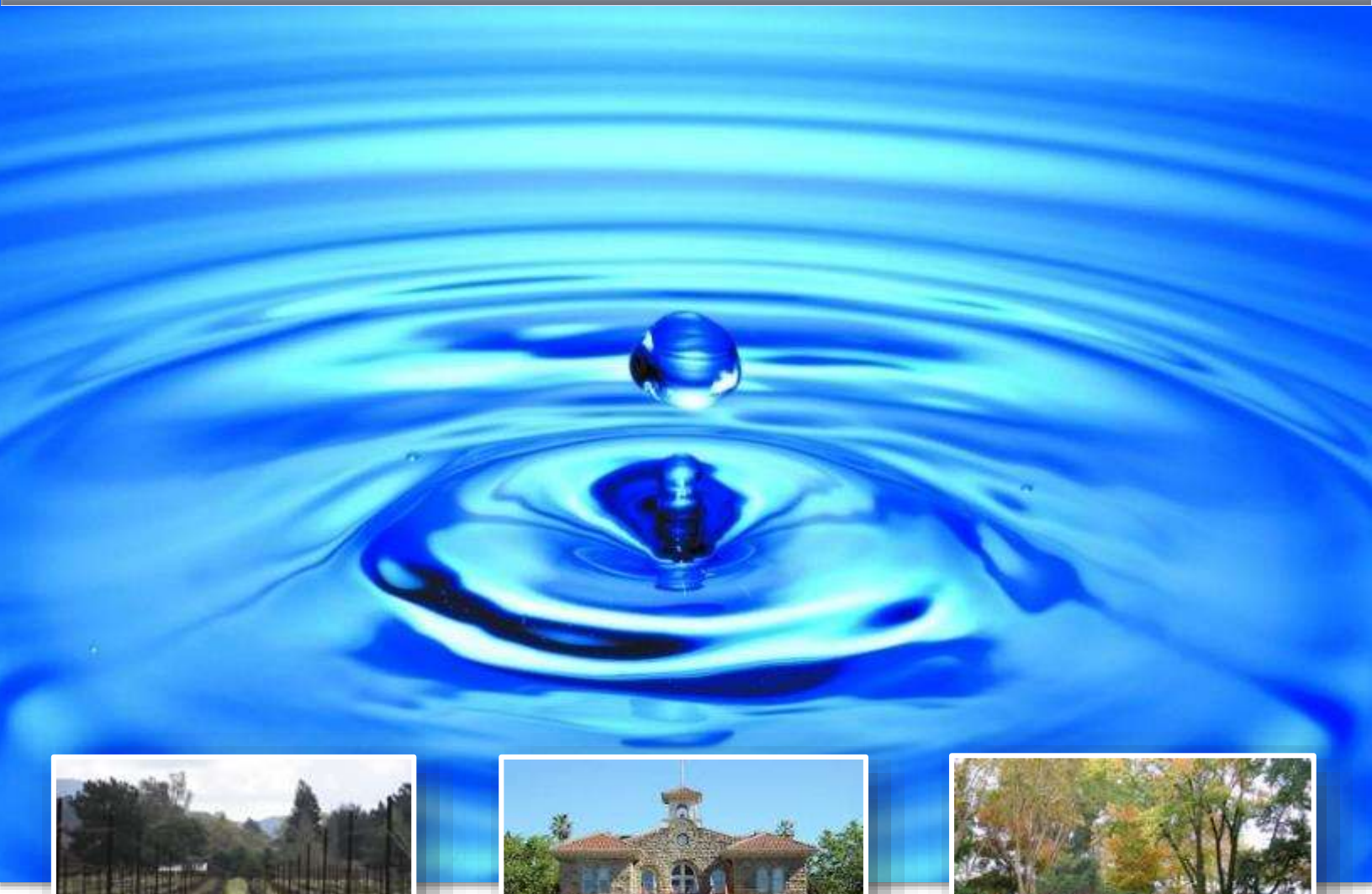
City of Sonoma
Urban Water Management Plan

FINAL

June 22, 2016



MADDAUS WATER MANAGEMENT INC.

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AB	Assembly Bill
ABAG	Association of Bay Area Governments
AF	acre-feet
AFY	acre-feet per year
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
BAAQMD	Bay Area Quality Management District
BMPs	Best Management Practices
BO	Biological Opinion
CCF	hundred cubic feet
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DMM	Demand Management Measures
DWR	California Department of Water Resources
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
ETo	evapotranspiration
GHG	greenhouse gas
GPCD	gallons per capita per day
gpd	gallons per day
gpf	gallons per flush
gpm	gallons per minute
MCL	maximum contaminant level
MF	multi-family
MG	million gallons
mgd	million gallons per day
MMWD	Marin Municipal Water District
MOU	Memorandum of Understanding Regarding Water Conservation in California
MWM	Maddaus Water Management, Inc.
NMFS	National Marine Fisheries Service
NMWD	North Marin Water District
NPDES	National Pollutant Discharge Elimination System
NRW	non-revenue water
OSA	outside service area
PRMD	Permit and Resource Management Department
PWS	Public Water System
PWSS	Public Water System Statistics
RA	Regional Alliance
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB X7-7	Water Conservation Act of 2009

SCWA	Sonoma County Water Agency
SF	Single Family
SMSWP	Sonoma-Marin Saving Water Project
SVCSD	Sonoma Valley County Sanitation District
SVGMP	Sonoma Valley Groundwater Management Plan
SWRCB	California State Water Resources Control Board
USGS	United States Geographical Survey
UWMP	Urban Water Management Plan
VOMWD	Valley of the Moon Water District
WAC	Water Advisory Committee
WDR	waste discharge requirement
WRR	water recycling requirement
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management

1. INTRODUCTION AND OVERVIEW

This report presents the 2015 Urban Water Management Plan (2015 UWMP) for the City of Sonoma (City) service area.

The State Legislature has declared that "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." This 2015 UWMP was prepared in close coordination with City of Sonoma staff to ensure that it is reasonable in addition to meeting the requirements of the Urban Water Management Planning Act as envisioned by the Legislature.

1.1 Background and Purpose

The purpose of developing this 2015 UWMP is to evaluate whether a water supplier can meet the water demands of its water customers as projected over a 20- or 25-year planning horizon. This evaluation is for a 25-year planning horizon and is accomplished through analysis of current and projected water supply and demand for normal, single-dry, or multiple-dry water year conditions. In addition, the purpose of this 2015 UWMP is to:

- Identify measures to be implemented or projects to be undertaken to reduce water demands and address water supply shortfalls;
- Identify stages of action to address up to 50% reduction in water supplies during dry water years;
- Identify actions to be implemented in the event of a catastrophic interruption in water supplies;
- Assess the reliability of the sources during normal, single-dry, and multiple-dry water years; and
- Identify when, how, and what measures the City could undertake in order to meet the State Legislature's call for a 20% per capita reduction in urban water use statewide by 2020.

The City supplies potable water to a population of approximately 11,150 people and approximately 300 businesses. The City's potable water supply is primarily water purchased from the Sonoma County Water Agency (SCWA) and water pumped from six groundwater wells owned and operated by the City. The SCWA water supply is delivered to the City via the SCWA aqueduct system and is supplied with water from the natural flow of the Russian River.

The evaluation and projections in this document are based on the City's current understanding of its water supply contract with the SCWA and its planned (future) water supply projects. This document is a "living" document (i.e., intended to be updated every five years) and as the City's water supply picture changes, the updated UWMP will incorporate those changes accordingly.

1.2 Urban Water Management Planning and the California Water Code

In order for an urban water supplier to be eligible for any water management grant or loan administered by the California Department of Water Resources (DWR), the agency must have a current UWMP on file that has been determined by DWR to address the requirements of the CWC. A current UWMP must also be maintained by the water supplier throughout the term of any grant or loan administered by DWR. A UWMP may also be required in order to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines.

1.2.1 Urban Water Management Planning Act of 1983 (AB 797)

The State of California Urban Water Management Planning Act (Act) is codified in California Water Code Sections 10610 through 10656 and requires each urban water supplier with 3,000 or more connections, or which supplies at least 3,000 acre-feet per year (AFY) of water, to submit a UWMP to the DWR every five years. The City has approximately 4,358 connections and meets the threshold for this State requirement.

The Act specifies the required content of each UWMP and allows for the level of detail provided in each UWMP to reflect the size and complexity of the water supplier. The act requires projections in five-year increments for a minimum of 20 years. This 2015 UWMP considers a 25-year planning horizon through year 2040.

1.2.2 Applicable Changes to the Water Code since 2010 UWMPs

The following table presents the applicable changes to the California Water Code between the 2010 and 2015 UWMPs.

Table 1-1. Changes to the Water Code since 2010 UWMPs

Change Number	Topic	CWC Section	Legislation Bill	Summary	Section in the City of Sonoma's 2015 UWMP
1	Demand Management Measures	10631 (f)(1) and (2)	AB 2067, 2014	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.	Section 9
2	Submittal Date	10621 (d)	AB 2067, 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.	Section 10
3	Electronic Submittal	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.	Section 10
4	Standardized Forms	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.	Water agencies are required to submit UWMP data electronically to DWR using standardized tables. The City has chosen to include the UWMP standardized forms as tables throughout this 2015 UWMP.
5	Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420, 2014	Requires plan to quantify and report distribution system water loss.	Section 4.3, Appendix K

Change Number	Topic	CWC Section	Legislation Bill	Summary	Section in the City of Sonoma's 2015 UWMP
6	Estimating Future Water Savings	10631 (e) (4)	SB 1420, 2014	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.	Section 4.4, Appendix E
7	Defining Water Features	10632	AB 2409, 2010	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.	Section 8, Section 8.2.4

1.2.3 Water Conservation Act of 2009 (SB X7-7)

For the current 2015 UWMP, a new requirement, SB X7-7, was passed by the California legislature and approved by the Governor. The bill amended AB 797 to require a 20% statewide reduction in urban potable water use by the year 2020. The water use reduction required by each water supplier varies by region and includes water savings targets measured in daily per capita use to be met by 2020 as well as an interim water savings target to be met by 2015. Each water supplier's 2015 UWMP will establish the 2015 baseline use from which targeted reductions are made, making the 2015 UWMP a particularly important document.

The purpose of SB X7-7 is to establish requirements for the state of California to reduce its statewide urban per capita water use by 20% by the year 2020. An interim target was set for 2015 which required a 10% reduction in urban per capita water use. After year 2021, failure to meet the 2020 water use target constitutes a violation of law. Compliance with the 2015 and 2020 water use targets is also a requirement for eligibility for State water grants and loans.

A checklist to ensure compliance of this 2015 UWMP with the above act requirements is provided in Appendix A.

1.3 UWMP Organization

The following information is included in this report and is discussed in individual sections below:

Section 1 – Introduction and Overview: In this introductory chapter, the City of Sonoma provides a discussion on the importance and extent of their water management planning efforts.

Section 2 – Plan Preparation: This section provides information on the process for developing the UWMP, including efforts in coordination and outreach.

Section 3 – System Description: This section includes maps of the City's service area, a description of the service area and climate, its Public Water System(s), and its organizational structure and history.

Section 4 – System Water Use: The current and projected water uses within the City's service area are described and quantified in this section.

Section 5 – Baselines and Targets: A description of the City's methods for calculating its baseline and target water consumption is included in this section, along with a demonstration of how the City has achieved the 2015 interim water use target and its plans for achieving the 2020 water use target.

Section 6 – System Supplies: This section describes and quantifies the current and projected sources of water available to the City. A description and quantification of potential recycled water uses and supply availability is also included in this chapter.

Section 7 – Water Supply Reliability: This section describes the reliability of the City's water supply and projects the reliability out 20 years. This description is provided for normal, single-dry years, and multiple-dry years.

Section 8 – Water Shortage Contingency Planning: This section provides the City's staged plan for dealing with water shortages, including a catastrophic supply interruption.

Section 9 – Demand Management Measures: The City's efforts to promote conservation and to reduce demand on water supply is described in this section, which also specifically addresses several demand management measures.

Section 10 – Plan Adoption, Submittal, and Implementation: This section describes the steps taken to adopt and submit the UWMP and to make it publicly available. This also includes a discussion of the City's plan to implement the UWMP.

Section 11 – References: Any applicable references contained within this UWMP are noted in this section.

Section 12 – Appendices: As shown in the Table of Contents, a number of appendices are included consisting of documents related to this 2015 UWMP Plan preparation.

2. PLAN PREPARATION

This section describes the basis for the 2015 UWMP preparation, regional planning, compliance, calendar year, units of measure, and coordination and outreach.

2.1 Basis for Preparing a Plan

In accordance with the CWC, urban water suppliers with 3,000 or more service connections or supplying 3,000 or more acre-feet of water per year are required to prepare a UWMP every five years.

2.1.1 Public Water Systems

Public Water Systems (PWSs) are the systems that provide drinking water for human consumption. These systems are regulated by the State Water Resources Control Board (Board), Division of Drinking Water. The California Health and Safety Code 116275 (h) defines a "Public Water System" as a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Table 2-1 lists the name and number of connections reported in this UWMP.

Table 2-1. Public Water Systems

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 (AF)
4910012	City of Sonoma	4,373	1,762
	TOTAL	4,373	1,762

2.2 Regional Planning

Before developing the UWMP, water agencies should consider the extent to which they will become involved in regional planning processes. Developing a cooperative 2015 UWMP may be a natural continuation of other regional coordination efforts, such as Integrated Regional Water Management, or may present an opportunity to begin regional collaboration. Regional planning can deliver mutually beneficial solutions to all agencies involved by reducing costs for the individual agency, assessing water resources at the appropriate geographic scale, and allowing for solutions that cross jurisdictional boundaries. Some of the other possible benefits, depending on the level of regional cooperation, can include more reliable water supplies; increased regional self-reliance; improved water quality; better flood management; increased economic stability; restored and enhanced ecosystems; and reduced conflict over resources.

The City has NOT participated in a regional UWMP, though their primary water supplier, SCWA, has one.

2.3 Individual or Regional Planning and Compliance

The following table presents the City's type of UWMP plan and confirms that the City is a member of a Regional Alliance.

Table 2-2. Plan Identification

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
☐	☑	Water Supplier is also a member of a Regional Alliance	Other
	Regional Urban Water Management Plan (RUWMP)		
NOTES: The City of Sonoma is a member of the Sonoma-Marin Saving Water Partnership.			

2.3.1 Regional UWMP

A group of water suppliers agreeing among themselves to plan, comply, and report as a region on the requirements of SB X7-7 is referred to as a "Regional Alliance." Each Regional Alliance will develop its own set of Interim 2015 and 2020 Urban Water Use Targets. A Regional Alliance allows water suppliers to work toward cooperatively developing programs and meeting regional water conservation targets, but not necessarily submitting a Regional Plan. Being a member of a Regional Alliance does not take the place of submitting a UWMP or RUWMP.

The City of Sonoma is a member of a regional alliance to support compliance with SB X7-7 Water Conservation Act of 2009. Members of this alliance include the Cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor, and the North Marin Water District (NMWD), Marin Municipal Water District (MMWD), and Valley of the Moon Water District (VOMWD). Appendix B provides a letter detailing and approving the City's membership between these parties. Section 5.8 of this document presents the Sonoma-Marin Saving Water Partnership (SMSWP) member Regional Alliance calculations – a consolidation of specific baseline and target per capita water use data available in each member's 2015 UWMP.

2.4 Calendar Year and Units of Measure

Water agencies use various units of measure when reporting water volumes, such as acre-feet (AF), million gallons (MG), or hundred cubic feet (CCF). The City is reporting on a calendar year basis in AF units.

Table 2-3. Agency Identification

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

2.5 Coordination and Outreach

This section describes the various agencies, districts and stakeholders that were involved or the City communicated with to obtain input and information in preparing this UWMP.

2.5.1 Wholesale and Retail Coordination

The City meets regularly with other water purveyors. In particular, the City meets at least monthly with SCWA and with other water contractors who purchase water from the SCWA. This monthly coordination has been instrumental in coordinating water supply and demand analyses for the preparation of this document. The City meets more often with the Valley of the Moon Water District, also a water contractor to the SCWA water supply, because of its shared delivery system through the SCWA aqueduct system that transports water from the Russian River to Sonoma Valley.

The City has one existing wholesale (potable water) source and one proposed wholesale source for recycled water. Table 2-4 shows the existing and future supply from wholesalers.

Table 2-4. Water Supplier Information Exchange

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)*
Sonoma County Water Agency
NOTES: Under normal water year conditions, approximately 95% of the City's water supply is surface water purchased from the SCWA.

2.5.2 Coordination with Other Agencies and the Community

Water suppliers must coordinate the preparation of their UWMP with other appropriate agencies in the area, to the extent practicable. In order to verify that agencies have fulfilled the above CWC provisions, agencies are to include a

description of their outreach and coordination activities to other agencies and the community, as described in CWC 10620(d)(2) and CWC 10642.

UWMP preparers are strongly encouraged to solicit participation from other agencies responsible for developing related reports or planning documents such as General Plans, Water Master Plans, Groundwater Management Plans, or Public Water System Statistics (PWSS) reports. Such coordination ensures consistency in planning and reporting. The City has proceeded to do this.

Urban water suppliers are required by the Act to encourage active involvement of the community within the service area prior to and during the preparation of its UWMP. The Act also requires urban water suppliers to make a draft of the UWMP available for public review and to hold a public hearing regarding the findings of the UWMP prior to its adoption. The City also included a public notice in the local newspaper notifying the public of the City's intent to prepare its UWMP and asking for public input during the preparation of the UWMP.

Prior to and during the preparation of the plan, the City encouraged the active involvement of the diverse social, cultural, and economic population which resides within the service area.

The following list identifies the public participation activities and the participants.

Date	Description	Participants
February 11, 2016	Notification Letters Sent to Interested Parties	See list in Table 10.1
December 28, 2015	Public Hearing Notice #1	General public via local newspaper: Sonoma Index Tribune
May 24, 2015	Public Hearing Notice #2	General public via local newspaper: Sonoma Index Tribune
May 23, 2016	Draft 2015 UWMP Released	General public via City website
June 6, 2016	Draft 2015 UWMP Public Hearing	City Council, general public

The findings and the Draft 2015 UWMP were presented before the City Council on June 6, 2016. The meeting was publicly noticed and the public given the opportunity to offer comments to the UWMP and to ask questions regarding the findings. A copy of the Council resolution of adoption is included in Appendix C.

2.5.3 Notice to Cities and Counties

CWC 10621 (b) requires that agencies notify cities and counties to which they serve water that the 2015 UWMP is being updated and reviewed. The CWC specifies that this must be done at least 60 days prior to the public hearing. The City's notifications to cities and counties are reported in Section 10 of this 2015 UWMP.

3. SYSTEM DESCRIPTION

3.1 General Description

The City of Sonoma (City) is located approximately 50 miles northeast of San Francisco at the southern end of Sonoma County (Figure 3.2). The City's water service area encompasses the city limits, as well as the Sonoma County jurisdictional area to the east of the city limits, and pocket areas that have outside service area (OSA) agreements with the City along Thornsberry Road, Lovall Valley Road, East Napa Road, East MacArthur Street, and Denmark Street. The service area is approximately 2.5 square miles and serves primarily residential and commercial customers. Elevations in the existing service area range from approximately 55 to 518 feet above mean sea level.

The water distribution system contains three pressure zones that are each served by one or more storage tanks. The principal water mains in the distribution system range in size from 6 to 16 inches. Most of the distribution grid piping in the older sections of the City range in size from 1-1/2 to 4 inches, while the newer areas are served by pipes 6 to 8 inches in diameter.

3.2 Service Area Boundary Maps

Figures 3-1 and 3-2 show an overview of Sonoma's service area, the location of Sonoma County, and the boundaries of the City of Sonoma.

Figure 3-1. City of Sonoma Water Service Area Map

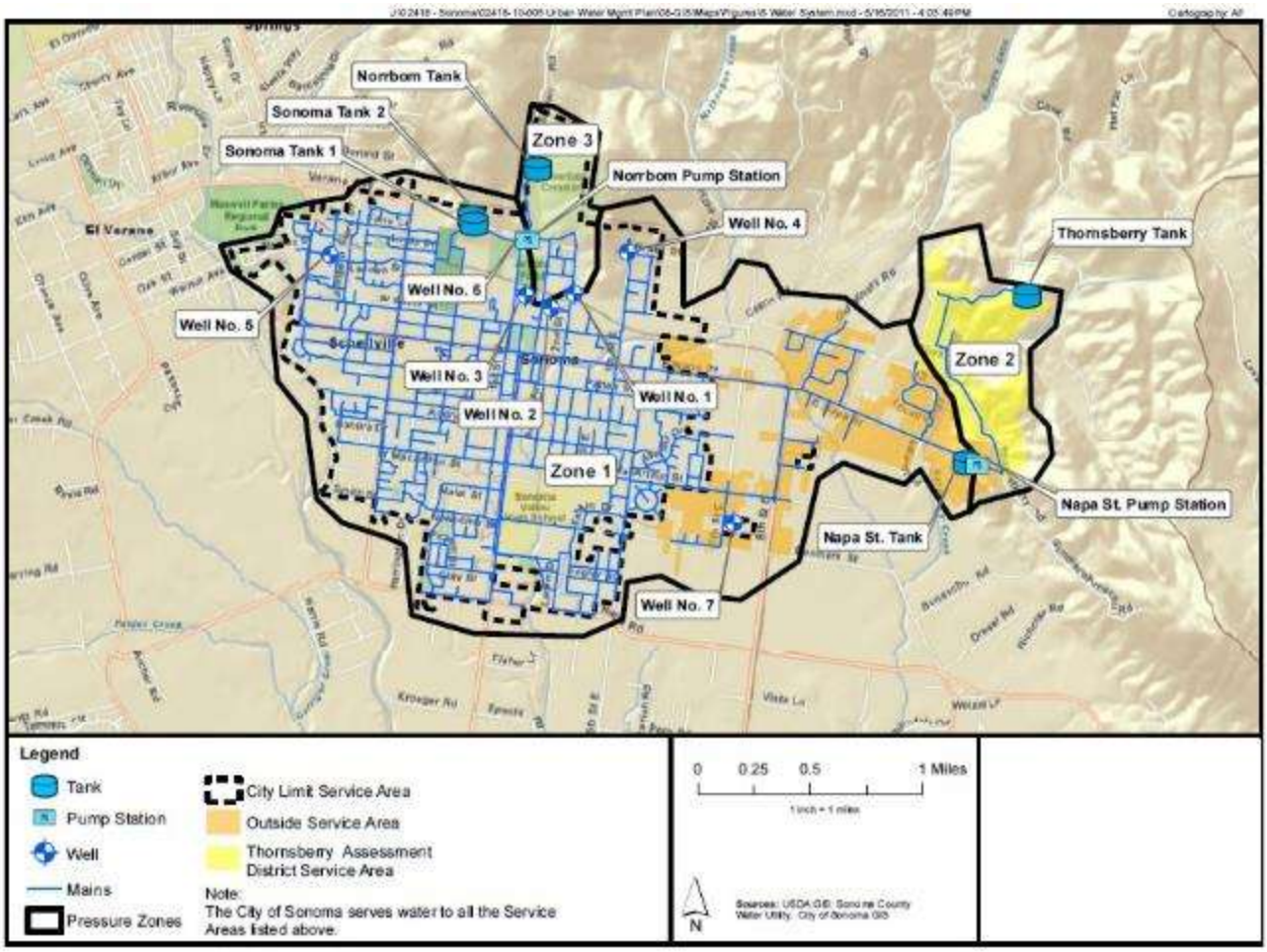
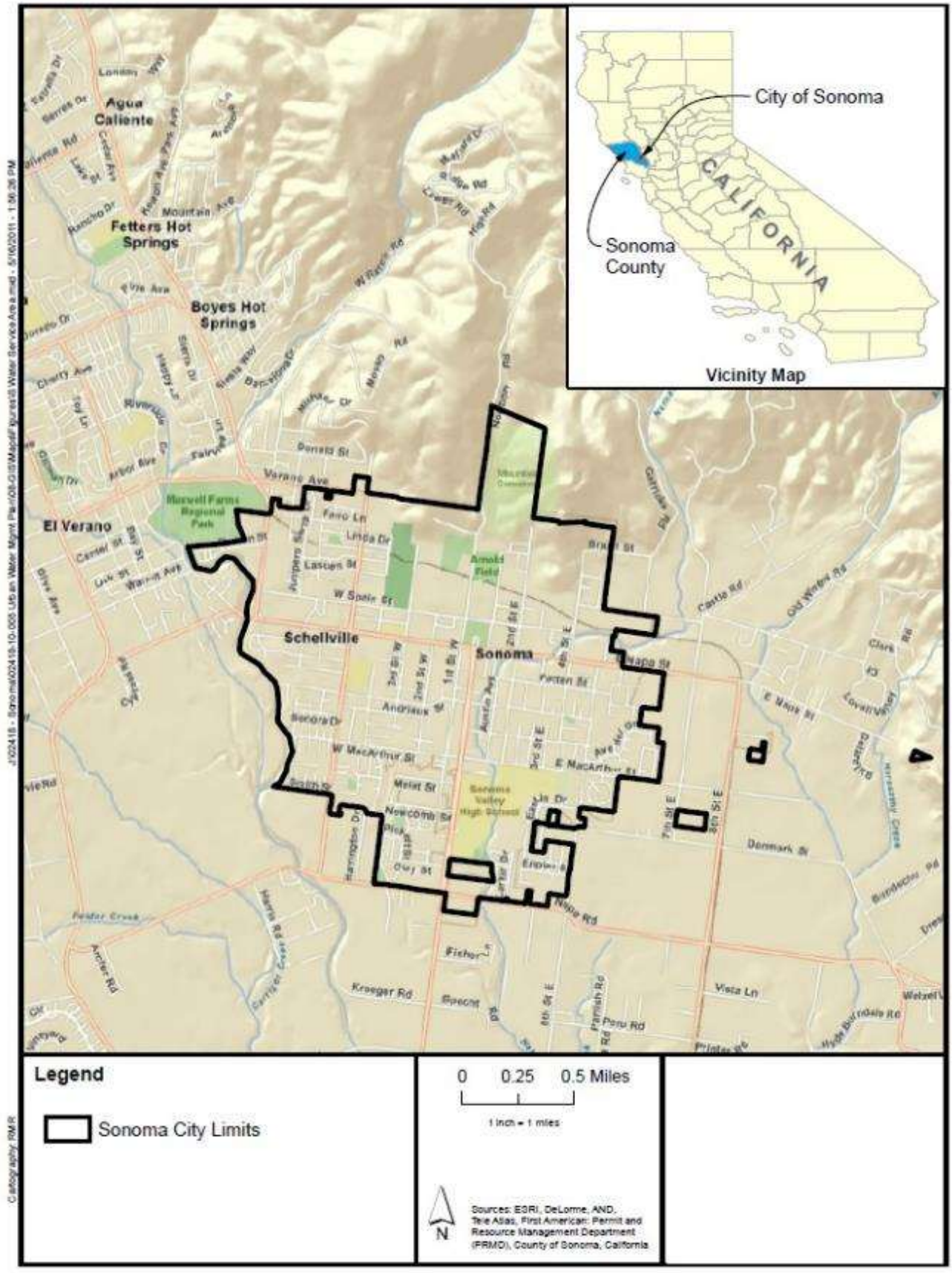


Figure 3-2. City of Sonoma Water System Map



3.3 Service Area Climate

The climate of the City is typical of that of the eastern Sonoma County and western Napa County areas, characterized by summers that are dry and warm and winters that are relatively mild, with the majority of rainfall occurring during the rainy season (November through March). The regional averages of rainfall and temperature is presented in the following table. The average annual rainfall is 29.4 inches and evapotranspiration (ETo) for the region is approximately 43 inches. ETo is a measurement of water evaporation combined with plant transpiration and is expressed in the form of a rate, typically inches per time period. In other words, ETo is the amount of water needed for common turf to grow in a specific region.

Table 3-0. Period of Record General Climate Summary, Temperature, and Precipitation – City of Sonoma

Month	Average Max. Temperature (°F)	Average Min. Temperature (°F)	Mean Temperature (°F)	Average Total Precipitation (inches)
January	57.2	37.2	47.2	6.1
February	63.2	39.9	51.4	5.3
March	66.4	40.8	53.6	4.1
April	71.2	42.3	56.6	1.8
May	77.2	46	61.5	0.82
June	84.1	49.7	66.8	0.23
July	88.6	51.2	69.5	0.03
August	88.2	50.8	69.2	0.08
September	86.3	49.3	67.4	0.33
October	78.6	45.5	61.9	1.7
November	65.9	40.6	53.3	3.9
December	57.5	37.1	47.3	5.2
Annual	73.7	44.2	58.4	29.4

Source: Western Regional Climate Center, Station 048351, 1893-2014. Data accessed online May 4, 2016. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8351

According to the California Irrigation Management Information System (CIMIS) May 2015 to April 2016 monthly report accessed May 4, 2016 on www.cimis.water.ca.gov, the total ETo at CIMIS Carneros Station 109 in ETo Zone 5 was 42.88 inches. At this site, prevailing winds are from the west and the local character is described as agricultural, primarily vineyards and cattle.

3.3.1 Climate Change

The City is developing a Climate Action Plan, which is a collaborative effort among all nine cities and the County of Sonoma to take further action in reducing greenhouse gas (GHG) emissions community-wide. Through the implementation of this program, participating jurisdictions will achieve compliance with Bay Area Air Quality Management District (BAAQMD) guidelines and other related policies that establish reduction targets for GHG emissions, including AB 32, California Environmental Quality Act (CEQA), and local GHG reduction goals. One main goal of the plan is to reduce water consumption.

3.4 Service Area Population and Demographics

The City's service area includes pocket areas of outside service area connections located in the Sonoma County jurisdictional area. The sources for the population projections are:

- City of Sonoma General Plan 2020, dated October 2006;

- Projections 2013, Association of Bay Area Governments (ABAG);
- City of Sonoma Growth Management Ordinance adopted February 20, 2008; and
- Department of Finance, 2010 Census.

DWR Table 3-1 below presents current and projected population for the City. It is evident in this table that the City does not plan to expand its population significantly in the next 25 years. In developing the 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (MWM, 2015), SMSWP, including a total of 9 Sonoma and Marin County member Water Contractors, and Maddaus Water Management (MWM) evaluated several data sources available for historical and projected population and opted to use ABAG 2013 population data as it represented the most current population information for each SMSWP member water contractor service area. Population estimates were provided by the Association of Bay Area Governments in their Plan Bay Area Projections 2013 report (ABAG, 2013) on a sub-regional jurisdictional level (not by water service area boundaries) in 5-year increments from year 1990 to 2040.

ABAG boundaries were aligned with the City of Sonoma's water service area boundary as provided by the water agency to ascertain the percent of the service area in each jurisdiction. The City of Sonoma's population numbers were analyzed in detail by comparing both sets of boundaries. This data was also compared to the 2010 Census data for further verification of accuracy. Through this analysis it was found that 100% of the water service area fell inside the City of Sonoma. For this area, ABAG projection values were used. In summary, the ABAG population values were adjusted on a percent basis to ensure that the population data used was consistent with the actual water area served.

Table 3-1. Population – Current and Projected

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
	11,147	11,375	11,642	11,865	12,130	12,430
NOTES: Association of Bay Area Governments (ABAG). Plan Bay Area Projections 2013, December 2013. Online: http://abag.ca.gov/planning/housing/projections13.html						

4. SYSTEM WATER USE

Accurately tracking and reporting current water demands allow water suppliers to properly analyze the use of their resources and conduct good resource planning. Estimating future demand as accurately as possible allows water agencies to manage their water supply and appropriately plan their infrastructure investments. Assessments of future growth and related water demand, done in coordination with local planning agencies, provide essential information for developing demand projections.

This section of the 2015 Urban Water Management Plan presents the actual and projected number of water accounts and annual water use in 5-year increments between 2015 and 2040.

The water demand and water conservation savings analysis was updated by Maddaus Water Management in the City of Sonoma 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (MWM, 2015). Excerpts and water demand data from the update are used in this section. A copy of the update can be found in Appendix D.

Water use in the City's service area is predominantly residential use. The residential customers number approximately 85% of the total water billing accounts and are approximately 75% of the total water deliveries. Commercial customers are the next largest customer type and are approximately 7% of the total water billing accounts but are approximately 13% of the total water deliveries.

4.1 Recycled versus Potable and Raw Water Demand

Recycled water is addressed comprehensively in Section 6.5, but a summary of recycled water demand is included in Table 4-3.

This section addresses potable water demand and also provides for the reporting of raw water demand for the year 2015. Raw water use in 2015 is reported in Table 4-1.

4.2 Water Uses by Sector

Current customer water use for the year 2015, as presented in Table 4-1, was obtained from actual City of Sonoma billing data.

Table 4-1. Demands for Potable and Raw Water – Actual

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type	2015 Actual		
Drop down list	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume (AF)
Single Family		Drinking Water	873.8
Multi-Family		Drinking Water	236.5
Commercial	Business	Drinking Water	210.0
Landscape	Irrigation	Drinking Water	80.7
Other		Drinking Water	124.3
Losses	Non-revenue water	Drinking Water	237.1
		TOTAL	1,762.4
NOTES: Losses equal total water into the system less total urban retail. Data obtained from City of Sonoma.			

The following table presents the City's projected water demands with plumbing code savings. Please note that losses represent non-revenue water (NRW). Further information about the basis of these demand projections can be found in Appendix D.

Table 4-2. Demands for Potable and Raw Water – Projected

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type	Additional Description *(as needed)*	Projected Water Use (AF) Report *To the Extent that Records are Available*				
Drop down list		2020	2025	2030	2035	2040
Single Family		1191.8	1211.7	1219.0	1233.8	1254.4
Multi-Family		288.7	290.2	289.7	291.5	295.1
Commercial	Business	266.7	272.5	278.4	287.0	295.9
Landscape	Irrigation	149.2	153.0	156.9	162.4	168.1
Other		113.5	116.1	118.3	121.0	124.0
Losses	Non-revenue water	163.7	167.0	168.5	171.1	174.4
TOTAL		2173.6	2210.5	2230.8	2266.7	2311.9
NOTES: Demand projections include plumbing code and standards (passive) savings.						

The following table presents the total potable, raw, and recycled water demands for the City for 2015 through 2040.

Table 4-3. Total Water Demands

Table 4-3 Retail: Total Water Demands (AF)						
	2015	2020	2025	2030	2035	2040
Potable and Raw Water *From Tables 4-1 and 4-2*	1,762	2,174	2,210	2,231	2,267	2,312
Recycled Water Demand *From Table 6-4*	0	55	55	55	55	55
TOTAL WATER DEMAND	1,762	2,229	2,265	2,286	2,322	2,367

4.3 Distribution System Water 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.

Table 4-4 shows "unaccounted-for" water which is defined to be the difference between water produced and water sold to customers. This differential between water supply and metered water use includes system flushing, leak repair flushing, hydrant leaks, street sweeping, and known leaks that are subsequently repaired. The remainder is unaccounted-for water, that is, unmetered water and/or water leaking from the system. Unaccounted-for water can also result from meter inaccuracies. Unaccounted-for water is estimated before the result of conservation programs is calculated and increases due to a rise in overall demand.

