

Prepared for:
City of Rohnert Park



FINAL

Urban Water Management Plan

2010



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June 2011

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KEY ACRONYMS AND ABBREVIATIONS

ABAG	Association of Bay Area Governments	SPA	Specific Plan Area
Act	Urban Water Management Planning Act	SRP	Santa Rosa Plain
AFY	Acre-feet per year	SRPGMP	Santa Rosa Plain Groundwater Management Plan
BMP	Best Management Practice	SRV	Santa Rosa Valley
BO	Biological Opinion	SWRCB	California Water Resources Control Board
cfs	Cubic feet per second	Subregional System	Santa Rosa Subregional System (recycled water system)
CDPH	California Department of Public Health	TAC	Technical Advisory Committee
CII	Commercial, irrigation and institutional	Tier 1	Tier 1 conservation measures
City	City of Rohnert Park	Tier 2	Tier 2 conservation measures
CUWCC	California Urban Water Conservation Council	UFW	Unaccounted-for water
DFG	California Department of Fish and Game	USGS	U.S. Geological Survey
DMM	Demand Management Measure	UWMP	Urban Water Management Plan
DWR	California Department of Water Resources	WWTP	Wastewater treatment plant
EIR	Environmental Impact Report		
ETo	Evapo-transpiration of common turf grass		
gpcd	Gallons per capita per day		
gpd	Gallons per day		
HETs	High-efficiency toilets		
IRWP	Incremental Recycled Water Program		
mgd	Million gallons per day		
MCL	Maximum contaminant level		
MOU	Memorandum of Understanding		
NBWRP	North Bay Water Recycling Project		
ND	New Development Standards and conservation measures		
NMFS	National Marine Fisheries Service		
PD	Planned Development		
PG&E	Pacific Gas and Electric		
PVP	Potter Valley Project		
Restructured Agreement	Restructured Agreement for Water Supply		
River	Russian River		
SCWA	Sonoma County Water Agency		
SBx7-7	Water Conservation Act of 2009		

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SECTION 1 PLAN PREPARATION

1.1 INTRODUCTION

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 Urban Water Management Plan (UWMP) was prepared in conjunction with City of Rohnert Park (City) 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. Since the adoption of the City’s previous 2005 UWMP, the State has enacted the Water Conservation Act of 2009 (Water Conservation Act), which requires a 20 percent reduction in per capita water consumption by 2020. This UWMP establishes the City’s baseline per capita water consumption and conservation targets, as well as outlining the methods for achieving the necessary water efficiencies.

1.1.1 Purpose

The purpose of developing a 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. The City has chosen to use a 25-year planning horizon. The UWMP analyzes current and projected water supply and demand for normal, single-dry or multiple-dry water year conditions. With adoption of the Water Conservation Act, this UWMP also analyzes how the City will determine, and reach, its water conservation goals. The purpose of the 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 percent 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 Water Conservation Act’s requirement to establish baseline water usage and conservation targets.

The City supplies potable water to a population of approximately 41,000 people. The City’s potable water supply is from two sources: water purchased from the Sonoma County Water Agency (SCWA) and water pumped from 29 active groundwater wells owned and operated by the City. The SCWA water supply is delivered to the City from 12 turnouts from the SCWA’s Petaluma Aqueduct and Russian River-Cotati Intertie system and is supplied with water from the natural flow of the Russian River. The City also has a recycled water system that delivers water from the Santa Rosa Subregional Water Reclamation System (Subregional System) and which offsets approximately 1,000 acre-feet per year of potable water demand.

1.1.2 Law

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 California

Department of Water Resources (DWR) every five years. The City has approximately 8,998 connections and meets the threshold for this State requirement.

For the current 2010 UWMP, the Water Conservation Act (SBx7-7) requires a 20 percent statewide reduction in per capita 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 2010 UWMP will establish the baseline use from which targeted reductions are made, making the 2010 UWMP a particularly important document. Because of the new requirements, DWR extended the due date for submittal of the UWMP to July 1, 2011.

1.1.3 Structure of the Plan

The outline of this UWMP generally follows the *Guidebook to Assist Water Suppliers to Prepare a 2010 Urban Water Management Plan* developed by DWR. The guidelines can be found in the following website link: <http://www.water.ca.gov/urbanwatermanagement/guidebook/>.

Some sections of the outline presented in the guidelines have been combined or arranged in a different order than the guidelines, but all the information requested in the UWMP guidelines and Act is provided within this document. This document is organized in six (6) sections as shown on Table 1.1. The table also includes a description of the key elements in the sections.

**Table 1.1
Structure of the Plan**

Section	Title	Key Elements
1	Plan Preparation	Introduction
		Coordination
		Plan Adoption, Submittal and Implementation
2	System Description	Service Area Physical Description
		Service Area Population
3	System Demands	Baselines and Targets
		Water Demands
		Water Demand Projections for Retailers
		Water Use Reduction Plan
4	System Supplies	Water Sources
		Groundwater
		Transfer Opportunities
		Desalinated Water Opportunities
		Recycled Water Opportunities
5	Water Supply Reliability and Water Shortage Contingency Planning	Future Water Supply Projects
		Water Supply Reliability
		Water Shortage Contingency Planning
		Drought Planning
6	Demand Management Measures (DMMs)	Water Quality
		Description of DMMs
		Implementation of DMMs

1.1.4 Level of Planning

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 UWMP considers a 25-year planning horizon through year 2035.

The Act does not require that a UWMP contain the level of system-specific detail that would be included in a water system master plan. The Act specifically exempts UWMPs from review under the California Environmental Quality Act (CEQA)¹. Additionally, Water Supply Assessments (Water Code Section 10631) and Water Supply Verifications (Water Code Section 66473.7) may rely on the UWMP as a foundational document for findings required in these documents.

1.1.5 Assumptions

The evaluation and projections in this document are based on the City's current 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 COORDINATION

This section describes the various agencies and stakeholders with which the City communicated in order to obtain input and information in preparing this UWMP.

1.2.1 Agency Coordination

The City meets regularly with other water purveyors. In particular, the City meets at least monthly with its water wholesaler, 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 cities of Cotati and Petaluma as well as the North Marin Water District because of its shared delivery system through the SCWA Petaluma aqueduct system that transports water from the Russian River south to the Sonoma transmission system.

In addition to sending notices to the various agencies listed in the table below, the City also included a public notice in the local newspaper, The Community Voice, notifying the public of the City's intent to prepare its UWMP. The notice asked for public input during the preparation of the UWMP.

Table 1.2 (DWR Table 1) identifies the various agencies that the City is coordinating with during the UWMP preparation process.

¹ Water Code Section 10652

**Table 1.2 (DWR Table 1)
Coordination with Appropriate Agencies**

Coordinating Agencies	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance/ input	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved/ No information
Sonoma County Water Agency	✓	✓		✓			
County of Sonoma				✓			✓
City of Cotati	✓			✓			
City of Petaluma	✓			✓			
City of Santa Rosa	✓			✓			
City of Sonoma	✓			✓			
North Marin Water District	✓			✓			
Town of Windsor	✓			✓			
Valley of the Moon Water District	✓			✓			
City of Sebastopol				✓			✓
Penngrove Water Company				✓			✓
Sonoma State University				✓			✓

1.2.2 Public Participation

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. Table 1.3 identifies the public participation activities and the participants. A description of the governance of the SCWA water supply is described in Section 2.

**Table 1.3
Public Participation and Outreach**

Date	Description	Participants
2010-2011	UWMP planning and coordination, discussion, projections at quarterly Water Advisory Committee (WAC) meetings	WAC Members, General Public
Apr. 8, 2011	Public notice of UWMP preparation	[Community Voice]
Mar. 17, 2011	Letters sent to Interested Parties	See List on Table 1.2 (DWR Table 1)
May 30, 2011	Public hearing notice #1	[Community Voice]
May 27, 2011	Draft UWMP 2010 released	City Council, General Public
Jun. 5, 2011	Public hearing notice #2	[Community Voice]
Jun. 14, 2011	Draft UWMP 2010 public hearing	City Council, General Public

The findings of the Draft UWMP were presented before the City Council on June 14, 2011. 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 City Council resolution of adoption is included in Appendix A.

1.3 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The UWMP was adopted by the City Council on June 14, 2011. The Final UWMP incorporates comments made by the City Council and the public. The Final UWMP is available for public viewing at the following website link: <http://www.rpcity.org/> and at the City’s main office during normal business hours. A copy of the Final UWMP will be submitted to DWR, the California State Library, the SCWA and Sonoma County no later than 30 days after adoption by the City Council. Comments to the Final UWMP made by DWR and the City’s responses to the comments will be added to the website for the public’s information.

Implementation of the 2010 Final UWMP will be the responsibility of the City Engineer and consists of the activities shown on Table 1.4.

**Table 1.4
Plan Implementation**

Description	Guidance Document(s)	Activity	Timeframe
Water supply projects and Capital Improvement Program (CIP)	City of Rohnert Park Annual Budget	Preparation of Annual CIP for water supply projects	March, 2011-2015
Water supply reliability	Final UWMP	Continued coordination and collaboration with SCWA to acquire consistent Russian River water supply entitlement in accordance with water supply contract	Monthly meetings with Water TAC and quarterly meetings with WAC
Water demand reduction targets	SBx7-7, Final UWMP, City Water Conservation Program	Ongoing tracking of GPCD and modifying Water Use Reduction Plan as needed	10% reduction by 2015; 20% reduction by 2020
Voluntary and mandatory Water conservation policies and procedures	Water shortage contingency plan in Final UWMP	Implement existing policies and procedures to incorporate elements from 2012 the revised contingency plan	

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SECTION 2 SYSTEM DESCRIPTION

This section describes the physical and political characteristics of the City's water service area as well as current and projected population for the service area.

2.1 PHYSICAL ATTRIBUTES

The City of Rohnert Park is located approximately 50 miles north of San Francisco. The water service area under consideration is bounded by the City's Sphere of Influence as outlined in its 2000 General Plan. The City's General Plan identified six major Specific Plan Areas (SPAs):

- Northeast SPA
- University District SPA
- Southeast SPA
- Canon Manor SPA
- Wilfred Dowdell SPA
- Northwest SPA

The City's General Plan anticipated annexation and development of all of the SPAs except Canon Manor. To date the University District, Southeast and Wilfred Dowdell SPAs have been approved and annexed, and the Northeast SPA is moving through the development approval process. Since the adoption of the General Plan in 2000, a casino has been proposed just inside the City's Sphere of Influence in the Northwest SPA; however this proposed land use is not in the General Plan, is still under review and remains uncertain. Therefore, Northwest SPA land uses are modeled as proposed by General Plan.

This UWMP also takes into account two major infill planned development (PD) projects: the Stadium Lands PD and the Sonoma Mountain Village PD. The City has approved Final Development Plans and Environmental Documents for each of these planned developments.

The Canon Manor Specific Plan Area has contracted with the Penngrove Water Company for water supply, and its demands are not considered demands on the City supply. Additionally, the Sphere of Influence includes Sonoma State University, which has its own water system and is not served by the City.

The water service area is approximately 6.4 square miles and serves residential and commercial needs. Figure 2.1 shows the City's water service area which is the current City Limit boundary. The figure also shows the SPAs described above. The City does not have outside service area connections. The City is at elevation 106 feet above mean sea level. The water distribution system contains two pressure zones. The distribution system consists of approximately 115 miles of water distribution system mains. Most of the distribution system mains are 6- to 8-inch diameter pipes and a small number are 10- to 12-inch diameter pipes.

The City also delivers recycled water to customers from Title 22 treated wastewater from the Santa Rosa Subregional System (Subregional System). The Subregional System operates a low-pressure and a high-pressure distribution system. The low-pressure system is delivered through an 18-inch diameter pipeline

that runs along Wilfred Avenue and Golf Course Drive and ends at Foxtail Golf Course near the northern City Limits. This low-pressure system delivers approximately 500 acre-feet per year to five customers. The high-pressure system begins at the Rohnert Park Pump Station, located at the intersection of Stony Point Road and Rohnert Park Expressway. The high-pressure system delivers 500 AFY to 27 customers.

2.2 POLITICAL CHARACTERISTICS AND GOVERNANCE OF PUBLIC WATER SYSTEM

The City’s water system is governed by a 5-member City Council which includes a mayor. The water system, including its groundwater system, is managed and operated by the Public Works Department. The recycled water system is managed and operated by the Subregional System. The City Engineer is a member of the Technical Advisory Committee (TAC) to the Subregional System.

The governance of the SCWA water supply is provided for under the *Restructured Agreement for Water Supply* (Restructured Agreement), the agreement which provides for a Water Advisory Committee (WAC). The WAC representatives for the City are one Council member and one alternate Council member selected by the Council. The power of the WAC is limited to an advisory role.

2.3 CLIMATE

The City is located in the Russian River watershed. The climate and hydrology of the Russian River watershed directly affect the City because its wholesale supply from SCWA is drawn from the Russian River. The climate of the Russian River watershed is tempered by its proximity to the Pacific Ocean and is characterized by seasonal rainfall patterns. Over 90 percent of the total annual precipitation falls between October and April, with a large percentage of the rainfall typically occurring during three or four major winter storms. The regional averages of the rate of evapo-transpiration of common turf grass (ETo), rainfall, and temperature are summarized in Table 2.1.