Within the past three years, the City's unaccounted-for water has been approximately 7%, which is below the industry average of 10% loss (maximum). It is assumed that the City's water loss will proceed at 7.5% consistently through 2040 based on average 2008-2014 NRW.

The City has no other water uses (e.g., groundwater recharge or conjunctive use) at this time.

Table 4-4. 12-Month Water Loss Auditing Report

Table 4-4 Retail: 12-Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss* (AF)
01/2015	215
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	

4.4 Estimating Future Water Savings

The projected demands presented in this 2015 UWMP include estimated plumbing code savings. The City's process of estimating future water savings, more specifically the passive savings methodology, can be found in Appendix E.

4.5 Water Use for Lower Income Households

SB X7-7 includes a new requirement for identifying water use projections for lower income households. Under the statute, a lower income household is as defined under the California Health and Safety Code and is established to be 80% of the median income, adjusted for family size. Based on City of Sonoma data from the *2010-2014 American Community Survey*, lower income households are estimated to comprise approximately 38% of the total households. Table 4-5 shows the projected water demands for lower income households and is based on 38% of single family and multi-family residential projected water use.

The projected demands included in the 2015 UWMP were developed as part of the City of Sonoma's 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (MWM, 2015) created in collaboration with the Sonoma-Marin Saving Water Partnership. This report can be found in Appendix D of this 2015 UWMP. Projected demand with and without plumbing code savings can be found also in this report. The demands presented in the 2015 UWMP include plumbing code savings. The methodology for developing these savings estimates can be found in Appendix E. Lower income residential demands are also included in the UWMP demand projections and can be found in Table 4-6 below.

Table 4-5. Inclusion in Water Use Projections

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc…. utilized in demand projections are found.	Appendix E, Table E-1
Are Lower Income Residential Demands Included in Projections?	Yes

The residential low-income water demands by customer category are shown in the following table.

Table 4-6. Low-Income Residential Demands (AF)

Customer Category	2020	2025	2030	2035	2040
Single Family	451	458	461	466	474
Multi-Family	109	110	110	110	112
Total	**560**	**568**	**570**	**577**	**586**

5. SB X7-7 BASELINES AND TARGETS

This section presents the SB X7-7 baseline and target gallons per capita per day (GPCD) analysis for the City of Sonoma.

5.1 Updating Calculations from 2010 UWMP

The Water Conservation Act of 2009 (SB X7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). The Water Conservation Act of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the *20x2020 Water Conservation Plan* (DWR, 2010). Consistent with SB X7-7, each water supplier must determine and report its existing baseline water consumption and establish future water use targets in GPCD; reporting began with the 2010 UWMP.

In this 2015 UWMP, agencies had the chance to change the years selected for their baseline periods as compared to their 2010 UWMPs. Agencies could choose to make this change based on changes to their calculated population (see Section 5.3) which could have affected the baseline and target GPCD values.

5.1.1 Update of Target Method

Under SB X7-7, each individual urban water supplier (i.e., the City) must develop a water use target for year 2020 using one of four allowable methods. The 2015 interim target is a water use target that is halfway between the base daily per capita water use of 225 GPCD and the 2020 water use target. There is no penalty if an agency does not achieve its 2015 interim target.

There are four methods established by the California Department of Water Resources, the agency charged with establishing such methodologies under the legislative act, which the City may use to develop 2015 and 2020 water use targets. Three methods are provided in SB X7-7; the fourth was subsequently established by the DWR. The four methods are generally described below. A more complete description can be found in DWR's 2015 Urban Water Management Plans Guidebook for Urban Water Suppliers (DWR, 2016).

- Method 1: 80% of Base Daily Per Capita Use
- Method 2: Performance standards based on actual water use data for indoor residential water use, landscaped area, and commercial, industrial, and institutional (CII) water use
- Method 3: 95% of the San Francisco Bay hydrologic region (see Figure 5-1)
- Method 4: Savings by water sector (indoor residential and CII) and landscape and water loss savings

As presented in the following SB X7-7 Table 7, the City has elected to use Method 1 for the development of its individual water use target. The City used the same target Method 1 in their 2010 UWMP.

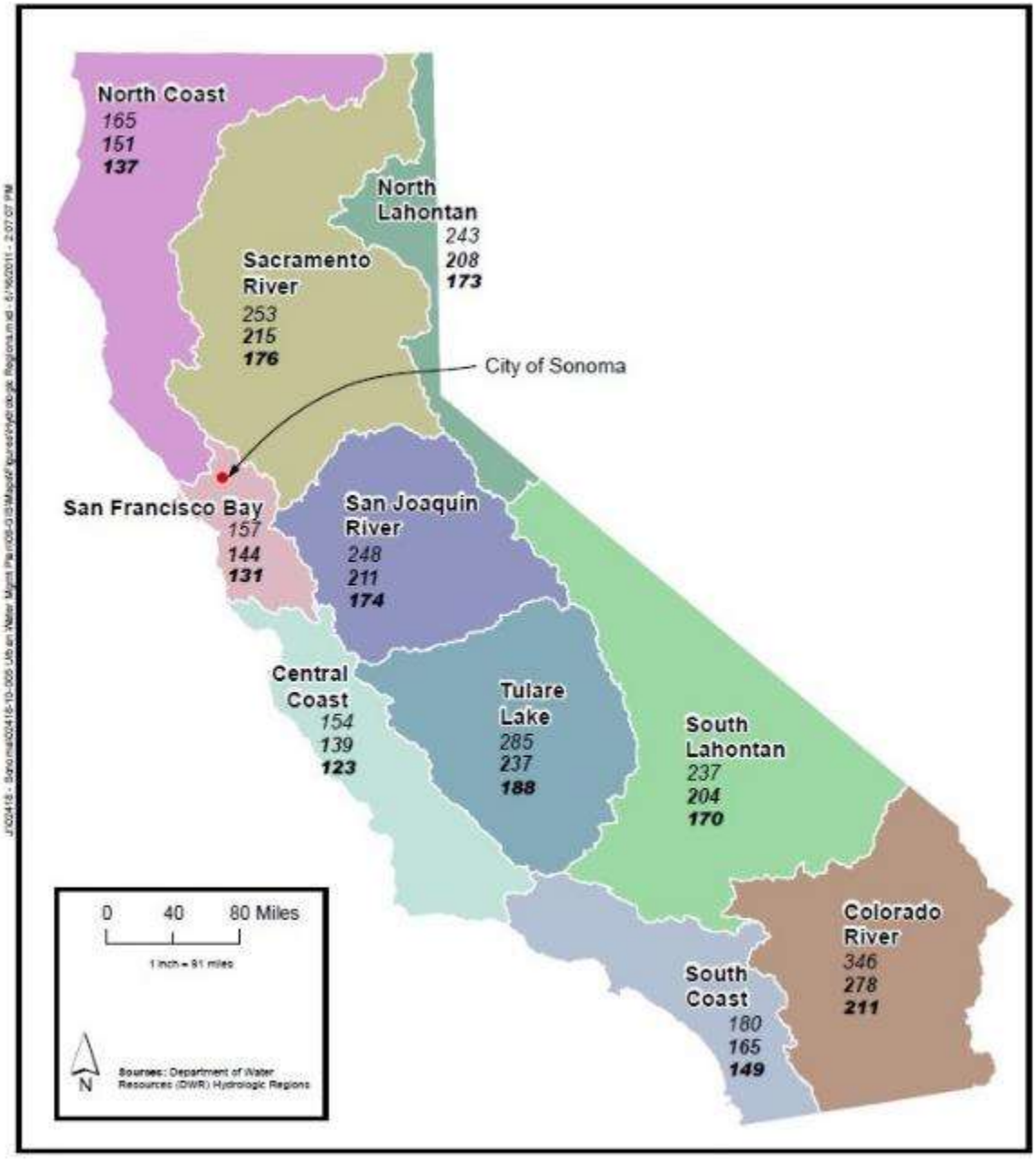
SB X7-7 Table 7: 2020 Target Method
Select Only One

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

Once the water use targets are determined, SB X7-7 requires confirmation that the water use targets meet the minimum water use reduction established by statute. In the City's case, the 2020 water use target established must be less than or equal to 80% of 225 GPCD or a 2020 target of 180 GPCD, as presented in the following table.

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
225	180

Figure 5-1. Hydrologic Region Map



5.1.2 Required Use of 2010 U.S. Census Data

As also noted in Section 3.4, 2010 U.S. Census data was not used in the development of baseline and target GPCD values. However, as presented in SB X7-7 Table 2 below, the "Other" method selected for determining population has been pre-approved by DWR staff member Gwen Huff. In developing the 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, SMSWP member Water Contractors and Maddaus Water Management evaluated several data sources available for historical and projected population and opted to use ABAG 2013 population data as it represented the most current population information for each SMSWP member water contractor service area. Population estimates were provided by ABAG in their Plan Bay Area Projections 2013 report (ABAG, 2013) in 5-year increments from year 1990 to 2040. This methodology was approved by Gwen Huff in December 2015.

ABAG boundaries were aligned with the City of Sonoma's water service area boundary as provided by the water agency to ascertain the percent of the service area in each jurisdiction. The City of Sonoma's population numbers were analyzed in detail by comparing both sets of boundaries. This data was also compared to the 2010 Census data for further verification of accuracy. Through this analysis it was found that 100% of the water service area fell inside the City of Sonoma. For this area, ABAG projection values were used. In summary, the ABAG population values were adjusted on a percent basis to ensure that the population data used was consistent with the actual water area served.

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: In developing the 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, SMSWP, including a total of 9 Sonoma and Marin County member Water Contractors, and MWM evaluated several data sources available for historical and projected population and opted to use ABAG 2013 population data as it represented the most current population information for each SMSWP member water contractor service area. Population estimates were provided by the Association of Bay Area Governments in their Plan Bay Area Projections 2013 report (ABAG, 2013) on a sub-regional jurisdictional level (not by water service area boundaries) in 5-year increments from year 1990 to 2040.

ABAG boundaries were aligned with the City of Sonoma's water service area boundary as provided by the water agency to ascertain the percent of the service area in each jurisdiction. The City of Sonoma's population numbers were analyzed in detail by comparing both sets of boundaries. This data was also compared to the 2010 Census data for further verification of accuracy. Through this analysis it was found that 100% of the water service area fell inside the City of Sonoma. For this area, ABAG projection values were used. In summary, the ABAG population values were adjusted on a percent basis to ensure that the population data used was consistent with the actual water area served.

5.1.3 SB X7-7 Verification Form

In the 2015 UWMP, water agencies must demonstrate compliance with their established water use target for the year 2015. This will also demonstrate whether or not the agency is currently on track to achieve its 2020 target.

Compliance is verified by DWR's review of the SB X7-7 Verification Form submitted with the 2015 UWMP. The SB X7-7 Verification Form tables are found throughout this section.

The two primary calculations required by SB X7-7 are:

- Base Daily Water Use calculation (average GPCD used in past years) and
- Compliance Water Use Target (target GPCD in 2015 and 2020).

In addition to calculating base gross water use, SB X7-7 requires that a retail water supplier identify its water demand reduction targets. The methodologies for calculating demand reduction were described in Section 4. The City has selected Method 1 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target.

To be consistent with the UWMP analysis, the units of measurement for the SB X7-7 analysis are AF, as shown in the following table.

SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Acre Feet

5.2 Baseline Periods

Water use GPCD must be calculated and reported for two baseline periods, the 10- or 15-year baseline (Baseline GPCD) and the 5-year baseline (Target Confirmation). Whether an agency uses a 10- or 15-year baseline depends on the percentage of recycled water delivered in the year 2008.

5.2.1 Determination of the 10-15 Year Baseline Period (Baseline GPCD)

The Base Daily Water Use calculation is based on gross water use by an agency in each year and can be based on a 10-year average, ending no earlier than 2004 and no later than 2010, or a 15-year average if at least 10% of 2008 demand was met by recycled water. Base Daily Water Use must account for all water sent to retail customers, excluding:

- Recycled water;
- Water sent to another water agency; and
- Water that went into storage.

Since the City's percentage of recycled water used in the year 2008 was zero (which is less than 10%), the water agency must use a 10-year baseline period. Recycled water deliveries of 2008 and the total water deliveries of 2008 were entered into the following SB X7-7 Table 1.

The following table presents the City's baseline period ranges for its SB X7-7 target GPCD analysis.

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	2,376	Acre Feet
	2008 total volume of delivered recycled water	0	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1]	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range[2]	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[3]	2007	

5.2.2 Determination of the 5-Year Baseline Period (Target Confirmation)

Water suppliers must also calculate water use in GPCD for a 5-year baseline period. This is a continuous 5-year period that ends no earlier than December 31, 2007 and no later than December 31, 2010. This will be used to confirm that the selected 2020 target meets the minimum water use reduction requirements (see Section 5.6 and Section 5.7).

For the Interim Urban Water Use Target – the water use goal each water supplier is to achieve and report in their 2015 UWMP – the average of the Base Daily Per Capita Water Use and the Urban Water Use Target is normally used.

The City's five-year baseline period is from 2003-2007. This value is calculated to be 206 GPCD as presented in Section 5.5.

5.3 Service Area Population

As also noted in Section 3.4, in developing the 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, SMSWP Sonoma and Marin County member Water Contractors and MWM evaluated several data sources available for historical and projected population and opted to use ABAG 2013 population data as it represented the most current population information for each SMSWP member water contractor service area. Population estimates were provided by ABAG in their Plan Bay Area Projections 2013 report (ABAG, 2013) on a sub-regional jurisdictional level (not by water service area boundaries) in 5-year increments from year 1990 to 2040.

ABAG boundaries were aligned with the City of Sonoma's water service area boundary as provided by the water agency to ascertain the percent of the service area in each jurisdiction. The City of Sonoma's population numbers were analyzed in detail by comparing both sets of boundaries. This data was also compared to the 2010 Census data for further verification of accuracy. Through this analysis it was found that 100% of the water service area fell inside the City of Sonoma. For this area, ABAG projection values were used. In summary the ABAG population values were adjusted on a percent basis to ensure that the population data used was consistent with the actual water area served.

The following SB X7-7 Table 3 presents the City's baseline service area population.

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1995	9,002
Year 2	1996	9,153
Year 3	1997	9,303
Year 4	1998	9,453
Year 5	1999	9,604
Year 6	2000	9,754
Year 7	2001	9,904
Year 8	2002	10,055
Year 9	2003	10,205
Year 10	2004	10,355
5 Year Baseline Population		
Year 1	2003	10,205
Year 2	2004	10,355
Year 3	2005	10,506
Year 4	2006	10,595
Year 5	2007	10,684
2015 Compliance Year Population		
2015		11,147
NOTES: Source - Association of Bay Area Governments (ABAG). Plan Bay Area Projections 2013, December 2013. Online: http://abag.ca.gov/planning/housing/projections13.html		

5.4 Gross Water Use

Gross water use is a measure of water that enters the distribution system of the supplier over a 12-month period (either fiscal or calendar year) with certain allowable exclusions. These exclusions are:

- Recycled water delivered within the service area;
- Indirect recycled water (see Methodology 1 from the *Methodologies* document [DWR, 2011]);
- Water placed into long-term storage (surface or groundwater);
- Water conveyed to another urban supplier;
- Water delivered for agricultural use; and
- Process water.

Gross water use must be reported for each year in the baseline periods as well as 2015, the compliance year.

The following table presents the City's baseline gross water use.

SB X7-7 Table 4: Annual Gross Water Use *								
	Baseline Year *Fm SB X7-7 Table 3*	**Volume Into Distribution System** *Fm SB X7-7 Table(s) 4-A*	**Deductions**					**Annual Gross Water Use**
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *Fm SB X7-7 Table 4-B*	Water Delivered for Agricultural Use	Process Water *Fm SB X7-7 Table(s) 4-D*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	2,118	0	0	0	0	0	2,118
Year 2	1996	2,277	0	0	0	0	0	2,277
Year 3	1997	2,393	0	0	0	0	0	2,393
Year 4	1998	2,292	0	0	0	0	0	2,292
Year 5	1999	2,461	0	0	0	0	0	2,461
Year 6	2000	2,482	0	0	0	0	0	2,482
Year 7	2001	2,567	0	0	0	0	0	2,567
Year 8	2002	2,690	0	0	0	0	0	2,690
Year 9	2003	2,586	0	0	0	0	0	2,586
Year 10	2004	2,488	0	0	0	0	0	2,488
10 - 15 year baseline average gross water use								**2,435**
5 Year Baseline - Gross Water Use								
Year 1	2003	2,586	0	0	0	0	0	2,586
Year 2	2004	2,488	0	0	0	0	0	2,488
Year 3	2005	2,382	0	0	0	0	0	2,382
Year 4	2006	2,318	0	0	0	0	0	2,318
Year 5	2007	2,313	0	0	0	0	0	2,313
5 year baseline average gross water use								**2,417**
2015 Compliance Year - Gross Water Use								
2015		1,762	0	0	0	0	0	1,762
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								

The following table presents the groundwater volume pumped by the City and entering the distribution system for current and baseline historical years.

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)			
Name of Source	Groundwater		
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	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System			
Year 1	1995	25	25
Year 2	1996	-	0
Year 3	1997	7	7
Year 4	1998	19	19
Year 5	1999	26	26
Year 6	2000	-	0
Year 7	2001	76	76
Year 8	2002	84	84
Year 9	2003	75	75
Year 10	2004	69	69
5 Year Baseline - Water into Distribution System			
Year 1	2003	75	75
Year 2	2004	69	69
Year 3	2005	77	77
Year 4	2006	65	65
Year 5	2007	73	73
2015 Compliance Year - Water into Distribution System			
2015		174	174

NOTES: For 1996 production, no groundwater production breakdown is available from the City of Sonoma or DWR. Total production is available and reported in the SCWA purchased water table below. This value is consistent with the City's 2010 UWMP and 2015 Demand and Conservation Report.

The following table presents the volume of SCWA water purchased by the City and entering the distribution system for current and baseline historical years.

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)			
Name of Source	SCWA		
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	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System			
Year 1	1995	2,094	2,094
Year 2	1996	2,277	2,277
Year 3	1997	2,387	2,387
Year 4	1998	2,274	2,274
Year 5	1999	2,435	2,435
Year 6	2000	2,482	2,482
Year 7	2001	2,491	2,491
Year 8	2002	2,605	2,605
Year 9	2003	2,511	2,511
Year 10	2004	2,419	2,419
5 Year Baseline - Water into Distribution System			
Year 1	2003	2,511	2,511
Year 2	2004	2,419	2,419
Year 3	2005	2,305	2,305
Year 4	2006	2,253	2,253
Year 5	2007	2,240	2,240
2015 Compliance Year - Water into Distribution System			
2015		1,588	1,588
NOTES: For 1996 production, no groundwater production breakdown is available from the City of Sonoma or DWR. Total production is available and reported in the SCWA purchased water table below. This value is consistent with the City's 2010 UWMP and 2015 Demand and Conservation Report.			

5.5 Baseline Daily per Capita Water Use

The base daily per capita water use is the water supplier's average gross daily per capita use in gallons. The baseline consists of all water entering the delivery system, including water losses, and with the exception of recycled water delivered within the supplier's service area, water placed into long-term storage, or water conveyed to other urban water suppliers. The following table presents the SB X7-7 analysis baseline GPCD.

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	9,002	2,118	210
Year 2	1996	9,153	2,277	222
Year 3	1997	9,303	2,393	230
Year 4	1998	9,453	2,292	216
Year 5	1999	9,604	2,461	229
Year 6	2000	9,754	2,482	227
Year 7	2001	9,904	2,567	231
Year 8	2002	10,055	2,690	239
Year 9	2003	10,205	2,586	226
Year 10	2004	10,355	2,488	214
10-15 Year Average Baseline GPCD				**225**
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	10,205	2,586	226
Year 2	2004	10,355	2,488	214
Year 3	2005	10,506	2,382	202
Year 4	2006	10,595	2,318	195
Year 5	2007	10,684	2,313	193
5 Year Average Baseline GPCD				**206**
2015 Compliance Year GPCD				
2015		11,147	1,762	141

5.6 2015 and 2020 Targets

The purpose of developing a baseline daily per capita water use figure is to have a baseline from which to derive the 2015 and 2020 water use targets. The base daily per capita water use is developed for each water supplier based on a 10-year average beginning no earlier than 2004 and ending no later than 2010.

For the development of the City of Sonoma's base daily per capita water use, a 10-year average from 1995 to 2004 was used. The City does not have a recycled water supply.

As shown in the following Table 5-1, the City's 10-year baseline daily per capita water use is 225. The base daily per capita water use was developed using the total service area population, which includes the population within the city limits as well as the estimated population outside the city limits but within the City's service area. The gross water use consists of all water entering the water delivery system, including water losses. This was calculated by adding all well production to water purchase, as reported annually to the DWR on PWSS reports.

A second requirement for completing the 2015 UWMP is that the City determine its 5-year base daily per capita water use. If the 5-year base daily water use exceeds 100 GPCD, then the 2020 water use target established by the City must be less than or equal to 95% of this 5-year baseline. As shown in Table 5-1, the 5-year base daily per capita water use is 206 GPCD.

Table 5-1. Baselines and Targets Summary

Table 5-1 Baselines and Targets Summary: *Retail Agency*					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1995	2004	225	202	180
5 Year	2003	2007	206		
*All values are in Gallons per Capita per Day (GPCD).					

The following table from the SB X7-7 Verification Form, presents the City's 2015 interim GPCD target.

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
180	225	202

Additionally, the following table from the SB X7-7 Verification Form, presents the City's 2020 GPCD target.

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*	Calculated 2020 Target *Fm Appropriate Target Table*	Confirmed 2020 Target
206	196	180	180
** Maximum 2020 Target is 95% of the 5 Year Baseline GPCD*			

5.7 2015 Compliance Daily per Capita Water Use (GPCD)

The 2015 per capita water use for the City is 141 GPCD as shown in Table 5-2; this value is below their 2015 interim target of 202.

Table 5-2. 2015 Compliance

Table 5-2: 2015 Compliance: *Retail Agency*								
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	202	0	0	0	0	141	141	Yes
*All values are in Gallons per Capita per Day (GPCD).								

The following SB X7-7 Table 6 likewise presents the City's 2015 compliance year GPCD.

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	225
5 Year Baseline GPCD	206
2015 Compliance Year GPCD	141

Furthermore, the following SB X7-7 Table 9 presents the City's year 2015 GPCD compliance status. This table exactly matches the previous Table 5-2.

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)*					2015 GPCD *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD		
141	202	0	0	0	0	141	141	YES

5.8 Regional Alliance

SB X7-7 provides that urban water retail suppliers may plan, comply, and report on the 2020 water use target on a regional basis, an individual basis, or both. The City is one of 9 water contractors to the Sonoma County Water Agency for purchase of Russian River water supply. The water contractors are eligible to form a regional alliance, under the provisions of SB X7-7, because the water contractors are recipients of water from a common wholesale water supplier, SCWA. A water conservation regional alliance among the 9 water contractors is already in existence and comprises the Sonoma-Marin Saving Water Partnership. Thereby effectively combining the regional water conservation efforts in a regional alliance for the purpose of coordinating conservation programs and meeting regional water use targets. The members of the alliance are: City of Sonoma, City of Santa Rosa, Town of Windsor, City of Rohnert Park, City of Cotati, City of Petaluma, Valley of the Moon Water District, Marin Municipal Water District, and North Marin Water District.

DWR established three options for calculating a regional alliance target. The City, along with the other water contractors in the regional alliance, selected Option 1 for establishing the regional alliance target. Option 1 consists of each member of the regional alliance calculating their individual target and then weighting the individual targets by each member's

population. The weighted targets are then averaged to determine the regional alliance target. The regional alliance per capita values are presented in the following tables. Appendix B provides a letter detailing and approving the City's membership between these SMSWP members.

Becoming a member of the regional alliance has supported the City's goal to meet the 2020 regional compliance target and helped each water contractor focus efforts on regional water conservation programs that the City intends to actively engage in through the Sonoma-Marin Saving Water Partnership. This regional effort provides for an "economies of scale" cost benefit for implementing regional programs and also provides for a consistent water conservation message throughout the region.

Although the City, together with the alliance members, can meet the regional targets, it is the City's intent to pursue a more aggressive water conservation implementation plan than what is included in this 2015 UWMP. The implementation plan has been developed over the past five years, allowing for the City to be on track to exceed its 2020 individual water use target of 180 GPCD

The following SB X7-7 Regional Alliance (RA) table presents the SMSWP individual member agency and combined regional weighted baseline per capita water use.

SB X7-7 RA1 - Weighted Baseline

Participating Member Agency Name	10-15 year Baseline GPCD*	Average Population During 10-15 Year Baseline Period	(Baseline GPCD) X (Population)	Regional Alliance Weighted Average 10-15 Year Baseline GPCD
City of Cotati	159	6,559	1,043,146	
Marin Municipal Water District	149	178,670	26,690,318	
North Marin Water District	173	54,061	9,370,435	
City of Petaluma	180	52,622	9,491,997	
City of Rohnert Park	161	40,811	6,582,847	
City of Santa Rosa	145	143,109	20,806,963	
City of Sonoma	225	9,679	2,173,212	
Valley of the Moon Water Distict	146	20,969	3,058,648	
Town of Windsor	156	24,572	3,834,809	
Regional Alliance Total	1,495	531,051	83,052,375	**156**

**All participating agencies must submit individual SB X7-7 Tables, as applicable, showing the individual agency's calculations. These tables are: SB X7-7 Tables 0 through 6 , Table 7, any required supporting tables (as stated in SB X7-7 Table 7), and SB X7-7 Table 9, as applicable.These individual agency tables will be submitted with the individual or Regional Urban Water Management Plan.*

The following SB X7-7 RA table presents the SMSWP participating member agency and combined regional weighted 2020 per capita water use target.

SB X7-7 RA1 - Weighted 2020 Target				
Participating Member Agency Name	**2020 Target GPCD***	**2015 Population**	**(Target) X (Population)**	**Regional Alliance Weighted Average 2020 Target**
City of Cotati	130	7,288	947,440	
Marin Municipal Water District	124	189,000	23,436,000	
North Marin Water District	139	61,381	8,531,959	
City of Petaluma	141	61,798	8,713,518	
City of Rohnert Park	119	41,675	4,959,325	
City of Santa Rosa	126	173,071	21,806,946	
City of Sonoma	180	11,147	2,006,460	
Valley of the Moon Water Distict	124	23,478	2,911,272	
Town of Windsor	130	27,486	3,573,180	
Regional Alliance Total	1,213	596,324	76,886,100	**129**

**All participating agencies must submit individual SB X7-7 Tables, as applicable, showing the individual agency's calculations. These tables are: SB X7-7 Tables 0 through 6 , Table 7, any required supporting tables (as stated in SB X7-7 Table 7), and SB X7-7 Table 9, as applicable.These individual agency tables will be submitted with the individual or Regional Urban Water Management Plan.*

The following SB X7-7 RA table presents the SMSWP regional interim 2015 per capita water use target.

SB X7-7 RA1 - 2015 Target		
Weighted Average 10-15 year Baseline GPCD	Weighted Average 2020 Target	Regional Alliance 2015 Interim Target
156	129	143

The following SB X7-7 RA table presents the SMSWP participating agency individual and the regional actual 2015 per capita water use.

SB X7-7 RA1 - 2015 GPCD (Actual)				
Participating Member Agency Name	**2015 Actual GPCD[1]**	**2015 Population**	**(2015 GPCD) X (2015 Population)**	**Regional Alliance 2015 GPCD (Actual)**
City of Cotati	93	7,288	679,016	
Marin Municipal Water District	110	189,000	20,715,583	
North Marin Water District	105	61,381	6,461,073	
City of Petaluma	110	61,798	6,823,500	
City of Rohnert Park	91	41,675	3,775,789	
City of Santa Rosa	85	173,071	14,765,037	
City of Sonoma	141	11,147	1,573,338	
Valley of the Moon Water Distict	90	23,478	2,117,236	
Town of Windsor	99	27,486	2,720,608	
Regional Alliance Totals	925	596,324	59,631,180	100

[*] All participating agencies must submit individual SB X7-7 Tables, as applicable, showing the individual agency's calculations. These tables are: SB X7-7 Tables 0 through 6 , Table 7, any required supporting tables (as stated in SB X7-7 Table 7), and SB X7-7 Table 9, as applicable.These individual agency tables will be submitted with the individual or Regional Urban Water Management Plan.

The following SB X7-7 RA table presents SMSWP's compliance verification for year 2015 per capita water use.

SB X7-7 RA1 - Compliance Verification				
2015 GPCD (Actual)	2015 Interim Target GPCD	Economic Adjustment[1] *Enter "0" if no adjustment*	Adjusted 2015 GPCD *(if economic adjustment used)*	Did Alliance Achieve Targeted Reduction for 2015?
100	143	0	100	YES

[1] *Adjustments for economic growth can be applied to either the individual supplier's data or to the aggregate regional alliance data (but not both), depending upon availability of suitable data and methods.*

6. SYSTEM SUPPLIES

This section describes the surface water, groundwater, and recycled water supply sources, quantities, supply constraints, and future water supply projects. The City of Sonoma primarily uses surface water purchased from the Sonoma County Water Agency and, to a lesser degree, local groundwater supply. The City proposes to use recycled water in the future.

The quality of the City's water deliveries is regulated by the California Department of Public Health (CDPH), which requires regular collection and testing of water samples to ensure that the quality meets regulatory standards and does not exceed the maximum contaminant levels (MCLs). The City, the SCWA, and the Subregional System perform water quality testing, which has consistently yielded results within the acceptable regulatory limits (Winzler & Kelly, 2010).

The quality of existing surface water, groundwater, and recycled water supply sources over the next 25 years is expected to be adequate. Groundwater and surface water will continue to be treated to drinking water standards with no surface water, groundwater, or recycled water quality deficiencies foreseen over the next 25 years.

6.1 Purchased or Imported Water

In addition to the water purchased from the SCWA, the City has local groundwater well supply and in the future proposes to use recycled water from the Sonoma Valley County Sanitation District (SVCSD). The factors affecting recycled water are described in detail in Section 6.5 and summarized in Table 6-4. In a normal water year, approximately 95% of the City's water supply is water purchased from the SCWA.

More detailed information regarding the SCWA's water supply and facilities can be found in the SCWA's Urban Water Management Plan (SCWA, 2015). A general description of the SCWA Water Supply and Transmission System follows.

6.1.1 SCWA Water Supply and Transmission System

The City's water supply is conveyed through the Sonoma Aqueduct and is at the terminus of 16 turnouts along the Sonoma Aqueduct that is owned and operated by the SCWA. The turnouts are spread along the aqueduct from just north of Trinity Road and Highway 12 south to Verano Avenue and Fifth Street West near the City. The SCWA aqueduct system is supplied water from the natural flow of the Russian River. Russian River water is stored in winter behind Warm Springs Dam for later release from Lake Sonoma; in winter and other times of the year water is stored behind Coyote Dam for later release from Lake Mendocino. These dams are federal projects under the jurisdiction of the U.S. Army Corps of Engineers (Corps). The SCWA is the local sponsor and partners with the Corps for the water supply portion of the reservoir projects. The SCWA owns and operates the water supply pools at both Lake Sonoma and Lake Mendocino. The water supply pool of Lake Sonoma is 212,000 acre-feet and Lake Mendocino is 111,000 acre-feet.

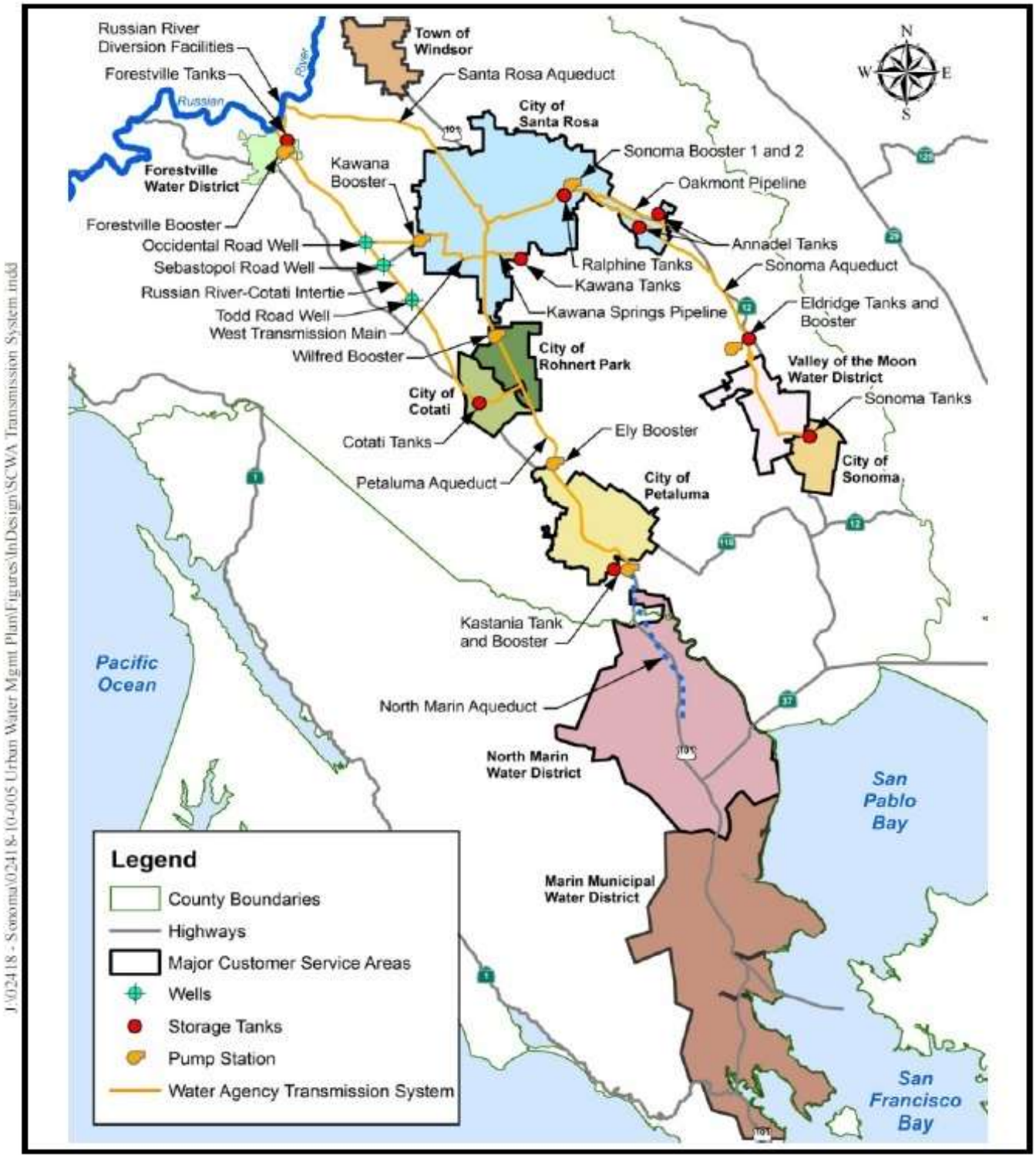
The SCWA also owns and operates three groundwater supply wells located in the Santa Rosa Plain groundwater basin. Information and sufficiency analysis of the SCWA groundwater wells can be found in the SCWA's UWMP.

The SCWA uses about 14 miles of the natural channel of Dry Creek and about 8 miles of the Russian River to convey water from Lake Sonoma to its diversion facilities. Water is diverted from the stretch of river located just upstream of Wohler Bridge and downstream of Mirabel via six Ranney Collectors. Because the water has gone through an array of intake laterals, it only needs the addition of chlorine to meet California Department of Public Health drinking water quality standards. A system of aqueducts, booster pumps, and tanks then distribute the water to the various water contractors and other water transmission system customers, including the Marin Municipal Water District. The system was designed and planned to meet peak day demands of its customers. The following Figure 6-1 presents the SCWA service area and water transmission system facilities.

The existing Sonoma Aqueduct facilities south of the Oakmont community in Santa Rosa serve the Valley of the Moon Water District and the City of Sonoma. The main booster pump station for the aqueduct is the Sonoma BST and is located on the east side of Spring Lake. A minor booster pump station is the Eldridge booster pumping station located

near Glen Ellen; it is typically off-line. Two water storage above-ground tanks are located near Oakmont known as Annadel No. 1 and Annadel No. 2 (also referred to as Los Guillicos Tank); there is a third tank known as Eldridge Tank. A series of two tanks near First Street West, where the aqueduct terminates, is where the City pulls water from the aqueduct.

Figure 6-1. SCWA Service Area and Water Transmission System Facilities



6.2 Groundwater

The City's water supply comes predominantly from purchased surface water from the SCWA. In a normal water year, approximately 10% of the City's water supply is from local groundwater supply wells.

This section provides a description of the groundwater wells, the Sonoma Valley Groundwater Management Plan (SVGMP) prepared since the last UWMP, updated hydrogeology of the basin, the City's groundwater supply and water quality, as well as the sufficiency of the groundwater for projected groundwater pumping. The description of the groundwater basin that supplements the SCWA's supply is described in the SCWA's 2015 UWMP and is not repeated in the City's UWMP. A copy of the SVGMP was updated in March 2014 and can be found at the following link: http://www.scwa.ca.gov/files/docs/projects/svgw/SonValley5YrReview_FINAL.pdf.

The City is currently using its own groundwater wells to help meet demand. It is the City's intent to use its wells to meet peak summer month demands and not on a year-round basis. The City pumps groundwater from a total of five active local wells that all supplement the water obtained from the SCWA. The City owns two additional wells but does not run them due to either arsenic or boron just above or near the MCLs allowed in California drinking water. These wells have the capacity to produce 190 gallons per minute (gpm) (Well #5) and 125 gpm (Well #7), and can be used in an emergency for up to 15 days out of each year with notification to CDPH for Well #5 and Well #7. In past years, the arsenic levels in Well #5 have fluctuated to below and above the MCL of 10 ug/L. These two wells are not considered as part of the active system the City runs. The wells are started and stopped manually by the operations staff. The total estimated sustainable capacity of the City's wells is limited to 238 AF per year, assuming that the City does not develop additional wells. This was established through the City's CEQA analysis for the recent construction of Well 8 in the City's northern well field.

Table 6-1. Groundwater Volume Pumped

Table 6-1 Retail: Groundwater Volume Pumped (AF)

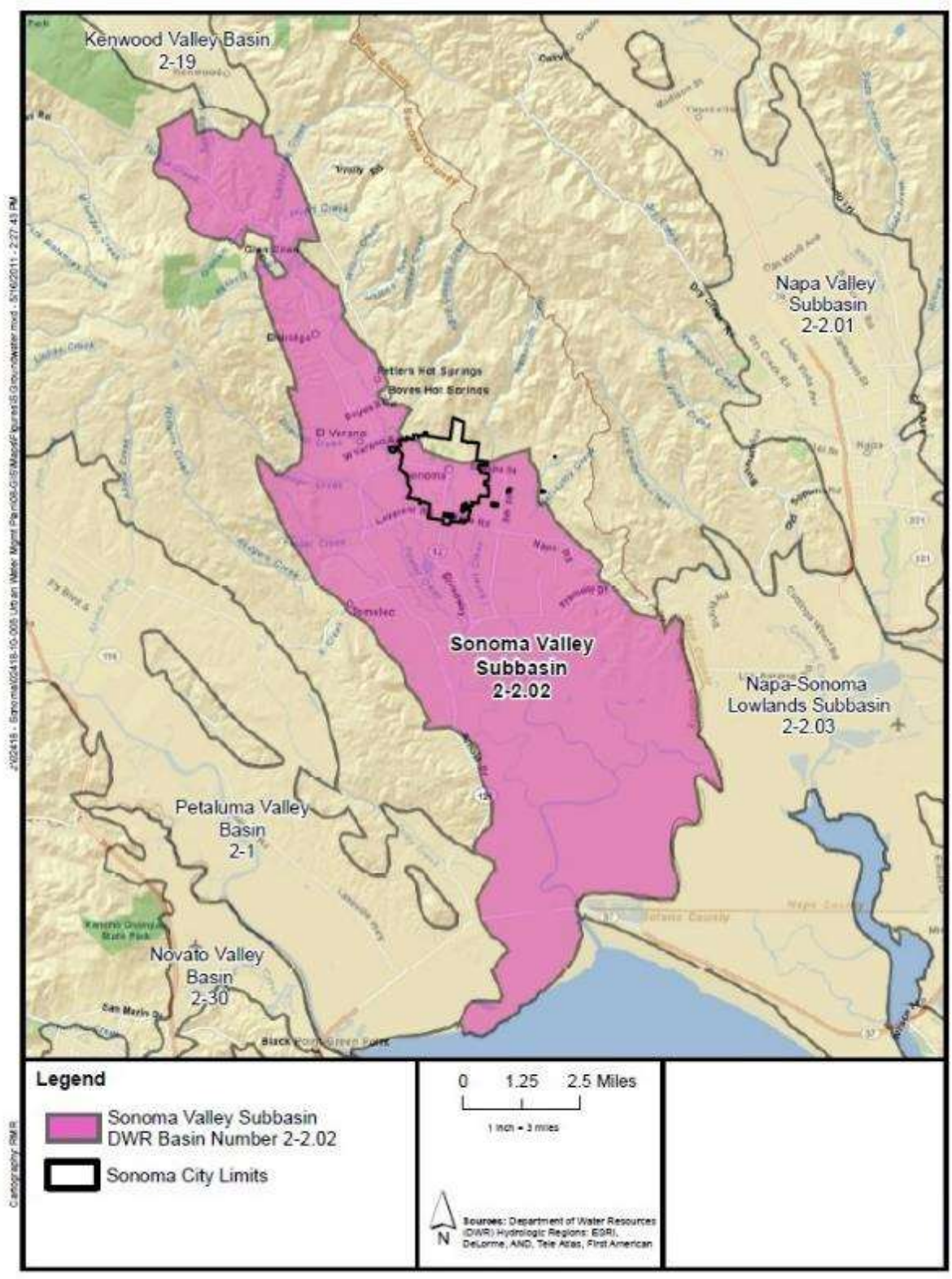
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List*	Location or Basin Name	2011	2012	2013	2014	2015
Fractured Rock	Sonoma Valley Groundwater Subbasin within Napa-Sonoma Valley Groundwater Basin	22	80	173	155	174
	TOTAL	22	80	173	155	174

NOTES: According to the March 2014 Sonoma Valley Groundwater Management Plan 5-Year Update Report (http://www.scwa.ca.gov/files/docs/projects/svgw/SonValley5YrReview_FINAL.pdf), the groundwater basin in the City of Sonoma is both alluvial and fractured rock. However, within the City's well field area, it is generally fractured rock. A description of the groundwater basin that supplements the SCWA's supply is described in the SCWA's 2015 UWMP and is not repeated in the City of Sonoma's UWMP.

6.2.1 Basin Description

In general, the City is located within the Sonoma Valley Groundwater Subbasin identified by the Department of Water Resources as 2-2.02 and is a subbasin of the Napa-Sonoma Valley Groundwater Basin (2-2). The Sonoma Valley is one of three subbasins that drain south-southeast into San Pablo Bay (DWR, 2003) Figure 6-2 shows the groundwater basin and subbasin areas.

Figure 6-2. Groundwater Basin and Subbasin Map



For more information about the groundwater basin, please see the 2014 SVGMP found at http://www.scwa.ca.gov/files/docs/projects/svgw/SonValley5YrReview_FINAL.pdf or Appendix F for the DRAFT 2015 Annual Report – Sonoma Valley Groundwater Management Program; groundwater quality and quantity issues as well as overdraft conditions are presented in these documents.

The City's current policy is to use groundwater only as necessary to meet their peak demands so groundwater levels can recover during the off-peak periods. The City estimates pumping in the future to be as indicated in Table 6-9.

Over time, the use of groundwater is estimated to go down to 50 acre-feet per year by 2040. These pumping amounts are below the sustainable yield of 238 acre-feet per year indicated above; therefore, there is no reason to expect any problems with pumping this amount of groundwater.

Hydrogeology of Basin

In 2006, the USGS completed an evaluation of the geology, water levels, water quality, surface water and groundwater interactions, and recharge areas of the Sonoma Valley Subbasin (USGS, 2006). In addition, a groundwater model was developed for the Sonoma Valley to assist in identifying problem areas within the basin (USGS, 2006a)

The Sonoma Valley is located within the North Coast Ranges geomorphic province of California. The Sonoma Mountains flank the west side of the subbasin with the Mayacmas Mountains bounding the basin to the east. The valley between the two mountain ranges is dominated by Sonoma Creek and is referred to as Sonoma Valley (Valley). Sonoma Valley is not uniform in width or slope and can be divided into three parts, based on topography. The middle part of the Valley is much narrower than the upper or lower parts. This middle part of the Valley is where the City is located (USGS, 2006a).

The water-bearing deposits underlying the City include younger and older Quaternary alluvium deposits, the Huichica and Glen Ellen Formations, and the Sonoma Volcanics. The thickness and extent (if any) of the Miocene to Pliocene Petaluma Formation beneath the City is unknown, and the Mesozoic Franciscan Complex bedrock is not exposed or encountered in wells (USGS, 2006a).

The younger Quaternary alluvium consists of stream channel, flood plain, alluvial fan, and salt marsh deposits of late Pleistocene to recent age. The younger alluvium has a large percentage of loose sand and gravel yielding water easily to wells. However, it is only a thin veneer and most wells penetrate the full thickness (Kunkel and Upson, 1960; USGS, 2006a).

The older Quaternary alluvium is composed of lenticular deposits of poorly sorted clay, silt, sand, and gravel, and is late Pleistocene in age. The older alluvium underlies the younger alluvium and is separated by an erosional unconformity (Kunkel and Upson, 1960). Wells that encounter sands and gravels in the older alluvium can yield as much as 500 to 1,000 gpm (Luhdorff & Scalmanini, 1999, as also referenced in the City of Sonoma 2010 UWMP). According to the United States Geographical Survey (USGS), the Quaternary alluvium may be as much as 300 feet in the center of the Valley (USGS, 2006a).

Underlying the Quaternary alluvium is the Glen Ellen Formation of late Pliocene to early Pleistocene age. The Glen Ellen Formation was deposited by alluvial fans and is composed of poorly sorted lenticular beds of clay, silt, sand, and gravel, with much of the material being derived from the Sonoma Volcanics. The Glen Ellen Formation interfingers with the Sonoma Volcanics and the underlying Huichica Formation and is up to 900 feet thick. Permeability is generally relatively low, but water obtained from the lenses of gravel can locally be sufficient for municipal use (USGS, 2006a).

The Huichica Formation is interbedded with, and partly older than, the Glen Ellen Formation. The Huichica is early Pleistocene to Pliocene in age and was deposited as alluvial fans by streams that drained uplifted areas of the Sonoma Volcanics. The formation also contains a thick body of clay and silt representing possible lake or swamp deposition. There are lenses of boulders or gravel with fine material within the fine-grained deposits. The Huichica's thickness exceeds 1,000 feet in parts of the Valley (USGS, 2006a). Large quantities of water are not able to be pumped from the formation and are mostly developed for domestic use (Kunkel and Upson, 1960 and Luhdorff & Scalmanini, 1999).

The Miocene to Pliocene Sonoma Volcanics consist of a variable sequence of volcaniclastic tuffs, lahars, debris and mudflows, and sedimentary units interbedded with volcanic flows of andesite, basalt, and rhyolite (USGS, 2006a). The significant aquifers in the volcanics are the tuffs, which include pumice beds (Kunkel and Upson, 1960). The Sonoma Volcanics are highly variable in terms of yield. The City has four wells completed in this formation that yield between 100 and 420 gpm.

Recharge occurring in the Sonoma Volcanics is mainly from surface outcroppings in the mountains that border the Sonoma Valley (USGS, 2006a). Alluvium is recharged from percolation through sediments in local creeks and surface runoff (Luhdorff & Scalmanini, 1999).

Groundwater Quality and Quantity Issues

The quality of the City's water deliveries is regulated by the California Department of Public Health (CDPH), which requires regular collection and testing of water samples to ensure that the quality meets federal and state regulatory standards and does not exceed MCLs. Both the City and SCWA perform water quality testing, which has consistently yielded results within the acceptable regulatory limits.

Groundwater in Sonoma Valley is generally high in iron and manganese. Iron and manganese are regulated under the Secondary Drinking Water Standards MCLs because they are an aesthetic concern rather than a health risk. These metals can cause staining of plumbing fixtures and clothing. Both iron and manganese concentrations are below the MCLs in all of the City's wells.

The quality of the groundwater from the other four active City wells is very good and none of these active wells require treatment. The quality of groundwater supply sources over the next 25 years is expected to be adequate. Groundwater will continue to be treated to drinking water standards in the one well, and no impacts to water supplies due to water quality deficiencies are foreseen to occur in the next 25 years.

Water quality issues are not anticipated to have a significant impact on water supply reliability. If applicable in the future, chemical contamination and the lowering of MCLs for naturally occurring constituents can be mitigated by constructing new treatment facilities.

6.2.2 Overdraft Conditions

Neither the Sonoma Valley Subbasin nor the Napa-Sonoma Valley Groundwater Basin is adjudicated.

DWR did not identify "critical conditions of overdraft" in the Sonoma Valley groundwater basin in Bulletin 118 – 80 (DWR, 1980); overdraft conditions are summarized in Appendix F.

The 2006 USGS report estimated through the groundwater flow modeling analysis that 17,300 acre-feet of groundwater was lost from overall groundwater storage between 1975 and 2000. As a result, the Sonoma Valley has been experiencing localized declining groundwater levels in some areas and potential groundwater quality problems from seawater intrusion and geothermal upwelling. Several groundwater studies have been prepared in the basin since the study and are summarized below as they apply to the City, but the City has not changed their groundwater production substantially in the last years of UWMP records.

In the SVGMP Annual Reports, semi-annual groundwater contour maps are shown and indicate a depression area in the southeastern portion of the City as well as south of the City.

To ensure consistent groundwater availability, use of the City wells would generally be used during periods of peak demand and when deliveries from the SCWA are not available. This method would allow groundwater to recover between seasons of use.

There are no legal constraints on the City's use of its groundwater supply. The City has no groundwater pumping restrictions or water quality issues that limit groundwater production.

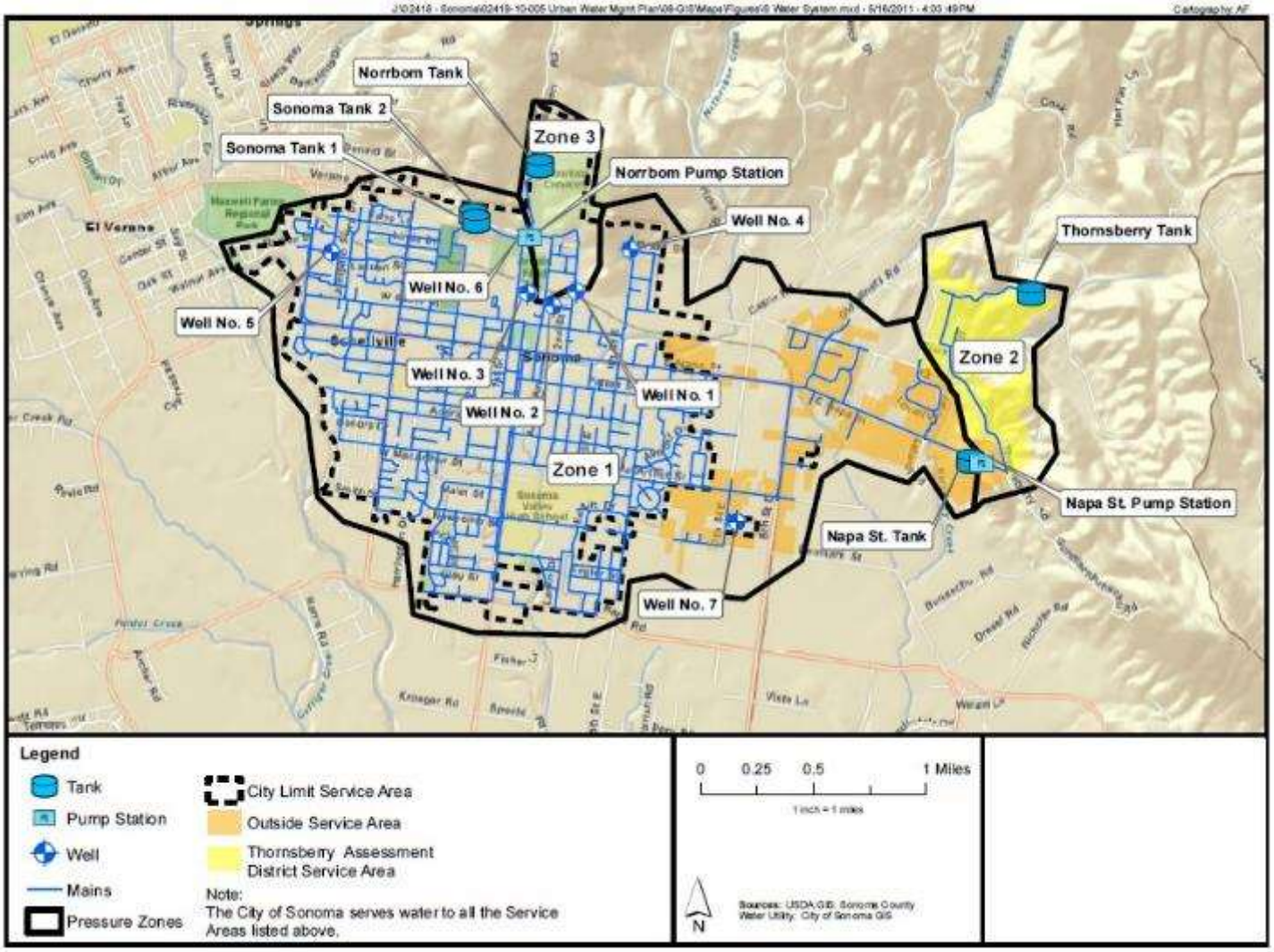
That said, the groundwater depression area indicated in the southwest part and southwest of the City is not related to pumping that the City does. Pumping from the City occurs in the northern portion of the City and does not show depressed groundwater levels. An evaluation of what is causing the groundwater depression in the southern portion of the City has not been completed.

The City now employs the following well management practices in order to avoid interference, improve operations efficiency, and maintain sustainable production:

- Rotate the use of City wells.
- Well #6 is not run for more than several weeks at a time to keep the well from drawing down into the screens, which can cause biofouling.
- Wells #1, #2, and #3 are not operated at the same time in order to avoid interference.

Wells should not be pumped more than 238 acre-feet per year for sustainable use.

Figure 6-3. Water System Map



6.2.3 Historical Groundwater Pumping

The City pumped groundwater from several wells; the amount of groundwater pumped in the last six years is shown in Table 6-1, earlier in Section 6.2. The City pumped an average of 121 AF per year over the 5-year time period between 2011 and 2015, with an increase in groundwater use due to less available purchased water beginning in 2008, due to drought. In 2015 the City pumped 174 AF, still less than the estimated safe yield of 238 AF. The amount of groundwater pumped varies considerably with the rainfall and how much water is purchased from the SCWA.

In general, the City uses groundwater to augment purchased water from the SCWA when necessary for peak flow demands. The City projects a decline in projected groundwater use due to the long-term regional groundwater-level decline, which, according to the Sonoma Valley Groundwater Management Program Five-Year Review and Update Final Report pages 3-32, are present in the wells southeast of the City of Sonoma.

6.3 Surface Water

Approximately 95% of the City's water supply is conveyed through the Sonoma Aqueduct and is at the terminus of 16 turnouts along the Sonoma Aqueduct that is owned and operated by the SCWA. More information about this surface water supply is presented in Section 6.1.1.

6.4 Stormwater

Communities are increasingly implementing opportunities to beneficially use stormwater to meet local water supply demands. These actions are motivated by constrained local water resources, new regulations, and relieving strain on overburdened stormwater infrastructure. Beneficial reuses include blending with other water supplies for groundwater recharge, redirecting it into constructed wetlands or landscaping, and diverting it to a treatment facility for subsequent reuse.

6.5 Wastewater and Recycled Water

Municipal recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again for a beneficial purpose. The term "recycled water" is defined in the CWC more broadly than "municipal recycled water." For purposes of the UWMPs, "recycled water" means only municipal recycled water, that is, water that has been treated and discharged from a municipal wastewater facility.

There are two requirements treated municipal wastewater must meet to be classified as recycled water. It must be reused:

- Beneficially, in a manner consistent with Title 22; and
- In accordance with a Regional Water Quality Control Board (RWQCB) permit such as National Pollutant Discharge Elimination System (NPDES), waste discharge requirement (WDR), or water recycling requirement (WRR).

This section describes the wastewater characteristics, flows, and treatment facilities that are proximate to the City's service area. The UWMP Act requires the following items to be addressed for recycled water:

- Information on the recycled water supply including coordination with dischargers;
- Description of the wastewater collection and treatment systems in the service area;
- Quantity of treated wastewater that meets recycled water standards;
- Recycled water currently being used in the service area;
- Potential for recycled water use in the service area;
- Actions to encourage recycled water use; and
- Plan for optimizing recycled water use.

The City meets the water supply needs of their customers by importing water into the City's service area from the SCWA, pumping local groundwater within Sonoma Valley, and implementing water conservation programs. However, in order to further supplement and enhance the City's water supply sources, the City has been in discussion with the Sonoma Valley County Sanitation District (SVCSD) to acquire recycled water in the future.

As discussed in more detail below, the City's service area is relatively distant from the SVCSD Waste Water Treatment Plant and will require extensive pipeline construction to serve irrigation demands in the City's service area. The City

recognizes that recycled water will help increase the reliability of their water supply by offsetting groundwater pumping, particularly in the southern end of Sonoma Valley. The City also recognizes the benefit of expanded recycled water use to offset agricultural pumping in the southern portion of the Sonoma Valley in terms of increasing the reliability of their groundwater supplies.

Accordingly, the City is collaborating with the SVCSD to increase recycled water use for agricultural and other purposes that results in reduced groundwater pumping. As discussed in more detail below, extension of recycled water pipelines to the City's service area is anticipated to be a later phase of a regional project, taking time and considerable outside funding to bring a recycled water system to the City's service area.

6.5.1 Recycled Water Coordination

The City has been in discussion with various agencies regarding the potential use of recycled water in the City's service area. Those agencies include the SCWA, the SVCSD, and the Valley of the Moon Water District. The SVCSD participates indirectly in the North Bay Regional Water Recycling Project described below.

6.5.2 Wastewater Collection, Treatment, and Disposal

SCVSD provides wastewater collection, treatment, disposal, and water recycling services for the City's service area, and other areas in the Sonoma Valley, including within the boundaries of the City of Sonoma (see Figure 6-4 below).

Wastewater Collected Within Service Area

The SVCSD reclamation facility provides a tertiary treatment for a permitted average dry-weather flow capacity of 3 million gallons per day (mgd). The current average dry-weather flow is 2.7 mgd, with 22 mgd as the average winter peak flow.

Table 6-2 lists the volume of wastewater collected within the service area.

Figure 6-4. SVCSD Facilities Map

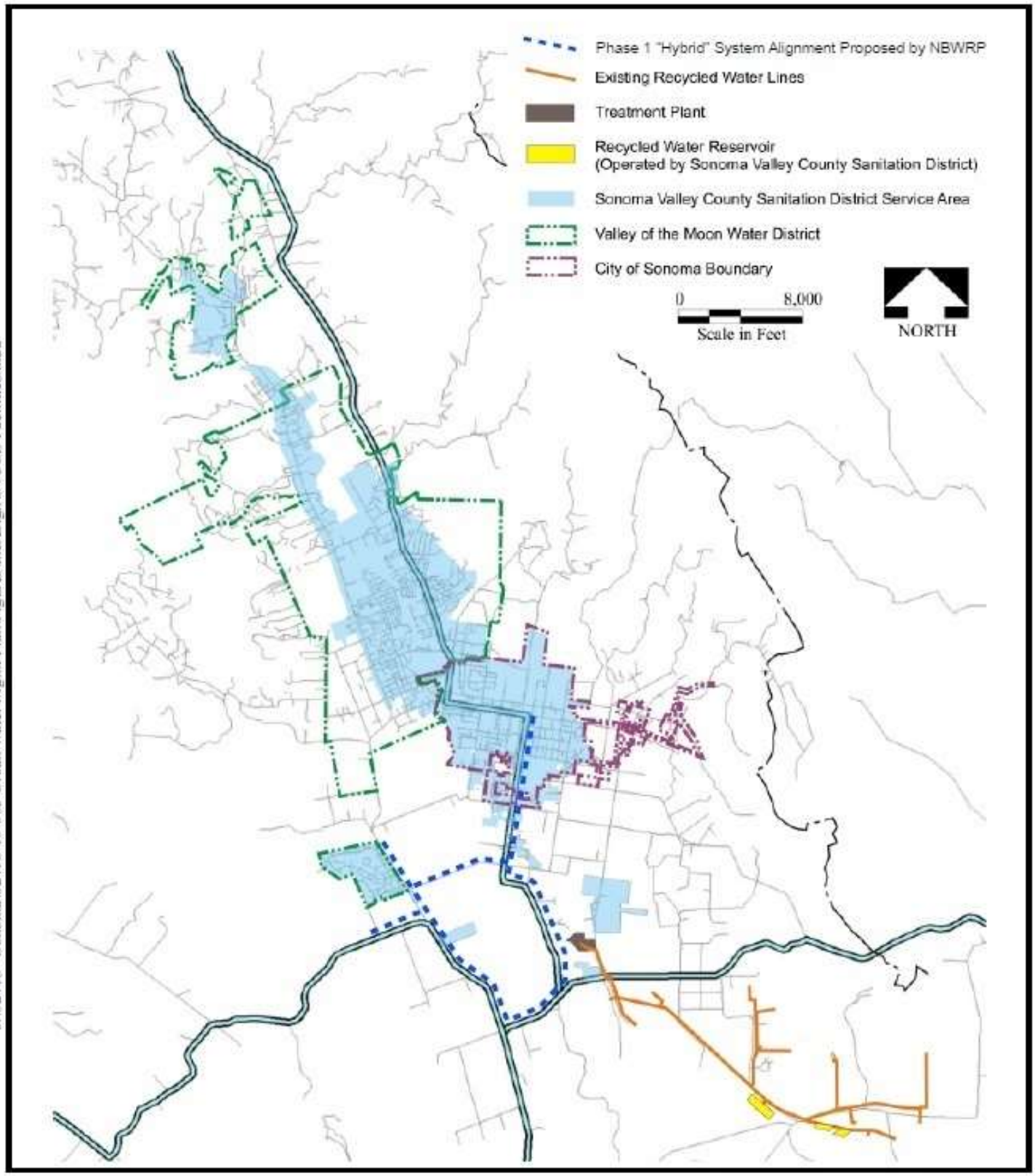


Table 6-2. Wastewater Collected Within Service Area in 2015

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.					
90%	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Sonoma Valley County Sanitation District (SVCSD)	Estimated	847	SVCSD	SVCSD reclamation facility	No	No
Total Wastewater Collected from Service Area in 2015:		847				
NOTES: 10% of City of Sonoma is on septic system. SVCSD reports an average dry weather flow of 2.7 mgd. Per SCWA staff, the population area of the SVCSD is approximately 40,000. The City's water service area population is approximately 28% of this SVCSD population, and so 28% of the dry weather flow is apportioned to the City's service area.						

Wastewater Treatment and Discharge Within Service Area

Table 6-3 exhibits that there is no volume of treated wastewater either recycled or disposed of within the service area by the City of Sonoma.

Treated wastewater is currently either discharged to the San Pablo Bay via Schell and Hudeman's Slough or is reused by dairy and vineyard operations in the southern part of the Sonoma Valley. In recent years, the SVCSD has explored the feasibility of expanding recycled water use to offset local groundwater pumping or imported Russian River water in addition to reducing or eliminating discharges to San Pablo Bay.

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

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal ***Drop down list***	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level ***Drop down list***	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
						Total	0	0	0	0

6.5.3 Recycled Water System and Water Beneficial Uses

This section provides an overview of the current and planned recycled water system. The definition of recycled water includes the term "direct beneficial use," which is defined in the California Code of Regulations, Title 22, Section 60301.200 as "the use of 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."

The Sonoma County Valley Sanitation District (SCVSD) is proposing to construct a recycled water pipeline in collaboration with the School District to provide recycled water to Sonoma Valley High and Adele Harrison Middle and Prestwood Elementary schools. The recycled water may also be used to offset irrigation at the City of Sonoma's Engler Street Park; there will be an opportunity for agricultural users along the pipeline route to connect to the system.

The 5th Street East Recycled Water Pipeline Project consists of approximately 7,000 linear feet of up to 10-inch diameter recycled water pipeline extending east from the intersection of Watmaugh Road at Shainsky Road to Fifth Street East, then north on Fifth Street East to Denmark Street. Along Denmark Street, approximately 1,300 linear feet of 8-inch diameter recycled water pipeline will be installed to the back of Sonoma Valley High School campus and approximately 400 linear feet of 4-inch diameter pipeline along Engler Street to Engler Street Park. On completion of the project the pipeline will deliver recycled water to the sports fields at Sonoma Valley High School and Adele Harrison Middle School, provide irrigation water to Engler Street Park, and provide water for up to 15 additional residences along the alignment.

The recycled water pipeline project has been recommended to receive $1.02 million in state Proposition 84 grant funding (the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006). Project design, permitting and agreements are scheduled for 2015, and project construction is expected to start in 2016. The Sanitation District anticipates that recycled water delivery could start as early as winter 2016/17.

SCVSD, which is managed by SCWA, currently provides recycled water for agricultural irrigation in Sonoma Valley and supplies recycled water for restoration of salt marshes along the Napa-Sonoma County border.

Sonoma Valley meets its water needs through a combination of Russian River water and groundwater. Water from the Russian River travels over 30 miles in a series of pipes to Sonoma Valley and the amount of water available is dependent upon drought conditions. The Sonoma Valley groundwater basin has localized decline of groundwater levels; offsetting groundwater pumping with recycled water use is one way to reduce groundwater declines.

Using recycled water to irrigate playing fields and parks will reduce Sonoma Valley's reliance on water from the Russian River. The use of recycled water for agricultural irrigation along the pipeline route will help reduce groundwater pumping. The use of recycled water to irrigate parks and school playgrounds is a common practice throughout California and many parts of the United States, including Texas, Florida, and Arizona.

Water is continually recycled in nature through the water cycle. Modern wastewater treatment replicates the natural recycling process to restore large quantities of water quickly and effectively. Recycled water produced by the Sanitation District is treated to tertiary recycled water standards (also referred to as advanced wastewater treatment), which is the highest level of treatment defined by the State of California, Title 22 California Code of Regulations. The wastewater goes through primary treatment, biological treatment, filtration, and disinfection before it is considered tertiary recycled water. Then, following strict regulatory requirements, the recycled water is sent through a series of pipes that is separate from the drinking water system and is used for applications including landscape irrigation.

There is currently no recycled water use in the City's service area. However, the SVCSD will have recycled water made available for use by the City. Once available, approximately 50 AF will be delivered to the Sonoma Valley Unified School District and another 5 AF to the City park on Engler Street.

Table 6-4 identifies the current and projected recycled water direct uses within the City's service area by beneficial use type.

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

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:	SVCSD
Name of Agency Operating the Recycled Water Distribution System:	SVCSD
Supplemental Water Added in 2015	0
Source of 2015 Supplemental Water	Not applicable

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040
Agricultural irrigation								
Landscape irrigation (excludes golf courses)	Primarily school district and City parks.	Tertiary	0	55	55	55	55	55
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	55	55	55	55	55

**IPR - Indirect Potable Reuse*

NOTES: Recycled water will be distributed to the City of Sonoma in 2016 via a new recycled water pipeline. Approximately 50 AF will be delivered to the Sonoma Valley Unified School District and another 5 AF to the City's park on Engler Street.

Planned vs. Actual Use of Recycled Water

As shown in Table 6-5, there was no recycled water use projected in the City by SVCSD in 2015. Recycled water use within the City's service area is planned to be implemented by Fall 2016 once infrastructure is in place.

Table 6-5. 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

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**
Total	0	0

6.5.4 Actions to Encourage and Optimize Future Recycled Water Use

As noted above, the SVCSD and SCWA have recently received funding from the Bureau of Reclamation, U.S. Department of Interior American Recovery and Reinvestment Act of 2009 through the Bureau of Reclamation, Title XVI Program. These funds will be used for the detailed design of the Phase 1 Implementation Plan described above and may also provide some construction funding. In addition, the SVCSD has applied for Proposition 84 funding from DWR through the Bay Area Integrated Regional Water Management Plan. If implemented, this project could provide recycled water to offset groundwater pumping and/or to provide direct potable offsets in the City of Sonoma.

As discussed above, the City is working with the local agencies to deploy recycled water within the Sonoma Valley basin and ultimately to bring it to the City's service area by Fall 2016, at a cost less than potable water as an appropriate financial incentive to encourage recycled water use.