**Table 2.1
Climate**

	Average Eto, in	Average Rainfall, in	Average Temp, °F
January	1.2	6.25	47.0
February	1.7	5.32	50.5
March	2.8	4.09	52.8
April	3.7	2.06	55.8
May	5.0	0.97	59.8
June	6.0	0.26	64.6
July	6.1	0.03	66.5
August	5.9	0.08	66.6
September	4.5	0.38	65.9
October	2.9	1.60	61.2
November	1.5	3.64	53.4
December	0.7	5.50	47.6
Annual	42.0	30.18	57.6

Data obtained from Western Regional Climate Center, wrcc@dri.edu for Santa Rosa station, 1902-2010

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The average annual rainfall and annual ETo for the region are approximately 30 and 42 inches per year, respectively. 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.

The average annual ETo for the region is approximately 12 inches more than the average annual precipitation. Because of this difference, and because over 90 percent of the annual precipitation occurs between the months of October and April, growing turf in this region requires a significant amount of irrigation during the dry season.

2.4 SERVICE AREA POPULATION

The information provided in this section is from the document entitled *2010 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update* prepared by Maddaus Water Management dated November 19, 2010 (referred to in this UWMP as the “Maddaus Report” and included in Appendix B), and is used in this UWMP as permitted by the City.

State regulations concerning the preparation of the UWMP reports allow water agencies to select the most appropriate demographic projections for use. The City selected population and employment projections based on the 2009 Association of Bay Area Governments (ABAG). ABAG published the projections report in 2009, which includes population and employment estimates for the City of Rohnert Park. The 2009 ABAG projections are the most current information available for the City and take into consideration the City’s 2000 General Plan and the SPAs described earlier, with some adjustments. The projections also take into account the recent economic conditions, especially the loss of jobs. The City previously used the 2000 General Plan projections which do not account for current economic conditions and end in 2020. Because of these limitations, the 2009 ABAG projections were selected for use in this UWMP. Table 2.2 (DWR Table 2) shows the current and projected population for the City’s service area. Employment projections are shown in Table 2 of the Maddaus Report.

**Table 2.2 (DWR Table 2)
Population – Current and Projected**

	2010	2015	2020	2025	2030	2035	Data Source
Population ^a	43,398	46,400	47,900	49,300	51,000	53,000	2009 ABAG

^a Population estimate for 2010 is from Department of Finance (2000 Census)

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SECTION 3 SYSTEM DEMANDS

This section describes the urban water system demands, including calculating its baseline (base daily per capita) water use and interim and final urban water use targets. It includes a detailed description of how the baseline and targets were calculated. The calculations follow the *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan* dated March 2011 and developed by DWR (DWR Guidebook). Background information and the approach used to develop baselines and targets are also included.

This section quantifies the current water system demands by category and projects them over the planning horizon of the UWMP. These projections include water sales to other agencies, system water losses, and water use target compliance. The future water demands are based on the assumed reduction in per capita daily use determined from planning for and implementing actions associated with the Water Conservation Act of 2009 (Water Conservation Act). The provisions of the Water Conservation Act are incorporated into Part 2.55 of Division 6 of the California Water Code, commencing with Section 10608.

3.1 BASELINES AND TARGETS

One of the new requirements for completing a UWMP in 2010 is the requirement for each urban water supplier to calculate a baseline daily per capita water use and develop a per capita water use target for 2020 and an interim water use target for 2015. After establishing the City's baseline water usage per capita and the related conservation goals described in the following paragraphs, the City decided to use regional conservation goals as part of a regional alliance with other water contractors and customers to the SCWA. However, it should be noted, that the City's individual base daily per capita water use will still apply if the regional alliance goals are not met. In other words, if the regional alliance goals are not met, the City's individual goals will apply to the City for DWR reporting and compliance purposes.

3.1.1 Base 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 gross water use includes all water entering the delivery system, including water losses, but excluding recycled water delivered within the supplier's service area, water placed into long-term storage and water conveyed to other urban water suppliers.

The purpose of developing a base daily per capita water use is to have a baseline from which to derive the 2020 and 2015 water use targets. The base daily per capita water use is developed for each water supplier using one of the methodologies authorized by the Department of Water Resources. In most cases, the calculation is based on a 10-year average beginning no earlier than 1994 and ending no later than 2010. However, the City may instead use a 10- to 15-year average because of its recycled water program. The methodology for determining the base daily per capita water use, in consideration of the City's recycled water program, is described in the paragraphs that follow.

The City, through the Subregional System, delivers recycled water to its customers. Because of this recycled water supply and in accordance with the DWR Guidebook, the City selected a 13-year average to calculate the base daily per capita water use. The 13-year average included data from 1992 to 2004.

A second baseline is computed in order to establish the maximum allowable 2020 target. This baseline consists of a continuous five year period ending no earlier than December 31, 2007 and no later than December 31, 2010. The range used for calculating the City’s maximum allowable target is the period from 2003 to 2007. Table 3.1 illustrates the 13-year and 5-year base period ranges.

**Table 3.1 (DWR Table 13)
Base Period Ranges**

Base	Parameter	Value	Units
10- to 15-Year Base Period	2008 total water deliveries	5,733	AFY
	2008 total volume of delivered recycled water	1,113	AFY
	2008 recycled water as a percent of total deliveries	19	percent
	Number of years in base period ^a	13	years
	Year beginning base period range	1992	--
	Year ending base period range ^b	2004	--
5-Year Base Period	Number of years in base period	5	years
	Year beginning base period range	2003	--
	Year ending base period range ^c	2007	--

^a If the 2008 recycled water percent is less than 10 percent of total water deliveries, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

^b The ending year must be between December 31, 2004 and December 31, 2010.

^c The ending year must be between December 31, 2007 and December 31, 2010.

As is shown in Table 3.2 (DWR Table 14), the City’s base daily per capita water use is 162 gallons per capita per day (gpcd). The base daily per capita water use was developed using the total service area population.

Table 3.2 (DWR Table 14)
Base Daily Per Capita Water Use — 10- to 15-Year Range

Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence Year	Calendar Year			
Year 1	1992	38,162	6.2	162
Year 2	1993	38,766	6.3	162
Year 3	1994	39,128	6.7	171
Year 4	1995	39,056	7.0	180
Year 5	1996	39,843	7.1	179
Year 6	1997	40,495	7.3	179
Year 7	1998	41,314	6.5	158
Year 8	1999	42,025	6.9	163
Year 9	2000	42,236	6.5	155
Year 10	2001	42,309	6.7	157
Year 11	2002	42,233	6.4	151
Year 12	2003	42,455	6.0	141
Year 13	2004	42,282	5.9	141
Year 14	n/a	n/a	n/a	n/a
Year 15	n/a	n/a	n/a	n/a
Base Daily Per Capita Water Use				162

Note: The City has selected a 13-year range for determining base daily use.

A second requirement for completing the 2010 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 percent of this 5-year baseline. As shown in Table 3.3 (DWR Table 15), the 5-year base daily per capita water use is 125 gpcd.

Table 3.3 (DWR Table 15)
Base Daily Per Capita Water Use — 5-Year Range

Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	42,455	6.0	141
Year 2	2004	42,282	5.9	141
Year 3	2005	42,262	5.2	123
Year 4	2006	42,833	4.9	115
Year 5	2007	42,722	4.6	108
Base Daily Per Capita Water Use				125

Based on the calculations for the 13-year baseline, the 5-year baseline and the 100 gpcd threshold, the City’s 2020 water use target that is calculated under Section 3.1.2 must be less than or equal to 95 percent of the 5-year baseline, or 119 gpcd. In summary, 119 gpcd is the minimum 2020 water use target that must be met under the calculations that follow in Section 3.1.2.

3.1.2 Water Use Targets (2015, 2020)

The Water Conservation Act established requirements for the state of California to reduce its statewide urban per capita water use by 20 percent by the year 2020. An interim target is set for 2015 which is halfway between the baseline and the 2020 target. 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 grants and loans.

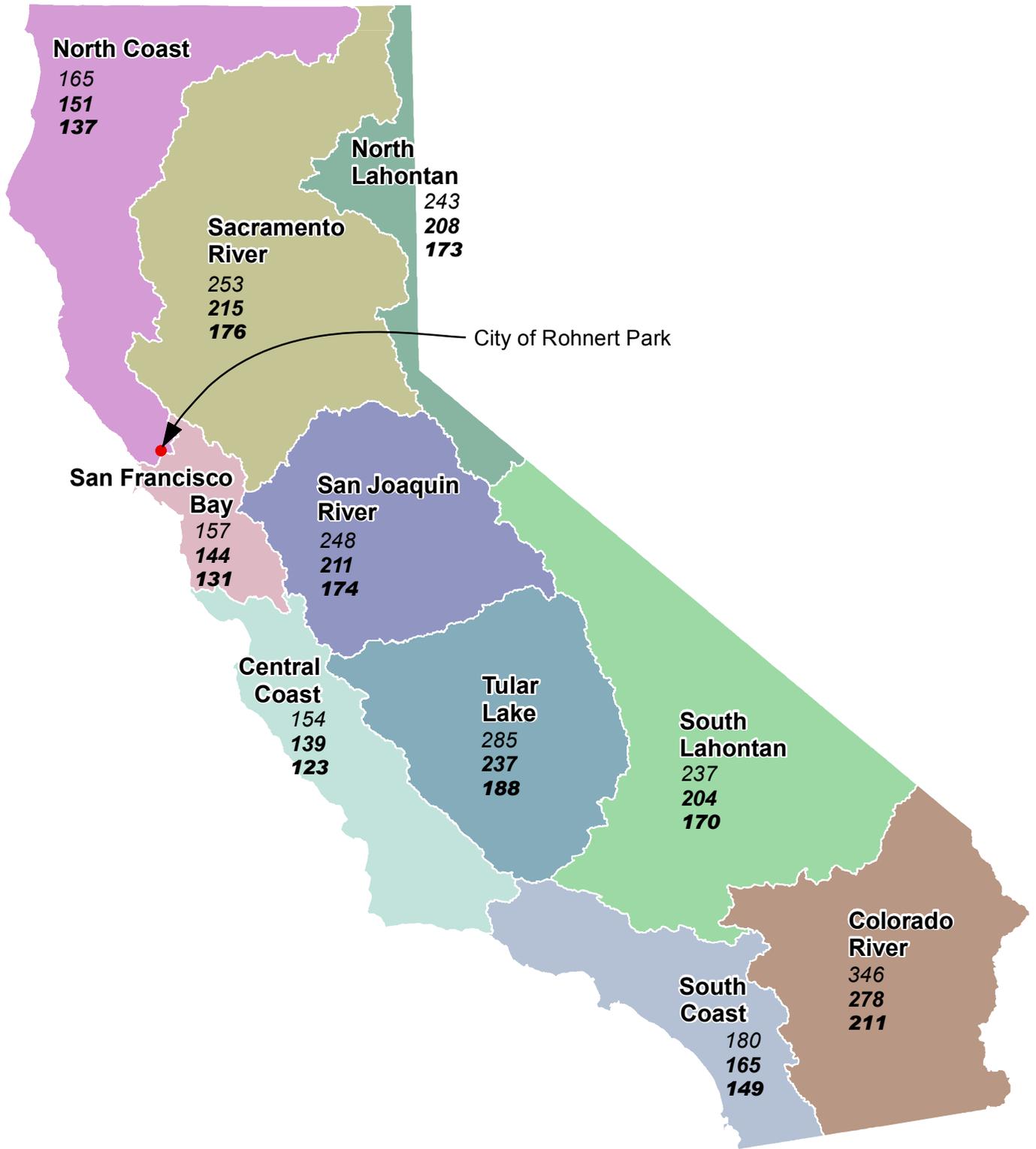
3.1.2.1 Individual Agency Targets

Under the Water Conservation Act, each individual urban water supplier must develop a water use target for the year 2020 using one of four allowable methods. The 2015 interim target is a per capita water use figure which is halfway between the City's base daily per capita water use of 119 gpcd (determined in Section 3.1.1) and the 2020 target.

There are four methods that an urban water supplier may use to develop their 2015 and 2020 water use targets. Three methods were provided in the Water Conservation Act and the fourth was subsequently established by DWR. The four methods are generally described below. A more complete description can be found in DWR's Guidebook.

- Method 1: 80 percent 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 percent of the San Francisco Bay hydrologic region (see Figure 3.1); and
- Method 4: Savings by water sector (indoor residential and CII) and landscape and water loss savings.

The City has elected to use Method 1 for the development of its individual water use target. Based on the City's base daily per capita water use of 162 gpcd, the 2020 water use target under Method 1 equals 130 gpcd. Because the minimum 2020 water use target determined in Section 3.1.1 is 119 gpcd and is less than the Method 1 calculation, the individual agency water use target that applies is 119 gpcd.