Table 6-6. Methods to Expand Future Recycled Water Use

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Financial incentives	The City is working with local agencies to deploy recycled water within the Sonoma Valley basin and ultimately bring it to the City's service area by Fall 2016 at a cost less than potable water as an appropriate financial incentive to encourage recycled water use.	2016	55
		Total	55

6.6 Desalinated Water Opportunities

There are currently no plans for desalination, nor are any anticipated. However, the City is within approximately 15 miles of the San Pablo Bay; therefore, desalination of bay water (as is currently being pilot tested by Marin Municipal Water District) is a possibility. Brackish or impaired groundwater is also present between Petaluma and San Pablo Bay, making desalination of groundwater also a possibility. Nevertheless, no desalinated water supplies are projected for this 2015 UWMP.

6.7 Exchanges or Transfers

The City has no plans for exchanges or discussions of purchase or sale of water during emergencies.

The CWC defines a water transfer as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer, sale, lease, or exchange of water or water rights. Temporary water transfers have a duration of one year or less (CWC Section 1725). Long-term water transfers have a duration of more than one year (CWC Section 1728).

Water transfers between the SCWA's water contractors are authorized under the *Restructured Agreement for Water Supply* (commonly referred to as the Restructured Agreement, see Appendix G). However, the City does not anticipate any transfers. More information is included in Section 7.1.

6.8 Future Water Projects

Currently, the City is evaluating its well system and will be assessing the yield and condition of its wells. The project will include replacing and/or supplementing its local groundwater supply well system. The City has just completed one new well (Well 8 at the Field of Dreams) and by 2020 plans to do another well siting study, possibly drilling a new well by 2025.

Understanding some of the depression issues indicated in the SVGWP, in 2010, the SCWA and several agencies including the City entered into an agreement to study the feasibility of groundwater banking in the Sonoma Valley. The agency group hired consultants to review the hydrogeology of the Sonoma Valley to assess potential areas, such as the groundwater depression areas, that could possibly bank groundwater. The feasibility study outcome helped to determine locations and have an understanding of the specific ramifications, such as water quality changes, of such a program and to allow the various participating local agencies enough information to proceed with appropriate work plans to further investigate specific locations to bank groundwater. The study included the investigation of the groundwater depression within the City area.

Also completed was a County-wide storm water management-groundwater recharge study by the SCWA to assess the feasibility of using storm water to recharge the groundwater in some areas around the Sonoma Valley.

The City's future water supply projects and programs are presented in Table 6-7. The water supply projects listed in this section are preliminary and supply increase amounts have not been determined.

Table 6-7. Expected Future Water Supply Projects or Programs

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 *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
SDC Conjunctive Use Project	Yes	Sonoma Developmental Center (SDC) and Valley of the Moon Water District	This project would provide increased reliability by utilizing surplus capacity on the City's and SDC's water systems. It would also capture and make beneficial use of off-peak water (wintertime water) available in the Russian River and off-peak capacity available in the SCWA's water supply and transmission system. The project would increase the water supply to the City during critical hot spells, increase flows available in the south end of the Sonoma Aqueduct, and reduce competition among the SCWA's water contractors for summertime deliveries from the Russian River.	2020	All Year Types	Not applicable
Groundwater Wells	No	N/A	The City is evaluating its well system and will be assessing the yield and condition of its wells. The project will include replacing and/or supplementing its local groundwater supply well system. The City has just completed one new well (Well 8 at the Field of Dreams) and by 2020 plans to do another well siting study, possibly drilling a new well by 2025.	2025	All Year Types	100 AFY

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 *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Groundwater Banking	Yes	SCWA	The City is working with the SCWA, the City of Sonoma, and other interested participants in a groundwater pilot testing project. Groundwater banking may increase the sustainable yield of existing wells, but at the time of this report, the feasibility of groundwater banking is yet not known.	2020	All Year Types	This may be a range
SCWA Russian River Diversion Rights Increase	Yes	SCWA	The City and the water contractors to the SCWA Russian River water supply will need an increase to the water supply entitlement limit, as provided for under the Restructured Agreement (see Appendix G), by year 2035. The SCWA will be working towards this permit application as well as the needed improvements to increase the capacity of the transmission and delivery system to implement this water supply increase. The City intends to request that its entitlement limit of 3,000 acre-feet per year be available by 2035 (an increase from its request of 2,626 acre-feet per year in 2035) in order to provide more reliability to this supply during periods of shortages, not due to droughts, but due to environmental factors.	2035	All Year Types	3,000 AFY

6.9 Summary of Existing and Planned Sources of Water

The City's water supply primarily comes from water purchased from the SCWA. The City, along with eight other water contractors, has a water supply agreement with the SCWA for the purchase of Russian River water. More information on this Restructured Agreement can be found in Section 7.1.

The City has provided the demand projections to SCWA. However, as discussed in Section 4 and Section 7 as well as Appendix D and Appendix E, the projected 2020 and subsequent year's water demands are based on a 2015 planning estimate. It is not known how much of this projected amount will actually occur and the City will be coordinating and working closely with the SCWA to determine the timing of capital improvement projects that may need to come online in order to deliver the City's water demands.

Table 6-9 provides the projected amount of water that the City expects to purchase from the SCWA to meet water demands in the future under normal water supply conditions. The remaining demand will be met with a combination of the City's own groundwater wells, water conservation implementation, and recycled water implementation. The SCWA's water supply and the City's groundwater and recycled water supplies are further described earlier in Section 6.

2015 water use is not representative of normal water use characteristics for the SCWA and its customers (water contractors). In recent years, the SCWA and the water contractors water use was significantly affected by a number of factors, including drought conditions, implementation of water shortage response plans, economic recession, increases in residential and commercial vacancy, and decreases in tourism. Lasting effects of the drought, water shortage, and economic recession, as well as a cool summer, significantly affected the SCWA and each water contractor's 2015 water use and is not representative of normal water use characteristics.

The methodology used for the SCWA and water contractors demand projections for 2020 through 2040 are based on normal water use characteristics and do not incorporate the effects of the conditions described above. Because of this methodology, the 2020 water demand projection, in particular, may be higher than what may likely occur. If the economic recovery is slower than expected, a lower demand projection of water use per year may be more likely to occur by 2020. If the economic recovery is strong, a higher demand projection may be more likely to occur. The water contractors will be coordinating and working closely with the SCWA to determine the timing of capital improvement projects that may need to come online in order to meet the water demand in response to the economy recovery.

As shown in Table 6-9, the City also plans to include recycled water to its water supply portfolio. The City is in discussion with the Sonoma Valley County Sanitation District for the supply and delivery of recycled water. Because the cost of the conveyance and delivery system to serve City customers would be expected to be paid with grant funding, it is estimated that the system would not come online until Fall 2016.

The supply amount is based on the City's water demands described in Section 4. The SCWA has informed its water contractors that the Russian River system capacity may be insufficient if the water demands of all of its water contractors exceed the demand projections of its contractors and customers. The SCWA and its water contractors are tracking Russian River system water deliveries and conducting on-going short- and long-range capital project planning to identify capital improvement needs, financing, and timing to address system deficiencies, as they become needed.

The City will need to receive an increased water supply under its contract with the SCWA by 2040 to more reliably supply its water needs, including meeting single-dry year conditions. The City and other water contractors anticipate the need for additional water in future years. The SCWA will be working on a petition to increase the amount it can withdraw from the Russian River and will need to submit an application for an increase to its diversion permit with the State.

The following table presents the City's 2015 water supplies.

Table 6-8. Water Supplies – Actual

Table 6-8 Retail: Water Supplies — Actual				
Water Supply		2015		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*	Additional Detail on Water Supply	Actual Volume (AF)	Water Quality *Drop Down List*	Total Right or Safe Yield (AF)
Purchased or Imported Water	SCWA	1,588	Drinking Water	3,000
Groundwater		174	Drinking Water	238
	Total	1,762		3,238
NOTES: Values provided by the City of Sonoma.				

The following table presents the City's projected water supplies by source.

Table 6-9: Water Supplies – Projected

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply (AF) *Report To the Extent Practicable*									
Drop down list		2020		2025		2030		2035		2040	
		Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield
Purchased or Imported Water	SCWA	1,924	3,000	2,015	3,000	2,088	3,000	2,217	3,000	2,262	3,000
Groundwater	The decline is projected groundwater volume may be accounted for by long-term groundwater-level declines, which, according to the Sonoma Valley Groundwater Management Program Five-Year Review and Update Final Report pages 3-32, are present in the wells southeast of the City of Sonoma.	250	238	195	238	143	238	50	238	50	238
Recycled Water	Recycled Water will be distributed to the City of Sonoma beginning in 2016 via a new recycled water pipeline. Approximately 50 AF will be delivered to the Sonoma Valley Unified School District, and another 5 AF to the City's park on Engler Street.	55		55		55		55		55	
	Total	2,229	3,238	2,265	3,238	2,286	3,238	2,322	3,238	2,367	3,238

7. WATER SUPPLY RELIABILITY ASSESSMENT

Assessment of water supply reliability is complex and dependent upon a number of factors, such as the number of water sources, regulatory and legal constraints, climate change, and expected growth.

This section compares the water demand information developed in Section 4 and the water supply information developed in Section 6. Comparisons are provided under DWR's required range of hydrologic conditions, including the normal, single-dry, and multiple-dry year conditions.

7.1 Constraints on Water Sources

There are factors that cause or have the potential to cause inconsistent supply to meet demands and are due to legal, environmental, water quality, or climatic issues. These factors that affect the reliability of the City's water supply are described in this section; more information about the reliability of the water supply and vulnerability to seasonal or climatic shortage can be found in the 2015 SCWA UWMP.

SCWA Water Supply Agreement

The City is one of 9 water contractors under contract with the SCWA through the *Restructured Agreement for Water Supply* (Restructured Agreement). Under the Restructured Agreement, the SCWA is obligated to deliver water up to 6.3 million gallons per day (mgd) during any month and 3,000 acre-feet of water during a fiscal year. The term of the agreement is through 2037 and can be extended by amendment. The full Restructured Agreement can be found in Appendix G.

The Restructured Agreement was executed in 2006 and generally provides for the finance, construction, and operation of existing and new diversion facilities, transmission lines, storage tanks, booster pumps, conventional wells, and appurtenant facilities. The Restructured Agreement provides the contractual relationship between the SCWA and its 9 water contractors, including the City, and includes specific maximum amounts of water that the SCWA is obligated to supply to its water contractors. Maximum water allocations for each of the SCWA's water contractors set forth within the Restructured Agreement were premised on the SCWA's diversion/re-diversion water rights being increased to 101,000 acre-feet per year and on the construction of the new facilities authorized by the Restructured Agreement.

During periods of shortage, Section 3.5 of the Restructured Agreement provides a method for allocating water among the various water contractors and customers of the SCWA water supply. On April 18, 2006, the SCWA's Board of Directors adopted Resolution No. 06-0342 (see Appendix N), which approved a methodology for allocating water in the event of a water supply shortage or in the event of a temporary impairment of the capacity of the SCWA's transmission system. It is anticipated that the approved methodology will be modified and updated in the next several years to address changes that have occurred over the past 10 years. These include changes in customer demands, local supply, and recycled water.

Water Rights

Four SWRCB permits currently authorize the SCWA to store up to 122,500 acre-feet per year of water in Lake Mendocino and up to 245,000 acre-feet per year of water in Lake Sonoma. They also authorize the SCWA to divert and re-divert 180 cubic feet per second (cfs) of water from the Russian River at the SCWA's Wohler and Mirabel facilities, up to 75,000 acre-feet per year. The City, along with other water contractors, has asked the SCWA to apply to the SWRCB to increase SCWA's Russian River diversion limit from 75,000 acre-feet per year to a higher amount that would be needed in future years (year 2027, based on current demand projections for all water customers).

In September 2008, a final Biological Opinion (BO) was released by the National Marine Fisheries Service (NMFS) and issued to the SCWA, the U.S. Army Corps of Engineers (Corps), the California Department of Fish and Game, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District. The BO is a federal mandate on Russian River operations of the receiving agencies listed above that affect salmonids on state and federal

endangered species lists (steelhead, coho, and chinook), which affects the SCWA's water supply operations and subsequent delivery to its water customers, including the City.

The BO calls for the elimination or reduction of impacts to salmonids due to water supply and flood control activities in the Russian River watershed through measures deemed to be "reasonable and prudent alternatives," including:

- Extensive monitoring of both habitat and fish in Dry Creek, the estuary and the Russian River;
- Eliminating impediments to fish migration and improving habitat on several streams;
- Restoring up to six miles of habitat in Dry Creek and studying a bypass project;
- Requesting the SWRCB to reduce summertime flows in the Russian River; and
- Creating a freshwater lagoon in the estuary at the mouth of the Russian River during the summer months.

The NMFS concluded that lower flows in Dry Creek and Russian River create a better environment for juvenile salmon and steelhead. The BO identified habitat restoration projects in Dry Creek to reduce water velocities in the stream/river. Current minimum summer flows are based on weather conditions and range from 125 cfs (during a normal year, as measured at Hacienda Bridge in Guerneville) to 85 cfs (as measured during a dry year). Under the terms of the BO, minimum flows would be dropped to 70 cfs with an additional 15 cfs to maintain system flexibility for a total flow of 85 cfs. The BO acknowledged a need for balance and flexibility and noted that SCWA may find alternative minimum flow requirements that meet the goals of restoring functional salmonid-rearing habitat while promoting water conservation and limited adverse effects on other in-stream resources.

Entitlements

Water entitlements are set forth in terms of average day peak month demand. The City's entitlement limit is 6.3 mgd with an annual entitlement limit of 3,000 acre-feet. Provided the capacity is available, the Restructured Agreement permits the City to take delivery of water in excess of its entitlement during a given month, provided specific conditions as specified in the agreement are met.

7.2 Reliability by Type of Year

This section presents a description of the water supply reliability year types and the magnitudes of the City's supply sources in these year types.

7.2.1 Types of Years

This section presents the basis for the reliability year types.

Average Year

A year, or an averaged range of years, that most closely represents the average water supply available to the agency. The UWMP Act uses the term "normal" conditions. Within this 2015 UWMP, the terms "normal" and "average" are used interchangeably.

Single-dry Year

The single-dry year is the year that represents the lowest water supply available to the agency.

Multiple-dry Year

The multiple-dry year period is the period that represents the lowest average water supply availability to the agency for a consecutive multiple year period (three years or more). This is generally considered to be the lowest average runoff for

a consecutive multiple year period for a watershed since 1903. DWR has interpreted "multiple-dry years" to mean three dry years. However, water agencies may project their water supplies for a longer time period.

7.2.2 Agencies with Multiple Sources of Water

Many agencies have multiple water sources and each may have a different hydrology resulting in different base years for each source. For example, an imported water source may have experienced its single driest year in the same year that a local surface water source experienced a normal year. The bases of the City's and SCWA's water year data are summarized in Table 7-1a, Table 7-1b, and Table 7-1c. The water year data and reliability analysis relies upon the information and river system modeling from the SCWA 2015 UWMP effort.

The following table presents the basis of the SCWA water supply reliability.

Table 7-1a. Bases of Water Year Data – SCWA Supply Reliability

Table 7-1a Retail: Basis of Water Year Data, SCWA Water			
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 (AF)	**% of Average Supply**
Average Year	1962	2,015	100%
Single-Dry Year	1977	1,702	84%
Multiple-Dry Years 1st Year	1988	2,015	100%
Multiple-Dry Years 2nd Year	1989	2,015	100%
Multiple-Dry Years 3rd Year	1990	2,015	100%
Multiple-Dry Years 4th Year *Optional*	1991	2,015	100%
NOTES: Multiple versions of Table 7-1 are being used. This table presents the City's water source SCWA supply reliability. Reliability for SCWA supply is 84% of year 2025 supply for single-dry year; 100% for all other water year types.			

The following table presents the basis of the City's groundwater supply reliability.

Table 7-1b. Bases of Water Year Data – Groundwater Source Supply Reliability

Table 7-1b Retail: Basis of Water Year Data, Groundwater			
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 (AF)	**% of Average Supply**
Average Year	1962	238	100%
Single-Dry Year	1977	238	100%
Multiple-Dry Years 1st Year	1988	238	100%
Multiple-Dry Years 2nd Year	1989	238	100%
Multiple-Dry Years 3rd Year	1990	238	100%
Multiple-Dry Years 4th Year *Optional*	1991	238	100%
NOTES: Multiple versions of Table 7-1 are being used. This table presents the City's groundwater source supply reliability. Reliability for groundwater has historically been 100% for all water year types. Groundwater usage is limited to 238 AF per year, assuming that the City does not develop additional wells. This was established through CEQA analysis for the City's latest Well 8 construction for the northern well field. The City recharges its well field during the winter and only uses wells to help meet peak demand during the dry months. Thus, the City has not had a history of groundwater supply reliability.			

The following table presents the basis of the City's recycled water supply reliability.

Table 7-1c. Bases of Water Year Data – Recycled Water Supply Reliability

Table 7-1c Retail: Basis of Water Year Data, Recycled Water			
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 (AF)	**% of Average Supply**
Average Year	1962	55	100%
Single-Dry Year	1977	55	100%
Multiple-Dry Years 1st Year	1988	55	100%
Multiple-Dry Years 2nd Year	1989	55	100%
Multiple-Dry Years 3rd Year	1990	55	100%
Multiple-Dry Years 4th Year *Optional*	1991	55	100%
NOTES: Multiple versions of Table 7-1 are being used. This table presents the City's recycled water supply reliability. Reliability for recycled water is assumed to be 100% for all water years. The City is a top-tier recipient for recycled water deliveries should there be any shortfall in supply.			

The Recycled Water Users Agreement between Sonoma Valley County Sanitation District and the City was approved by the City Council in January 2016 and presents the recycled water reliability. A copy of the agreement stating that the small 1-acre park will be irrigated with an estimated 5 AFY of recycled water can be found in Appendix O. A copy of the City's school district agreement for 50 AFY of recycled water use can be requested from the City.

7.3 Supply and Demand Assessment

The City's combined projected water supplies are sufficient to meet projected demands during normal and multiple-year conditions. During a severe drought condition, under the single-dry year condition, the City will not have adequate supplies and will need to impose mandatory water conservation. The City's water customers have been successful in reducing its water demands during water shortages, such as had occurred in 2015 when the City's water deliveries were reduced by 23% as compared to 2013 water use. Also, the City can produce more groundwater on a short-term basis during peak summer months to supplement the SCWA supply.

The City's projected water supply portfolio is highly stable, because it relies largely on current contracted and permitted water supply from the SCWA, and also has local groundwater wells that can further supplement the SCWA supply, particularly during drought conditions.

Comparisons of supply and demand under normal, single-dry, and multiple-dry years are included in Tables 7-2 through 7-4.

The following table presents the City's projected normal year supplies and demands.

Table 7-2. Normal Year Supply and Demand Comparison

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals (AF) (*autofill from Table 6-9)*	2,229	2,265	2,286	2,322	2,367
Demand totals (AF) *(autofill from Table 4-3)*	2,229	2,265	2,286	2,322	2,367
Difference	0	0	0	0	0

The following table presents the City's projected single-dry year supplies and demands.

Table 7-3. Single-dry Year Supply and Demand Comparison

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals (AF)	2,229	1,952	1,936	1,926	1,947
Demand totals (AF)	1,783	1,812	1,829	1,857	1,894
Difference (AF)	446	140	107	68	53
NOTES: Reliability for SCWA single-dry year supplies is 100%, 84%, 83%, 82%, and 81% in years 2020, 2025, 2030, 2035, and 2040, respectively. Reliability for groundwater and recycled water is assumed to be 100% for all water years. The City plans to achieve up to a 20% demand reduction using enhanced conservation techniques in single-dry years as needed. As mandated by California statewide reductions, the City accomplished an over 20% reduction in demand in the recent 2015 drought year. As compared to 2013, the City achieved a 23% reduction.					

The following table presents the City's projected multiple-dry year supplies and demands.

Table 7-4. Multiple-dry Years Supply and Demand Comparison

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison (AF)						
		2020	2025	2030	2035	2040
First year	Supply totals	2,229	2,265	2,286	2,322	2,367
	Demand totals	2,229	2,265	2,286	2,322	2,367
	Difference	0	0	0	0	0
Second year	Supply totals	2,229	2,265	2,286	2,322	2,367
	Demand totals	2,229	2,265	2,286	2,322	2,367
	Difference	0	0	0	0	0
Third year	Supply totals	2,229	2,265	2,286	2,322	2,367
	Demand totals	2,229	2,265	2,286	2,322	2,367
	Difference	0	0	0	0	0
Fourth year *(optional)*	Supply totals	2,229	2,265	2,286	2,322	2,367
	Demand totals	2,229	2,265	2,286	2,322	2,367
	Difference	0	0	0	0	0
NOTES: 100% reliability for multiple-dry years per SCWA analysis and 100% for all other supplies.						

7.4 Regional Supply Reliability

The City of Sonoma, as a member of SMSWP, participates in various water management coordination initiatives that maximize the use of local water resources and minimize the need to import water from other regions.

By 2040, the SCWA will need to "perfect" its Russian River water supply because the combined water demands from the water contractors and water customers of the SCWA will exceed the current Russian River diversion limit.

Excerpt from SCWA's DRAFT 2015 UWMP (SCWA, 2015):

Based on the water demand projections described in Section 4, the Water Agency estimates the existing annual diversion and rediversion limit of 75,000 ac-ft will be exceeded by 2035. Consequently, it will be necessary for the Water Agency to file an application with the SWRCB by around 2030 to increase its annual diversion and rediversion limit. The projected shortfall in the Water Agency's annual diversion and rediversion limit of Russian River water is estimated to be about 117 ac-ft/yr in 2035 increasing to nearly 1,000 ac-ft/yr by 2040. Because seeking additional water rights is a lengthy and costly process, the Water Agency anticipates that when the current supply limit is no longer sufficient that it would file an application to increase its annual diversion and rediversion limit by an additional 5,000 ac-ft annually to accommodate future demand increases over a longer planning horizon. In order for the SWRCB to act on an application to increase these limits, the Water Agency will need to prepare an Environmental Impact Report under CEQA. The increase to the Water Agency's annual diversion and rediversion limit of Russian River water and the schedule for filing an application with the SWRCB will be reevaluated in the Water Agency's 2020 UWMP.

For additional information on regional supply reliability, see the SCWA UWMP (SCWA, 2015).

8. WATER SHORTAGE CONTINGENCY PLANNING

Water shortage contingency planning is a strategic planning process to prepare for and respond to water shortages. Sound planning and preparation can help maintain reliable supplies and reduce the impacts of supply interruptions.

A water shortage contingency plan (WSCP) is a document that can be created separately from the UWMP and amended as needed without amending the corresponding UWMP.

This section provides information required by Water Code Section 10632. The City adopted water waste prohibitions, which are included in Appendix H. The City has also adopted a Water Shortage Contingency Plan within Section 13.66 of its Municipal Code, which is included in Appendix I.

8.1 Stages of Action

Water Code Section 10632(a) requires a description of the actions to be undertaken by the urban water supplier in response to water supply shortages of up to 50%. The number of stages of action in a WSCP is at the discretion of the water supplier. Typically, water agencies will include between three and five stages of action in a WSCP. The Water Code requires the water supplier to outline the specific water supply conditions that are applicable at each stage of action. The stages reflect decreasing water supplies with increasing levels of prohibitions and consumption reduction methods. Agencies must include a stage that addresses a reduction of 50% in the water supply.

The Russian River water supply is generally very reliable but, as described earlier in this section, does have some constraints, such as legal, environmental, and climatic ones. These are generally handled by the City's ability to supplement the SCWA supply with its own local groundwater supply and the City's ability to implement mandatory water conservation.

Although the City has a relatively reliable and flexible water supply portfolio that allows it to manage a range of supply cutbacks, the City Council also has the authority to declare a water shortage emergency. This authority is contained in Section 13.10 of the Municipal Code. Emergencies are declared in four stages with specific reduction methods used for each stage. Table 8-1 summarizes the stages of the City's WSCP and consumption reduction methods that it has the authority to use.

Table 8-1. Stages of WSCP

Table 8-1 Retail: Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction* *Numerical value as a percent*	Water Supply Condition (*Narrative description*)
1	15%	The council may by resolution declare a Stage 1 water shortage upon notification that the board of directors for the Sonoma County Water Agency has declared up to 15% reduction in Russian River water supply delivery to the City.
2	16%-25%	The council may by resolution declare a Stage 2 water shortage upon notification that the board of directors of the Sonoma County Water Agency has declared a 16% to 25% reduction in Russian River water supply delivery to the City or recommendation by the director that Stage 2 must be implemented in order to meet Stage 1 reduction goals.
3	26%-40%	The council may by resolution declare a Stage 3 water shortage upon notification by the director that the board of directors of the Sonoma County Water Agency has declared a 26% to 40% reduction in Russian River water supply delivery to the city or recommendation by the director that Stage 3 must be implemented in order to meet Stage 2 reduction goals.
4	>40%	The council may by resolution declare a Stage 4 water shortage upon notification that the board of directors of the Sonoma County Water Agency has declared a reduction of greater than 40% in Russian River water supply delivery to the City or recommendation by the director that Stage 4 must be implemented in order to meet Stage 3 reduction goals.
* *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		

8.2 Prohibitions on End Uses

Section 13.10.060 of the Municipal Code specifies prohibited water uses, including temporary prohibitions that are used in various stages of the water shortage emergencies. These are outlined in Table 8-2 below.

Table 8-2. Restrictions and Prohibitions on End Uses

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?
0	Landscape - Restrict or prohibit runoff from landscape irrigation	Ongoing "waste of water prohibited" nonessential use.	Yes
0	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Ongoing "waste of water prohibited" nonessential use.	Yes
0	Other - Require automatic shut of hoses	Ongoing "waste of water prohibited" nonessential use.	Yes
0	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Ongoing "waste of water prohibited" nonessential use.	Yes
1-4	Landscape - Limit landscape irrigation to specific times	Voluntary.	No
1-4	Landscape - Prohibit certain types of landscape irrigation	Voluntary.	No
1-4	Landscape - Other landscape restriction or prohibition	Voluntary. Inspect all irrigation systems, repair leaks, and adjust spray heads to provide optimum coverage and eliminate avoidable over-spray. For irrigation valves controlling water applied to lawns, vary the minutes of run-time consistent with fluctuations in weather. Reduce minutes of run-time for each irrigation cycle if water begins to run off to gutters and ditches before the irrigation cycle is completed.	No
2-4	Other water feature or swimming pool restriction	Refilling or initial filling of a swimming pool shall be prohibited.	Yes
2-4	Water Features - Restrict water use for decorative water features, such as fountains		Yes
2-4	Other - Prohibit use of potable water for washing hard surfaces		Yes
2-4	Other - Prohibit use of potable water for construction and dust control		Yes

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?
2-4	Landscape - Limit landscape irrigation to specific days		Yes
3-4	Landscape - Prohibit certain types of landscape irrigation	Watering of athletic fields and turf areas in public and private parks shall be limited to 75% of the water usage in year 2006 for the same period of time; or if 2006 billing data is unavailable or not appropriate for use, a different baseline year may be used as approved by the director.	Yes
3-4	Other water feature or swimming pool restriction	Use of water for ornamental fountains shall be prohibited.	Yes
4	Other	1. The director shall develop a water rationing plan establishing water allotments for residential, commercial, and institutional customers of the City that takes into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply and the City's local water supply. 2. No new water connections shall be permitted during a Stage 4 water shortage except as approved by the city manager for public health and safety reasons. 3. No new water agreements to serve water shall be entered into by the City during a Stage 4 water shortage. (Ord. 09-2009, Section 1, 2009; Ord. 02-2009, Section 2, 2009).	Yes

8.2.1 Landscape Irrigation

The following categories of prohibitions on landscape irrigation are listed in Table 8-2 above. The section below includes examples of restrictions or prohibitions that may fall within these categories. Note that "Other landscape restriction or prohibition" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Restrict or prohibit runoff from landscape irrigation - Examples include: Irrigation runoff is to be prevented; excessive irrigation runoff is prohibited; irrigation runoff is prohibited.
- Limit landscape irrigation to specific times - Examples include: Landscape irrigation is limited to between the hours of 7:00pm and 7:00am; landscape irrigation is limited to eight minutes per day duration.
- Limit landscape irrigation to specific days - Examples include: Even numbered addresses are allowed to water only on Monday, and Thursday; landscape irrigation is allowed only two days per week; landscape irrigation is allowed only one day per week.
- Prohibit certain types of landscape irrigation - Examples include: The use of sprinkler irrigation is prohibited; irrigation of turf is prohibited, except with recycled water; only irrigation of trees and shrubs is allowed.

- Prohibit all landscape irrigation - Examples include: All landscape irrigation using potable water is prohibited; all landscape irrigation is prohibited.
- Other landscape restriction or prohibition - Examples include: Any other landscape restriction or prohibition utilized by the agency.

8.2.2 Commercial, Industrial, and Institutional (CII)

The following categories of prohibitions on CII are included in Table 8-2 previously. The section below includes examples of restrictions or prohibitions that may fall within these categories. Note that "Other CII restriction or prohibition" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Lodging establishments must offer opt out of linen service – Examples include: Lodging establishments are required to place notices in each room that inform the guest that they may opt out of linen service.
- Restaurants may only serve water upon request – Examples include: Restaurants may not serve water to customers unless requested.
- Commercial kitchens are required to use pre-rinse spray valves – Examples include: Any commercial kitchen is required to use a pre-rinse spray valve as part of their dish washing operation.
- Other CII restriction or prohibition – Examples include: Any other CII restriction or prohibition selected by the agency that does not fall into the categories listed above.

8.2.3 Water Features and Swimming Pools

The following categories of prohibitions on water features and swimming pools are listed in Table 8-2 above. The section below includes examples of restrictions or prohibitions that may fall within these categories. Note that "Other water feature or swimming pool restriction" is also a category to include prohibitions that do not fall into the listed categories.

- Restrict water use for decorative water features, such as fountains – Examples include: Decorative water features may only be operated if they use recirculating water; decorative water features shall not be allowed to operate.
- Require covers for pools and spas – Examples include: Every swimming pool and spa is required to cover the surface of the pool or spa with a cover that reduces evaporation during hours that the pool or spa is not in use; allow filling of swimming pools only when an appropriate pool cover is in place.
- Other water feature or swimming pool restriction – Examples include: Any other restriction or prohibition selected by the agency for reducing water use in water features or swimming pools.

8.2.4 Defining Water Features

The City's definition of water features is as follows:

A landscape design element where open water forms an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment of stormwater retention are not water features for means of calculating a landscape water budget.

8.2.5 Other

The following categories of other prohibitions or restrictions are listed in Table 8-2 above. The section below includes examples of restrictions or prohibitions that may fall within these categories. Note that "Other" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Customers must repair leaks, breaks, and malfunctions in a timely manner – Examples include: Broken or malfunctioning sprinkler heads must be repaired within 48 hours after the customer receives a notification from the water agency; All leaks or breaks must be repaired by the customer within 48 hours of receiving a notification from the water agency.
- Require hoses to have automatic shut off nozzles – Examples include: Hoses may only be operated out of doors if they are equipped with an automatic shut off nozzle.
- Prohibit use of potable water for construction and dust control – Examples include: Potable water may not be used for construction or dust control.
- Prohibit use of potable water for washing hard surfaces – Examples include: Potable water may not be used to wash hard surfaces, such as driveways or sidewalks, except in cases of health and safety.
- Prohibit vehicle washing except at facilities using recycled or recirculating water – Examples include: Vehicles may not be washed except at a facility that uses recycled or recirculating water.
- Other – Examples include: Any other restriction or prohibition selected by the water agency to reduce water consumption that does not fall into the categories above.

8.3 Penalties, Charges, Other Enforcement of Prohibitions

Demand reduction stage 1-4 violations to the City's respective stage water waste prohibitions & requirements, non-essential user/actions, and/or allocation reduction are noticed in the following sequence: (1) written notice of infraction or administrative penalties; (2) flow restricting devices or water shutoff. Administrative penalties shall be $100 for first violation, $200 for second violation, and $300 for third or subsequent violations.

8.4 Consumption Reduction Methods

While the WSCP establishes restrictions that are enforceable by penalties and charges, it also establishes methods of reducing consumption that are set forth in Table 8-3 below. Typically, these restrictions "should" or "may" be done. Methods from prior stages stay in effect when more restrictive stages are enacted.

8.4.1 Categories of Consumption Reduction Methods

The following categories of consumption reduction methods are listed in Table 8-3. The section below includes examples of consumption reduction methods that fall within these categories. Note that "Other" is a category that will be used to include consumption reduction methods that do not fall into the listed categories.

- Expand Public Information Campaign – Examples include: Begin or enlarge media campaign; Create bill insert with conservation information; Write articles for local newspaper; Conduct water efficiency workshops for different customer sectors.
- Improve Customer Billing – Examples include: Increase billing frequency; Change bill format to report consumption in gallons per capita per day; Add information to the bill that compares the customer's use to the water use of similar customers.
- Increase Frequency of Meter Reading – Examples include: Change from bi-monthly to monthly meter reading; Employ Advanced Metering Infrastructure (AMI) so that meters are read in real time.

- Offer Water Use Surveys – Examples include: Actively reach out to high water users to offer water use surveys; Expand water use survey program to include new sectors.
- Provide Rebates or Giveaways of Plumbing Fixtures and Devices – Examples include: Implement new rebate programs (toilet, clothes washer, etc.); Implement new giveaway programs (shower head, aerator, etc.); Expand rebate programs by including new types of rebates; Offer a higher dollar value for each rebate; Expand funding for existing rebate or giveaway programs.
- Provide Rebates for Landscape Irrigation Efficiency – Examples include: Implement a new landscape efficiency rebate program that provides rebates for landscape conversion, irrigation controllers, sprinkler heads, etc.; Expand an existing rebate program that provides rebates for landscape conversion, irrigation controllers, sprinkler heads, etc.
- Decrease Line Flushing – Examples include: Decrease the length of time for each line flushing; Decrease the frequency of line flushing.
- Reduce System Water Loss – Examples include: Implement a water audit program to identify leaks in the water system; Expand the leak repair program to control system losses. Refer to Section 4.3 for required distribution system audit protocols.
- Increase Water Waste Patrols – Examples include: Implement a Water Waste Patrol program; Increase staffing for Water Waste Patrol; Increase authority of Water Waste Patrol.
- Moratorium or Net Zero Demand Increase on New Connections – Examples include: The water supplier will only approve a new connection if the applicant can demonstrate a net zero demand increase for the new connection. "Net Zero Demand Increase" requires that a project's water use is offset with conservation projects inside or outside of the project area; the water supplier does not approve new water service connections.
- Implement or Modify Drought Rate Structure or Surcharge – (see Section 8.6.1 below) Examples include: Implement a drought rate structure; Modify a drought rate structure; Implement a drought surcharge on all customers.
- Other – Any other consumption reduction method that the agency may take that does not fall into the categories listed above.

Table 8-3. Stages of WSCP – Consumption Reduction Methods

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)*
0	Provide Rebates for Landscape Irrigation Efficiency	Current conservation measure
0	Provide Rebates for Turf Replacement	Current conservation measure
0	Offer Water Use Surveys	Current conservation measure
1	Expand Public Information Campaign	
1	Increase Frequency of Meter Reading	
1-4	Provide Rebates on Plumbing Fixtures and Devices	Current conservation measure
1-4	Reduce System Water Loss	Current conservation measure
1-4	Increase Water Waste Patrols	
4	Moratorium or Net Zero Demand Increase on New Connections	
4	Implement or Modify Drought Rate Structure or Surcharge	
4	Improve Customer Billing	

The following table presents a summary of the City's Water Shortage Contingency Plan stage actions.

Table 8-3a. City of Sonoma Water Shortage Contingency Plan Stage Actions

Demand Reduction Stages	Triggers	Demand Reduction Goal	Water Waste Prohibitions & Requirements / Non-Essential User/Actions	Reduction Allocations	Penalties for Excessive Water Use
1	SCWA BOD declares up to 15% reduction in RR water supplies to City.	Up to 15%	Voluntary Rationing	Up to 15% reduction of RR water supply deliveries.	Violations noticed in sequence by (1) written notice of infraction or administrative penalties (2) flow restricting devices or water shutoff. Administrative penalties shall be $100 for first violation, $200 for second violation and $300 for third or subsequent violations.
1			Request to irrigate only during evening and early morning hours.		
1			Request to inspect all irrigation systems for leaks and over-spray.		
1			Request to vary sprinkler run-times consistent with fluctuations in weather.		
1			Request to curtail nonessential uses as 1) washing hardscapes, 2) timely repair of leaks, 3) irrigation runoff or overspray, or 4) washing		

Demand Reduction Stages	Triggers	Demand Reduction Goal	Water Waste Prohibitions & Requirements / Non-Essential User/Actions	Reduction Allocations	Penalties for Excessive Water Use
			cars, boats, trailers without a shutoff nozzle.		
1			Request use of water conservation rebate or incentive programs.		
2	SCWA BOD declares 16% to 25% reduction in RR water supplies to City.	Up to 25%	Above plus following mandatory restrictions.	Up to 25% reduction of RR water supply deliveries.	Same as above.
2			Prohibit swimming pool initial filling or refills		
2			Prohibit water for non-recirculating ornamental fountains.		
2			Prohibit noncommercial washing of motor vehicles, trailers and boats without a shutoff nozzle.		
2			Prohibit use of water from a fire hydrant except for fighting fires.		
2			Prohibit potable water for construction dust control.		
2			Prohibit irrigation except on specific days and times set forth by Council Resolution.		
3	SCWA BOD declares 26% to 40% reduction in RR water supplies to City.	Up to 40%	Above plus additional mandatory restrictions.	Up to 40% reduction of RR water supply deliveries.	Same as above.
3			Limit irrigation of athletic fields and park turf to 75% of 2006 water usage for same period of time.		
3			Prohibit noncommercial washing of vehicles.		
3			Prohibit use of water for ornamental fountains.		

Demand Reduction Stages	Triggers	Demand Reduction Goal	Water Waste Prohibitions & Requirements / Non-Essential User/Actions	Reduction Allocations	Penalties for Excessive Water Use
4	SCWA BOD declares a greater than 40% reduction in RR water supplies to City.	Over 40%	Above plus additional mandatory restrictions.	Up to 40% reduction of RR water supply deliveries.	Same as above.
4			Water Rationing Plan which may include drought surcharges, excess use penalties, temporary service interruptions.		
4			Prohibit new water connections.		
4			Prohibit new water agreements.		

8.5 Determining Water Shortage Reductions

The City's wells and the SCWA's supply turnouts are all equipped with water meters. In addition, each potable and recycled water customer is metered. Non-residential landscape irrigation is metered separately from indoor use at most non-residential sites. The City reads meters on a bi-monthly basis and is able to document both demand reductions and atypically high water use. The City contacts individual customers to resolve issues related to atypically high water use.

To determine actual water savings from implementing a stage of the water shortage contingency plan, the City will rely upon its water meters to record the production and consumption of water.

8.6 Revenue and Expenditure Impacts

The most challenging situation for the City to manage would be a 50% reduction in all water supplies because it would also reduce revenue from water sales. This reduced revenue would be balanced by some reduction in costs since the City would be purchasing less water from the SCWA. In addition, the City would have the option of deferring planned capital expenditures and utilizing its utility system reserves.

8.6.1 Drought Rate Structures and Surcharges

Well-designed drought rate structures can reduce the potential financial effects of water shortages and enable the supplier to recover its purchase, treatment, and delivery costs, as well as the additional costs related to the water shortage response program.

In order to understand the potential impacts of supply reduction on revenues and expenditures, the City has analyzed the effects of 20, 30, and 50% reductions in water delivered. The City's current water rate structure includes a monthly service charge and a commodity charge. Commodity charges are tiered for residential, multi-family, and commercial accounts.

Reductions in water use will affect the revenue that the City receives from its commodity charges, because less water will be sold. The anticipated revenue from commodity charges can be calculated by subtracting the revenue generated from monthly service charges from the total budgeted revenue.

The City is considering adopting a water shortage drought surcharge to address declining revenues during droughts and prolonged water shortages.

8.6.2 Use of Financial Reserves

The City has a "combined" operating and capital reserve fund. In general, the City's policy is to maintain a 4-month operating reserve. After expenditures, the remaining is theoretically available to help manage revenue shortfalls. In order to manage a supply reduction, the City will need to defer capital expenditures and draw upon its available reserves to cover operational expenses.

8.7 Resolution or Ordinance

The City has adopted a Water Shortage Contingency Plan, which was codified by Ordinance 09-2009 in Section 13.10 of the Municipal Code. This Ordinance is attached in Appendix I.

8.8 Catastrophic Supply Interruption

In accordance with the Emergency Services Act, the City has developed an Emergency Operation Plan (EOP). This EOP guides response to unpredicted catastrophic events that might impact water delivery, including regional power outages, earthquakes, or other disasters. The EOP outlines standard operating procedures for all levels of emergency, from minor accidents to major disasters. The EOP has been coordinated with the SCWA and neighboring water purveyors. The following table provides a summary of the actions included in the EOP for specific catastrophic effects.

Table 8-3b. Preparation Action for Catastrophes

Possible Catastrophe	Summary of Actions
Earthquake	Shut-off isolation valves and use spare piping for ruptured mains
	Storage supplies for service interruption
	Portable and emergency generators available for City facilities
	Procedures for assessing water quality, notifying public and disinfecting system
Flooding	Portable and emergency generators available for City facilities
	Storage supplies for service interruption
	Procedures for assessing water quality, notifying public and disinfecting system
Toxic Spills (interrupts SCWA Supply)	Use of local groundwater
	Procedures for assessing water quality, notifying public and disinfecting system
Fire	Storage supplies for fire flows
	Mutual aid plans and responders identified
	Portable and emergency generators available for City facilities
Power outage or grid failure	Portable and emergency generators available for City facilities
Severe Winter Storms	Portable and emergency generators available for City facilities
Hot Weather	Portable and emergency generators available for City facilities

8.9 Minimum Supply Next Three Years

The minimum water supply available during the next three years during a multiple-dry year drought is shown in Table 8-4. Because the City has based its planning on the SCWA's current water rights and because these current water rights are more restrictive than any hydrologic condition, including the multiple-dry year condition, this minimum water supply analysis is identical to the normal water year analysis.

Table 8-4. Minimum Supply Next Three Years

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply (AF)	1,856	1,949	2,042
NOTES: Water supplies are based on the interpolated demand from actual 2015 use and projected 2020 demand with plumbing code savings per Table 7-2. Year 2015 actual use can be found in Table 2-1 and Table 4-3. No cutbacks in supply are anticipated since in multiple-dry years all three supply sources - groundwater, SCWA water, and recycled water - have 100% reliability and do not experience any cutbacks.			

9. DEMAND MANAGEMENT MEASURES

The goal of the Demand Management Measures (DMM) section in a UWMP is to provide a comprehensive description of the water conservation programs that a supplier has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets. This chapter provides the opportunity for water suppliers to communicate their efforts to promote conservation and to reduce the demand on the water supply.

The City is a California Urban Water Conservation Council (CUWCC) member and has the option of submitting their 2013–2014 Best Management Practice (BMP) annual reports in lieu of describing the Demand Management Measures in this UWMP. The City is a signatory to the CUWCC, is on track with the CUWCC BMPs, and is in full compliance with the CUWCC's Memorandum of Understanding (MOU).

9.1 Demand Management Measures for Retail Agencies

The City is on track with the CUWCC's BMPs and MOU (see Appendix J for the CUWCC BMP reports).

9.1.1 Water Waste Prevention Ordinances

The City prohibits water waste (Ordinance 2000-6, Section 13.04.024, see Appendix H). The water waste prevention ordinance is in place at all times and is not dependent upon a water shortage for implementation.

9.1.2 Metering

The City meters all its customers and is considering implementing AMI installations in year 2025.

9.1.3 Conservation Pricing

The City has increasing block water rates for its residential customer classes and uniform water rates for its commercial and dedicated irrigation accounts.

9.1.4 Public Education and Outreach

The City has instituted public education and outreach efforts. Outreach efforts depend on the situation and may include the following:

Marketing of rebates and giveaways;

- Communicating water use via water bills (e.g., increased frequency of billing, an easy to understand bill format, or bills that compare a customer's water use to the water use of similar customers);
- Providing school education programs;
- Information booths at fairs and public events;
- Newsletters;
- Informative websites, online tools, or social media;
- Newspaper articles; and
- Other activities not listed here.

9.1.5 Programs to Assess and Manage Distribution System Real Loss

The City performs water audits and manages water losses. The 2015 American Water Works Association (AWWA) Water Audit summary report is in Appendix K.

9.1.6 Water Conservation Program Coordination and Staffing Support

The Cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor, North Marin and Valley of the Moon Water Districts, California-American Water Company and the SCWA formed the Sonoma-Marin Saving Water Partnership (Partnership) in 2010. The purpose of the Partnership is to establish the financial obligation, identify and recommend implementation of water conservation projects, and to maximize implementation of cost-effective projects for the Partnership. The Partnership coordinates all water use efficiency focused media buys in the region and provides support to members that need additional assistance meeting conservation targets.

The Sonoma County Water Agency (Water Agency) coordinates the work of the Partnership in conjunction with the Water Advisory Committee (WAC), which provides input to the Water Agency and holds certain powers and responsibilities enumerated in the Restructured Agreement for Water Supply between the Water Agency and the Partnership. The Partnership is committed to continued water conservation and is on track to meet long-term water conservation targets. The contact info for the Conservation Coordinator is:

Carrie Pollard
Principal Programs Specialist
Sonoma County Water Agency
carriep@scwa.ca.gov
Office: 707-547-1968

Funding

The Water Agency's wholesaler water conservation programs are funded by the Partners annually through a WAC recommended budget that allocates a Water Conservation Sub-charge for each acre-foot sold. The Partnership members have agreed to expend $15 million on water conservation implementation from July 2008 through July 2018 and have agreed to maintain membership in good standing with the California Urban Water Conservation Council and implement the Best Management Practices as outlined by the CUWCC.

The Water Agency pursues grant funding on behalf of the Partnership to off-set some of the programmatic costs associated with water use efficiency programs and to test new technology. In the last five years, the Water Agency has been awarded over $3,240,000 for implementing WUE programs in our region.

Annual Report

The Partners are committed to remain as members in good standing of the CUWCC and implement the BMPs for water conservation. The Partners will implement or use best efforts to secure the implementation of any water conservation requirements and will publish an Annual Report to track progress. The Annual Report will track program implementation, highlight program milestones, and reinforce the importance of protecting and preserving water resources for future generations. The 2014/2015 Annual Report for the Partnership can be found at the following link: http://www.savingwaterpartnership.org/about-us/annual-report/.

Water Education Program

The Water Education Program is a comprehensive approach to helping educators teach students the "value" of water as an important natural resource. Water conservation and stewardship of local watersheds is promoted throughout the program. Students are encouraged to use water wisely and make environmentally sustainable choices to help secure a reliable source of freshwater now and in the future. The program includes classroom instructional presentations, field study opportunities, free curriculum materials aligned with the existing California State Frameworks and the California Science Standards, a lending library of videos, interactive models and printed materials, production of a newsletter for teachers and endorsement, participation and financial sponsorship of events, assemblies and workshops. All of these programs and materials are free to teachers in the service area, which covers over 200 schools throughout Sonoma and

northern Marin counties. In addition to this ongoing program, there will be a new home for the 5th grade field study program, the Westside Education Facility.

The total number of students receiving direct instruction in 2014/2015 was 10,520 (2,564 students in the field study programs and 4,256 in the classroom only programs, 1,775 students in the secondary education program and 1,925 students in the kinder/transitional kinder program). An additional 356 adults participated in the field study program while serving as adult chaperones with the participating classes.

Public Outreach Program

Annually the Partnership develops a regional outreach campaign that aligns with current water supply conditions and promotes water use efficiency programs. Over the last few years, the campaigns have included the following:

- There's Never Enough to Waste. Turn the Water Off. (2015)
- There's a Drought On. Turn the Water Off. (2014)
- The 20 Gallon Challenge (2013)
- Save our Water - Statewide campaign with a local focus (2011 and 2012)

The Water Agency, in collaboration with the members of the Partnership, produces collateral material that aligns with the specific campaign. The Water Agency coordinates an annual media buy that includes outreach in English and Spanish. Each member of the Partnership can choose to supplement the campaign with their own media buys. The buys generally include the following:

- Radio
- Newsprint in 14 various local publications
- Sonoma County Fair presence
- Social Media (Facebook, Twitter, Instagram, YouTube)
- Mall banners
- Movie theater trailers

The Partnership ran its biggest promotion ever with the Drought Drive-Up event held simultaneously at 10 locations throughout Sonoma and Marin Counties on April 23, 2014. The event distributed over 5,100 custom drought kits. Participants customized their own kits at this drive-thru event by selecting items from an order sheet so each participant only received what they needed. Items included:

- A shower bucket
- WaterSense labeled adjustable spray showerheads (up to two)
- A five-minute shower timer
- WaterSense labeled bathroom faucet aerators (up to two)
- WaterSense labeled swivel spray kitchen faucet aerator
- Up to three packets of toilet leak test dye tablets

The Partnership distributed 3,000 showerheads, 3,000 bathroom faucet aerators, and 1,000 kitchen faucet aerators, not including the fixtures that were provided by the individual Partnership members that hosted the sites.

After the success of the original Drought Drive-Ups in 2014, four more were scheduled in 2015. Strategic collaborations were formed with local home improvement centers to showcase the importance of saving water during the drought and to promote water efficient products and practices. Friedman's Home Improvement and Garret Ace Hardware donated hundreds of the buckets that were given away as part of the drought kits. Both retailers featured water efficient product displays, including WaterSense labeled products, in their stores to coincide with the events. Both businesses donated staff time with several enthusiastic employees helping to set up and staff the events. The four events were held in Windsor, Sonoma, and two in Santa Rosa. Each kit contained the same material as the 2014 event.

Regional Programs

There are numerous regional programs that are implemented by the Water Agency on behalf of the Partnership. The Water Agency provides region-wide support which allows cost savings due to the collaboration. Some of these programs are:

- Sonoma-Marin High Efficiency Clothes Washer Water Rebate – A rebate for replacing a top-loading clothes washer with a qualifying front-loading clothes washer.
- Green Business Program – Certification for local businesses that are going green.
- Qualified Water Efficient Landscaper Training Program – A low cost professional certification program that educates landscapers about irrigation system auditing.
- Eco-Friendly Garden Tour – An annual self-guided garden tour in Sonoma County and North Marin that promote sustainable landscaping practices.
- Garden Sense – A free garden consultation program that is open to all Sonoma County residents. Consultants provide site specific advice on lawn removal, conversion to drop irrigation, and plant selection.
- Sonoma County Plant Guide – A website of low water use, climate appropriate plants.
- Community Resilience Challenge – A community mobilization campaign that inspires thousands of citizens, leaders, and groups to take action to save water, grow food, conserve energy, reduce waste, and build community.

The Agency supports promoting new and innovative models to increase water use efficiency in our region. Some of the pilot projects we have collaborated with are the following:

- PAYS Program (Windsor) – An on-bill financing program that allows water customers to fund their own water and energy improvements with a long-term payback on their water bill.
- SmartMarkets Pilot (VOMWD) – A water market that allows for “eco-shares” to be earned for reducing demand and redeemed for various incentives.
- Water Smart Software (Cotati) – A community based social marketing platform that compares a customer’s water use to their neighbors to encourage behavioral change.
- Barnacle Pilot Program (All) – An online platform that provides real-time water use data to the customer outside of the water utilities billing infrastructure.
- Unmetered Flow Reducer (NMWD) – An in-line device that is placed between the meter and the customer connection that allows small leaks to be “batched” through the meter, thus reducing unaccounted for water from low flow leaks and allowing the customer to be notified that a leak is occurring.

The Water Agency participates in numerous regional and statewide initiatives to ensure the Partnership is on the forefront of water use efficiency, legislation, and conservation planning.

- California Urban Water Conservation Council (Elected Board member, Residential Committee, Research and Evaluation Committee, Utility Ops Committee, Landscape Committee)
- California Irrigation Institute
- Independent Technical Panel
- College WUE Group
- Russian River Watershed Association
- California Landscape Contractors Association

The Water Agency encourages the Partnership to participate in research studies. Below are a few of the recent studies we have been involved with:

- Alliance for Water Efficiency Demand Elasticity Study (Santa Rosa & Petaluma)
- Residential End Use Study (Rohnert Park, Santa Rosa, Petaluma, and NMWD)

The Partnership has received notable recognition for effective collaboration and program implementation. Below are the awards the Partnership has received.

- Environmental Protection Agency (EPA) Water Sense Partner of the Year 2015
- EPA Water Sense Partner of the Year 2014
- EPA Water Sense Excellence Award 2013

The City of Sonoma has a Water Conservation Specialist who works with the City and SMSWP staff to coordinate water conservation activities.

9.1.7 Other Demand Management Measures

For additional Demand Management Measure information, see the CUWCC BMPs (Appendix J) and the City of Sonoma's 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (Appendix D).

9.2 Implementation over the Past Five Years

As a CUWCC member, the City is submitting its 2013–2014 BMP annual reports in lieu of describing the Demand Management Measures in this UWMP. The City is on track and in full compliance with the CUWCC's MOU. (Appendix J). The City has also achieved its 2015 SB X7-7 water use target.

9.3 Planned Implementation to Achieve Water Use Targets

The City is on track and in full compliance with the CUWCC's MOU (Appendix J). The City's projected conservation implementation activity and water use is presented in Appendix J.

9.4 Members of the California Urban Water Conservation Council

The City is a CUWCC member and is submitting their 2013–2014 BMP annual reports in lieu of describing the DMMs in this UWMP. The option of submitting the CUWCC BMP report in lieu of describing the DMMs is only available if the supplier is in full compliance with the CUWCC's MOU. The submitted reports are in Appendix J and include documentation from the CUWCC that the City has met the MOU coverage requirements and is in full compliance with the MOU.

Table 9-1 below lists all the CUWCC BMPs and the City's full compliance.

Table 9-1: Summary Showing the City of Sonoma's Compliance with CUWCC MOU

CUWCC BMP Retail Coverage Report			
2013		2014	
BMP 1.1 Operation Practices	ON TRACK	BMP 1.1 Operation Practices	ON TRACK
BMP 1.2 Water Loss Control	ON TRACK	BMP 1.2 Water Loss Control	ON TRACK
BMP 1.3 Metering With Commodity	ON TRACK	BMP 1.3 Metering With Commodity	ON TRACK
BMP 1.4 Retail Conservation Pricing	ON TRACK	BMP 1.4 Retail Conservation Pricing	ON TRACK
BMP 2.1 Public Outreach	ON TRACK	BMP 2.1 Public Outreach	ON TRACK
BMP 2.2 School Education Programs	ON TRACK	BMP 2.2 School Education Programs	ON TRACK

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This Plan will be presented to the City of Sonoma's Board of Directors for review and adoption. Once adopted, it will supersede the existing plan prepared in 2010. It will be filed with the Water Efficiency Office in the Department of Water Resources, the California State Library, SCWA, the County of Sonoma, and the cities listed in Table 10-1 below, as required by law, and will be used by the City staff during the current five-year planning cycle. As required by Section 10621 (a) of the Water Code, the City will update the UWMP again in December 2020.

10.1 Notice of Public Hearing

A public hearing before the City's Board of Directors to discuss and receive comments regarding the City's 2015 UWMP demand reduction targets, selected method, and economic impacts was held on June 6, 2016. The public hearing was advertised in the Sonoma Index Tribune 10 days prior to the meeting. Additionally, a public hearing notice was posted on the City's web site:

- http://www.sonomacity.org/

The notice from the website is shown in Appendix L.

10.1.1 Notice to Cities and Counties

Notification was provided to Sonoma County and the cities listed in Table 10-1.

Table 10-1. Notification to Cities and Counties

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Cotati	☑	☑
City of Petaluma	☑	☑
City of Rohnert Park	☑	☑
City of Santa Rosa	☑	☑
City of Sonoma	☑	☑
Town of Windsor	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Sonoma County	☑	☑
NOTES: The following non-City agencies were also notified: Sonoma County Water Agency, Sonoma Valley County Sanitation District, Valley of the Moon Water District, North Marin Water District, Marin Municipal Water District, County of Sonoma PRMD, Sonoma Valley Basin Advisory Panel, Sonoma Ecology Center, City of Sonoma Planning Commission, and the City of Sonoma Community Services Environmental Commission.		

Figure 10-1 is a copy of the public notice letter sent to the cities and county informing them of the City of Sonoma's intent to update the UWMP.

Figure 10-1. Notification Letter to Cities and County

City of Sonoma
Department of Public Works
No. 1 The Plaza
Sonoma California 95476-6690
Phone (707) 938-3332 Fax (707) 938-3240

December 28, 2015

To: Interested Agencies

Re: 60-day Notice of Review and Preparation of the 2015 Urban Water Management Plan Update

The City of Sonoma is currently reviewing and updating the City's Urban Water Management Plan (UWMP), as required by State law. The 2015 UWMP is due to the California Department of Water Resources by July 1, 2016. The UWMP will provide an analysis of the projected water demand and supply over the next 25 years, as well as an updated water conservation plan.

If you are interested in providing input during the preparation of the UWMP, please contact me at (707) 933-2230 or at dtakasugi@sonomacity.org

Sincerely,

Dan Takasugi
Public Works Director / City Engineer

Distribution List:

Sonoma County Water Agency, Attention: Grant Davis
Sonoma Valley County Sanitation District, Attention: Grant Davis
Valley of the Moon Water District, Attention: Dan Muelrath
City of Santa Rosa, Attention: David Guhin
City of Rohnert Park, Attention: Mary Grace Pawson
City of Cotati, Attention: Craig Scott
City of Petaluma, Attention: Dan St. John
Town of Windsor, Attention: Toni Bertolero
North Marin Water District, Attention: Chris DeGabriele
County of Sonoma PRMD, Attention: Sandi Potter
Sonoma Valley Basin Advisory Panel, Attention: Marcus Trotta
Sonoma Ecology Center, Attention: Richard Dale
City of Sonoma Planning Commission, Attention: David Goodison
City of Sonoma Community Services Environmental Commission
Kathy Pons

10.1.2 Notice to the Public

The public hearing was posted in the Sonoma Index Tribune (see Appendix L) and on the City's website. The public was notified 10 days prior to the adoption meeting via newspaper and the following website:

- http://www.sonomacity.org/

10.2 Public Hearing and Adoption

The findings and the Draft UWMP were presented before the City Council on June 6, 2016. The meeting was publicly noticed and the public given the opportunity to offer comments to the UWMP and to ask questions regarding the findings. The UWMP was made available for public review at City Hall and online.

10.2.1 Adoption

The 2015 UWMP was adopted on June 6, 2016. The final UWMP incorporates comments made by the City Council, the Sonoma County Water Agency, and the public.

A copy of the Council resolution of adoption is included in Appendix C.

10.3 Plan Submittal

To satisfy Water Code Section 10635(b), within 30 days of adoption, the City of Sonoma was required to submit a copy of the 2015 UWMP to the DWR, the California Library Records Hall (Sacramento), and any city or county to which the City provides water.

Documentation confirming the City's 2015 UWMP submittal can be found in Appendix M.

10.4 Public Availability

The Final UWMP is available for public viewing on the following website:

- http://www.sonomacity.org

Comments and response to comments to the final 2015 UWMP made by the DWR will be added to the website for the public's information. A copy of the 2015 UWMP, along with any comments or response to comments, is available for public viewing at City Hall during normal business hours.

11. REFERENCES

Alliance for Water Efficiency. The Status of Legislation, Regulation, Codes & Standards on Indoor Plumbing Water Efficiency, January 2016. Online: http://www.allianceforwaterefficiency.org/Codes-Standards-White-Paper.aspx

American Water Works Association. *Manual of Water Supply Practice, M36, Water Audits and Loss Control Programs*, (3rd edition). AWWA, 2009. Online: http://www.awwa.org

Association of Bay Area Governments (ABAG). Plan Bay Area Projections 2013, December 2013. Online: http://abag.ca.gov/planning/housing/projections13.html

California Department of Public Health. *California Code of Regulations*, Title 22, Section 60301.200, revised June 18, 2014. Online: http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/RWregulations_20140618.pdf

California Green Building Standards Code (CALGreen). Online: http://www.usgbc-ncc.org/index.php?option=com_content&view=article&id=401&Itemid=90

California Irrigation Management Information System (CIMIS). May 2015-April 2016 monthly report accessed online on May 4, 2016. www.cimis.water.ca.gov

California State Legislative Analyst's Office. Proposition 84, The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, August 2006. Online: http://www.lao.ca.gov/handouts/resources/2006/prop_84_08_08_06.pdf

California Urban Water Conservation Council. *Best Management Practices (BMP) Cost and Savings Study.* CUWCC, 2005.

California Urban Water Conservation Council. *Memorandum of Understanding,* CUWCC, adopted December 1991, amended September 2014. Online: https://www.cuwcc.org/Resources/Memorandum-of-Understanding

California Water Code (CWC) sections 1725 & 1728. Online: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=01001-02000&file=1725-1732

Ibid. *General Plan 2020*, October 2006. Online: http://www.sonomacity.org/Sonoma/media/Files/Planning/2020_General_Plan.pdf

Ibid. Growth Management Ordinance, adopted February 2008.

Consortium for Efficient Energy website. www.cee1.org

CUWCC Website: https://www.cuwcc.org/Resources/Planning-Tools-and-Models?folderId=776&view=gridview&pageSize=10

DeOreo, W.B., P.W. Mayer, Leslie Martien, Matthew Hayden, Andrew Funk, Michael Kramer-Duffield, Renee Davis, James Henderson, Bob Raucher, Peter Gleick, and Matt Heberger, *California Single-Family Water Use Efficiency Study*. Sacramento, California: Department of Water Resources, 2011. Online: http://www.energy.ca.gov/appliances/2013rulemaking/documents/responses/Water_Appliances_12-AAER-2C/California_IOU_Response_to_CEC_Invitation_to_Participate-Water_Meters_REFERENCE/DeOreo_2011_California_Single-Family_Water_Use_Efficiency_Study.pdf

DeOreo, W.B., P.W. Mayer, E.M. Opitz, B. Dziegielewski, J.C. Kiefer, W.Y. Davis, and J.O. Nelson. *Residential End Uses of Water, Version 2 - 4309.* Denver, Colorado: AWWA Research Foundation, 2016.

Department of Finance. 2010 Census. Online: http://www.dof.ca.gov/research/demographic/state_census_data_center/census_2010/

Department of Water Resources. 2015 Urban Water Management Plans Guidebook for Urban Water Suppliers, March 2016. Online: http://www.water.ca.gov/urbanwatermanagement/docs/2015/UWMP_Guidebook_Mar_2016_FINAL.pdf

Ibid. *20x2020 Water Conservation Plan,* February 2010. Online: http://www.water.ca.gov/wateruseefficiency/sb7/docs/20x2020plan.pdf

Ibid. Bulletin 118-80, January 1980. Online: http://www.water.ca.gov/pubs/groundwater/bulletin_118/ground_water_basins_in_california__bulletin_118-80_/b118_80_ground_water_ocr.pdf

Ibid. Bulletin 118 – Update 2003, October 2003. Online: http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_entire.pdf

Ibid. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*, February 2011. Online: http://www.water.ca.gov/wateruseefficiency/sb7/docs/MethodologiesCalculatingBaseline_Final_03_01_2011.pdf

Dyett & Bhatia. *City of Rohnert Park General Plan*, July 2000. Online: http://www.worldcat.org/title/city-of-rohnert-park-general-plan/oclc/64577528

Dziegielewski, B., J. C. Kiefer, W. DeOreo, P. Mayer, E. M. Opitz, G. A. Porter, G. L. Lantz, and J. O. Nelson. *Commercial and Institutional End Uses of Water*. Denver, Colorado: AWWA, Research Foundation and American Water Works Association with Cooperation of the U.S. Bureau of Reclamation, 2000. Catalog No.90806. 264 pp. ISBN 1-58321-035-0. Online: http://ufdc.ufl.edu/WC13511002/00001

Energy Star Unit Shipment and Market Penetration Report Calendar Year 2011 Summary. Online: http://www.energystar.gov/ia/partners/downloads/unit_shipment_data/2011_USD_Summary_Report.pdf

Koeller & Company. "High Efficiency Plumbing Fixtures - Toilets and Urinals," 2005.

Kunkel and Upson. Geology and ground water in Napa and Sonoma Valleys, Napa and Sonoma Counties, California, 1960. Online: https://pubs.er.usgs.gov/publication/wsp1495

Maddaus Water Management (MWM). *2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update*, prepared for City of Sonoma, June 2015.

Oak Ridge National Laboratory, Energy Division, "Bern Clothes Washer Study, Final Report," prepared for U.S. Department of Energy, March 1998. Online: http://web.ornl.gov/sci/ees/etsd/btric/eere_research_reports/appliances/other_appliances/laundry_equipment/ornl_m_6382/ornl_m_6382.html

Plumbing Efficiency Research Coalition. Water Consumption by Water-Using Plumbing Products and Appliances – 1980-2012, PERC Phase 1 Report, Table 2-A, November 2012. Online: http://www.map-testing.com/content/info/menu/perc.html

Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study," February 2008.

Sonoma County Water Agency (SCWA). *DRAFT 2015 Urban Water Management Plan.* Online*:* www.scwa.ca.gov/uwmp/

Ibid. *Sonoma Valley Groundwater Management Plan, Five-Year Review and Update, Final Report*, March 2014. Online: http://www.scwa.ca.gov/files/docs/projects/svgw/SonValley5YrReview_FINAL.pdf.

U.S. Census 2010 website. http://www.census.gov/2010census/

U.S. Census Bureau. *2010-2014 American Community Survey*, December 2015. Online: http://www.census.gov/data/developers/data-sets/acs-survey-5-year-data.html

U.S. Geological Survey (USGS). *Climate Change and Water Resources Management: A Federal Perspective*, 2009.

Ibid. Mineral Resources Online Spatial Data, 2006b. Online: http://mrdata.usgs.gov/geochem/doc/groups-cats.htm

Western Regional Climate Center, Station 048351, 1893-2014. Data accessed online May 4, 2016. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8351

Ibid. Station 048351, accessed December 8, 2015. Online: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8351

Winzler & Kelly. City of Sonoma 2010 Urban Water Management Plan.

APPENDIX A – UWMP 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 1.2**
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**
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	**Sections 2.5, 10.1**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 3.2**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 3.3**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 3.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 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**
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**
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, Appendix K**
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**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 5.6, Table 5-1**
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 App E	**Section 5**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5% of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 5.6**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Sections 5.2.2, 5.7**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 5**
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	**n/a**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 5.7**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 6.9**
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**
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**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 6.2.1**
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**
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	**Sections 6.2, 6.2.3**
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**
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 6.2**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 6.7**
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**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 6.6**
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, Table 2-4, Table 6-9**
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	**n/a**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
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**
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**
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, Table 6-3**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 6.5.3**
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 6.5.3**
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**
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 6.5.4**
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 6.5.4**
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**
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**
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**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
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**
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	**Sections 6.1, 6.2, 7, 8.8**
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**
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**
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**
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**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 8.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 8.4**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 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**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 8.7, Appendix I**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
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**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 9, Appendix J**
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	**n/a**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Appendix J**
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 10.1**
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 10.1**
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 10.2**
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	**Appendix I**
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 10.1, Appendix L**

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
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 10.1**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 10.2.1, Appendix C**
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 10.3, Appendix M**
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 10.3, Appendix M**
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 10.3**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 10.4, Appendix M**

APPENDIX B – LETTER AGREEMENT BETWEEN CITY OF SONOMA AND NMWD, MMWD, & VOMWD

Letter Agreement
Between and Among
Cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor
And
North Marin Water District, Marin Municipal Water District
and Valley of the Moon Water District
For
Establishing a Regional Alliance to Comply with
SB x7-7 the Water Conservation Act of 2009

Recitals

A. The Water Conservation Act of 2009 (SB x7-7) set a goal of achieving a 20% reduction in statewide urban per capita water use by the year 2020 and requires urban water retailers to set a 2020 urban per capita water use target. SB x7-7 provides that urban water retailers may plan, comply and report on a regional basis, individual basis or both.

B. The Parties to this Letter Agreement (Cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor and North Marin, Marin Municipal and Valley of the Moon Water Districts) are eligible to form a "Regional Alliance" pursuant to the *Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (DWR Methodologies) because the Parties receive water from a common water wholesale water supplier, the Sonoma County Water Agency (Agency). The Parties desire to establish a Regional Alliance for purposes of complying with SB x7-7.

C. The Parties and the Agency are signatories to the Sonoma-Marin Saving Water Partnership Memorandum of Understanding (S-MSWP MOU) that provides for the identification and implementation of regional water conservation programs and tasks as directed by the Water Advisory Committee (WAC). The S-MSWP MOU requires financial and reporting commitments for implementation of water conservation programs.

Agreement for Regional Alliance Target Setting and Reporting

1. Regional Alliance Formation and Target Setting

Pursuant to the DWR Methodologies, the Parties hereby form a Regional Alliance and agree to send a letter to the Department of Water Resources (DWR) prior to July 1, 2011 informing DWR that a Regional Alliance has been formed. The Parties agree that the Regional Alliance Target will be established using Option 1 (as Option 1 is described in the DWR Methodologies) and that each Party will include the Regional Alliance Target in its individual 2010 Urban Water Management Plan.

2. Regional Alliance Review

No later than December 31, 2015, the Parties agree to review and re-analyze the Regional Alliance and Regional Alliance Target as part of the preparation of the 2015 Urban Water Management Plan.

3. Regional Alliance Reporting

The Parties agree to prepare Regional Alliance Reports pursuant to the DWR Methodologies including but not limited to the following information: baseline gross water use and service area population, individual 2015 and 2020 water use targets for each Party and for the Regional Alliance, compliance year gross water use and service area population, and adjustments to gross water use in compliance year. The information will be provided by each Party and reported in the annual S-MSWP report in addition to the information required in the annual report, as outlined in the S-MSWP MOU.