City of Rohnert Park

Legend

Region Water Use Targets

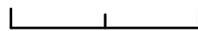
in gallons per capita per day

165 Baseline (1995-2005)

151 Interim Target (2015)

137 2020 Target

0 40 80 Miles



1 inch = 81 miles



Sources: Department of Water Resources (DWR) Hydrologic Regions

Figure 3.1
Hydrologic Region Map

City of Rohnert Park
2010 Urban Water Management Plan



www.w-and-k.com

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Table 3.4 summarizes the calculation on the “95 percent target check.” Table 3.5 summarizes the City’s 2015 and 2020 water use targets.

Table 3.4
Water Use Target Calculations for the City of Rohnert Park

Year	Population	Gross Water Use (mgd)	Daily Per Capita Water Use (gpcd)
2003	42,455	6.0	141
2004	42,282	5.9	141
2005	42,262	5.2	123
2006	42,833	4.9	115
2007	42,722	4.6	108
Average Daily Water Use (2003-2007)			125
2020 Target (95% of 2003-2007 average)			119
Base Daily Water Use ^a			162
2015 Interim Target ^b			140

^a From Table 3.2

^b Halfway between Base Daily Water Use and 2020 Target

Table 3.5
Water Use Targets for the City of Rohnert Park

Year	Projected Water Use, AFY ^a	Population ^b	Projected Per Capita Water Use, gpcd	Water Use Target, gpcd	Meets Target?
2015	5,314	46,400	102	140	Yes
2020	5,486	47,900	102	119	Yes

^a Total potable water deliveries (i.e., excludes recycled water)

^b Population projections from Section 2

3.1.2.2 Regional Targets

The Water Conservation Act 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 nine water contractors to the Sonoma County Water Agency (SCWA) for purchase of Russian River water supply. The water contractors are eligible to form a regional alliance, under the provisions of the Water Conservation Act because the water contractors are recipients of water from a common wholesale water supplier, the SCWA. A water conservation regional alliance among the nine water contractors is already in existence and comprises the Sonoma-Marin Saving Water Partnership, effectively combining the regional water conservation efforts with regional alliance for purposes of meeting regional water use targets. The members of the alliance are the cities of Rohnert Park, Santa Rosa, Sonoma, Cotati and Petaluma, the Town of Windsor, Valley of the Moon Water District, North Marin Water District and Marin Municipal 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 targets and then weighting the individual targets by each member’s population. The weighted targets are then averaged to determine the regional alliance target. Detailed calculations under the regional alliance can be found in

Appendix C.1. The regional alliance per capita water use targets in comparison to the projected per capita water use are shown in Table 3.6.

Table 3.6
Regional Water Use Targets

Year	Projected Water Use, AFY	Population	Projected Per Capita Water Use, gpcd	SBx7-7 Water Use Target, gpcd	Meets Target?
2015	95,032	637,687	133	142	Yes
2020	94,602	659,825	128	129	Yes

The City Council approved becoming a member of the regional alliance and using regional targets at its Council meeting of April 12, 2011. A copy of the letter approving the City's membership in the regional alliance is included in Appendix C.2. Use of the regional approach allows the City, together with the other regional alliance members, to have a (combined) conservation target of 129 gpcd.

Becoming a member of the regional alliance will help the City focus efforts on regional water conservation programs that the water contractors intend to actively engage in through the Sonoma-Marín 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.

3.2 WATER DEMANDS

The water demand and water conservation savings analyses are included in the Maddaus Report (Appendix B). Excerpts and water demand data from the Maddaus Report are directly used in this section.

3.2.1 Past and Current Water Deliveries

Water use in the City's service area is predominantly residential use. The residential customers account for approximately 90 percent of the total water billing accounts and approximately 80 percent of the total water deliveries. Commercial customers are the next largest customer type with irrigation accounts next in terms of number of accounts and water deliveries. The relatively modest use associated with irrigation accounts can be attributed to the fact that many large landscapes in the City are connected to the recycled water system. Fire system water accounts were not listed separately in the account estimates because they are already included as part of commercial or multi-family customer accounts.

Past customer water use for the year 2005, as presented in Table 3.7 was obtained from actual billing data for the various water use sectors.

**Table 3.7 (DWR Table 3)
Water Deliveries — Actual, 2005 (AFY)**

Water Use Sectors	2005				
	Metered		Not Metered		Total Volume
	# of Accounts	Volume	# of Accounts	Volume	
Single family	7,590	2,455	-	-	2,455
Multi-family	413	1,191	1	-	1,191
Commercial	496	951	-	-	951
Industrial/Institutional	2	-	-	-	-
Irrigation	250	212			212
Total	8,751	4,809	1	-	4,809

Current customer water use for year 2010, as presented in Table 3.8 is also based on actual billing data for the various water use sectors.

**Table 3.8 (DWR Table 4)
Water Deliveries — Actual, 2010 (AFY)**

Water Use Sectors	2010				
	Metered		Not Metered		Total Volume
	# of Accounts	Volume	# of Accounts	Volume	
Single family	7,655	1,642	-	-	1,642
Multi-family	473	1,467	-	-	1,467
Commercial/Institutional	549	417	1	-	417
Industrial	2	0	-	-	0
Irrigation	321	316	-	-	316
Total	9,000	3,843	1	-	3,843

3.2.2 Projected Water Deliveries

For purposes of water use projections, the Maddaus Report used an adjusted usage figure for year 2010 and not the actual metered delivery data presented in the previous table. The 2010 planning estimate is then used as a “take-off” point from which future demand projections are based. The reason for using an adjusted usage figure rather than basing the estimate on actual water delivery is that the 2010 actual delivery is an artificially low “take-off” point for future projections due to a cooler than normal 2010 summer. This results in lower summertime water use, water use reduction due to the economic climate in 2010 and carryover residual reductions in water demands coming from mandatory water conservation in 2009. The adjusted water use figure for 2010 was based on the 2007 water use.

The land use and population assumptions for the water use projections are based on the 2009 Association of Bay Area Governments (ABAG) population and employment projections. The 2009 ABAG projections were used to create the demand projections. They take into account the recent economic conditions, especially the loss of jobs. By using this employment information, this analysis effectively accounts for commercial vacancies the City is experiencing. Lower jobs in 2010 correlate with higher vacancies, lower water use per account and lower jobs per account. Job growth in the future is used to increase the number of accounts in the future. The City previously used 2000 General Plan projections which do not account for current economic conditions and end in 2020. Because of these limitations, 2009 ABAG projections were used in the Maddaus Report. The 2000 Census data was used as a general reference when determining population and household sizes for the City’s service area in 2010.

**Table 3.9 (DWR Table 5)
Water Deliveries — Projected, 2015 (AFY)**

Water Use Sectors	2015				
	Metered		Not Metered		Total
	# of Accounts	Volume	# of Accounts	Volume	Volume
Single family	8,077	2,536	-	-	2,536
Multi-family	453	1,593	-	-	1,593
Commercial	576	637	-	-	637
Industrial/Institutional	2	3	-	-	3
Irrigation	266	433	-	-	433
Total	9,374	5,202	-	-	5,202

Note: Delivery projections are based on savings including plumbing code and excluding unaccounted-for water.

**Table 3.10 (DWR Table 6)
Water Deliveries — Projected, 2020 (AFY)**

Water Use Sectors	2020				
	Metered		Not Metered		Total
	# of Accounts	Volume	# of Accounts	Volume	Volume
Single family	8,339	2,569	-	-	2,569
Multi-family	475	1,609	-	-	1,609
Commercial	716	766	-	-	766
Industrial/Institutional	3	3	-	-	3
Irrigation	275	447	-	-	447
Total	9,808	5,394	-	-	5,394

The projections for 2020, if realized, would bring the City’s per capita water use down to 102 gpcd which is less than the City’s 2020 water use target of 119 gpcd.

**Table 3.11 (DWR Table 7)
Water Deliveries — Projected, 2025, 2030, and 2035 (AFY)**

Water Use Sectors	2025		2030		2035	
	Metered		Metered		Metered	
	# of Accounts	Volume	# of Accounts	Volume	# of Accounts	Volume
Single family	8,582	2,597	8,878	2,651	9,226	2,726
Multi-family	490	1,620	507	1,647	527	1,689
Commercial	807	849	901	935	1,012	1,041
Industrial/Institutional	3	4	4	4	4	5
Irrigation	283	460	292	476	304	495
Total	10,165	5,530	10,582	5,713	11,073	5,956

3.2.3 Water Sold to Other Agencies

The City did not sell water to other agencies. This information is presented in table 3.12 in DWR’s required format.

**Table 3.12 (DWR Table 9)
Sales to Other Water Agencies (AFY)**

Water Distributed	2005	2010	2015	2020	2025	2030	2035
Name of Agency	--	--	--	--	--	--	--
Total	0						

3.2.4 Actual and Projected “Other” Water Demands

Table 3.13 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, un-metered water and/or water leaking from the system. Unaccounted-for water can also result from meter inaccuracies. Unaccounted-for water is calculated before the result of conservation programs is calculated and increases due to an overall increase in demand.

The City is committed to minimizing its unaccounted-for water and staying within the industry average of 10 percent loss (maximum). The City’s unaccounted-for water for the past 5 years is approximately 7 percent. The City’s unaccounted-for water in 2005 was uncharacteristically high (approximately 17 percent of potable water deliveries). During this period the City was replacing commercial and multi-family meters. In many cases the work included constructing new services, and temporary un-metered services were used to keep businesses and apartment complexes with water. It is believed that during 2005, some water was not metered as a result of the work associated with the metering project.

The City has no other uses (such as groundwater recharge or conjunctive use) at this time. Table 3.13 below shows actual losses for 2005 and 2010 and estimates losses for the years 2015 through 2035. The City’s recycled water use is from the Santa Rosa Subregional System. A detailed description of the City’s recycled water use is included in Section 4.6.

**Table 3.13 (DWR Table 10)
Additional Water Uses and Losses (AFY)**

Water Use	2005	2010	2015	2020	2025	2030	2035
Saline Barriers	-	-	-	-	-	-	-
Groundwater Recharge	-	-	-	-	-	-	-
Conjunctive Use	-	-	-	-	-	-	-
Raw Water	-	-	-	-	-	-	-
Recycled Water	810	710	1,300	1,300	1,300	1,300	1,300
Unaccounted-for System Losses ^a	962	656	391	406	416	430	448
Other (define)	-	-	-	-	-	-	-
Total	1,772	1,366	1,691	1,706	1,716	1,730	1,748

^a In 2005 and 2010, the City had one commercial account that was un-metered. It is assumed that this un-metered account caused unaccounted-for system losses to be very high. In addition, in 2005, the City replaced commercial and multi-family meters causing higher unaccounted-for water in 2005.

3.2.5 Summary of Total Water Use

Table 3.14 presents the projected water conservation savings resulting from the City’s conservation implementation plan described in Section 3.4.2.

Table 3.14
Conservation Savings (AFY)

Existing Tier 1 Program, New Development Standards, Plumbing Code					
	2015	2020	2025	2030	2035
Conservation Savings (Tier 1 + ND)	279	314	342	376	418
Plumbing Code	167	309	434	541	638
Total Conservation Savings	446	623	776	917	1,056

Table 3.15 summarizes the actual water use in 2005 and 2010 and projects water use for years 2015 through 2035. As with previous tables, water use for years 2005 and 2010 are actual water use figures.

Table 3.15 (DWR Table 11)
Total Water Use (AFY)

Water Use	2005	2010	2015	2020	2025	2030	2035
Total Water Deliveries (from Tables 3.7 to 3.11)	4,809	3,843	5,202	5,394	5,530	5,713	5,956
Sales to Other Water Agencies (from Table 3.12)	0	0	0	0	0	0	0
Less Conservation Savings ^a (from Table 3.14)	--	--	(279)	(314)	(342)	(376)	(418)
Additional Water Uses and Losses (from Table 3.13)	1,772	1,366	1,691	1,706	1,716	1,730	1,748
Total	6,581	5,209	6,614	6,786	6,904	7,067	7,286

^a Conservation excludes plumbing code savings (included in Total Water Delivery projections); 2005 and 2010 deliveries are actual deliveries and include conservation savings and losses

3.2.6 Lower income Water Use Projections

The Water Conservation Act 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 percent of median income, adjusted for family size. Based on Census data for the service area, the 80 percent median income figure is approximately \$55,389. Lower income households are estimated to comprise approximately 34 percent of the total households in the City. Table 3.16 shows the projected water demands for lower income households based on 34 percent of the total single family and multi-family residential projected water use.

**Table 3.16 (DWR Table 8)
Lower Income Projected Water Demands (AFY)**

Water Distributed	2015	2020	2025	2030	2035
Single-family residential	872	884	893	912	938
Multi-family residential	548	553	557	567	581
Total	1,420	1,437	1,451	1,479	1,519

3.3 WATER DEMAND PROJECTIONS FOR RETAILERS

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. As referenced earlier in this section, the demand analysis and projections can be found in the Maddaus Report.

The City has provided its demand projections to the SCWA. However, as discussed in Section 3.2.2, the projected 2015 and subsequent years’ water demands are based on a 2010 planning estimate. It is not known how much of this projected amount will actually occur. 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 meet the City’s water demands.