4. Regional Water Supply Planning

The Parties agree to participate in discussions regarding regional water supply planning.

5. Regional Alliance Dissolution

The Parties agree that each Party can withdraw from the Regional Alliance at any time without penalty by giving written notice to all other Parties. If a Party withdraws from the Regional Alliance, the Parties agree that the Regional Target will be recalculated among remaining participating Parties as set forth in the DWR Methodologies and in Section 2 above.

6. Miscellaneous

This Letter Agreement shall be between and among those Parties that have executed this Letter Agreement by May 1, 2011. If all Parties have not executed this Letter Agreement by said date, the Parties who have executed this Letter Agreement by May 1, 2011, agree that the Regional Target will be recalculated among participating Parties as set forth in the DWR Methodologies and in Section 2 above.

7. Letter Agreement Authorization

This Letter Agreement may be signed in counterparts. By signing below, each signatory states that he or she is authorized to sign this Letter Agreement on behalf of the Party for which he or she is signing.

_____ _____

Name: _____ Date

City of Santa Rosa

_____ _____

Name: _____ Date

City of Rohnert Park

_____ _____

Name: _____ Date

City of Sonoma

_____ _____

Name: _____ Date

City of Cotati

Name: _____

City of Petaluma

Date

Name: _____

Town of Windsor

Date

Name: _____

North Marin Water District

Date

Name: _____

Marin Municipal Water District

Date

Name: _____

Valley of the Moon Water District

Date

CITY OF SONOMA

RESOLUTION NO. 17 - 2016

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SONOMA ADOPTING THE CITY OF SONOMA 2015 UPDATE TO THE URBAN WATER MANAGEMENT PLAN

WHEREAS, the Urban Water Management Planning Act, Water Code Section 10610 et seq., (the Act) requires that every urban water supplier which provides 3,000 acre feet or more of water annually, or which directly or indirectly supplies water for municipal purposes to more than 3,000 customers, shall prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Water Conservation Act of 2009, Senate Bill SBx7-7, requires a 20% reduction in per capita water use by 2020; and

WHEREAS, requirements of the Water Conservation Act of 2009 applicable to urban water suppliers may be incorporated into the Urban Water Management Plan; and

WHEREAS, the Urban Water Management Plan must be adopted after public review and a public hearing by the City, and after adoption by the City Council must be filed with the California Department of Water Resources and sent to the State Library; and

WHEREAS, the City of Sonoma has prepared the City of Sonoma 2015 Update to the Urban Water Management Plan, including SBx7-7 20% by 2020 water use reduction goals per the requirements of the Urban Water Management Planning Act; and

WHEREAS, the Sonoma City Council conducted a public hearing on the City of Sonoma 2015 Urban Water Management Plan, including the SBx7-7 20% by 2020 water use reduction goals on June 6, 2016; and

WHEREAS, the City of Sonoma published a notice on the public hearing on May 24, 2016 in the Sonoma Index-Tribune; and

WHEREAS, adoption of the Urban Water Management Plan pursuant to this resolution is exempt from the requirements of the California Environmental Quality Act (CEQA) pursuant to Sections 15307 and 15308 of the CEQA Guidelines as action by a regulatory agency for protection of natural resources and the environment that includes procedures for protection of the environment.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Sonoma as follows:

1. The City of Sonoma 2015 Urban Water Management Plan, including the Water Conservation Act SBx7X7 20% by 2020 water-use reduction goals, Method 1, are hereby adopted.

2. City staff is hereby directed to submit the City of Sonoma 2015 Urban Water Management Plan to the California Department of Water Resources and the California State Library within 30 days of adoption of the Plan.

ADOPTED this 6th day of June, 2016 by the following vote:

AYES:	Hundley, Cook, Gallian, Agrimonti, Edwards
NOES:	None
ABSENT:	None

Laurie Gallian, Mayor

ATTEST:

Gay Johann
Assistant City Manager/City Clerk

APPENDIX D – 2015 URBAN WATER MANAGEMENT PLAN WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURES UPDATE

In this appendix report 2015 data presented is not actual City of Sonoma year 2015 water use, but the estimated water use for the City based on the same baseline projection assumptions used to project year 2020-2040 water use. Actual 2015 water use was not used for the projection since year 2015 was a drought year. The State of California mandated a 25% statewide reduction in municipal water use as compared to the year 2013 water use. This historic drought impacted all water across the state, including the City of Sonoma. Actual 2015 water use is reported previously in the 2015 UWMP. Again, the 2015 water use projection presented in this appendix is based on non-drought, not-actual baseline data.

Due to the length of the 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, it is included as a separate document.

APPENDIX E – PASSIVE SAVINGS PROJECTION BACKGROUND

Plumbing codes and appliance standards for toilets, urinals, clothes washers, and showerheads will continue to reduce indoor residential and non-residential water demands in the future. This reduction in demand is accounted for in Maddaus Water Management Decision Support System (DSS) Model. Background on the DSS Model as well as details on the method of determining plumbing code savings is presented in the following sections.

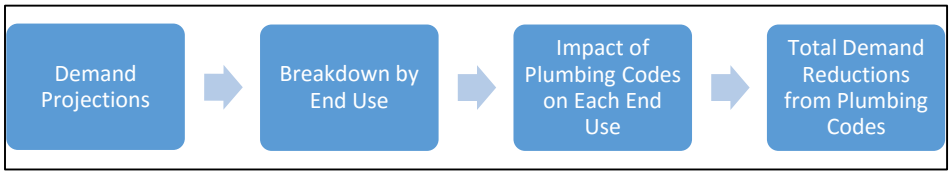
DSS Model Overview

The DSS Model prepares long-range, detailed demand projections. The purpose of the extra detail is to enable a more accurate assessment of the impact of water efficiency programs on demand. A rigorous modeling approach is especially important if the project will be subject to regulatory or environmental review.

The DSS Model is an end-use model that breaks down total water production (water demand in the service area) to specific water end-uses. The model uses a bottom-up approach that allows for multiple criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. The DSS Model may also use a top-down approach with a utility prepared water demand forecast.

To forecast urban water demands using the DSS Model, customer demand data are obtained from the water agency being modeled. The demand data are reconciled with available demographic data to characterize the water usage for each customer category in terms of number of users per account and per capita water use. The data are further analyzed to approximate the split of indoor and outdoor water usage in each customer category. The indoor/outdoor water usage is further divided into typical end uses for each customer category. Published data on average per-capita indoor water use and average per-capita end use are combined with the number of water users to calibrate the volume of water allocated to specific end uses in each customer category. In other words, the DSS Model checks that social norms from end studies on water use behavior (e.g., for flushes per person per day) are not exceeded.

The DSS Model evaluates conservation measures using benefit cost analysis with the present value of the cost of water saved ($/Acre-Foot). Benefits are based on savings in water and wastewater facility operations and maintenance (O&M). The figure below illustrates the process for forecasting conservation water savings, including the impacts of fixture replacement due to plumbing codes and standards already in place.



The DSS Model has been used for practical applications of conservation planning in over 250 service areas representing 20 million people including extensive efforts nationally in California, Colorado, Hawaii, Idaho, Utah, Georgia, Florida, North Carolina, Tennessee, Oregon, Texas, Ohio, and internationally in Australia, New Zealand and Canada. The

California Urban Water Conservation Council did a peer review and has endorsed the model since 2006. The model is offered to all of their members for use to estimate water demand, plumbing code, and conservaiton program savings. For more information, please see the CUWCC Website: https://www.cuwcc.org/Resources/Planning-Tools-and-Models?folderId=776&view=gridview&pageSize=10.

DSS Model Assumptions

The table below shows the key assumptions used in the DSS Model in determining projected demands with and without plumbing codes. The assumptions having the most dramatic effect on future demands are the natural replacement rate of fixtures, how residential or commercial future use is projected, and finally the percent of estimated real water losses.

Table E-1. List of Key Assumptions

Parameter	Model Input Value, Assumptions, and Key References				
Model Start Year	2015				
Water Demand Factor Year (Base Year)	2008-2013				
Non-Revenue Water in Start Year	7.5%				
	This value is based on 2008-2014 historical NRW and can be found in the green NRW section of the DSS Model.				
Population Projection Source	ABAG Plan Bay Area Projections 2013 (ABAG, 2013).				
Employment Projection Source	ABAG Plan Bay Area Projections 2013 (ABAG, 2013).				
Base Year Water Use Profile					
Customer Categories	**Start Year Accounts**	**Total Water Use Distribution**	**Demand Factors (gpd/acct)**	**Indoor Use %**	**Residential Indoor Water Use**
Single Family	3,539	59.9%	296	48%	62
Multifamily	267	14.6%	957	56%	50
Business	302	12.8%	739	61%	N/A
Irrigation	81	7.1%	1,525	0%	N/A
Other	298	5.7%	333	30%	N/A
Total	4,487	100%	N/A	N/A	N/A
Residential End Uses	Key Reference: CA DWR Report "California Single Family Water Use Efficiency Study," (DeOreo, 2011 – Page 28, Figure 3: Comparison of household end-uses) and AWWARF Report Key Reference: AWWARF Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016). Table 2-A. Water Consumption by Water-Using Plumbing Products and Appliances - 1980-2012. PERC Phase 1 Report. Plumbing Efficiency Research Coalition. 2013. http://www.map-testing.com/content/info/menu/perc.html Model Input Values are found in the "End Uses" section of the DSS Model on the "Breakdown" worksheet.				
Non-Residential End Uses, %	Key Reference: AWWARF Report "Commercial and Institutional End Uses of Water" (Dziegielewski, 2000 – Appendix D: Details of Commercial and Industrial Assumptions, by End Use). Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study." February 2008. Model Input Values are found in the "End Uses" section of the DSS Model on the "Breakdown" worksheet.				

Parameter	Model Input Value, Assumptions, and Key References
Efficiency Residential Fixture Current Installation Rates	U.S. Census, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Key Reference: California Urban Water Conservation Council Potential Best Management Practice Report "High Efficiency Plumbing Fixtures – Toilets and Urinals" (Koeller, 2005 – Page 42, Table 8 and Table 9: Residential toilet installation rates in California). Key Reference: Consortium for Efficient Energy (www.cee1.org). Model Input Values are found in the "Codes and Standards" green section of the DSS Model by customer category fixtures.
Water Savings for Fixtures, gal/capita/day	Key Reference: AWWARF Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016). Key Reference: CA DWR Report "California Single Family Water Use Efficiency Study" (DeOreo, 2011 – Page 28, Figure 3: Comparison of household end-uses). WCWCD supplied data on costs and savings; professional judgment was made where no published data was available. Key Reference: California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014. Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model.
Non-Residential Fixture Efficiency Current Installation Rates	Key Reference: 2010 U.S. Census, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Assume commercial establishments built at same rate as housing, plus natural replacement. Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study." February 2008. Model Input Values are found in the "Codes and Standards" green section of the DSS Model by customer category fixtures.
Residential Frequency of Use Data, Toilets, Showers, Washers, Uses/user/day	Key Reference: AWWARF Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016). Summary values of the report can be found in the following presentation: http://watersmartinnovations.com/documents/pdf/2014/sessions/2014-T-1458.pdf Key Reference: California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014. Key Reference: Alliance for Water Efficiency, The Status of Legislation, Regulation, Codes & Standards on Indoor Plumbing Water Efficiency, January 2016. Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model and confirmed in each "Service Area Calibration End Use" worksheet by customer category.
Non-Residential Frequency of Use Data, Toilets, Urinals, and Uses/user/day	Key References: Estimated based on AWWARF Report "Commercial and Institutional End Uses of Water" (Dziegielewski, 2000 – Appendix D: Details of Commercial and Industrial Assumptions, by End Use). Based on three studies of office buildings in which the numbers varied from 2.0 to 3.45 toilet flushes per employee per day: Darell Rogers cited in Schultz Communications (1999); Konen Plumbing Engineer July/August 1986); and Eva Opitz cited in PMCL (1996). Fixture uses over a 5-day work week are prorated to 7 days. Non-residential 0.5 gpm faucet standards per Table 2-A. Water Consumption by Water-Using Plumbing Products and Appliances - 1980-2012. PERC Phase 1 Report. Plumbing Efficiency Research Coalition. 2013. http://www.map-testing.com/content/info/menu/perc.html Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model, and confirmed in each "Service Area Calibration End Use" worksheet by customer category.

Parameter	Model Input Value, Assumptions, and Key References
Natural Replacement Rate of Fixtures (% per year)	Residential Toilets 2% (1.28 gpf and lower), 3% (1.6 gpf toilets), 4% (3.5 gpf and higher toilets)
	Non-Residential Toilets 2% (1.6 gpf and lower), 3% (3.5 gpf and higher toilets)
	Residential Showers 4% (corresponds to 25-year life of a new fixture)
	Residential Clothes Washers 10% (based on 10-year washer life). Key References: "Residential End Uses of Water" (DeOreo, 2016) and "Bern Clothes Washer Study, Final Report" (Oak Ridge National Laboratory, 1998).
	Model Input Value is found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model.
Residential Future Water Use	Increases Based on Population Growth and Demographic Forecast
Non-Residential Future Water Use	Increases Based on Employment Growth and Demographic Forecast

The DSS Model forecasts service area water fixture use. In the codes and standards part of the DSS Model, specific fixture end use type (point of use fixture or appliance), average water use, and lifetime are compiled. Additionally, state and national plumbing codes and appliance standards for toilets, urinals, showers, and clothes washers are modeled by customer category. These fixtures and plumbing codes can be added to, edited, or deleted by the user. This yields two demand forecasts: 1) with plumbing codes, and 2) without plumbing codes.

Plumbing Codes and Legislation

The DSS Model incorporates the following items as a "code" meaning that the savings are assumed to occur and are therefore "passive" savings.

- National Plumbing Code
- CALGreen
- AB 715
- AB 407

National Plumbing Code

The Federal Energy Policy Act of 1992, as amended in 2005, mandates that only fixtures meeting the following standards can be installed in new buildings:

- Toilet – 1.6 gal/flush maximum
- Urinals – 1.0 gal/flush maximum
- Showerhead – 2.5 gal/min at 80 psi
- Residential faucets – 2.2 gal/min at 60 psi
- Public restroom faucets – 0.5 gal/min at 60 psi
- Dishwashing pre-rinse spray valves – 1.6 gal/min at 60 psi

Replacement of fixtures in existing buildings is also governed by the Federal Energy Policy Act, which mandates that only devices with the specified level of efficiency (as shown above) can be sold as of 2006. The net result of the plumbing code is that new buildings will have more efficient fixtures and old inefficient fixtures will slowly be replaced with new,

more efficient models. The national plumbing code is an important piece of legislation and must be carefully taken into consideration when analyzing the overall water efficiency of a service area.

In addition to the plumbing code, the U.S. Department of Energy regulates appliances, such as residential clothes washers, further reducing indoor water demands. Regulations to make these appliances more energy efficient have driven manufactures to dramatically reduce the amount of water these machines use. Generally, front loading washing machines use 30-50% less water than conventional models (which are still available). In a typical analysis, the DSS Model forecasts a gradual transition to high efficiency clothes washers (using 12 gallons or less) so that by the year 2025 that will be the only type of machines available for purchase. In addition to the industry becoming more efficient, rebate programs for washers have been successful in encouraging customers to buy more water efficient models. Given that machines last about 10 years, eventually all machines on the market will be the more water efficient models. Energy Star washing machines have a water factor (WF) of 6.0 or less - the equivalent of using 3.1 cubic feet (or 23.2 gallons) of water per load. The maximum water factor for residential clothes washers under current federal standards is 9.5. The water factor equals the number of gallons used per cycle per cubic foot of capacity. Prior to year 2000, the water factor for a typical new residential clothes washer was about 12. In March 2015, the federal standard reduced the maximum water factor for top- and front-loading machines to 8.4 and 4.7, respectively. In 2018, the maximum water factor for top-loading machines will be further reduced to 6.5. For commercial washers, the maximum water factors were reduced in 2010 to 8.5 and 5.5 for top- and front-loading machines, respectively. Beginning in 2015, the maximum water factor for Energy Star certified washers was 3.7 for front-loading and 4.3 for top-loading machines. In 2011, the EPA estimated that Energy Star washers comprised more that 60% of the residential market and 30% of the commercial market (Energy Star, 2011). A new Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s.

State Building Code – 2010 CALGreen

The 2010 CALGreen requirements effect all new development in the State of California after January 1, 2011. The new development requirements under CALGreen are listed in the following figure. The DSS Model includes the CALGreen requirements that effect all new development in the State of California after January 1, 2011. The DSS Model modeled water savings from the CALGreen building code by adding Multi-family and Commercial customer categories as appropriate to applicable conservation measures.

Table E-2. 2010 CALGreen Building Code Summary Table

2010 CALGreen Building Code						
Building Class	**Component**	**Effective Date***	**Indoor Fixtures Included**	**Indoor Requirement**	**Landscaping & Irrigation Requirements**	**Are the Requirements Mandatory?**
Residential	Indoor	1/1/2011	Toilets, Showers, Lavatory & Kitchen Faucets, Urinals	Achieve 20% savings overall below baseline		Yes
	Outdoor	1/1/2011			Provide weather adjusting controllers	Yes
Non Residential	Indoor	1/1/2011	Submeter leased spaces	Only if building >50,000 sq. ft. & if leased space use >100 gpd		Yes
			Toilets, Showers, Lavatory & Kitchen Faucets, Wash Fountains, Metering Faucets, Urinals	Achieve 20% savings overall below baseline		Yes
	Outdoor	1/1/2011			Provide water budget	> 1,000 sq. ft. landscaped area
					Separate meter	As per Local or DWR ordinance
					Prescriptive landscaping requirements	> 1,000 sq. ft. landscaped area
					Weather adjusting irrigation controller	Yes

* Effective date is 7/1/2011 for toilets.

State Plumbing Code – AB 715

Plumbing codes for toilets, urinals, showerheads, and faucets were initially adopted by California in 1991, mandating the sale and use of ultra-low flush 1.6 gallon per flush (gpf) toilets (ULFTs), 1 gpf urinals, and low-flow showerheads and faucets. California Code of Regulations Title 20 California State Law (AB 715) required High Efficiency Toilets and High Efficiency Urinals be exclusively sold in the state by 2014. Effective January 1, 2014, Assembly Bill (AB) 715 (enacted in 2007) required that toilets and urinals sold and installed in California cannot have flush ratings exceeding 1.28 and 0.5 gallons per flush, respectively.

California State Law – SB 407

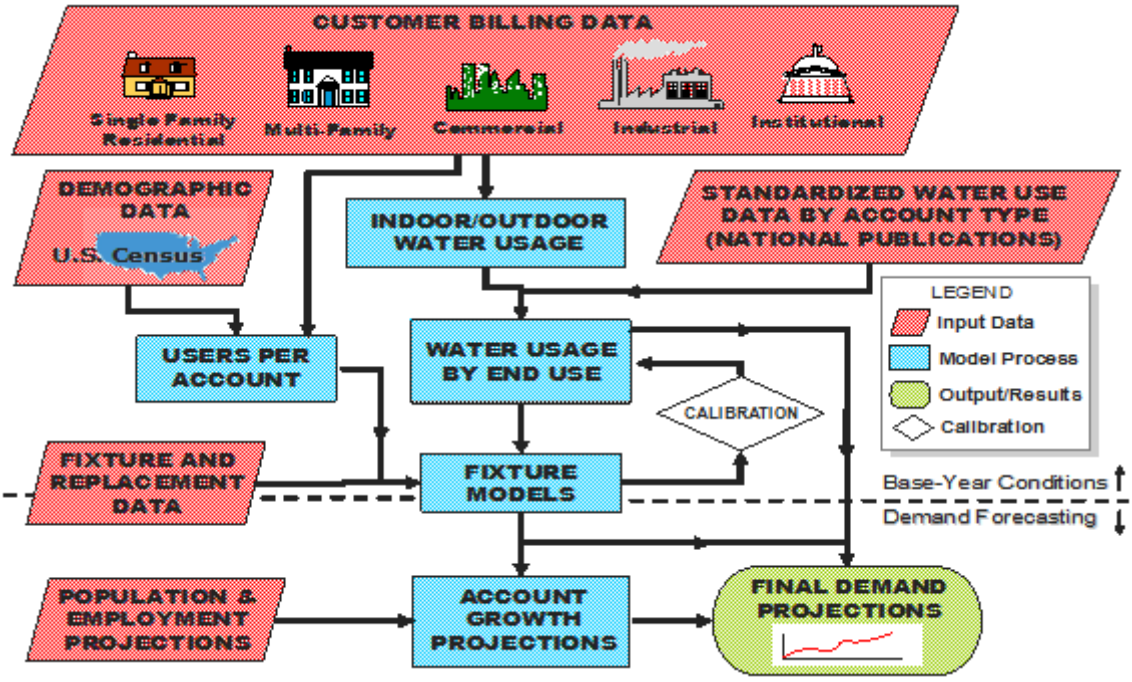
SB 407 addresses plumbing fixture retrofits on resale or remodel. The DSS Model carefully takes into account the overlap with SB 407, the plumbing code (natural replacement), CALGreen, AB 715 and rebate programs (such as toilet rebates). SB 407 (enacted in 2009) requires that properties built prior to 1994 be fully retrofitted with water conserving fixtures by the year 2017 for single-family residential houses and 2019 for multi-family and commercial properties. SB

407 program length is variable and continues until all the older high flush toilets have been replaced the service area. The number of accounts with high flow fixtures is tracked to make sure that the situation of replacing more high flow fixtures than actually exist does not occur. SB 837 (enacted in 2011) requires that sellers of real property disclose on their Real Estate Transfer Disclosure Statement whether their property complies with these requirements. Additionally, SB 407 conditions issuance of building permits for major improvements and renovations upon retrofit of non-compliant plumbing fixtures. Each of these laws is intended to accelerate the replacement of older, low efficiency plumbing fixtures, and ensure that only high-efficiency fixtures are installed in new residential and commercial buildings.

Plumbing code related water savings are considered reliable, long-term savings, and can be counted on over time to help reduce the City's overall system water demand. The demand projections including plumbing code savings further assumes no active involvement by the water utility, and that the costs of purchasing and installing replacement equipment (and new equipment in new construction) are borne solely by the customers, occurring at no direct utility expense. The inverse of the Fixture Life is the natural replacement rate, expressed as a percent (i.e., 10 years is a rate of 10% per year).

The following figure conceptually describes how plumbing codes are incorporated into the flow of information in the DSS Model.

Figure E-1. DSS Model Overview Used to Make Potable Water Demand Projections



DSS Model Fixture Replacement

The DSS Model is capable of modeling multiple types of fixtures, including fixtures with slightly different design standards. For example, currently toilets can be purchased that flush at a rate of 0.8 gallons per flush (gpf), 1.0 gallon per flush or 1.28 gallons per flush. The 1.6 gpf and higher gallons per flush toilets still exist but can no longer be purchased in California. Therefore, they cannot be used for replacement or new installation of a toilet. So, the DSS Model utilizes a fixture replacement table to decide what type of fixture should be installed when a fixture is replaced or a new fixture is installed. The replacement of the fixtures is listed as a percentage, as shown in the following figure. A value of 100% would indicate that all the toilets sold would be of one particular flush volume. A value of 75% means that three out of every four toilets installed would be of that particular flush volume type. The DSS Model contains a pair of replacement tables for each fixture type and customer category combination (i.e., Residential Single Family toilets,

Residential Multifamily toilets, Commercial toilets, Residential clothes washing machines, Commercial washing machines, etc.).

In the following example, the DSS Model includes the effects of the Federal Policy Act and AB 715 on each toilet fixture type. This DSS Model feature determines the "saturation" of 1.6 gpf toilets as the Federal Policy Act was in effect from 1992-2014 for 1.6 gpf toilet replacements.

Figure E-2. Example Toilet Replacement Percentages by Type of Toilet

Replacement Appliance Market Shares					
Year	High Use Toilet Residential	1.6 gpf ULFT Residential	1.28 gpf HET Residential	<1.0 gpf Toilet Residential	Total
2015	0%	0%	100%	0%	100%
2020	0%	0%	90%	10%	100%
2025	0%	0%	75%	25%	100%
2030	0%	0%	65%	35%	100%
2040	0%	0%	50%	50%	100%
New Appliance Market Shares					
Year	High Use Toilet Residential	1.6 gpf ULFT Residential	1.28 gpf HET Residential	<1.0 gpf Toilet Residential	Total
2015	0%	0%	100%	0%	100%
2020	0%	0%	90%	10%	100%
2025	0%	0%	75%	25%	100%
2030	0%	0%	65%	35%	100%
2040	0%	0%	50%	50%	100%

APPENDIX F – DRAFT 2015 ANNUAL REPORT – SONOMA VALLEY GROUNDWATER MANAGEMENT PROGRAM

Due to the length of the DRAFT 2015 Annual Report – Sonoma Valley Groundwater Management Program, it is included as a separate document.

APPENDIX G – 2006 RESTRUCTURED AGREEMENT FOR WATER SUPPLY

Due to the length of the 2006 Restructured Agreement for Water Supply, it is included as a separate document.

ORDINANCE NO. 2000-6

AN ORDINANCE OF THE CITY OF SONOMA INSTITUTING WATER WASTE PROHIBITIONS

The City Council of the City of Sonoma does hereby ordain as follows:

SECTION 1.
Section 13.04.024 "Water Waste Prohibitions" is hereby added to Chapter 13.04 "City Water System" of the Sonoma Municipal Code to read as follows:

Section 13.04.024 - Water Waste Prohibitions

A. Purpose. The purpose of this Section is to promote water conservation and the efficient use of potable water furnished by the City of Sonoma by eliminating intentional or unintentional water waste when a reasonable alternative solution is available, and by prohibiting use of equipment which is wasteful.

B. Nonessential Uses. During such period of time when the Sonoma County Water Agency has declared a stage 2 or stage 3 water conservation condition, or whenever the City Council of the City of Sonoma shall declare the existence of a water conservation condition, no customer of the City of Sonoma shall use or permit the use of potable water from the City of Sonoma for residential, commercial, institutional, industrial, agricultural, or other purpose for the following nonessential uses:

1. The washing of sidewalks, walkways, driveways, parking lots and other hard-surfaced areas by direct hosing, except as may be necessary to properly dispose of or wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety;

2. The escape of water through breaks or leaks within the customers plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the City of Sonoma, is a reasonable time within which to correct such break or leak or, as a minimum, to stop the flow of water from such break or leak;

3. Irrigation in a manner or to an extent which allows excessive run off of water or unreasonable over-spray of the areas being watered. Every customer is deemed to have his water system under control at all times, to know the manner and extent of his water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;

4. Washing cars, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle;

5. Water for non-recycling decorative water fountains;

6. Water for single pass evaporative cooling systems for air conditioning in all connections installed after April 5, 2000 unless required for health or safety reasons;

7. Water for new non-recirculating conveyor car wash systems; and

8. Water for new non-recirculating industrial clothes wash systems.

C. Exempt Water Uses. All water use associated with the operation and maintenance of fire suppression equipment or employed by the City of Sonoma for water quality flushing and sanitation purposes shall be exempt from the provisions of this section. Use of water supplied by a private well or from a reclaimed waste water, gray water or rainwater utilization system is also exempt.

D. Variances. Any customer of the City of Sonoma may make written application for a variance. Said application shall describe in detail why applicant believes a variance is justified.

1. The City Manager or his or her designee may grant variances for use of water otherwise prohibited by this section upon finding and determining that failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public; or, cause an unnecessary and undue hardship on applicant or public, including but not limited to, adverse economic impacts, such as loss of production or jobs.

2. The decision of the City Manager or his or her designee may be appealed to the City Council by submitting a written appeal to the City Clerk within fifteen (15) calendar days of the date of the decision. Upon granting any appeal, the City Council may impose any conditions it determines to be just and proper. Variances granted by the City Council shall be prepared in writing and the City Council may require the variance be recorded at applicant's expense.

E. Enforcement and Fees. Depending on the extent of the water waste the City of Sonoma may, after written notification to customer and a reasonable time to correct the violation as solely determined by the City of Sonoma, take some or all of the following actions. Penalties, fees and charges noted below shall be established by resolution of the City of Sonoma. The City shall not be obligated to take any of the actions set forth below in any certain order, nor is the City prevented from selecting any one or all of the items listed below as the means to enforce this ordinance in any given situation. The methods of enforcement set forth below are not mutually

exclusive, and the use of one form of enforcement shall not prevent the subsequent use of another form of enforcement.

1. Written notice to the customer of the water waste violation including a specified period of time to correct the violation.

2. Personal contact with the customer at the address of the water service. If personal contact is unsuccessful, written notice of the violation including a date that the violation is to be corrected may be left on the premises, with a copy of the notice sent by certified mail to the customer.

3. The City of Sonoma may install a flow-restricting device on the service line.

4. The City of Sonoma may levy a water waste fee to the customer.

5. The City of Sonoma may cause termination of water service and the charge for same shall be billed to the customer. Except in cases of extreme emergency as solely determined by the City Manager or his or her designee, service shall not be reinstated until verified by the City of Sonoma that the violation has been corrected and all charges and fees have been paid.

SECTION II. SEVERABILITY

If any section, subsection, sentence, clause, phrase, or word of this ordinance is for any reason held to be invalid, the validity of the remaining portion of this ordinance shall not be affected.

SECTION III. ENVIRONMENTAL DETERMINATION

The City of Sonoma determines that this ordinance is a Class 7 categorical exemption under section 15307 of the California Environmental Quality Act, which exempts actions by regulatory agencies for protection of natural resources.

SECTION IV. EFFECTIVE DATE

This ordinance shall take effect thirty (30) days from the date of its passage. Before expiration of fifteen (15) days after its passage, this ordinance or summary thereof, as provided in California Government Code Section 39633, shall be published at least once in a newspaper of general circulation published and circulated in the City of Sonoma.

Adopted and approved this ____ day of May, 2000.

AYES: _____
NOES: _____
ABSTAIN: _____

ABSENT: _____

_____

MAYOR

ATTEST:

_____

CITY CLERK

CITY OF SONOMA

ORDINANCE NO. 09 - 2009

AN ORDINANCE AMENDING CHAPTER 13.10 WATER SHORTAGE AND CONSERVATION PLAN OF TITLE 13 OF THE SONOMA MUNICIPAL CODE

The City Council of the City of Sonoma does ordain as follows:

SECTION 1. Chapter 13.10 Water Shortage and Conservation Plan of the Sonoma Municipal Code is hereby amended in its entirety to read as follows:

Chapter 13.10
WATER SHORTAGE AND CONSERVATION PLAN

Sections:

13.10.010 Purpose and Authority.
The purpose of this Water Shortage and Conservation Plan is to conserve the water supply of the City for the greatest public benefit with particular regard to public health, fire protection, and domestic use; to conserve water by reducing waste; and to achieve water use reductions in response to water shortages that occur from time to time.

Nothing in this ordinance shall preclude the Council from passing an emergency resolution for the immediate curtailment of water use by its customers due to water supply shortages and delivery limitations caused by catastrophic events and conditions, either natural or unnatural.

13.10.020 Declaration of Policy.
It is declared that, because of the conditions prevailing in the City and in the County of Sonoma, the public health, safety, and welfare requires that the water resources available to the City be put to the maximum beneficial use to the extent to which they are capable, by promoting water conservation and the efficient use of potable water furnished by the City, eliminating intentional

or unintentional water waste when a reasonable alternative solution is available, and prohibiting use of equipment which is wasteful.

13.10.030 Definitions.

"Allotment" means the maximum quantity of water allowed for each customer over any applicable period as established in the water rationing provisions in this chapter.

"City" means the City of Sonoma acting by and through the City of Sonoma public works department as operator of the City of Sonoma water system.

"City Manager" is the City Manager of the City of Sonoma.

"Council" is the City Council of the City of Sonoma.

"Customer" means any person, whether within or without the geographic boundaries of the City of Sonoma, who uses water supplied by the City and shall also include any non-occupant property owners.

"Director" is the Public Works Director of the City of Sonoma.

"Excess-use" means the usage of water by a water customer in excess of the water allotment provided under the water rationing provisions of this chapter, over an applicable period.

"GPD" means gallons per day.

"Municipal Code" means the Municipal Code of the City of Sonoma.

"Ornamental fountain" means a fountain that uses City of Sonoma potable water and may or may not have a system that recirculates the water and is not used for habitation of pet fish or other pet marine creatures.

"Person" means any person, firm, partnership, association, corporation, company, organization, or governmental entity.

"Service interruption" means the temporary suspension of water supply, or reduction of pressure below that required for adequate supply, to any customer, portion of a water supply, or entire system.

"Water rationing" means procedures established to provide for the systematic distribution of critically-limited water supplies, in order to balance demand and limited available supplies, and to assure that sufficient water is available to preserve public health and safety.

13.10.040 Authorization.

The City Manager or his/her designee is authorized and directed to implement the applicable provisions of this chapter upon determination that such implementation is necessary to protect the public health, safety, and welfare.

13.10.050 Application.
The provisions of this chapter shall apply to all persons, customers, and property served by the City.

13.10.060 Waste of Water Prohibited.
It is unlawful for a customer to permit potable water to escape down a gutter, ditch, or other surface drain and/or to fail to repair a controllable leak of water due to defective plumbing. No customer shall use or permit the use of potable water from the City for residential, commercial, institutional, industrial, agricultural, or other purpose for the non-essential uses as defined in Section 13.10.060(A).

A. Nonessential Uses. Non-essential uses are defined as follows:
   1. The washing of sidewalks, walkways, driveways, parking lots, and other hard-surfaced areas by direct hosing, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety provided that the disposal of such is in conformance with Chapter 13.32 Stormwater Management and Discharge Control;
   2. The escape of water through breaks or leaks within the customers plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the City is a reasonable time to correct such break or leak or, at a minimum, to stop the flow of water from such break or leak;
   3. Irrigation in a manner or to an extent which allows excessive run off of water or unreasonable over-spray of the areas being watered. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of his/her water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
   4. Washing cars, boats, trailers, or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle; and
   5. Water for non-recirculating conveyor car wash systems.

B. Exempt Water Uses. Use of water supplied by a private well or from a reclaimed wastewater, grey water, or rainwater utilization system is exempt from this chapter.

13.10.070 Water Conservation Stages.
The Council may declare any of the water shortage stages set forth in Subsections 13.10.070 (A-D) by resolution. When a water shortage stage has been declared by the Council, it shall be a violation of this section for any customer of the City to knowingly make, cause, use, or permit the use of City supplied water for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner in excess of or contrary to the applicable requirements set forth below.

A. Stage 1. Voluntary Conservation – Water Shortage Alert. The Council may by resolution declare a Stage 1 water shortage upon notification that the Board of Directors for the Sonoma County Water Agency has declared up to 15 percent reduction in Russian River water supply delivery to the City. In order to achieve an overall system-wide reduction goal

of up to 15 percent of Russian River water supply deliveries, all potable water customers of the City shall be requested to:

1. Apply irrigation water only during the evening and early morning hours to reduce evaporation losses.
2. Inspect all irrigation systems, repair leaks, and adjust spray heads to provide optimum coverage and eliminate avoidable over-spray.
3. For irrigation valves controlling water applied to lawns, vary the minutes of run-time consistent with fluctuations in weather.
4. Reduce minutes of run-time for each irrigation cycle if water begins to run-off to gutters and ditches before the irrigation cycle is completed.
5. Become informed about and adhere to the City's Water Waste Prohibitions as established in Section 13.10.060.
6. Utilize water conservation rebate and other incentive programs to replace high water-use plumbing fixtures and appliances with water-efficient models.
7. Utilize City information on using water efficiently, reading water meters, repairing ordinary leaks, and applying water efficiently to landscaping.

B. Stage 2. Mandatory Conservation – Water Shortage. The Council may by resolution declare a Stage 2 water shortage upon notification that the Board of Directors of the Sonoma County Water Agency has declared a 16 percent to 25 percent reduction in Russian River water supply delivery to the City or recommendation by the Director that Stage 2 must be implemented in order to meet Stage 1 reduction goals. When a Stage 2 water shortage has been declared by the Council, the following restrictions shall apply in addition to the restrictions set forth in Section 13.10.070(A):

1. Refilling or initial filling of a swimming pool shall be prohibited;
2. Use of water for non-recirculating ornamental fountains by commercial customers shall be prohibited;
3. Non-commercial washing of privately-owned motor vehicles, trailers, and boats except from a bucket and a hose equipped with a shut-off nozzle shall be prohibited;
4. Any use of water from a fire hydrant except for fighting fires shall be prohibited. Use for essential construction needs may be permitted by the Director upon submittal of a permit application for construction water;
5. Use of potable water for dust control at construction sites shall be prohibited;
6. Residential and commercial irrigation shall be prohibited except on specific days and times as set forth by Resolution of the Council;
7. Other uses deemed by Council resclution to be non-essential by the Council.

C. Stage 3. Mandatory Compliance – Severe Water Shortage. The Council may by resolution declare a Stage 3 water shortage upon notification by the Director that the Board of Directors of the Sonoma County Water Agency has declared a 26 percent to 40 percent reduction in Russian River water supply delivery to the City or recommendation by the Director that Stage 3 must be implemented in order to meet Stage 2 reduction goals. When a Stage 3 water shortage has been declared by Council, the following restrictions shall apply in addition to the restrictions as set forth in Sections 13.10.070(A) and 13.10.070(B):

1. Watering of athletic fields and turf areas in public and private parks shall be limited to seventy-five (75) percent of the water usage in year 2006 for the same period of time; or

if 2006 billing data is unavailable or not appropriate for use, a different baseline year may be used as approved by the Director;

2. Non-commercial washing of vehicles shall be prohibited;
3. Use of water for ornamental fountains shall be prohibited; and
4. Other uses deemed by Council resolution to be non-essential.

D. Stage 4. Mandatory Water Rationing – Critical Water Shortage. The Council may by resolution declare a Stage 4 water shortage upon notification that the Board of Directors of the Sonoma County Water Agency has declared a reduction of greater than 40 percent in Russian River water supply delivery to the City or recommendation by the Director that Stage 4 must be implemented in order to meet Stage 3 reduction goals. During Stage 4 water shortage, the restrictions set forth in Subsections 13.10.070(A), 13.10.070(B), and 13.10.070(C) shall be enforced along with the restrictions in this section and any water rationing plan adopted by the Council.

1. The Director shall develop a water rationing plan establishing water allotments for residential, commercial, and institutional customers of the City that takes into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply and the City's local water supply. The water rationing plan shall include, but not be limited to, the following analyses and evaluations:
   a. Water allocation for City customers based on (i) the amount of water available for the City's water service area, (ii) the nature of the customer's use, and (iii) the economic and fiscal impacts of water supply reductions;
   b. A Stage 4 water shortage rate structure for conservation "tiered" rates, drought surcharges, excess-use penalties, and fees;
   c. A systematic plan for temporary service interruptions to all or part of its water system, as may be deemed appropriate to further extend limited and/or dwindling water supplies;
   d. A water billing plan that identifies the Finance Department's responsibilities for obtaining and monitoring customer data and water usage to effect the water rationing plan; and
   e. A public outreach and notification plan for implementing temporary service interruptions and water rationing.
2. No new water connections shall be permitted during a Stage 4 water shortage except as approved by the City Manager for public health and safety reasons.
3. No new water agreements to serve water shall be entered into by the City during a Stage 4 water shortage.

13.10.080 Exceptions and Application Procedures for Exceptions.

Any customer may make written application for an exception to the provisions of this chapter. Exception applications shall describe in detail the reasons the customer believes an exception is justified.

A. The City Manager may grant exceptions for use of water otherwise prohibited by this chapter upon finding and determining that failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public, or cause an unnecessary and undue hardship on applicant or the public, including but not limited to, adverse economic impacts, such as loss of production or jobs.

B. The decision of the City Manager may be appealed to the Council by submitting a written appeal to the City Clerk within fifteen (15) calendar days of the date the decision is served upon the applicant along with a copy of this chapter. Upon granting any appeal, the Council may impose any conditions it determines to be just and proper. Exceptions granted by the Council shall be prepared in writing and the Council may require the exception be recorded at the applicant's expense.

C. If the applicant fails to appeal the decision of the City Manager within the time prescribed under Section 13.10.080(B), the applicant waives all rights to an appeal of the decision of the City Manager and shall have failed to exhaust their administrative remedies.

13.10.090 Violation—Enforcement.

It is a violation for any customer to fail to comply with any requirement of this chapter or any resolution adopted in connection with this chapter. Each and every day, or portion thereof, during which a violation is committed, continued, or permitted by any person shall constitute a separate offense. Each offense shall be enforced as either (1) an infraction, or (2) an administrative penalty enforced as set forth in this chapter. The administrative penalties for violating a provision of this chapter shall be $100 for the first violation, $200 for a second violation of the same code section within the same year, and $300 for the third or any subsequent violations of the same code section within the same year. If any customer responsible for a violation of this chapter is a minor or incompetent, the parents or guardians of such persons shall be deemed responsible. Each person found responsible for a violation of this chapter shall be jointly and severally liable for such violation.

13.10.100 Violation—Procedure for Enforcement.

A. On the date of the initial site inspection or observation, the Director or his/her designee shall make personal contact with the customer at the address of the water service and serve the customer with an initial notice of the violation. This initial notice shall include (i) the date the property was inspected, (ii) the address or a definite description of the location where the violation occurred, such as a tax assessor parcel number (A.P.N.), (iii) the provision of this chapter or resolution adopted pursuant to this chapter that the person has violated and a description of the violation, (iv) a description of the action necessary to correct the violation, (v) a date that sets forth a reasonable time to correct the violation prior to the imposition of the administrative penalties in Section 13.10.090, and (vi) the name, date, and signature of the code enforcement officer that observed the violation. If personal contact cannot be made, the initial notice may be left on the premises, with a copy served by certified mail to the customer, any non-occupant property owner, and any other person the Director or his/her designee determines to be a responsible for a violation of this chapter.

B. Where a person deemed responsible for a violation of this chapter or resolution adopted in furtherance of this chapter fails to correct the violation within the time set forth in the initial notice, the Director or his/her designee shall issue a Notice and Order. Each Notice and Order shall contain (i) the date of the first inspection when the violation was identified, (ii) the address or a definite description of the location where the violation occurred, such as a tax assessor parcel number (A.P.N.), (iii) the section of this chapter or resolution adopted

pursuant to this chapter that the person has violated and a description of how the person has violated the section, (iv) a description of the action necessary to correct the violation and thereby avoid additional penalties for each day the violation continues, (v) the current amount of the penalty for the code violation(s) calculated from the date of the initial inspection, (vi) an explanation of how the penalty shall be paid, the time period in which it shall be paid, and the consequences of failure to pay the penalty, (vii) an order prohibiting the continuation or repeated occurrence of the code violation(s) described within administrative notice and order, (viii) the name, date, and signature of the code enforcement officer, (ix) a copy of this chapter, (x) a statement that the person has a right to be heard before an independent hearing officer if a hearing is requested within 15 days of the Notice and Order being served upon them, (xi) a form to request an administrative hearing, and (xii) a statement that failure to request an administrative hearing within 15 days of the date of the Notice and Order shall constitute waiver of the right to a hearing and failure to exhaust administrative remedies.

C. If a customer or other responsible person(s) files a timely request for a hearing, the Director shall work with the City Prosecutor to schedule an administrative hearing to be conducted in conformance with Sections 1.30.140 through 1.30.200.

D. Where a customer or other responsible person(s) fails to timely request an administrative hearing or the hearing officer issues a decision assessing penalties against a customer or responsible person(s), those penalties may be collected in conformance with Section 1.30.220 through 1.30.310 and may also be included in the customer's water bill.

13.10.110 Requiring Flow-Restricting Devices or Shutting Off Water

In addition to the penalties set forth by Section 13.10.090, the City Manager or his/her designee may order the installation of a flow-restricting device or terminate water service where there is good cause. Good cause includes, but is not limited to, evidence of recurring violations of this chapter, failure to timely pay administrative penalties, or recurring failure to pay water bills. Before any installation of a flow-restricting device or termination of water service, the City Manager or his/her designee must comply with the following requirements:

A. Before initiating any water termination process, the City Attorney shall be contacted to ensure all pertinent statutory requirements are followed.

B. Service of written notice the City Manager or his/her designee's decisions upon any customer billed by the City, occupants of the property, and any non-occupant property owners. This notice shall provide a copy of the City Manager or his/her designee's decisions, including the reasons for that decision; a written explanation of the good cause in support of installing the flow-restricting termination of water services; a copy of this chapter and Chapter 1.24 of the Municipal Code; a form notice to appeal; a statement that the customer other interested persons, including any other occupants of the property or any non-occupant property owners, have a right to be heard before the Council by exercising the right of appeal; City fees that may be assessed for filing an appeal; and a reference to the 15-day time limit for appealing the City Manager's or his/her designee's final decision to the Council in conformance with Chapter 1.24 of the Municipal Code.

C. If a customer or any other persons with an occupancy or ownership interest of the serviced property files a notice of appeal that meets the relevant requirements of such an appeal, the City Manager shall schedule a hearing as required under Chapter 1.24 of the Municipal Code.

D. On the date of the hearing before the Council, the customer and any interested persons shall be given the right to testify, call witnesses, and to present evidence relevant to concerning the matters giving rise to flow-restricting device or termination of water service.

E. After the hearing, the Council may utilize their powers to either affirm, reverse, or modify the City Manager's or his/her designee's decision.

13.10.120 Violation—Installation of a Flow-Restricting Device.
If the Council finds a water flow-restricting device should be installed, the Council shall establish a date by which the City will install the device and the Council shall further require the person(s) found responsible to reimburse the City its costs in installing the flow-restricting device. If the person(s) found responsible do not pay these installation costs after being billed for such costs by the City, the City Manager may utilize the procedures contained in Chapter 1.12 of the Municipal Code to recoup the City's installation costs.

13.10.130 Violation--Additional Remedy.
As an additional remedy, the violation of any provision of this chapter shall be deemed, and is declared to be, a public nuisance and may be abated in accordance with Chapter 1.12 of the Municipal Code.

SECTION 2. Repeal of Conflicting Ordinances. All former ordinances or parts thereof conflicting or inconsistent with the provisions of this ordinance are hereby repealed.

SECTION 3. Severability. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held invalid , such decision shall not affect the validity of the remaining portions of this Ordinance. The Council hereby declares that it should have adopted this ordinance and each section, subsection, sentence, clause, or phrase thereof irrespective of the fact that any one or more of sections, subsections, sentences, clauses or phrases be declared unconstitutional.

SECTION 4. Effective Date. This ordinance shall be in full force and effective 30 days after its adoption and shall be published and posted as required by law.

SECTION 5. This ordinance is exempt from the California Environmental Quality Act pursuant to CEQA Guidelines sections 15307 and 15308.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Sonoma this 19th day of August 2009.

Ken Brown, Mayor

State of California)
County of Sonoma)
City of Sonoma)

I, Gay Rainsbarger, City Clerk of the City of Sonoma, do hereby certify that the foregoing ordinance was adopted on August 19, 2009 by the following vote:

AYES:	Sebastiani, Gallian, Barbose, Sanders, Brown
NOES:	None
ABSENT:	None

Gay Rainsbarger

Gay Rainsbarger, City Clerk

APPENDIX J – CUWCC BEST MANAGEMENT PRACTICES REPORTS

This appendix presents the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) Reports as introduced in Section 9.

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

6271 City of Sonoma

1. Conservation Coordinator provided with necessary resources to implement BMPs?	Name:	Mike Brett
	Title:	Water Conservation Coordinator
	Email:	mbrett@sonomacity.org

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.		www.sonomacity.org Go to Council & Commissions/municipal code/section 13.10.060	
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control

ON TRACK

6271 City of Sonoma

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
Copy1_of_AWWA_Water_Audit_2014.xls	
AWWA Water Audit Validity Score?	81
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
20			26.35	False		6.45

At Least As effective As Yes

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

6271 City of Sonoma

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	301
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	No
Feasibility Study provided to CUWCC?	No

Date: 1/1/0001

Uploaded file name:

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

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

On Track

6271 City of Sonoma

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	1456225.49	670164.01
Multi-Family	Increasing Block	Yes	399928.35	71471.31
Commercial	Uniform	Yes	454820.08	68697.52
Dedicated Irrigation	Uniform	Yes	208527.35	19745.72
			2519501.27	**830078.56**

Calculate: V / (V + M) **75 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

6271 **City of Sonoma** **Retail**

Does your agency perform Public Outreach programs? No

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

Sonoma County Water Agency

Agency Name	ID number
Sonoma County Water Agency	208

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

Did at least one contact take place during each quater of the reporting year? No

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? No

Public Information Program Annual Budget

Description of all other Public Outreach programs

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

6271 City of Sonoma **Retail**

Does your agency implement School Education programs? No

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

Sonoma County Water Agency

Agencies Name	ID number
Sonoma County Water Agency	208

Materials meet state education framework requirements? No

Materials distributed to K-6? No

Materials distributed to 7-12 students? No (Info Only)

Annual budget for school education program:

Description of all other water supplier education programs

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2014

BMP3 - Residential

ON TRACK

Agency **City of Sonoma** Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
13.84	0	13.84	12.24	1.310

Residential Assistance

	Single Family Accounts	Single Family Target	Multi Family Units	Multi Family Target
Total Number Of Accounts/Units	3500		0	
Total Participants during Reporting				
Number of Leak Detection Surveys or Assistance on Customer Property	113	26.25	0	0.00
Number of Faucet Aerators Distributed	500		0	
Number of WSS Showerheads Distributed	500			
Landscape Water Surveys	16	26.25	0	

Has agency reached a 75% market saturation for showerheads? No

High Efficiency Clothes Washers	Single Family Accounts	Single Family Target
Number of installations for HECW	25	35.00
Are financial incentives provided for HECWs?	No	
Has agency completed a HECW Market Penetration Study?	No	

Water Sense Specification Toilets

Retrofit 'On Resale' Ordinance exists No

75% Market Penetration Achieved No

	Single Family Units	Multi Family Units
Five year average Resale Rate	0.05	0.08
Number Toilets per Household	2	2
Number WSS Toilets Installed	0	0
Target Number of WSS Toilets	175.00	0.00

WSS for New Residential Development

Does an Ordinance Exists Requiring WSS Fixtures and Appliances in new SF and MF residences?	Single Family Units	Multi Family Units
	No	No
Number of new SF & MF units built	27	0
Incentives		

CUWCC BMP Coverage Report 2014

BMP3 - Residential

ON TRACK

Unique Conservation Measures

Residential Assistance / Landscape Water Survey unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High Efficiency Clothes Washers unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

WaterSense Specification toilets unique water savinigs

SF Measured water savings (AF/YR) MF Measured water savings (AF/YR)

Uploaded file name:

WaterSense Specification toilets for New Residential development unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High bill contact with single-family and multi-family customers

Measured water savings (AF/YR)

Uploaded file name:

Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/YR) 0

Uploaded file name:

Notify residential customers of leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide unique water savings fixtures that are not included in the BMP list above

Measured water savings (AF/YR) 0

Uploaded file name:

Install residence water use monitors

Measured water savings (AF/YR) 0

Uploaded file name:

Participate in programs that provide residences with school water conservation kits

Measured water savings (AF/YR) 0

Uploaded file name:

Implement in automatic meter reading program for residential customers

CUWCC BMP Coverage Report 2014

BMP3 - Residential

ON TRACK

Measured water savings (AF/YR) 0

Uploaded file name:

OTHER Types of Measures

Measured water savings (AF/YR) 0

Uploaded file name:

Traditional Water Savings Calculation result:

Measures	Target Water Savings (AF):	Actual Water Savings (AF):
SF Leak Detection Surveys	0.59	9.92
MF Leak Detection Surveys	0.00	0.00
Landscape Water Surveys	0.59	0.59
SF WSS Toilets Installed	10.08	2.04
MF WSS Toilets Installed	0.00	0.00
HECW	0.98	1.29

Comments:

At Least As Effective As No

Exemption No

CUWCC BMP Coverage Report 2014

BMP4 - Commercial Industrial Institutional

ON TRACK

Agency **City of Sonoma** Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

CII Baseline Water Use (AF): 297.40 CII Water Use Reduction(AF): 29.74

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
0	0	0	12.79	26.230

Water Efficiency Measures:	Quantity Installed:	Water Savings:	Accept Council's default value
1 High Efficiency Toilets (1.2 GPF or less)	0		No
2 High Efficiency Urinals (0.5 GPF or less)	0		No
3 Ultra Low Flow Urinals	0.00		No
4 Zero Consumption Urinals	0.00		No
5 Commercial High Efficiency Single Load Clothes Washers	0.00		No
6 Cooling Tower Conductivity Controllers	0.00		No
7 Cooling Tower pH Controllers	0.00		No
8 Connectionless Food Steamers	0.00		No
9 Medical Equipment Steam Sterilizers	0.00		No
10 Water Efficient Ice Machines	0.00		No
11 Pressurized Water Brooms	0.00		No
12 Dry Vacuum Pumps	0.00		No
Total Water Savings:		**0.00**	

Unique Conservation Measures

Industrial Process Water Use Reduction

Measured water savings (AF/YR)

Uploaded file name:

Commercial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Industrial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Filter Upgrades (for pools, spas and fountants)

Measured water savings (AF/YR)

Uploaded file name:

Car Wash Reclamation Systems

Measured water savings (AF/YR)

Uploaded file name:

Wet Cleaning

Measured water savings (AF/YR)

Uploaded file name:

Water Audits (to avoid double counting, do not include device/replacement water savings

Measured water savings (AF/YR)

Uploaded file name:

Clean In Place (CIP)Technology (such as bottle sterilization in a beverage processing plant)

Measured water savings (AF/YR)

Uploaded file name:

Waterless Wok

Measured water savings (AF/YR)

Uploaded file name:

Alternative On-site Water Sources

Measured water savings (AF/YR)

Uploaded file name:

Sub-metering

Measured water savings (AF/YR)

Uploaded file name:

High Efficiency Showerheads

Measured water savings (AF/YR)

Uploaded file name:

Faucet Flow Restrictors

Measured water savings (AF/YR)

Uploaded file name:

Water Efficiency Dishwashers

Measured water savings (AF/YR)

Uploaded file name:

Hor Water on Demand

Measured water savings (AF/YR)

Uploaded file name:

Pre-rinse spray Valves of 1.3 gpm (gallons per minute) or less

CUWCC BMP Coverage Report 2014

BMP4 - Commercial Industrial

ON TRACK

Institutional

Pre-rinse spray valves of 1.3 gpm (gallons per minute) or less

Measured water savings (AF/YR)

Uploaded file name:

Central Flush Systems

Measured water savings (AF/YR)

Uploaded file name:

IOther Measures chosen by the Agency

Measured water savings (AF/YR)

Uploaded file name:

Comments:

At Least As Effective As	No
Exemption	No

CUWCC BMP Coverage Report 2014

BMP5 - Landscape **ON TRACK**

Agency **City of Sonoma** Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	PRIOR ACTIVITIES CREDIT
9.54	0	9.54	5.97	48.37

1) Accounts with Dedicated Irrigation Meters

a) Number of dedicated irrigation meter accounts	87
b) Number of dedicated irrigation meter accounts with water budgets	75
c) Aggregate water use for all dedicated non-recreational landscape accounts with water budgets	62.7
d)Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	
Aggregate acreage of recreational areas assigned water budgets for dedicated recreational landscape accounts with budgets	44
Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	No
Unique measured water Savings (AF/YR) in this measure	
Uploaded the backup data if there are unique measured water savings?	No
Technical Assistance	
Number of Accounts 20% over-budget	
Number of Accounts 20% over-budget offered technical assistance	
Number of Accounts 20% over-budget accepting technical assistance	
Unique measured water Savings (AF/YR) in technical assistance	
Uploaded the backup data if there are unique measured water savings?	No

2) Commercial / Industrial / Institutional Accounts without Meters or with Mixed-Use Meters

Number of mixed use and un-metered accounts.		
Number of irrigation water use surveys offered		
Number of irrigation water use surveys accepted		
Type: Incentives numbers received by customers:	$ Value:	0
Type: Rebates numbers received by customers:	$ Value:	0
Type No- or low-Interest loan offered numbers received by customers:	$ Value:	0
Annual water savings by customers receiving irrigation water savings surveys and implementing recomendations		
Estimated annual water savings by customers receiving surveys and implementing recommendations		

CUWCC BMP Coverage Report 2014

BMP5 - Landscape **ON TRACK**

Unique measured water Savings (AF/YR) in this measure

Uploaded the backup data if there are unique measured water savings? No

Financial Incentives

Unique measured water Savings (AF/YR) inFinancial incentives

Uploaded the backup data if there are unique measured water savings? No

Unique Conservation Measures

1. Monitor and report on landscape water use

1a. Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1b. Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1c. Establish agency-wide water budget. (Include in Help notes: ETo based water budget in the MWELO changed in 2010 from .8ETo to .7ETo.)

Uploaded file name:

1d. Establish agency-wide, sector-based irrigation goal to reduce water use, based on season.

Uploaded file name:

2. Provide technical landscape resources and training

2a. Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Uploaded file name:

2b. Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Uploaded file name:

2c. Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Uploaded file name:

2d. Establish time-of-day irrigation restrictions.

Uploaded file name:

2e . Establish day-of-week irrigation restrictions.

Uploaded file name:

3. Provide incentives

CUWCC BMP Coverage Report 2014

BMP5 - Landscape **ON TRACK**

3a. Establish landscape budget-based rates.

Uploaded file name:

3b. Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Uploaded file name:

3c. Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Uploaded file name:

3d. Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Uploaded file name:

3e. Provide incentives for conversions from potable to recycled water.

Uploaded file name:

3f. Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Uploaded file name:

4. Participate in local and regional planning and regulatory activities

4a. Collaborate with planning agencies at the local and regional level, other water suppliers in the area and stakeholders in response to state or federal requirements such as the State Model Water Efficient Landscape Ordinance and AB 1881. Participate in the development, review, implementation, and enforcement of requirements for new developments. Provide water use data to planning agencies.

4b. Establish or participate in a water conservation advisory committee or other community outreach effort to drive market transformation and exchange information about landscape water conservation with developers, community-based organizations, homeowners associations, residential customers, landscape professionals, educators, other water suppliers in region.

4c. Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

5. Develop a holistic approach to landscape water use efficiency

5a. Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Uploaded file name:

6. Other Measures

Other Landscape Measures.

Uploaded file name:

Comments:

CUWCC BMP Coverage Report 2014

BMP5 - Landscape **ON TRACK**

At Least As Effective As	No
Exemption	No

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

6271 City of Sonoma

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Mike Brett

Title: Water Conservation Coordinator

Email: mbrett@sonomacity.org

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.		www.sonomacity.org Go to Council & Commissions/municipal code/section 13.10.060	
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control

ON TRACK

6271 City of Sonoma

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
AWWA Water Audit FY 13.xls	
AWWA Water Audit Validity Score?	81
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
15			11.3	False		35.08

At Least As effective As Yes

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

6271 City of Sonoma

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	301
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	No
Feasibility Study provided to CUWCC?	No

Date: 1/1/0001

Uploaded file name:

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

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

On Track

6271 City of Sonoma

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	2569356.29	614472.1
Multi-Family	Increasing Block	Yes	482817.38	62009.5
Commercial	Uniform	Yes	478548.29	63550.9
Dedicated Irrigation	Uniform	Yes	310963.18	18810.08
			3841685.14	**758842.58**

Calculate: V / (V + M) **84 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

6271 **City of Sonoma** **Retail**

Does your agency perform Public Outreach programs? No

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

Sonoma County Water Agency

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

Did at least one contact take place during each quater of the reporting year? No

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? No

Public Information Program Annual Budget

Description of all other Public Outreach programs

Comments:

At Least As effective As	No	
Exemption	No	0

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

6271 City of Sonoma **Retail**

Does your agency implement School Education programs? No

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

Sonoma County Water Agency

Agencies Name	ID number
Sonoma County Water Agency	208

Materials meet state education framework requirements? No

Materials distributed to K-6? No

Materials distributed to 7-12 students? No (Info Only)

Annual budget for school education program:

Description of all other water supplier education programs

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2013

BMP3 - Residential

ON TRACK

Agency **City of Sonoma**

Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
12.15	0	12.15	14.76	3.920

Residential Assistance

	Single Family Accounts	Single Family Target	Multi Family Units	Multi Family Target
Total Number Of Accounts/Units	3577		278	
Total Participants during Reporting	0		0	
Number of Leak Detection Surveys or Assistance on Customer Property	412	26.83	0	2.09
Number of Faucet Aerators Distributed	500		0	
Number of WSS Showerheads Distributed	500			
Landscape Water Surveys	13	26.83	0	

Has agency reached a 75% market saturation for showerheads? No

High Efficiency Clothes Washers	Single Family Accounts	Single Family Target
Number of installations for HECW	21	35.77
Are financial incentives provided for HECWs?	Yes	
Has agency completed a HECW Market Penetration Study?	No	

Water Sense Specification Toilets

Retrofit 'On Resale' Ordinance exists: No

75% Market Penetration Achieved: No

	Single Family Units	Multi Family Units
Five year average Resale Rate	0.05	0.08
Number Toilets per Household	2	2
Number WSS Toilets Installed	71	0
Target Number of WSS Toilets	178.85	22.24

WSS for New Residential Development

Does an Ordinance Exists Requiring WSS Fixtures and Appliances in new SF and MF residences?	Single Family Units	Multi Family Units
	No	No
Number of new SF & MF units built	14	43
Incentives		

CUWCC BMP Coverage Report 2013

BMP3 - Residential

ON TRACK

Unique Conservation Measures

Residential Assistance / Landscape Water Survey unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High Efficiency Clothes Washers unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

WaterSense Specification toilets unique water savinigs

SF Measured water savings (AF/YR) MF Measured water savings (AF/YR) 2.99

Uploaded file name:

WaterSense Specification toilets for New Residential development unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High bill contact with single-family and multi-family customers

Measured water savings (AF/YR)

Uploaded file name:

Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/YR) 0

Uploaded file name:

Notify residential customers of leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide unique water savings fixtures that are not included in the BMP list above

Measured water savings (AF/YR) 0

Uploaded file name:

Install residence water use monitors

Measured water savings (AF/YR) 0

Uploaded file name:

Participate in programs that provide residences with school water conservation kits

Measured water savings (AF/YR) 0

Uploaded file name:

Implement in automatic meter reading program for residential customers

CUWCC BMP Coverage Report 2013

BMP3 - Residential

ON TRACK

Measured water savings (AF/YR) 0

Uploaded file name:

OTHER Types of Measures

Measured water savings (AF/YR) 0

Uploaded file name:

Traditional Water Savings Calculation result:

Measures	Target Water Savings (AF):	Actual Water Savings (AF):
SF Leak Detection Surveys	0.60	9.23
MF Leak Detection Surveys	0.02	0.00
Landscape Water Surveys	0.60	0.29
SF WSS Toilets Installed	10.30	2.04
MF WSS Toilets Installed	2.24	0.00
HECW	1.00	0.59

Comments:

At Least As Effective As No

Exemption No

CUWCC BMP Coverage Report 2013

BMP4 - Commercial Industrial Institutional

ON TRACK

Agency **City of Sonoma** Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

CII Baseline Water Use (AF): 297.40 CII Water Use Reduction(AF): 29.74

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
0	9.9	9.9		7.700

Water Efficiency Measures:	Quantity Installed:	Water Savings:	Accept Council's default value
1 High Efficiency Toilets (1.2 GPF or less)	10	9.90	No
2 High Efficiency Urinals (0.5 GPF or less)	0	0.00	Yes
3 Ultra Low Flow Urinals	0.00	0.00	Yes
4 Zero Consumption Urinals	0.00	0.00	Yes
5 Commercial High Efficiency Single Load Clothes Washers	0.00	0.00	Yes
6 Cooling Tower Conductivity Controllers	0.00	0.00	Yes
7 Cooling Tower pH Controllers	0.00	0.00	Yes
8 Connectionless Food Steamers	0.00	0.00	Yes
9 Medical Equipment Steam Sterilizers	0.00	0.00	Yes
10 Water Efficient Ice Machines	0.00	0.00	Yes
11 Pressurized Water Brooms	0.00	0.00	Yes
12 Dry Vacuum Pumps	0.00	0.00	Yes
Total Water Savings:		**0.29**	

Unique Conservation Measures

Industrial Process Water Use Reduction

Measured water savings (AF/YR)

Uploaded file name:

Commercial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Industrial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Filter Upgrades (for pools, spas and fountants)

Measured water savings (AF/YR)

Uploaded file name:

Car Wash Reclamation Systems

Measured water savings (AF/YR)

Uploaded file name:

Wet Cleaning

Measured water savings (AF/YR)

Uploaded file name:

Water Audits (to avoid double counting, do not include device/replacement water savings

Measured water savings (AF/YR)

Uploaded file name:

Clean In Place (CIP)Technology (such as bottle sterilization in a beverage processing plant)

Measured water savings (AF/YR)

Uploaded file name:

Waterless Wok

Measured water savings (AF/YR)

Uploaded file name:

Alternative On-site Water Sources

Measured water savings (AF/YR)

Uploaded file name:

Sub-metering

Measured water savings (AF/YR)

Uploaded file name:

High Efficiency Showerheads

Measured water savings (AF/YR)

Uploaded file name:

Faucet Flow Restrictors

Measured water savings (AF/YR)

Uploaded file name:

Water Efficiency Dishwashers

Measured water savings (AF/YR)

Uploaded file name:

Hor Water on Demand

Measured water savings (AF/YR)

Uploaded file name:

Pre-rinse spray Valves of 1.3 gpm (gallons per minute) or less

Pre-rinse spray valves of 1.6 gpm (gallons per minute) or less

Measured water savings (AF/YR)

Uploaded file name:

Central Flush Systems

Measured water savings (AF/YR)

Uploaded file name:

IOther Measures chosen by the Agency

Measured water savings (AF/YR)

Uploaded file name:

Comments:

At Least As Effective As	No
Exemption	No

CUWCC BMP Coverage Report 2013

BMP5 - Landscape

ON TRACK

Agency **City of Sonoma**

Date Agency Signed MOU: 1/18/2002

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	PRIOR ACTIVITIES CREDIT
12.96	0	12.96	6.38	41.79

1) Accounts with Dedicated Irrigation Meters

a) Number of dedicated irrigation meter accounts	82
b) Number of dedicated irrigation meter accounts with water budgets	75
c) Aggregate water use for all dedicated non-recreational landscape accounts with water budgets	80.3
d)Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	
Aggregate acreage of recreational areas assigned water budgets for dedicated recreational landscape accounts with budgets	44
Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	No
Unique measured water Savings (AF/YR) in this measure	
Uploaded the backup data if there are unique measured water savings?	No
Technical Assistance	
Number of Accounts 20% over-budget	
Number of Accounts 20% over-budget offered technical assistance	
Number of Accounts 20% over-budget accepting technical assistance	
Unique measured water Savings (AF/YR) in technical assistance	
Uploaded the backup data if there are unique measured water savings?	No

2) Commercial / Industrial / Institutional Accounts without Meters or with Mixed-Use Meters

Number of mixed use and un-metered accounts.		
Number of irrigation water use surveys offered		
Number of irrigation water use surveys accepted		
Type: Incentives numbers received by customers:	$ Value:	0
Type: Rebates numbers received by customers:	$ Value:	0
Type No- or low-Interest loan offered numbers received by customers:	$ Value:	0
Annual water savings by customers receiving irrigation water savings surveys and implementing recomendations		
Estimated annual water savings by customers receiving surveys and implementing recommendations		

CUWCC BMP Coverage Report 2013

BMP5 - Landscape **ON TRACK**

Unique measured water Savings (AF/YR) in this measure

Uploaded the backup data if there are unique measured water savings? No

Financial Incentives

Unique measured water Savings (AF/YR) inFinancial incentives

Uploaded the backup data if there are unique measured water savings? No

Unique Conservation Measures

1. Monitor and report on landscape water use

1a. Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1b. Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1c. Establish agency-wide water budget. (Include in Help notes: ETo based water budget in the MWELO changed in 2010 from .8ETo to .7ETo.)

Uploaded file name:

1d. Establish agency-wide, sector-based irrigation goal to reduce water use, based on season.

Uploaded file name:

2. Provide technical landscape resources and training

2a. Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Uploaded file name:

2b. Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Uploaded file name:

2c. Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Uploaded file name:

2d. Establish time-of-day irrigation restrictions.

Uploaded file name:

2e . Establish day-of-week irrigation restrictions.

Uploaded file name:

3. Provide incentives

CUWCC BMP Coverage Report 2013

BMP5 - Landscape **ON TRACK**

3a. Establish landscape budget-based rates.

Uploaded file name:

3b. Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Uploaded file name:

3c. Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Uploaded file name:

3d. Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Uploaded file name:

3e. Provide incentives for conversions from potable to recycled water.

Uploaded file name:

3f. Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Uploaded file name:

4. Participate in local and regional planning and regulatory activities

4a. Collaborate with planning agencies at the local and regional level, other water suppliers in the area and stakeholders in response to state or federal requirements such as the State Model Water Efficient Landscape Ordinance and AB 1881. Participate in the development, review, implementation, and enforcement of requirements for new developments. Provide water use data to planning agencies.

4b. Establish or participate in a water conservation advisory committee or other community outreach effort to drive market transformation and exchange information about landscape water conservation with developers, community-based organizations, homeowners associations, residential customers, landscape professionals, educators, other water suppliers in region.

4c. Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

5. Develop a holistic approach to landscape water use efficiency

5a. Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Uploaded file name:

6. Other Measures

Other Landscape Measures.