Table 3.17 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 use. The SCWA’s water supply, the City’s groundwater and recycled water supply are further described in Section 4. The City’s water conservation implementation is further described in Section 6. Table 3.17 illustrates the recycled water that the City expects to have delivered through the Subregional System.

Table 3.17 (DWR Table 12)
Retail Agency Demand Projections Provided to Wholesale Suppliers (AFY)

Wholesaler	Contracted Volume	2010 ^c	2015	2020	2025	2030	2035
Sonoma County Water Agency	7,500 ^a	2,758	3,514	4,583	4,937	5,292	5,646
Santa Rosa Subregional	1,300 ^b	710	1,200	1,300	1,300	1,300	1,300

^a Maximum entitlement under the *Restructured Agreement for Water Supply*

^b Recycled water contracted volume is based on maximum projected delivery

^c 2010 based on actual volume

2010 water use is not representative of normal water use characteristics for SCWA and its customers (water contractors). From 2007 – 2010, the SCWA and the water contractors’ water use was significantly reduced by a number of factors including drought conditions, implementation of water shortage response plans, economic recession and increases in residential and commercial vacancy. The methodology used for the SCWA and water contractors for the demand projections for 2015 through 2035 are based on normal water use characteristics and do not incorporate the effects of the conditions described above.

3.4 WATER USE REDUCTION PLAN

In this section, the phrases “Best Management Practices” (BMPs) and “Demand Management Measures” (DMMs) are used interchangeably and also referred to as “conservation measures.” The City’s water use reduction plan is detailed in the Maddaus Report. The report identifies current and projected savings from the City’s conservation programs. The programs include the following categories:

- **Tier 1.** Tier 1 consists of BMPs that were originally identified and established by the California Urban Water Conservation Council (CUWCC). A Memorandum of Understanding (MOU) was voluntarily signed by many urban water agencies and environmental groups who pledged to develop and implement 14 conservation BMPs. The City became a signatory to the MOU on October 23, 2001.
- **Tier 2.** Tier 2 consists of conservation measures beyond Tier 1. City staff conducted a review and screening of various conservation measures that included a water savings device or program that would result in a reduction in water uses. Due to the low cost effectiveness of Tier 2 measures, the City did not select any Tier 2 measures for implementation other than the new development standards described below.
- **New Development Standards (ND).** These are a subset of Tier 2 measures which apply to new development. Conservation savings resulting from Cal Green building codes have been included as this affects all new development in California after January 1, 2011. The City adopted an ordinance for “Cal Green” building standards and the ordinance became effective on January 1, 2011.

3.5 WATER DEMAND REDUCTION GOALS AND PROGRAMS

Based on the programs identified in the section above, the Maddaus Report identified a conservation savings of 418 acre-feet per year by 2035. This amount of conservation savings is a result of implementing the City’s Existing Tier 1 and ND programs. In addition to the conservation savings of 418 acre-feet per year,

the Maddaus Report identifies 638 acre-feet per year savings resulting from State-mandated plumbing code changes in the Building Code.

3.6 IMPLEMENTATION PLAN FOR GPCD REDUCTION

The implementation plan is discussed in detail in the Maddaus Report. The plan is summarized below and includes water savings quantified for the following conservation measures consisting of existing Tier 1 program measures, New Development (ND) measures and other measures:

- CUWCC #1 – Residential Water Surveys, Interior
- CUWCC #1 – Residential Water Surveys, Outdoor
- CUWCC #2 – Plumbing Retrofit Kits
- CUWCC #5a – Large Landscape Water Budgets
- CUWCC #6 – Washer Rebates
- CUWCC #7 – Residential Public Education
- CUWCC #9 – Commercial Water Audits
- ND1 – Rain-sensor shut off device on irrigation controllers (Cal Green)
- ND2 – Smart Irrigation Controller (Cal Green)
- ND3 – High Efficiency Toilets (state law 2014)
- ND4 – Efficient Dishwashers
- ND5 – Efficient Clothes Washing Machines
- ND6 – Hot Water on Demand Systems
- ND7 – High Efficiency Faucets and Showerheads (Cal Green)
- ND8 – Landscape and irrigation requirements
- SB-407 Plumbing Retrofit on Resale or Remodel (state law)
- Submetering Requirement for New Multifamily Accounts
- Submetering Requirement for Existing Multifamily Accounts (retrofit upon sale or remodel)

The City's service area has a high proportion of residential water use and a significant amount of outdoor water use. Consequently, residential conservation programs produce the most savings. The City's service area does not have a heavy manufacturing sector so the conservation potential in the commercial sector is relatively low. The City's implementation plan includes projected water conservation savings from the measures listed above, although the actual implementation of some measures will depend on further review of water use patterns, economic factors, and market demands for programs.

3.6.1.1 Current Plan and Economic Impacts

The economic analysis is shown in Table 18 of the Maddaus Report for the City's selected water conservation program, which includes Tier 1 and ND conservation measures. The water savings cost for the City's conservation program is expressed in two ways in the Maddaus Report: i) Total present value over the analysis period of 2010 through 2035; and ii) Cost of water saved. As shown on Table 18 of the Maddaus Report, the cost of water saved is \$182 per acre-foot. In comparison, the SCWA wholesale water rate is \$634 per acre-foot. Based on the analysis conducted in the Maddaus Report, the cost of implementing the City's water conservation program is less expensive than buying additional water from the SCWA.

3.6.1.2 Additional Measures for Future Discussion

The City's implementation plan described in Section 3.4.2 is expected to be adequate for the City to comply with its 2020 water use target; therefore, no additional measures are being considered at this time.

SECTION 4 SYSTEM SUPPLIES

This section describes the imported water, groundwater and recycled water supply sources, quantities, supply constraints, and future water supply projects. The City primarily uses imported water purchased from the SCWA and local groundwater supply. The City also uses recycled water delivered to large landscape accounts by the Subregional System.

4.1 SCWA WATER SUPPLY

From 2005 to 2010, an average of 70 percent of the City's total water supply (i.e., SCWA water, recycled water and groundwater) was water purchased from the SCWA. More detailed information regarding SCWA's water supply and facilities can be found in SCWA's Urban Water Management Plan at the following link: www.scwa.ca.gov/uwmp/. A general description of the SCWA Water Supply and Transmission System follows.

4.1.1 SCWA Water Supply and Transmission System

The City's water supply is conveyed through the Petaluma Aqueduct through turnouts along the Petaluma Aqueduct and Russian River-Cotati Intertie that are owned and operated by the SCWA. 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; water is also stored in winter and other times of the year 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. The SCWA is the local sponsor and partners with the U.S. Army Corps of Engineers 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 Valley 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 been naturally filtered by the gravels of the Russian River, 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 (see Figure 4.1). The system was designed and planned to meet peak daily demands of its customers.

The existing Petaluma Aqueduct facilities also serve the cities of Rohnert Park, Cotati, and Petaluma, North Marin Water District and Marin Municipal Water District. Potable water, from the SCWA turnouts and City wells is delivered to customers through the City's potable distribution system.

4.2 OTHER EXISTING AND PLANNED WATER SOURCES

The City uses local groundwater supply and also uses recycled water. A detailed discussion of the City's groundwater supply is included in Section 4.3. A discussion of the recycled water supply is included in Section 4.4. The City has no other planned water sources than what it is currently using.

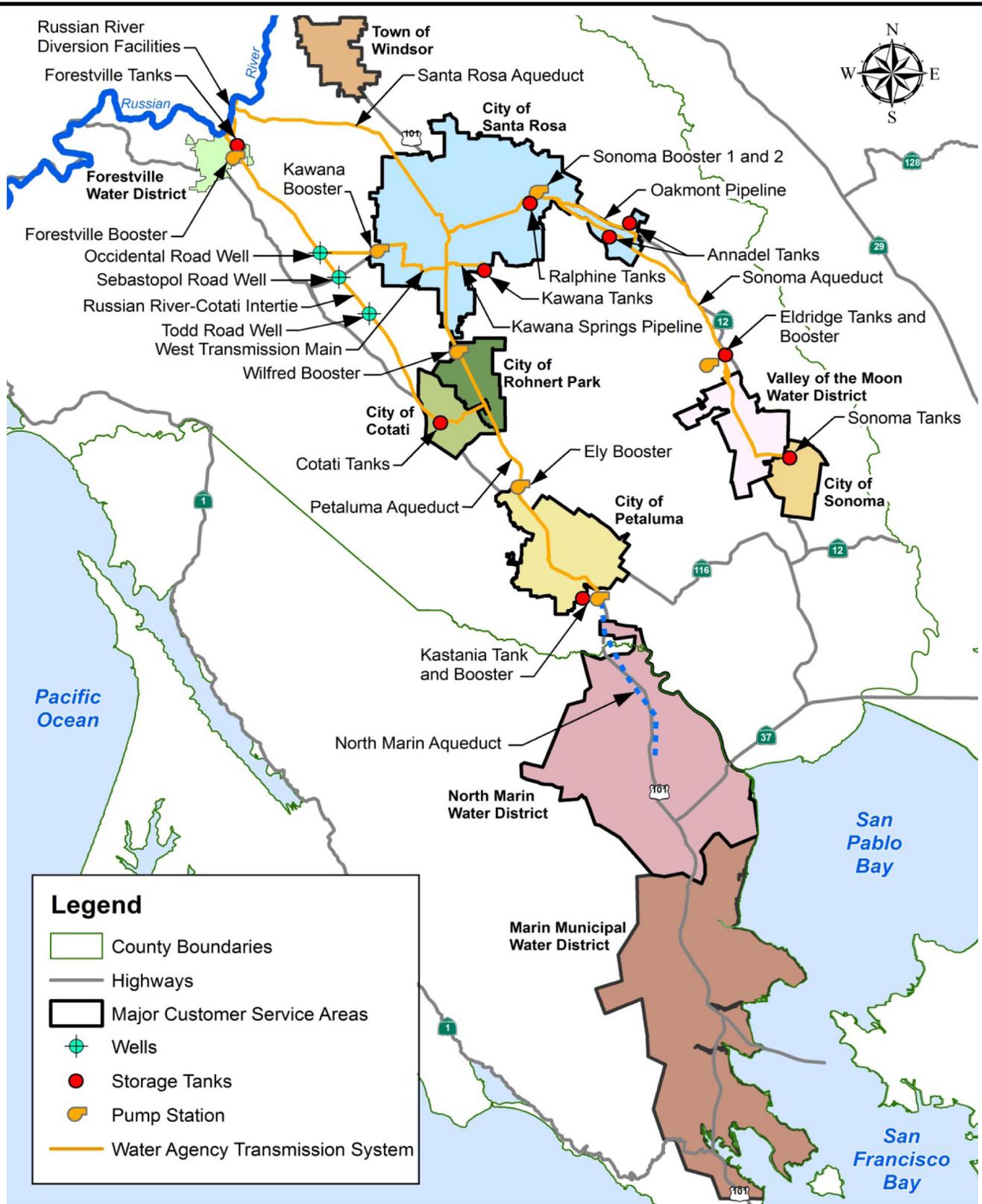
4.3 GROUNDWATER

From 2005 to 2010, an average of 17 percent of the City's total water supply (i.e., SCWA water, recycled water and groundwater) was from local groundwater wells (see Table 4.2 (DWR Table 18)). The discussion that follows provides a description of the groundwater portion of the City's supply, the Santa Rosa Plain Groundwater Management Plan (SRVGMP), the hydrogeology of the basin from which the City pumps groundwater from, the City's groundwater supply and water quality, as well as a summary of the sufficiency of the groundwater for projected groundwater pumping.

4.3.1 Introduction

The City's groundwater supply is from 29 local active groundwater supply wells, located in the Santa Rosa Valley Groundwater Basin. The City manages its SCWA and groundwater supplies in a conjunctive use manner: it relies primarily on SCWA supplies, when those supplies are unconstrained. During periods when the SCWA supply is restricted, primarily for legal and institutional reasons, the City increases groundwater pumping.

The City has developed 42 groundwater wells, 29 of which are currently active, and the City has one standby well that can be used in emergencies for up to five consecutive days but not more than 15 days in a year. The active wells have a total rated production capacity of 8.3 mgd. Table 4.1 outlines the status and production capacity of all the City's wells, which are illustrated on Figure 4.2.



Source: Sonoma County Water Agency 2005 UWMP

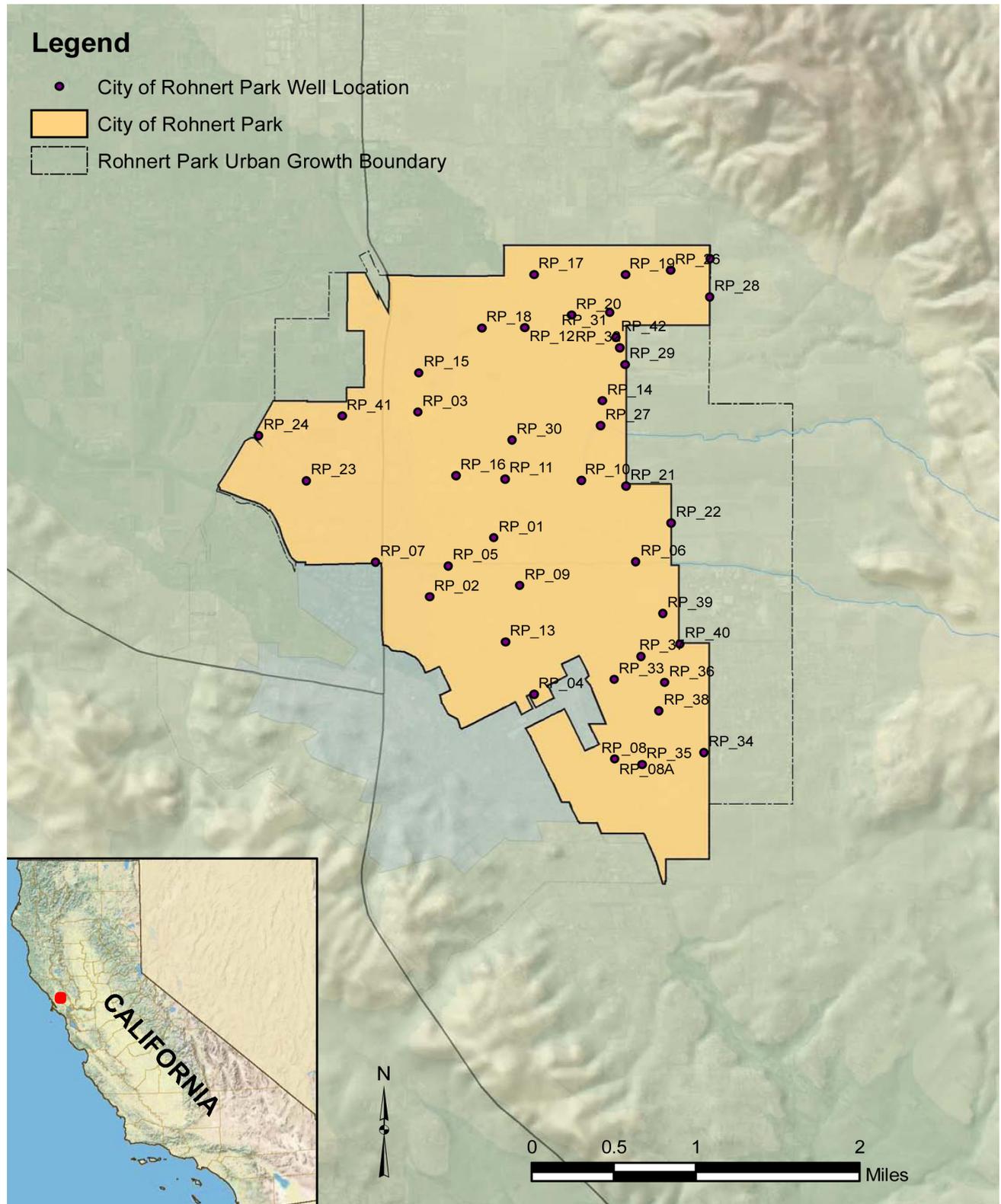
Figure 4.1
SCWA Service Area and Water Transmission System Facilities

City of Rohnert Park
 2010 Urban Water Management Plan



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Source: Sonoma County Water Agency 2005 UWMP

Figure 4.2
City Wells Map

City of Rohnert Park
2010 Urban Water Management Plan

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Table 4.1
City Well Site Information

Well No.	Production, gpm	Status
1	230	Active
2	150	Active
3	0	Abandoned/monitoring well
4	0	Inactive (75gpm)
5	180	Active
6	100	Active
7	250	Active
8	145	Active
8A	95	Active
9	250	Active
10	185	Active
11	345	Active
12	130	Active
13	265	Active
14	140	Active
15	0	Standby Status (302 GPM)
16	450	Active
17	0	Inactive (Unknown GPM)
18	180	Active
19	0	Disconnected/monitoring well
20	120	Active
21	150	Active
22	170	Active
24	0	Disconnected/monitoring well
26	0	Disconnected/monitoring well
27	320	Active
29	130	Active
30	250	Active
31	160	Active
33	230	Active
34	85	Active
35	195	Active
37	0	Inactive (40 GPM)
39	300	Active
40	90	Active
41	285	Active
42	155	Active
Total	5,735	Gallons Per Minute
	8.26	Million Gallons Per Day

4.3.2 Santa Rosa Plain Groundwater Management Plan

Under the Groundwater Management Act (AB 3030), there are no groundwater management plans in effect for the Santa Rosa Valley (SRV) Groundwater Basin or the Santa Rosa Plain (SRP) Subbasin, but a consensus-based Santa Rosa Plain Groundwater Management Plan (SRPGMP) will be completed over the next several years. The SRPGMP process is being led by the SCWA, and its staff has developed a work plan where a small steering committee comprised of representatives from SCWA, County, cities, agriculture and environmental organizations, has been formed to guide pre-planning work and initiate education and outreach on the groundwater management planning process. Three public workshops were held around

the County, including one in the City in January 2011, and all were well attended by the public. The steering committee recommended to the Sonoma County Board of Supervisors that groundwater stakeholders develop a non-regulatory, voluntary groundwater management plan for the SRV Basin. It was approved on March 22, 2011, and the SCWA will move forward in convening a broad-based Basin Advisory Panel to begin the plan.

4.3.3 Description of Groundwater Basin

The City is located in the southern portion of the SRV Groundwater Basin, which drains to the northwest, toward the Russian River and then to the Pacific Ocean. All of the City's water supply wells are located in the SRV Groundwater Basin and no City wells are planned to be constructed outside the SRV Basin. Figure 4.3 shows other nearby groundwater basins including the Petaluma Valley Groundwater Basin, which is located immediately south of the SRV Groundwater Basin and drains to the southeast toward San Pablo Bay. The basin boundaries displayed on Figure 4.3 are from DWR's website.

This section contains a summary of the geology and hydrogeologic conditions in the SRV Groundwater Basin (DWR, 2004). The basin description was described in the 2005 UWMP and has not changed. Additional data reviewed for this UWMP included data for the last 5 years of groundwater levels; historical pumpage; precipitation; groundwater quality; updated geological information, and published and unpublished reports and maps.

Santa Rosa Valley Groundwater Basin

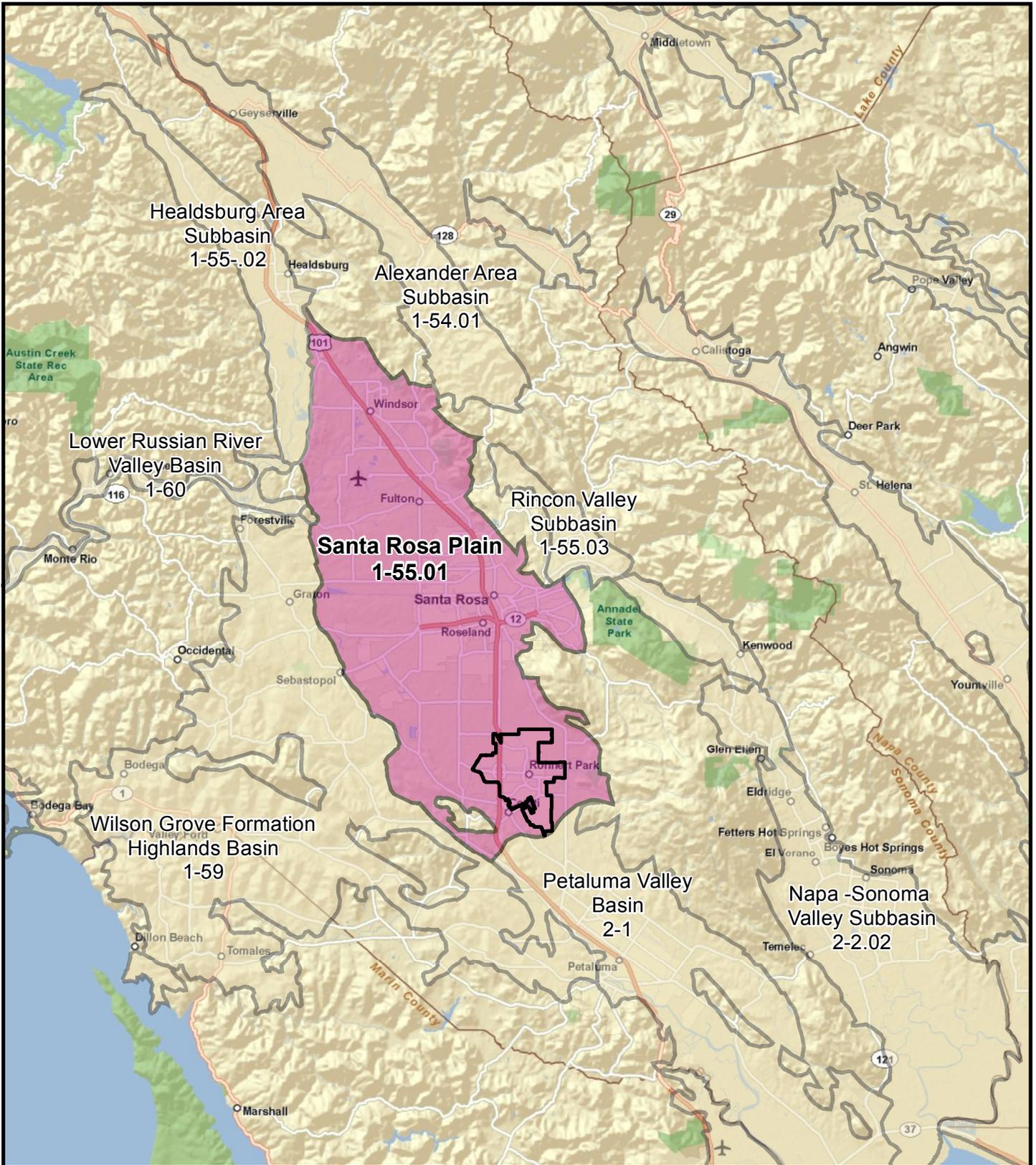
The SRV Groundwater Basin encompasses an area of 158 square miles. There are three subbasins within this basin: the SRP Subbasin, the Healdsburg Area Subbasin, and the Rincon Valley Subbasin (DWR, 2004). The City pumps groundwater from the SRP Subbasin, which has an area of 125 square miles; this is the largest of the three subbasins. The Healdsburg Area Subbasin has an area of 24 square miles, and the Rincon Valley Subbasin contains 9 square miles. The Russian River valley forms the boundary between the Healdsburg Area Subbasin and the SRP Subbasin. The Rincon Valley Subbasin is separated from the SRP Subbasin by a narrow constriction in the bedrock of the Sonoma Volcanics east of Santa Rosa. The southern boundary of the basin is formed by a groundwater divide located just south of the cities of Rohnert Park and Cotati. This divide separates the basin from the Petaluma Valley Groundwater Basin to the south.

Santa Rosa Plain Subbasin

The SRP Subbasin extends from the City, going north to the Russian River, and to just south of Healdsburg, in the northwest. The subbasin is approximately 22 miles long and up to nine miles wide. It is drained by the Laguna de Santa Rosa, which flows north to the Russian River. The subbasin contains three primary water-bearing units: the Wilson Grove Formation, Quaternary alluvial fan deposits, and Quaternary alluvium. Groundwater quality in these formations is generally good (DWR, 2004). The geology of which is discussed in 4.3.3.1. The hydrogeology is discussed below.

DWR (1982) described groundwater levels in the SRP Subbasin as "about in balance, with increased ground water levels in the northeast contrasting with decreased ground water levels in the south." During the period from 1990 to 2003, groundwater levels in the northern part of the subbasin continued to increase, and groundwater levels in the south showed marked increases between 2004 and 2007, primarily in response to decreased pumping in the subbasin. During the last five years, the water levels continued

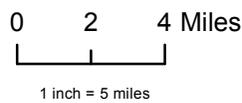
J:\02056 - Rohnert Park\02056-11-007 2010 UWMP Rohnert Park\08-GIS\Maps\Figures\RP_Groundwater.mxd - 5/16/2011 - 1:37:51 PM



Cartography: RMR

Legend

- Santa Rosa Plain Subbasin
DWR Basin Number 1-55.01
- Rohnert Park City Limits



Sources: Department of Water Resources (DWR) Hydrologic Regions: ESRI, DeLorme, AND, Tele Atlas, First American

Figure 4.3
Groundwater Basin and Subbasin Map

City of Rohnert Park
2010 Urban Water Management Plan



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to increase until 2008 and 2009, when the drought occurred and water levels dropped somewhat. The water levels are recovering again in 2010 when less groundwater was pumped. The areas south of the City appear to be recovering more slowly than those in the City. Hydrographs in the SRV Groundwater Basin from the DWR Water data library were reviewed to update the groundwater conditions reported by DWR in 1982, and these show no indication of overdraft conditions near Rohnert Park.