Uploaded file name:

Comments:

CUWCC BMP Coverage Report 2013

BMP5 - Landscape

ON TRACK

At Least As Effective As	No
Exemption	No

APPENDIX K – DWR WATER AUDIT METHOD

This appendix presents the City of Sonoma's 2015 AWWA water audit report results.

AWWA WLCC Free Water Audit Software: Water Balance

WASv4.2

Water Audit Report For:	Report Yr:
City of Sonoma	2015

Own Sources (Adjusted for known errors) 174.090	Water Exported 0.000	Billed Water Exported			
	Water Supplied 1,762.404	Authorized Consumption 1,547.319	Billed Authorized Consumption 1,525.289	Billed Metered Consumption (inc. water exported) 1,525.289	Revenue Water 1,525.289
				Billed Unmetered Consumption 0.000	
			Unbilled Authorized Consumption 22.030	Unbilled Metered Consumption 0.000	Non-Revenue Water (NRW) 237.115
				Unbilled Unmetered Consumption 22.030	
		Water Losses 215.085	Apparent Losses 4.406	Unauthorized Consumption 4.406	
				Customer Metering Inaccuracies 0.000	
				Systematic Data Handling Errors 0.000	
Water Imported 1,588.314			Real Losses 210.679	Leakage on Transmission and/or Distribution Mains Not broken down	
				Leakage and Overflows at Utility's Storage Tanks Not broken down	
				Leakage on Service Connections Not broken down	

AWWA WLCC Free Water Audit Software: Reporting Worksheet

WAS v4.2

Back to Instructions

? Click to access definition

Water Audit Report for: City of Sonoma
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 (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

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

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	?	8	174.090	acre-ft/yr
Master meter error adjustment (enter positive value):	?	5		acre-ft/yr
Water imported:	?	8	1,588.314	acre-ft/yr
Water exported:	?	n/a		acre-ft/yr
WATER SUPPLIED:			1,762.404	acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

					Pcnt:	Value:
Billed metered:	?	10	1,525.289	acre-ft/yr		
Billed unmetered:	?	n/a	0.000	acre-ft/yr		
Unbilled metered:	?	n/a	0.000	acre-ft/yr		
Unbilled unmetered:	?		22.030	acre-ft/yr	1.25%	

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:	?	1,547.319	acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

215.085 acre-ft/yr

Apparent Losses

					Pcnt:	Value:
Unauthorized consumption:	?		4.406	acre-ft/yr	0.25%	

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

Customer metering inaccuracies:	?	10	0.000	acre-ft/yr
Systematic data handling errors:	?	5		acre-ft/yr

Systematic data handling errors are likely, please enter a non-zero value; otherwise grade = 5

Apparent Losses:	?	4.406

? Enter a percentage less than 10% in the red cell (J42), or select 'Value' option

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	?	210.679	acre-ft/yr
WATER LOSSES:		215.085	acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER:	?	237.115	acre-ft/yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	?	9	56.0	miles	
Number of active AND inactive service connections:	?	8	4,367		
Connection density:			78	conn./mile main	
Average length of customer service line:	?	10	0.0	ft	(pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	?	9	65.0	psi	

COST DATA

Total annual cost of operating water system:	?	8	$3,984,765	$/Year
Customer retail unit cost (applied to Apparent Losses):	?	8	$6.99	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	?	8	$740.34	$/acre-ft

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	13.5%
Non-revenue water as percent by cost of operating system:	4.6%
Annual cost of Apparent Losses:	$10,036
Annual cost of Real Losses:	$155,974

Operational Efficiency Indicators

Apparent Losses per service connection per day:	0.90	gallons/connection/day
Real Losses per service connection per day*:	43.07	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.66	gallons/connection/day/psi
? Unavoidable Annual Real Losses (UARL):	69.75	acre-feet/year
From Above, Real Losses = Current Annual Real Losses (CARL):	210.68	acre-feet/year
? Infrastructure Leakage Index (ILI) [CARL/UARL]:	3.02	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 81 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

For more information, click here to see the Grading Matrix worksheet

APPENDIX L – PUBLIC NOTICE OF UWMP HEARING

City of Sonoma
Department of Public Works
No. 1 The Plaza
Sonoma California 95476-6690
Phone (707) 938-3332 Fax (707) 938-3240

December 28, 2015

To: Interested Agencies

Re: 60-day Notice of Review and Preparation of the 2015 Urban Water Management Plan Update

The City of Sonoma is currently reviewing and updating the City's Urban Water Management Plan (UWMP), as required by State law. The 2015 UWMP is due to the California Department of Water Resources by July 1, 2016. The UWMP will provide an analysis of the projected water demand and supply over the next 25 years, as well as an updated water conservation plan.

If you are interested in providing input during the preparation of the UWMP, please contact me at (707) 933-2230 or at dtakasugi@sonomacity.org

Sincerely,

Dan Takasugi
Public Works Director / City Engineer

Distribution List:

Sonoma County Water Agency, Attention: Grant Davis
Sonoma Valley County Sanitation District, Attention: Grant Davis
Valley of the Moon Water District, Attention: Dan Muelrath
City of Santa Rosa, Attention: David Guhin
City of Rohnert Park, Attention: Mary Grace Pawson
City of Cotati, Attention: Craig Scott
City of Petaluma, Attention: Dan St. John
Town of Windsor, Attention: Toni Bertolero
North Marin Water District, Attention: Chris DeGabriele
County of Sonoma PRMD, Attention: Sandi Potter
Sonoma Valley Basin Advisory Panel, Attention: Marcus Trotta
Sonoma Ecology Center, Attention: Richard Dale
City of Sonoma Planning Commission, Attention: David Goodison
City of Sonoma Community Services Environmental Commission
Kathy Pons

Newspaper notice submission by City of Sonoma on May 18, 2016. Print version to be included in Final 2015 UWMP.

Index Tribune: Please acknowledge receipt of this request and publish the Legal Notice shown on the attached document on Tuesday May 24, 2016.

CITY OF SONOMA

NOTICE OF PUBLIC COMMENT PERIOD &

PUBLIC HEARING

ON THE

URBAN WATER MANAGEMENT PLAN

The City of Sonoma intends to update its current Urban Water Management Plan (UWMP). Updates are required every five (5) years, in accordance with the California Water Code. This effort helps ensure we can provide the communities we serve with a reliable supply of high-quality water to meet current and future demands.

To ensure sufficient opportunity of public feedback and suggestions, the proposed plan will be available for review on the City of Sonoma's website (www.sonomacity.org) by May 24, 2016. Public comments may be submitted in writing to:

Public Works Director

City of Sonoma

No. 1 The Plaza

Sonoma, CA 95476

The public commenting period will conclude with a Public Hearing at the City of Sonoma Council meeting held on June 6, 2016. The meeting begins at 6:00pm and is located at 177 First Street West, Sonoma, CA 95476. At the conclusion of the Public Hearing, the City Council will be considering the proposed UWMP update for adoption.

DATED: May 18, 2016

Gay Johann, Assistant City Manager/City Clerk

APPENDIX M – DOCUMENTATION OF 2015 UWMP SUBMITTAL

Documentation pending. It will be included in the Final version of this 2015 UWMP.

APPENDIX N – SCWA BOARD OF DIRECTOR'S WATER SHORTAGE ALLOCATION METHODOLOGY APPROVAL

THE WITHIN INSTRUME IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE.

ATTEST: APR 2 0 2006

EEVE T. LEWIS, County Clerk & ex-officio Clerk of the Board of Directors of the SONOMA COUNTY WATER AGENCY
BY _____ DEPUTY CLERK

#45
Resolution No. 06-0342
County Administration Bldg.
Santa Rosa, CA

Date: April 18, 2006

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SONOMA COUNTY WATER AGENCY APPROVING WATER SHORTAGE ALLOCATION METHODOLOGY.

WHEREAS, the General Manager/Chief Engineer has negotiated the proposed Restructured Agreement for Water Supply; and

WHEREAS, the proposed Restructured Agreement for Water Supply requires the Sonoma County Water Agency to have an adopted water shortage allocation methodology available at all times to inform each of its customers of the water that would be available in the event of reasonably anticipated shortages; and

WHEREAS, the proposed Restructured Agreement for Water Supply requires the adopted water shortage allocation methodology be consistent with Section 3.5 of the Restructured Agreement for Water Supply; and

WHEREAS, the City of Santa Rosa developed an allocation methodology regarding implementation Section 3.5 of the Restructured Agreement for Water Supply; and

WHEREAS, the Water Advisory Committee's consultant, in conjunction with the water contractors, amended and documented the allocation methodology developed by the City of Santa Rosa; and

WHEREAS, the General Manager/Chief Engineer staff plans to return to the Board with a revised version of the allocation methodology when the Urban Water Management Plan is considered for approval, and to continually improve the allocation methodology over time as additional information and better modeling tools become available.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Sonoma County Water Agency hereby finds, determines, and declares as follows:

1. All of the above recitals are true and correct.

2. The water shortage allocation methodology is approved.

DIRECTORS:

BROWN _____ KERNS _____ SMITH _____ REILLY _____ KELLEY _____

Ayes 5 Noes _____ Absent _____ Abstain _____

SO ORDERED.

R1

RS3/u/CL/AGENDA/MISC/H2O SHORT ALLOCATION METHOD 0406

FILE:WC/60-0-7 RESTRUCTURED AGREEMENT FOR WATER SUPPLY

c Jeane Reason, Acct 2
resfile, mis

APPENDIX O – RECYCLED WATER USE AGREEMENT

Recording Requested By
Sonoma County Water Agency
Per California Government Code sec. 27383,
there shall be no fee for recording.

When recorded return conformed copy to:
Executive Secretary
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403-9019

Recycled Water Use Agreement between Sonoma Valley County Sanitation District

and the City of Sonoma

This Agreement is between Sonoma Valley County Sanitation District (hereinafter "District"), and the City of Sonoma, (hereinafter "Recycled Water User"). The District is operated by the Sonoma County Water Agency ("Water Agency") pursuant to Contract.

RECITALS

A. Recycled Water User owns approximately 1.09 acres of real property identified as Assessor's Parcel No(s). 128-62-0057 and 128-63-0048, located at 440 Engler Street, Sonoma, CA 95476; (hereinafter "Lands"), as shown on Attachment A. Attachment A is herein incorporated by reference. Approximately 1.09 acres will be irrigated with recycled water. Lands are used for landscape irrigation purposes.

B. District owns and operates certain wastewater treatment and disposal facilities (hereinafter referred to as "Facilities") known as the Sonoma Valley County Sanitation District's Treatment Plant, which generates tertiary-treated recycled water.

C. Recycled water produced by the District meets or exceeds the State of California standards for tertiary-treated recycled water.

D. District is willing to provide, and Recycled Water User is willing to accept, delivery of certain quantities of tertiary-treated recycled water for landscape irrigation on all or portions of the lands subject to the terms and conditions herein.

E. The General Manager of the Sonoma County Water Agency has been authorized by Board resolution to enter into certain agreements for the District. References to "District" employees are understood to be Sonoma County Water Agency employees acting on behalf of the District.

AGREEMENT

District and Recycled Water User agree as follows:

1. RECITALS

a. The above recitals are true and correct.

2. LIST OF ATTACHMENTS

a. The following attachments are hereby made an integral part of this Agreement:
   i. Attachment A: Location Map
   ii. Attachment B: Recycled Water Use Requirements

3. TERM

a. The term of this Agreement is for a period of five (5) years commencing upon on the date the District provides written notice to Recycled Water User that the 5th Street East Pipeline is constructed and is fully operational.

4. RECYCLED WATER COMMITTED USE

a. **Water use:**

i. **Annual Obligation:** Recycled Water User agrees to use and District agrees to deliver, subject to the conditions and limitations specified in this Agreement, 5 acre-feet of recycled water, herein referred to as "Committed Use," each calendar year. It is understood that the actual amount of recycled water use may, subject to conditions and limitations specified in this Agreement, exceed the minimum obligation depending on the District's ability to provide additional recycled water.

ii. **Requests for additional water above 5 acre-feet per year:** Requests by either party to have Recycled Water User take additional recycled water during any Season as defined in Paragraph 5 (Recycled Water Delivery) may be made and approved in writing by the Operations Coordinator or designee, and Recycled Water User, subject to the conditions and limitations specified in this Agreement.

iii. **Obligation Adjustment:** If, after review of a minimum of three years of water usage, District determines that Recycled Water User's usage is significantly less than the Committed Use, District retains the right to reopen this Agreement in order to adjust the Committed Use to reflect actual usage.

5. RECYCLED WATER DELIVERY

a. Location of water delivery: During the Summer and Winter Seasons of each year, District will deliver recycled water from District's recycled water pipeline system turnout to Recycled Water User at the location shown on Attachment A. This location will also be the location at which the recycled water is metered.

A. **Delivery period:**

1. Recycled Water User understands that the delivery periods for the recycled water are based on the Seasons as identified in the table below.

Facility	Summer Season	Winter Season
Sonoma Valley County Sanitation District	May 1 to October 31 (Summer Water)	Nov. 1 to April 30 (Winter Water)

b. Coordination for water delivery: Recycled Water User shall coordinate with District's Operations and Maintenance Division at (707) 523-1070 for all water delivery not in accordance with the scheduled delivery periods. All requests for additional services by District shall be made a minimum of 72 hours in advance of the requested accommodation. District retains the right to implement a schedule for recycled water delivery among its users. Schedule shall be implemented upon written notification to Recycled Water User.

c. Limitations precluding delivery of recycled water: Notwithstanding the requirements for District to deliver recycled water as stated in this Agreement, both parties to this Agreement recognize and agree that such delivery of water may at times be precluded for unanticipated reasons or for reasons beyond the control of District. District will not be obligated to provide water when delivery is prevented by Acts of God, reduction in transmission capacity, malfunction of District's system, temporary imbalance of recycled water in the various storage ponds, changes in operations, discharge or monitoring requirements, a determination by any regulatory agency that recycled water is not suitable for the intended use, a determination that the activity is unlawful, a determination that the activity may violate any operations permits, including but not limited to any National Pollutant Discharge Elimination System Permits and/or permits under state authority issued to the District as these permits currently exist or may be revised in the future (hereinafter "Permits"), or a determination that a constituent of the recycled water is harmful to the plants being irrigated, or any other unanticipated cause or cause outside the control of District.

6. OTHER COOPERATING CUSTOMERS

a. Recycled Water User recognizes and understands that District is obligated to deliver recycled water to other cooperating recycled water customers. District will endeavor to supply recycled water to Recycled Water User so that the maximum amount can be used by Recycled Water User, and, in the event of shortage for any reason, to be equitable between Recycled Water User and all other cooperating recycled water customers, as reasonably determined by District in supplying recycled water. District intends that delivery of recycled water to the Recycled Water User will have preference, when reasonably possible, over delivery to District-owned land and other curtailable customers. However, District cannot assure uninterrupted supply of recycled water to Recycled Water User.

7. RECYCLED WATER QUALITY

a. The recycled water delivered to the Recycled Water User by District will be treated to the tertiary level, and will generally be of quality in compliance with the District's applicable National Pollutant Discharge Elimination System permit and any accompanying Waste Discharge Permits administered by the Regional Water Quality Control Board (hereinafter "RWQCB"). District also maintains compliance with the current State Water Resources Control Board, Division of Drinking Water regulations. District will make available for informational purposes to Recycled Water User such test reports as are periodically required of District by regulatory agencies to characterize the recycled water. The results of these tests are maintained at the Sonoma County Water Agency Operations Office, 204 Concourse Boulevard, Santa Rosa, California, and may be obtained by Recycled Water User requesting a copy in writing to Sonoma County Water Agency, 404 Aviation

Blvd, Santa Rosa, California. No warranty as to suitability of the recycled water for any particular use is given, except that the water may be used for landscaping purposes.

8. RECYCLED WATER APPLICATION RESTRICTIONS

a. Recycled Water User agrees to irrigate in such a manner that is compatible with good irrigation practices on Recycled Water User's Lands, consistent with best management practices, runoff, ponding, and environmental restrictions specified in Attachment B to this Agreement or otherwise required pursuant to law, regulation or Permits, and not harmful to the landscaping.

b. Recycled Water User shall not allow the recycled water to be used in violation of any law, regulation, ordinance, or provision of the Permits. Recycled Water User's attention is directed to the regulations contained in the California Code of Regulations, Title 22. Recycled Water User acknowledges that he has read Title 22 and is familiar with its content. Recycled Water User shall comply with the parts of said regulations that are pertinent to Recycled Water User's use of the recycled water. Current excerpts from the State Water Resources Control Board, Division of Drinking Water regulations, which may be applicable to Recycled Water User, and other requirements, are included in Attachment B for Recycled Water User's convenience only and should not be relied upon by Recycled Water User as a statement of current or future law. In addition, Recycled Water User acknowledges receipt of Attachment B attached hereto which contains information regarding restrictions that may be applicable to Recycled Water User's use of recycled water.

c. Recycled Water User agrees to notify District's Operations and Maintenance Section (707-523-1070) of Title 22 violations or damage to District irrigation facilities within 24 hours of discovery of such violation or damage. Recycled Water User shall be solely responsible for the cost of repair for damage occurring to District equipment as a result of Recycled Water User's activities.

d. If Recycled Water User does not comply with laws, regulations, ordinances, or Permit provisions governing the use of recycled water, District may immediately curtail recycled water delivery, notify Recycled Water User of such infraction in writing, and, if Recycled Water User does not rectify the infraction within two (2) calendar days after notice, District may immediately terminate this Agreement.

e. Recycled Water User agrees that recycled water can only be used on lands identified in this agreement and that recycled water cannot be sold to a third party.

9. PERMISSION TO ENTER

a. Recycled Water User agrees to provide to District a right of access to the Lands for the purpose of operation, equipment maintenance, sampling, meter reading, and observation as needed. Unless there is an emergency, the District shall provide the User with 24-hours' written notice of intent to access the User's property.

b. Recycled Water User agrees to allow District to install pipelines, meters, and equipment on land controlled by Recycled Water User and intended for recycled water distribution; however, such installation is subject to the prior written consent of User, which shall not be unreasonably withheld. In addition, Recycled Water User hereby grants District, acting through its duly authorized employees, agents, representatives, or contractors, reasonable access to Recycled Water User's property to do any necessary work associated with installation of equipment required by this Agreement or pursuant to the Permits, meter reading, verification or recycled water use, or any other monitoring of recycled water-related activity on said Lands. When entering Recycled Water User's Lands, District will interfere as little as possible with Recycled Water User's operations and usage of the Lands. Unless there is an emergency, the District shall provide the User with 24-hours' written notice of intent to access the User's property.

10. PAYMENT

a. At the time of execution of this Agreement, the Board of Directors for the District has established a charge (cost per acre-foot) for delivery of recycled water. The current annual charge imposed by the District is $700 per acre-foot for non-curtailable water. For each subsequent year, this amount may be compounded by 5% per year. The maximum charge shall not exceed 90% of the charge imposed by the Water Agency per acre-foot for potable water. The District will prepare an invoice, for recycled water actually used by Recycled Water User pursuant to the terms of this Agreement, at the end of the irrigation season in the year which charges for recycled water are assessed. Within thirty (30) days of receipt of an invoice, Recycled Water User shall pay District the sum of money due, calculated by multiplying the acre-feet of water delivered to Recycled Water User during the previous year by the cost per acre-foot as established by the Board.

11. TAXES

a. Recycled Water User recognizes that this Agreement may create a possessory interest subject to property taxation and that Recycled Water User may be subject to the payment of property taxes levied on such interest (Revenue and Taxation Code Section 107.6). Recycled Water User shall pay, before delinquency, all taxes, assessments, license fees, and other charges (hereinafter referred to as "taxes") that are levied or assessed during the term of this Agreement against Recycled Water User's interest in personal property installed or located in or upon Recycled Water User's premises and any such taxes measured by the value of District's interest in such personal property. Upon the District's demand, Recycled Water User shall furnish District with satisfactory evidence of any such tax payments. If any taxes are levied against District or if, as a consequence of this Agreement, District incurs a tax obligation greater than, or in addition to, that which would be borne by District in the absence of this Agreement, Recycled Water User, upon demand of District, shall immediately reimburse District for the sum of taxes so levied against or borne by District.

12. CHANGES TO AGREEMENT

a. Changes to the Agreement: Changes to the Agreement may be authorized by written amendments to this Agreement or by separate written agreements signed by the Chair of the District's Board of Directors. The parties expressly recognize that, except to the extent authorized herein, District personnel are without authorization to waive agreement terms.

b. Verbal authorization: Requests for additional water, as referred to in Paragraph **Error! Reference source not found.** (**Error! Reference source not found.**), may be authorized verbally; but such requests shall be memorialized in writing as soon as possible, with a copy to the User.

c. Written amendments by General Manager: Changes to the Committed Use, or requests for additional water during Irrigation Season, as referred to in Paragraph **Error! Reference source not found.** (**Error! Reference source not found.**), may be authorized by written amendments to this Agreement signed by Recycled Water User and the General Manager of the Sonoma County Water Agency.

d. Written amendments by Chair of District's Board of Directors: All other changes to the Agreement may be authorized only by written amendments to this Agreement, or by separate written agreements, signed by the Recycled Water User and Chair of the District's Board of Directors. The parties expressly recognize that, except to the extent authorized herein, District personnel are without authorization to waive Agreement terms.

13. ASSIGNMENT AND DELEGATION

a. The right and benefit to receive and the obligation to take recycled water shall be a covenant running with the Lands, and the obligation to provide recycled water shall be that of District.

Recycled Water User shall provide District with thirty (30) days advance written notice of any transfer of title or interest of the Facilities or Lands. Upon transfer of title or interest of the Facilities or Lands, all rights, duties, and obligations undertaken by this Agreement shall succeed to the new owner(s), lessees, heirs, executors, or assigns.

b. Recycled Water User agrees that recycled water will be used only on the Lands. Notwithstanding Paragraph 13. A above, any assignment, delegation, lease, sublet, or transfer of any interest in or duty under this Agreement shall not be of any force or effect without the prior written consent of District.

14. MUTUAL INDEMNIFICATION

a. Each party shall indemnify, defend, protect, hold harmless, and release the other, its officers agents, and employees, from and against any and all claims, loss, proceedings, damages causes of action, liability, costs, or expense (including attorneys' fees and witness costs) arising from or in connection with, or caused by any act, omission, or negligence of such indemnifying party. This indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages or compensation payable to or for the indemnifying party under worker's compensation acts, disability benefit acts, or other employee benefit acts.

15. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS

All notices, bills, and payments shall be made in writing and may be given by personal delivery or by mail. Notices, bills, and payments sent by mail shall be addressed as follows:

District	Primary **Recycled Water User Contact**
Operations Coordinator – East	Contact: _____
404 Aviation Boulevard	_____
Santa Rosa, CA 95403-9019	_____
	Phone: _____
	Email: _____
	Secondary **Recycled Water User Contact**
	Contact: _____
	_____
	_____
	Phone: _____
	Email: _____

And when so addressed, shall be deemed given upon deposit in the United States mail, postage prepaid. In all other instances, notices, bills, and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills, and payments are to be given by giving notice pursuant to this paragraph.

16. MISCELLANEOUS PROVISIONS

a. No Waiver of Breach: The waiver by District of any breach of any term or promise contained in this Agreement shall not be deemed to be a waiver of such term or provision or any subsequent breach of the same or any other term or promise contained in this Agreement.

b. Construction: To the fullest extent allowed by law, the provisions of this Agreement shall be construed and given effect in a manner that avoids any violation of statute, ordinance, regulation,

or law. The parties covenant and agree that in the event that any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

Recycled Water User and District acknowledge that they have each contributed to the making of this Agreement and that, in the event of a dispute over the interpretation of this Agreement; the language of the Agreement will not be construed against one party in favor of the other. Recycled Water User and District acknowledge that they have each had an adequate opportunity to consult with counsel in the negotiation and preparation of this Agreement.

c. Third Party Beneficiaries: Nothing contained in this Agreement shall be construed to create and the parties do not intend to create any rights in third parties.

d. Captions: The captions in this Agreement are solely for convenience of reference. They are not a part of this Agreement and shall have no effect on its construction or interpretation.

e. Merger: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and as a complete and exclusive statement of the terms of the agreement, pursuant to Code of Civil Procedure Section 1856. No modification of this Agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

f. Time of Essence: Time is and shall be of the essence of this Agreement and every provision hereof.

17. TERMINATION

a. Except as expressly set forth in Paragraph **Error! Reference source not found. Error! Reference source not found.** herein, should one party breach any of the terms and conditions in this Agreement, written notice of such breach shall be given to the other party. If the breach is not cured within twenty-one (21) calendar days of the breach, the other party may, in addition to any remedies provided by this Agreement or by law, terminate this Agreement on an additional fifteen (15) calendar day's written notice to the breaching party.

18. RESTRICTIONS ON DISCHARGE INTO WATERS OF THE STATE

a. Recycled Water User understands and acknowledges that District is legally required to dispose of recycled water on Lands during the Season as defined in Paragraph **Error! Reference source not found.** (**Error! Reference source not found.**) and is not permitted to release it into the Sonoma Creek Watershed or its tributaries. Therefore, District is relying on a good-faith performance of Recycled Water User in accepting and using recycled water. If Recycled Water User, as reasonably determined by District, fails to accept and dispose of the recycled water as agreed herein, Recycled Water User and District agree that District will suffer irreparable harm and will not be adequately compensated by money damages for said harm. The parties to this Agreement agree that District may obtain an injunction compelling specific performance of this Agreement together with such other relief as may be allowed under this Agreement or by law.

19. MEDIATION OF DISPUTES PRIOR TO ARBITRATION

Except as provided in Paragraphs **Error! Reference source not found.** (**Error! Reference source not found.**), **Error! Reference source not found.** (**Error! Reference source not found.**), and **Error! Reference source not found.** (**Error! Reference source not found.**), if a dispute arises out of or relates to this Agreement, or an alleged breach of it, and if the dispute cannot be settled through negotiation, then before resorting to arbitration, the Recycled Water User and District agree first to try in good faith

to settle the dispute by mediation. Costs for the mediation shall be borne equally by the parties, except costs for witnesses, preparation materials and evidence incurred by a party for its own benefit. If the parties cannot agree on a mediator or mediation rules to use the parties shall use the construction industry mediation procedures developed by the American Arbitration Association, with the following exceptions or terms in addition to those procedures:

a. The mediation shall be conducted at Santa Rosa, California.

b. Unless otherwise agreed in writing by the parties, the mediation shall be concluded no later than ninety (90) days after initiation of the mediation. At the end of the mediation period, any party may elect to initiate arbitration pursuant to Paragraph **Error! Reference source not found.** (**Error! Reference source not found.**) of this Agreement.

c. The parties shall exchange all relevant non-privileged documents fifteen (15) days before the first mediation session.

Any mediation proceeding shall be confidential and shall not be admissible in a subsequent proceeding. If any party commences an arbitration or court action based on a dispute or claim to which this section applies without first attempting to resolve the matter through mediation, then the other party may apply to such arbitrator or judge for an order staying the arbitration or court action pending mediation.

20. <u>ARBITRATION</u>

Except as provided in Paragraphs **Error! Reference source not found.** (**Error! Reference source not found.**), **Error! Reference source not found.** (**Error! Reference source not found.**), and **Error! Reference source not found.** (**Error! Reference source not found.**), any claims, disputes, or controversies arising out of or relating to this Agreement, or breach thereof, if not previously resolved by negotiation or mediation pursuant to Paragraph **Error! Reference source not found.** (**Error! Reference source not found.**) of this Agreement, shall be settled by arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules (except as modified by A and B immediately below) and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof, provided, however, that:

a. All arbitration proceedings shall take place in Santa Rosa, California.

b. In order to expedite matters and limit costs consistent with the purposes of arbitration, the number of depositions and other discovery shall be appropriate to the amount in dispute and the complexity of the issues, and the arbitrator shall have express authority to limit the number of depositions and other discovery if the parties cannot agree. Written interrogatories will not be permitted. With these exceptions Commercial Arbitration Rules regarding discovery shall apply.

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as set forth below.

Reviewed as to funds by District:

_____
Division Manager - Administrative Services

Reviewed as to form by County Counsel:

_____
County Counsel

City of Sonoma

By: _____

Carol Giovanatto
(Please print name here)

Title: City Manager

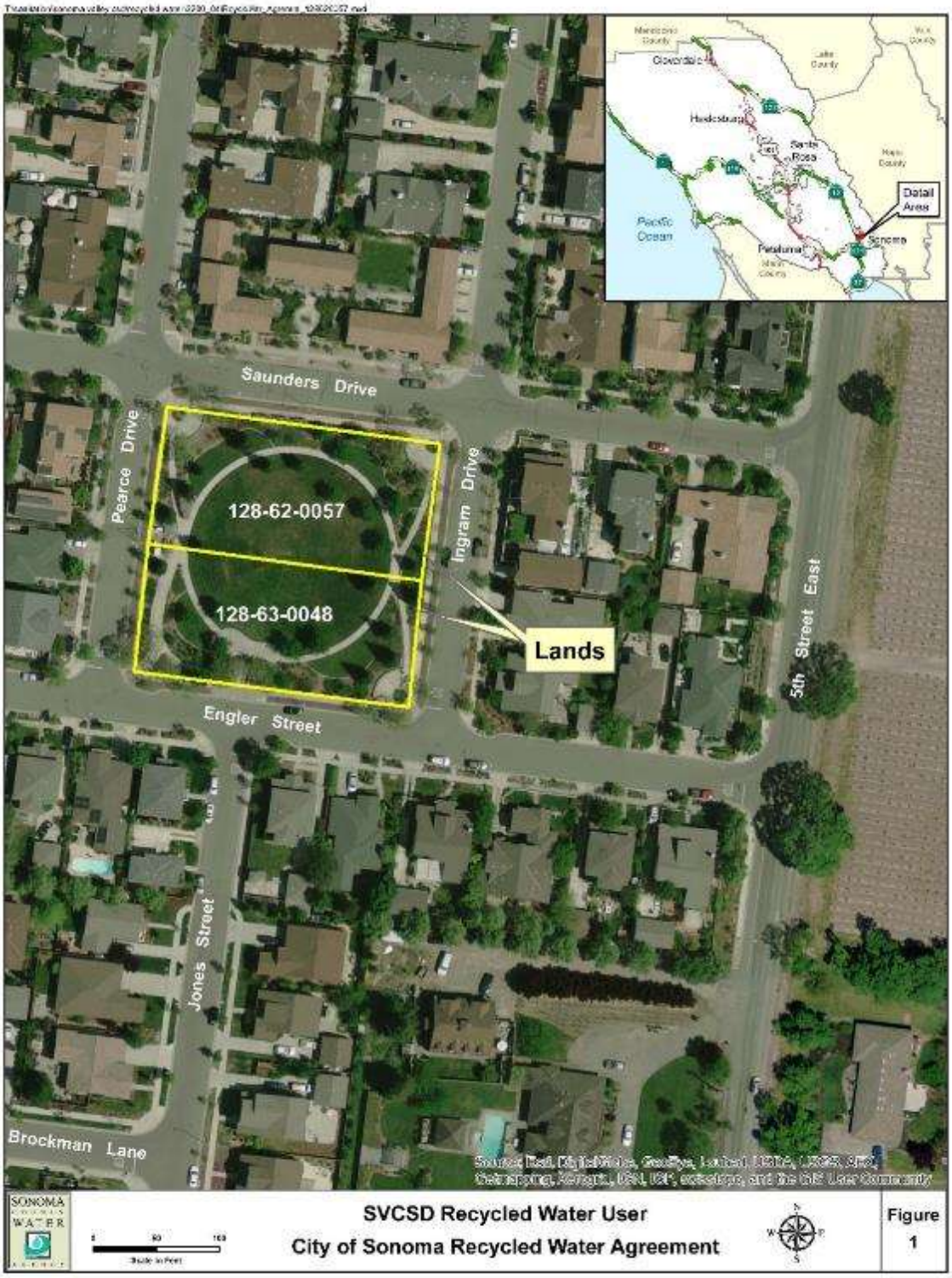
Date: _____

Sonoma Valley County Sanitation District

By: _____
Grant Davis, General Manager
Authorized per Board Action on January 15, 2002

Date: _____

ATTACHMENT A
LOCATION MAP



ATTACHMENT B
RECYCLED WATER USE REQUIREMENTS

Recycled water produced at the Facilities by District generally meets the requirements for disinfected tertiary recycled water as defined by California Code of Regulations (CCR) Title 22, Division 4, and Chapter 3.

Irrigation with recycled water shall be performed in accordance with CCR Title 22 and the applicable National Pollutant Discharge Elimination System (NPDES) Permit or other operating permit. The treatment, storage, distribution, or reuse of recycled water shall not create a condition of pollution or nuisance as defined in Section 13050(m) of the California Water Code.

Irrigation Area Requirements

Irrigation area requirements specified in CCR Title 22, Section 60310, which pertain to disinfected tertiary recycled water include, but are not limited to the following:

- No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic water supply well.
- Any use of recycled water shall comply with the following: (1) Any irrigation runoff shall be confined to the recycled water use area unless otherwise authorized by the regulatory agency; (2) Spray, mist, or runoff shall not enter a dwelling or a food handling facility; (3) Drinking water fountains and designated outdoor eating areas shall be protected against contact with recycled water spray, mist, or runoff.
- No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.
- All areas where recycled water is used and that are accessible to the public shall be posted with conspicuous signs, in a size no less than 4 inches high by 8 inches wide that include the following wording: "RECYCLED WATER - DO NOT DRINK". Each sign shall display an international symbol as found in Water Recycling Criteria, Figure 60310-A
- Except as allowed under Section 7604 of Title 17, no physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.
- The recycled water system shall not include any hose bibs. Quick couplers that are different from that used on the potable water system may be used.
- Recycled water shall not be applied to irrigation areas during periods when uncontrolled runoff may occur.
- Recycled water shall be applied in such a manner so as not to exceed vegetative demand or field capacity.
- No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.
- Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.

A.

Allowable Uses of Recycled Water

Allowable uses of recycled water are specified in CCR Title 22, Section 60303. According to CCR Title 22, disinfected tertiary recycled water can be used for irrigation of the following:

- Food crops where recycled water contacts the edible portion of the crop, including all root crops.
- Orchards where the recycled water does not come into contact with the edible portion of the crop.
- Vineyards where the recycled water does not come into contact with the edible portion of the crop.
- Non-food bearing trees. Christmas tree farms are included in this category provided no irrigation with recycled water occurs for a period of 14 days prior to allowing public access.
- Fodder and fiber crops.
- Seed crops not eaten by humans.
- Food crops that must undergo commercial pathogen-destroying processing before being consumed by humans.
- Cemeteries.
- Freeway landscaping.
- Restricted-access golf courses.
- Ornamental nursery stock and sod farms.
- Pasture for milk animals.
- Irrigation of parks, schools and playgrounds.
- Any inedible vegetation where access is controlled so that the irrigated area cannot be used as if it were part of a park, playground, or school yard.