Storage capacity for the SRP Subbasin was estimated at 948,000 acre-feet based on an average specific yield of 7.8 percent at depths of 10 to 200 feet (DWR, 2004; Cardwell, 1958). Average annual natural recharge from 1960 to 1975 for the entire subbasin was estimated to be 29,300 acre-feet and average annual pumping during the same time was estimated at 29,700 acre-feet (DWR, 1982a).

Healdsburg Area and Rincon Valley Subbasins

The Healdsburg Area Subbasin is located northwest of the SRP Subbasin and includes the flood plain of the Russian River. Quaternary alluvium, alluvial fan deposits, terrace deposits, and the Wilson Grove Formation are the principal water bearing units in the subbasin. The Quaternary alluvium is highly permeable and receives recharge from the Russian River and its tributaries.

The City of Healdsburg uses wells perforated in the alluvium for most of its groundwater supply. DWR monitors groundwater levels in eight wells in this subbasin, and water levels have remained stable for the last 5 years (DWR Water Data Library, 2011).

The Rincon Valley Subbasin is located east of the City of Santa Rosa and consists of a valley approximately seven miles long and up to 2.5 miles wide. The valley is bounded by the Sonoma Mountains except where it connects with the SRP Subbasin. The Rincon Valley Subbasin drains to Brush Creek, which flows south to Santa Rosa Creek. Quaternary alluvium and alluvial fan formations are the principal water bearing units in the subbasin, and groundwater quality in these formations is generally good. The water level data on the DWR water data library generally shows that water levels dipped in the low water years of 2008 and 2009, but recovered in 2010 and remained stable in this area between 2006 and 2010.

4.3.3.1 Geology of Santa Rosa Valley Groundwater Basin

Many investigations pertaining to the geology in Sonoma County and more specifically to the SRV Basin area have been conducted. Continued evaluation and interpretation of the lithostratigraphic and structural complexities of the geology of the area present uncertainties with even the most recent geologic maps. A brief synopsis of the major geologic formations occurring in the SRV Basin area is provided below and is taken directly from the 2005 UWMP.

The surficial exposure of geologic units in SRV Basin consists mostly of Quaternary alluvium and alluvial fan deposits (W&K, 2005; Clahan, 2004; Allen, 2003; and DWR, 1982a) (Figure 4.4). The plain is bordered by the Rodgers Creek fault to the east and the Sebastopol and Meacham Hill faults to the west. In the vicinity of the Rodgers Creek fault, the low hills and mountain ranges are predominantly composed of mafic rocks of the Sonoma Volcanics and the Petaluma Formation. West of the Sebastopol fault, the Petaluma Formation has been uplifted and is exposed along the southwestern edge of the Basin. West of the Meacham Hill fault, a broad, low topographic area contains exposures of the Wilson Grove Formation and fragments of the Franciscan complex.

The basement complex in the SRV Basin is formed by the Mesozoic Franciscan complex, which is the oldest geologic unit in the area. The Franciscan consists largely of clastic and chemical sediments of marine origin

intercalated with pillow basalts and more basic igneous rock, and weakly metamorphosed marine sedimentary rocks.

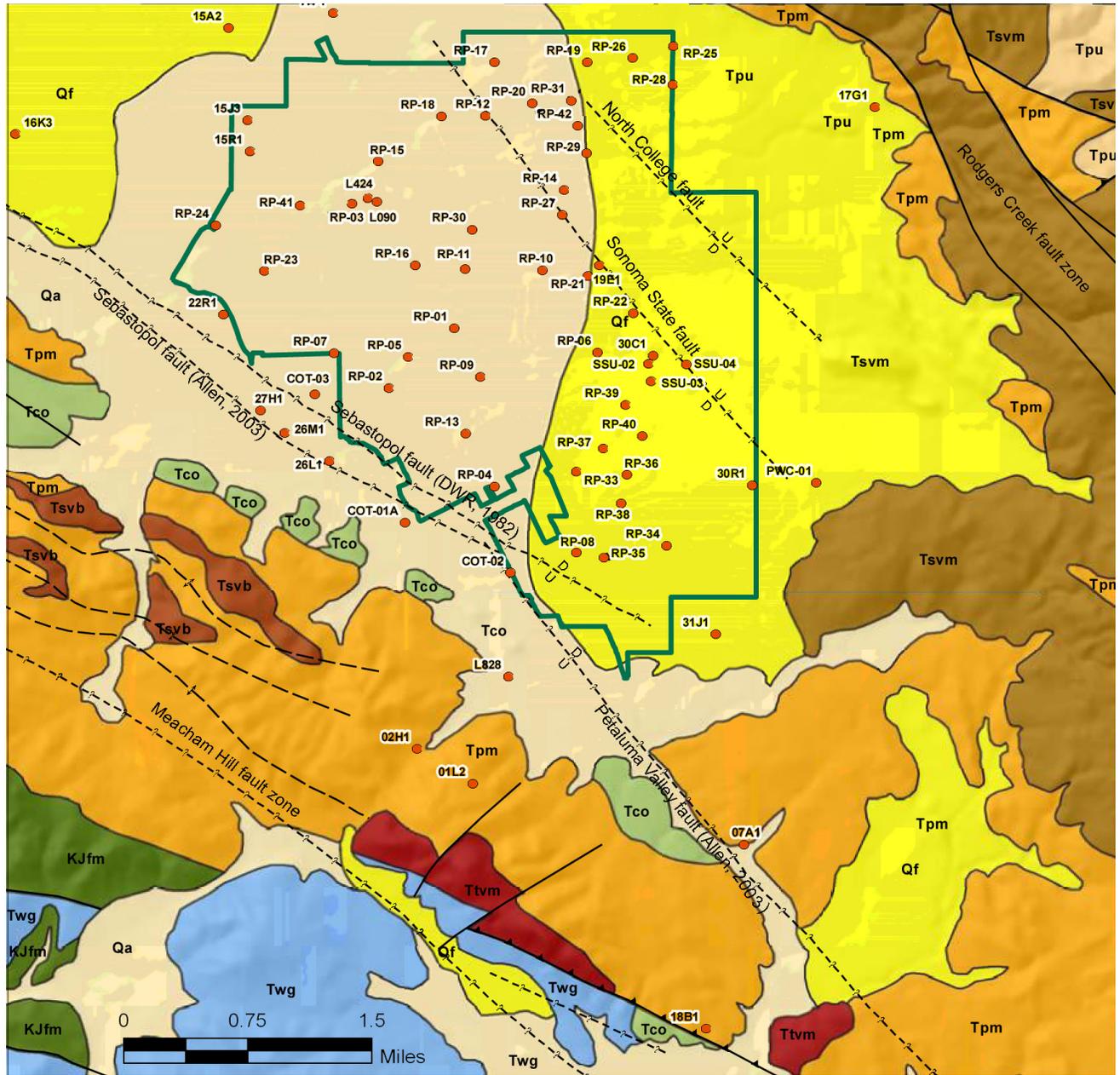
Unconformably overlying the Franciscan basement complex are sequences of volcanic and volcano-clastic rocks of late Tertiary age (late Miocene and Pliocene) known as the Tolay and Sonoma Volcanics. The Tolay Volcanics have been described by Morse and Bailey (1935) as a series of lava flows, breccia, tuff, and agglomerate that extends beneath the southern SRV Basin at a depth of about 2,100 feet (DWR, 1982a). The Sonoma Volcanics consist of a Pliocene age series of lava flows, agglomerates, tuffs, and intercalated sediments of volcanic debris forming a very complex assemblage of flows, dikes, plugs, mudflows, breccias, pumice beds, and stratified (volcanic in origin) materials. Rocks have been folded, intensely faulted, and eroded causing considerable differences in the formation between adjacent areas. The Sonoma Volcanics are exposed in the Sonoma Mountains east of the SRV Basin.

Interbedded and interfingering with the Tolay and Sonoma Volcanics are non-marine, transitional marine and marine sedimentary rocks of the Wilson Grove Formation (formerly known as the Merced Formation), the Petaluma Formation, and the Cotati Formation. The Wilson Grove Formation is a late Miocene marine deposit consisting predominantly of massive beds of coarse to fine-grained sandstone and thin interbeds of clay and silty clay, lenses of gravel and pebbles. Material is largely derived from the Franciscan Formation and to a much lesser extent from the Sonoma Volcanics. The Petaluma Formation is late Miocene to Pliocene in age and largely consists of strongly folded continental and shallow marine to brackish-water deposits of clay, shale, and sandstone, some conglomerate and nodular limestone. Clay is particularly abundant in this unit. The Cotati Formation is similar in age to the upper Petaluma Formation and is classified as Petaluma Formation on older maps. It consists of marine transitional deposits, primarily massive sandstone and conglomerate.

A Quaternary (Pliocene and Pleistocene) sequence of alluvial deposits, described as primarily consolidated alluvial fan deposits but also containing fluvial and lacustrine deposits, overlies and interfingers with the Tertiary units in the Cotati Valley. This sequence was formerly known as the Glen Ellen Formation, and some reports still use this terminology. In the southern portion of the SRV, the consolidated alluvial fan deposits are overlain by largely unconsolidated Quaternary (Pleistocene and Holocene) alluvium, including alluvial fan deposits.

The lithostratigraphic relationship between the western and eastern areas remains obscure due to poor exposures and because it is covered by the younger deposits in the Santa Rosa Valley. A generalized relationship of interfingering and interbedding of the western marine deposits with transitional marine and non-marine deposits is believed to occur beneath the Valley. Allen (2003) mapped a region just west of the City of Cotati that contains interbedded Wilson Grove and Petaluma Formation, which extend beneath the Valley.

Surface geophysical survey interpretations indicate that up to 2.5 to 3 kilometers of Tertiary and younger deposits underlie the SRV Basin (Allen, 2003; McLaughlin & Sarna-Wojcicki, 2003). Investigators (Cardwell, 1958; DWR, 1978 and 1982a; and Allen, 2003) have developed various interpretations of the depositional relationships. These interpretations tend to show an interfingering and/or interbedding relationship between the Wilson Grove Formation to the west with the Petaluma Formation and Sonoma Volcanics to the east. Interpretation of these relationships are largely based on limited deep borehole information from a few oil and gas test holes, deep water wells, and/or projections of measured angles of dip at surface exposures (Allen, 2003) and need further study to better understand this complex environment.



Note: Due to uncertainty about the Sebastopol fault, two locations are shown based on DWR (1982) and Allen (2003). DWR (1982) does not show the Petaluma Valley fault.

Modified from: Clahan, K.B., et al, 2004, Draft, Geologic map of the Cotati 7.5' Quadrangle, California Geological Survey.

Allen, James, 2003, Stratigraphy and tectonics of neogene strata, Northern San Francisco Bay Area: San Jose State University, M.S. Thesis, 183 p.

DWR, 2003, Evaluation of ground water resources, Sonoma County: Volume 2, Santa Rosa Plain, Bulletin 118-4, 107 p.

Source: Sonoma County Water Agency 2005 UWMP

Legend	
Geologic Unit	Fault
Qa - Alluvium	— Thrust Fault
Qf - Alluvial Fans	- - - Buried Fault
Tpu - Petaluma Formation (Upper)	- - - - - Syncline
Tco - Cotati Formation	- - - - - Anticline
Tpm - Petaluma Formation (Middle)	— Cross Section Locator
Twg - Wilson Grove Formation	• Well Location
Tsvb - Sonoma Volcanics - Basalt	□ Rohnert Park UGB
Tsvm - Sonoma Volcanics - Mafic	
Ttvm - Tolay Volcanics	
KJfm - Franciscan Complex	

Figure 4.4
Geologic Map
City of Rohnert Park and Vicinity

City of Rohnert Park
2010 Urban Water Management Plan



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As noted in the previous pages, the USGS is working with SCWA and other participating agencies and water companies, including the City, to complete an update to the SRP Subbasin Study (USGS, 2003 and 2007).

The lithostratigraphy is complicated by faulting and the local faults are described below. The lithostratigraphy and the faulting indicate the hydrologic properties which are also described below.

Faults

The SRV Groundwater Basin is in the northwest trending structural province of the Coast Ranges. Folds and faults have deformed or displaced all formations with the exception of the younger alluvium. The syncline forming the Santa Rosa Plain was named the Windsor syncline by Gealey (1951). The northwest trending faults at the margins of the SRV Basin have displaced the formations and, therefore, control much of the shape of the Plain and the thickness of the water-bearing deposits. One of the primary faults in the area is the Rodgers Creek fault, located between the Valley and Sonoma Mountain to the east. In the northern portion of the SRV Basin, the Healdsburg fault is generally considered a continuation of the Rodgers Creek fault. The Meacham Hill and Tolay faults are located west of the Valley in the Wilson Grove Formation Highlands Groundwater Basin. There are often multiple smaller faults in the vicinity of these major faults, and these areas are described or mapped as "fault zones" in some reports.

Several buried faults have been mapped within the Valley, most notably the Sebastopol fault, which extends from the southern portion of the subbasin northwest to Sebastopol. Although the Sebastopol fault is mapped near the southwestern boundary of the City, its location is approximate because the fault trace is not exposed at the surface. The Petaluma Valley fault was first proposed by Collins (1992) and Wright and Smith (1992). It is located primarily in the Petaluma Valley Groundwater Basin but is shown on some maps intersecting the Sebastopol fault just west of the City.

DWR (1982a and 1987) investigated the hydraulic properties of the Sebastopol fault, but the results were inclusive. Water level hydrographs of the City's wells show similar trends in pumpage are to nearby City of Cotati wells located on opposite sides of the mapped location of the fault. This suggests that the Sebastopol fault does not act as a significant barrier to groundwater flow. Data are not available to determine the hydraulic properties of faults in the Rohnert Park area, but water level data shown on hydrographs and contour maps indicate there is flow across the faults. There is no evidence that faults in the vicinity of Rohnert Park act as significant barriers to groundwater flow.

Groundwater Production Zones

In the southern portion of the SRP Subbasin, groundwater is produced largely from the upper 800 feet of the sedimentary deposits. A groundwater evaluation of local hydrogeologic conditions was completed for the 2005 UWMP by Ludorff and Scallmanini (2007), where geologic cross sections were prepared. Using these cross sections from nearby water supply wells and some private well logs, local hydrogeology was evaluated. The well profiles and cross sections completed for the study provided a generalized depiction of the subsurface geologic conditions that was used to divide the aquifer into depth zones to facilitate the analysis of groundwater levels. These zones do not represent laterally extensive aquifers but are strictly depth based for purposes of evaluating hydrogeologic conditions. These designations are based on an approximate correlation to the geologic units and on water well completion depths. The vertical zones of the aquifer system were designated:

- Shallow (0 to 200 foot depth),
- Intermediate (200 to 600 foot depth),

- Deep (600 to 800 foot depth), and
- Lower (depths greater than 800 feet).

The City's wells pump predominantly from the intermediate zone, but several wells are also completed partially in the deep and lower zones of the aquifer system.

Shallow Zone

The shallow zone appears to consist largely of clays and sandy clays with a few thin sand to gravel beds. The sands appear to occur largely towards the margins of the Plain in the northern part of the southern SRP Subbasin. Somewhat more sand occurs further south possibly deposited by alluvial fan sources in the Copeland and Lichau Creek areas. The depositional system appears to have been small alluvial fans grading into a fluvial plain or possibly lacustrine area.

Intermediate Zone

Water supply wells operated by the Cities of Rohnert Park and Cotati are constructed primarily in the intermediate zone, with perforated intervals between depths of 200 to 600 feet. Based on review of well profiles and geologic cross sections, this zone consists of a complex sequence of largely thin (and rare occurrences of thick) sand and sand to gravel deposits interbedded with deposits of sandy clay to clay. The correlation of individual sand and gravel beds between wells is generally poor. The intermediate zone appears to be the most complex stratigraphically of the four zones, and it is difficult to identify specific formations based on individual driller logs. Geologic cross sections prepared by DWR (1982a) suggest that the Rohnert Park wells are completed primarily in Quaternary alluvial fan formations. Deeper wells may also be completed partially in the underlying Wilson Grove Formation, especially in the northern portion of Rohnert Park.

Deep Zone

Underlying the intermediate zone, the deep zone is defined as occurring at depths between 600 to 800 feet. The deep zone is best defined in the northern portion of the southern SRP Subbasin as an approximately 100 to 150 foot interval of thin to thicker sand and gravel beds with interbeds of clays. These beds appear to rapidly thin or pinch out to the south. Correlation of the deep zone to surficial map units is difficult. It is unclear whether the deposits in the deep zone represent Tertiary sedimentary deposits (interbedded Wilson Grove-Petaluma) or Quaternary non-marine deposits.

Lower Zone

Underlying the deep zone, the lower zone is defined as occurring at depths between 800 to 1,500 feet. The units encountered in well logs constructed to depths greater than 800 feet are believed to be older Tertiary sedimentary units, probably Petaluma Formation or interbedded Wilson Grove-Petaluma Formation or equivalent. Because of the fine-grained nature of this zone, and the limited potential aquifer thickness, it appears the lower zone represents a poor target for groundwater production.

Precipitation

The City lies within the watershed of the Laguna de Santa Rosa, which is a tributary of the Russian River. The City lies in a region that has a "Mediterranean" climate, meaning the normal weather pattern is a dry summer season with little or no rain. Typically, over 96 percent of the region's annual precipitation falls during the months of October through April. The mean annual precipitation is about 30 inches near the City and increases in an easterly direction to more than 45 inches at Sonoma Mountain.

Sonoma County precipitation gauges with long periods of record are located north and northwest of the City. Annual precipitation data from 1905 to 2010 are from the Santa Rosa gauge, which is located north of the City of Santa Rosa at an elevation of 174 feet. The lowest annual rainfall during this period was 12.78 inches during the 1977 water year (October 1, 1976 to September 30, 1977), and the highest annual rainfall was 55.68 inches in the 1983 water year. The mean annual precipitation was 30 inches, which is similar to the annual mean precipitation for the City. This represents an annual precipitation volume of 2.5 acre-feet per year. In 2008-2009, the precipitation dropped to 19.4 inches per year during a two year drought period, but then increased to 35.3 inches in 2009-2010.

4.3.3.2 Groundwater Quality

Groundwater produced by the City is tested for a total of 139 constituents, including bacteria, pesticides, herbicides, fungicides, organic chemicals, inorganic chemicals, nitrates, radioactivity, corrosivity, trihalomethanes, iron, and manganese.

Groundwater produced from the City's wells meets primary state drinking water standards. Overall mineral content for all zones in 2009, as indicated by specific conductance (electrical conductance; EC), ranges from 280 to 610 $\mu\text{mhos/cm}$. EC values are below the recommended secondary Maximum Contaminant Level (MCL) of 900 $\mu\text{mhos/cm}$. Other water quality concerns in the Rohnert Park area include elevated nitrate, arsenic, iron, and manganese concentrations in some wells. Nitrate concentrations in City wells perforated in the intermediate zone or in multiple zones range from non-detect to 35 mg/L, which is less than the primary MCL of 45 mg/L. Samples collected from five wells in 1997 exceeded secondary MCLs for iron and manganese, which do not pose health hazards but are considered nuisance pollutants. However, treatment can be used to reduce iron and manganese to levels that meet the secondary MCLs (Dyett & Bhatia, 2000).

Arsenic is naturally occurring in the area, and concentrations in City wells range from 2 to 12 $\mu\text{g/L}$. Arsenic concentrations at the upper end of the range of detected concentrations occur in City wells completed in the northwestern area in the deep and lower zones (well depths greater than 600 feet). Arsenic concentrations in these deeper wells are at levels near or above the federal MCL of 10 $\mu\text{g/L}$.

Organic chemicals introduced through known point sources could influence groundwater quality conditions in the future. No serious or widespread issues that affect community water supplies due to organic chemical sources are known to be present in the City.

4.3.3.3 Adjudicated Basins

Neither the SRV Basin nor the SRP Subbasin has been adjudicated. Thus, there are no legal limits on the right to pump water from the basin.

4.3.4 Sufficiency of Groundwater

A full analysis of the water level hydrographs and their relationship to pumpage and sufficiency was evaluated in the 2005 UWMP for a time period between 1977 and 2003, where there were several periods of wet, normal, single- dry and multiple-dry years. The analysis is not included here, but the reader is referred to the 2005 UWMP for the full analysis. This UWMP update used the information from that analysis, extending it to include the last five years to assess the sufficiency of groundwater over the next 25 years.

Groundwater recharge was estimated to be about 8,300 acre-feet per year based on the water budget completed in 2005, and showed a positive change in groundwater storage through 2003 with a decrease in groundwater pumpage. Since then, with the decrease of groundwater pumpage, it has produced more of a positive change in groundwater storage. The observed groundwater level trends indicate stable to continued increasing levels during 2005-2007, a temporary lowering in groundwater levels during the drought period of 2008 and 2009, and a recovery and a continued increase in water levels in 2010.

Hydrologic Availability of the Groundwater Supply

The City's groundwater supply has not historically been subject to hydrologic variability.

Groundwater levels in the shallow zone have generally been stable except for small responses to changes in precipitation. In the intermediate zone, larger responses or fluctuations in water levels occur in direct response to pumpage. Groundwater levels in the intermediate zone show little response to changes in precipitation; most of the water level changes that have been observed in the Rohnert Park area are associated with pumpage rather than climatic conditions. Correspondingly, the City's management strategy, which further reduces groundwater utilization by the City, provides an additional buffer against hydrologic variability because the City's groundwater resource can be managed in conjunction with other water sources to maximize reliability.

Reliability and Vulnerability of the Groundwater Supply

There are no physical constraints to groundwater pumping. The City has more than adequate capacity from its well field to pump what it anticipates utilizing.

Maintaining sustainable groundwater supplies is one of the primary goals of groundwater management. Groundwater level trends within the basin indicate that pumpage over the last five years has been sustainable.

The 2005 analysis of the historical groundwater level and pumpage data resulted in an estimated range of pumpage within which the City and other pumpers in the southern portion of the SRP Subbasin could operate without causing persistent groundwater level declines. On the whole, groundwater levels within the SRP Subbasin have remained in balance and significantly increased in the southern portion of the SRP Subbasin since DWR's 1982 study (DWR, 1982a). As described in earlier sections, the City's pumpage for the 25-year horizon falls within a range that is historically demonstrated to be sustainable. Thus, groundwater supplies from the basin are sufficient to meet the City's projected groundwater demands.

4.3.4.1 Groundwater Pumped (2005-2010)

In 2003, the City began a shift toward greater use of Agency water and reduced groundwater pumping. Table 4.2 illustrates the City's groundwater use for the five-year period from 2005-2010.

**Table 4.2 (DWR Table 18)
Groundwater – Volume Pumped (AFY)**

Santa Rosa Plain Subbasin	Metered or Unmetered ^a	2005	2006	2007	2008	2009	2010 ^b
Groundwater pumped	metered	805	348	933	1,078	2,102	1,582
Total City Water Supply ^c		7,391	6,754	7,067	7,363	7,579	5,266
Groundwater as percentage of total water supply		11%	5%	13%	15%	28%	30%

^a Data obtained from DWR Annual Reports

^b See Table 4.11

^c Includes SCWA water purchased, groundwater produced and recycled water used

The City has continued its operational strategy, using more SCWA supply while decreasing its groundwater use. Since this change, the City decreased its groundwater use significantly. Between 2005 and 2007, the City pumped as little as 348 acre-feet in 2006, down from 3,556 acre-feet in 2003. The City's pumpage increased in 2008 and 2009, to 2,102 acre-feet in 2009, when there was a drought. This amount pumped in 2009 was still less than the 2.3 million gallons per day (mgd) (total of 2,577 acre-feet per year) as specified in the City's 2004 Water Policy Resolution. The City has continued to decrease its pumpage to 1,582 acre-feet in 2010 and continues with its strategy to pump less and maximize its use of SCWA water.

4.3.4.2 Limitations to Groundwater Pumping and Overdraft Conditions

The City has adopted local policies related to groundwater management. Resolution No. 2004-95 (the Water Use Policy Resolution, see Appendix D), was adopted on April 27, 2004, and specifies that new development outside of the current City limits will not be approved if it would contribute to the City exceeding an average annual pumping rate of approximately 2,577 acre-feet per year. The Water Use Policy Resolution is the only local policy determination related to groundwater management in Sonoma County. The City also has a policy of not allowing private wells within the City Limits.

4.3.5 Projected Groundwater Pumping

Table 4.3 illustrates the groundwater usage proposed for the future. The City's groundwater use through 2035 is projected in accordance with its Water Use Policy Resolution. The projected groundwater supply figures are needed to supplement the SCWA supply to meet demand. The City will use a conjunctive use strategy, balancing groundwater and SCWA supplied water. The City will use SCWA water first, and supplement with groundwater at the amount necessary to meet demand. It is expected that the City will not have to use groundwater as much as is currently used, but will decrease over time. The City expects to decrease their groundwater use from the current 30% down to 6% by 2035 as indicated on the table below.

**Table 4.3 (DWR Table 19)
Groundwater – Volume Projected to be Pumped (AFY)**

Santa Rosa Plan Subbasin	2015	2020	2025	2030	2035
Projected Groundwater Use	1,800	903	667	475	340
Total water supply	5,314	5,486	5,604	5,767	5,986
Groundwater as percentage of total water supply	34%	16%	12%	8%	6%

4.3.6 Planned Groundwater Supply Projects and Programs

The City has no new planned groundwater supply projects except for the groundwater banking project it is investigating with the SCWA and other water customers in the Santa Rosa Plain Subbasin. The City,

however, plans to continue rehabilitating wells and continue to decrease the amount of groundwater to the extent necessary to supplement SCWA water and meet peak flows, periods of drought or interruptions in supply. Table 4.3 (DWR Table 19) illustrates this groundwater strategy.

The USGS has almost completed a comprehensive five year SRP Subbasin study that will update the Sonoma County groundwater model. The study will allow groundwater users in the basin to better understand impacts of groundwater use on the resource, and will help with planning future use and management of the resource. Once completed later this year, the USGS study should provide updated information on aquifer yield, storage, and recharge that will be based on the longer period of record now available for these characteristics.

In 2010 SCWA and several agencies including the City entered into an agreement to study the feasibility of groundwater banking in the Santa Rosa Valley. The agency group hired consultants who are currently reviewing the hydrogeology of the Valley to assess potential areas, such as the groundwater depression areas, that could possibly bank groundwater. The feasibility study outcome is 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 workplans to further investigate specific locations to bank groundwater. The study is expected to be completed after this UWMP is completed.

4.4 TRANSFER OPPORTUNITIES

Water transfers between SCWA’s water contractors are authorized under the Restructured Agreement. Such transfers and exchanges between Agency water contractors have been necessary in the past and may continue to be necessary in the future to improve water reliability. The City does not anticipate any transfers or exchanges as has previously occurred because of increased water entitlement limits under the Restructured Agreement as well as recent improvements to the SCWA’s water supply and transmission system.

**Table 4.4 (DWR Table 20)
Transfer and Exchange Opportunities (AFY)**

Transfer Agency	Transfer or Exchange	Short Term or Long Term	Proposed Volume
Name of agency	N/A	N/A	--
Total			0

4.5 DESALINATED WATER OPPORTUNITIES

There are currently no plans for desalination, and no desalination for future water supply is anticipated.

4.6 RECYCLED WATER OPPORTUNITIES

This section describes the wastewater characteristics, flows, and treatment facilities that provide recycled water in the City. 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
- Plan for optimizing recycled water use.

4.6.1 Coordination

The City currently provides wastewater collection service and is a partner in the Subregional System. The Subregional System, which is operated and managed by the City of Santa Rosa (Santa Rosa), provides wastewater treatment, disposal and water recycling services for the cities of Cotati, Rohnert Park, Sebastopol and Santa Rosa and portions of unincorporated Sonoma County. This UWMP has been coordinated with the Subregional System.

4.6.2 Existing Wastewater Collection, Treatment and Reuse System

The Subregional System includes the following facilities:

- The Laguna Water Reclamation Plant (WRP), a tertiary wastewater treatment plant that utilizes aeration, clarification, conventional filtration, and ultraviolet disinfection;
- A permitted wet weather discharge to the Russian River of up to 5% of the river flow under the NPDES Permit CA 0022764;
- The forty-mile long Geysers Pipeline that delivers 11 mgd of recycled water, year round, to the Geysers Steamfield; and
- Approximately 62 miles of recycled water distribution piping that deliver recycled water to approximately 675 parcels for agricultural reuse and impoundment and approximately 100 parcels for urban reuse, largely in the cities of Rohnert Park and Santa Rosa.¹ This recycled water distribution system includes approximately 1,480 million gallons of storage² in open ponds.
- The Subregional System's facilities have a rated dry weather capacity of 21.4 million gallons per day (mgd) and the City is allotted 3.43 mgd of the total capacity. These facilities, including the existing Rohnert Park Reuse System, are illustrated in Figure 4.5.

The Subregional System produces Title 22 Tertiary Recycled Water, which is suitable for unlimited irrigation uses and most industrial process water uses. Without additional treatment, the recycled water supply is not suitable for potable use.

While a great deal of the Subregional System's recycled water is used for urban, agricultural or industrial purposes, the Subregional System maintains a permitted discharge to the Russian River. The Subregional System is committed to supplying recycled water users first and its permitted discharge is used primarily to manage variations in hydrologic conditions. For example, in a cool wet year when rainfall is high and irrigation demand is low, the Subregional System will discharge more water than in a warm dry year when irrigation demand is high. Table 4.5 provides the total recycled water volumes from the Subregional System.

¹ Engineering Report for Master Water Recycling Permit for the City of Santa Rosa Water Reclamation System.

² Santa Rosa Incremental Recycled Water Program, Technical Memorandum No. 16 – Water Balance Modeling Summary

Table 4.5 (DWR Table 21)
Recycled Water – Wastewater Collection and Treatment (AFY)

Type of Wastewater	2005	2010	2015	2020	2025	2030	2035
Wastewater collected & treated in service area	24,858	23,047	24,882	26,718	28,553	30,388	32,223
Volume that meets recycled water standard	24,858	23,047	24,882	26,718	28,553	30,388	32,223

Table 4.6 summarizes the existing and planned disposal methods for water that is not recycled by the Subregional System. The table indicates that the vast majority of the recycled water produced by the Subregional System is beneficially reused. The Subregional System projects that less than 10% of the recycled water produced will be discharged to surface water.

Table 4.6 (DWR Table 22)
Recycled Water – Non-Recycled Wastewater Disposal (AFY)

Method of Disposal	Treatment Level	2010	2015	2020	2025	2030	2035
Russian River	Tertiary	288	600	911	1,223	1,534	2,286
Total		288	600	911	1,223	1,534	2,286

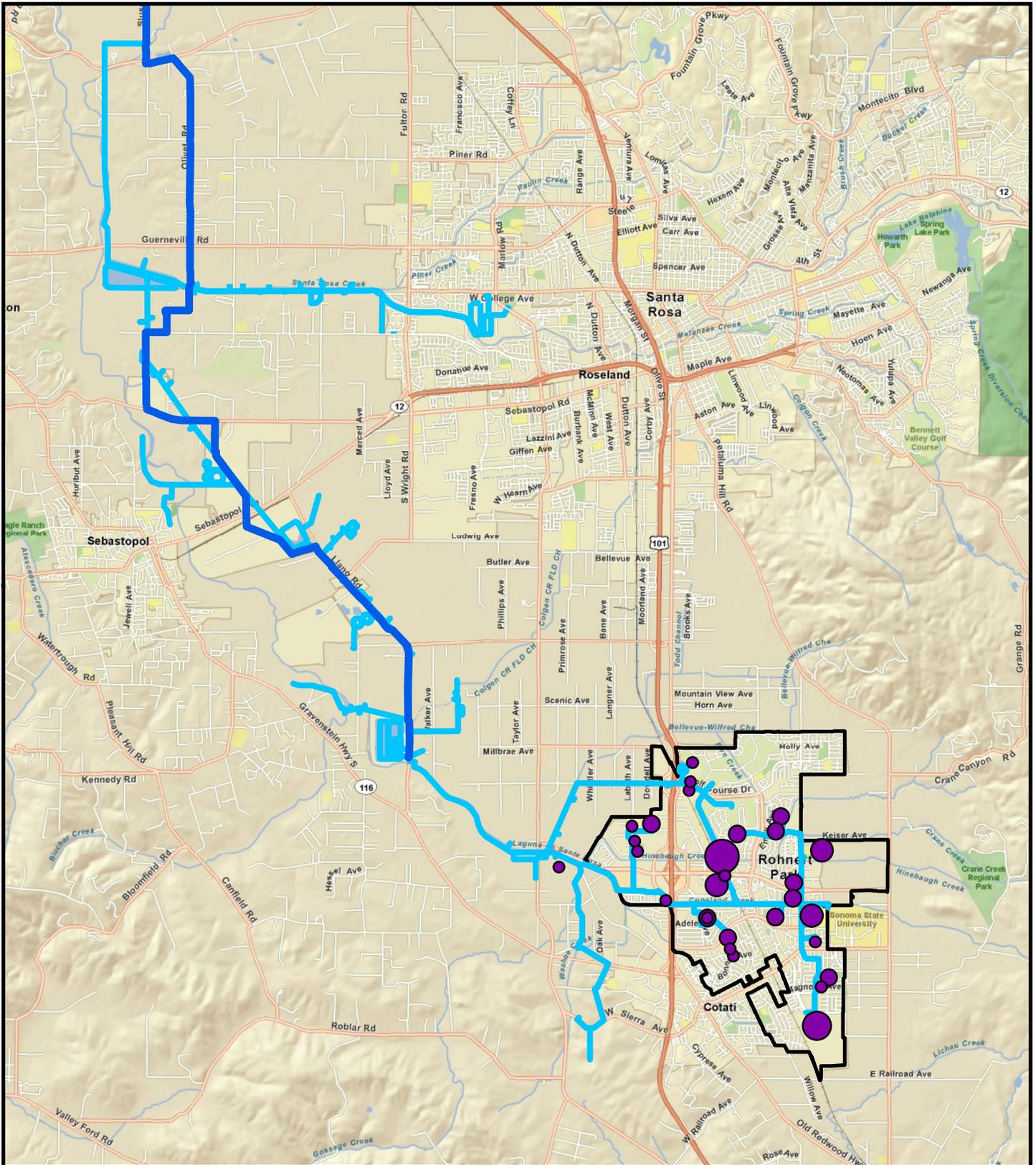
4.6.2.1 Limitations on Use of Available Recycled Water

The recycled water supply available to the City is relatively drought-proof because of the operational nature of the Subregional System’s recycled water program. The Subregional System facilities include extensive recycled water storage ponds, System-owned land (“City Farms”), facilities to deliver recycled water to customers including urban and agricultural users and the Geysers Steamfield, and facilities to discharge recycled water under an NPDES permit. The Subregional System treats and stores recycled water for reuse by its customers. The volume of wastewater recycled is relatively constant, but the total volume of water available to the System is influenced by rainfall on the open storage ponds. During periods of lower rainfall, the system can be operated to minimize discharges to the Russian River and delivery of water to the City Farms in order to assure delivery to paying recycled water customers first. This provides the system with operational flexibility and the ability to meet recycled water demands under a range of hydrologic conditions. Expanding the recycled water system will require additional seasonal storage facilities in order to retain this level of flexibility.

The Subregional System currently maintains a contract with each individual user of the Rohnert Park Urban Reuse system, including the City. These contracts are included in the Subregional System’s *Engineering Report for Master Water Recycling Permit for the City of Santa Rosa Water Reclamation System*. The contracts outline the acreage which is committed to recycled water use and generally provide for a 20-year term. Recycled water service can only be suspended as a result of inadequate treatment of recycled water (a temporary situation) or regulatory directive (i.e. changes in the State Health or Regional Board Regulations regarding the use of recycled water for landscape irrigation). These regulatory requirements are well established, well tested and have been the basis of recycled water use throughout the State for over 30 years

4.6.3 Existing Recycled Water Use

The City hosts the largest urban recycled water system in Sonoma County. This system was installed in the 1990s and recycled water is used for irrigation of many large nonresidential landscapes in the City including



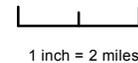
Legend

- City Limits
- Geysers Pipeline
- Subregional System Irritation Pipeline

Existing Recycled Water Demands MGy

- 0 - 1
- 2 - 5
- 6 - 20
- 21 - 50
- 51 - 160

0 0.5 1 Miles



1 inch = 2 miles



Sources: Department of Water Resources (DWR) Hydrologic Regions: ESRI, DeLorme, AND, Tele Atlas, First American

Figure 4.5
Subregional Water Reuse System

City of Rohnert Park
2010 Urban Water Management Plan



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parcs and school grounds, various commercial and industrial sites, and the Foxtail Golf Course. Recycled water use offsets historic demands on the City’s potable water system and demands on irrigation wells. From 2005 to 2010, recycled water use averaged between 710 and 1,010 acre-feet per year. The use is relatively constant, however because recycled water is used almost exclusively for irrigation purposes the demand can fluctuate with local rainfall patterns and attendant irrigation demands.

4.6.4 Potential Uses of Recycled Water

In 2004 the Subregional System completed its Incremental Recycled Water Program (IRWP) Master Plan and certified a programmatic Environmental Impact Report (EIR) for the Master Plan. The IRWP identified up to 6,600 acre-feet per year in potential urban and agricultural recycled water uses throughout Sonoma County. The IRWP Master Plan defined Urban Reuse as recycled water use that occurs within the Urban Growth Boundaries of the cities of Santa Rosa, Rohnert Park and Cotati or at the Santa Rosa Golf and Country Club. The IRWP set a 500 acre-feet per year “Target” for Urban Reuse and established a programmatically approved range from 0 to 6,600 acre-feet per year to allow for the development of cost-effective systems from both the water and wastewater perspective.

Review of the City’s planned development indicates that an additional 300 acre-feet per year of recycled water could be used for urban use, primarily in areas of new growth. Recycled water would be used for landscape irrigation in a variety of settings as authorized by California’s Title 22 Code of Regulations.

Table 4.7 (DWR Table 23) identifies the projected total recycled water use, for the next 20 years as provided by the Subregional System. Use within the City currently accounts for all existing landscape irrigation use. The City projects that an additional 300 acre-feet per year of landscape irrigation use will come on line in its service area, as planned development progresses.

**Table 4.7 (DWR Table 23)
Recycled Water – Potential Future Use (AFY)**

User Type	Description	Feasibility ^a	2015	2020	2025	2030	2035
Agricultural irrigation		Feasible	5431	5608	5784	5961	6138
Landscape irrigation ^b		Feasible	900	900	1700	1700	1700
Commercial irrigation ^c		Feasible	N/A	N/A	N/A	N/A	N/A
Golf course irrigation		Feasible	N/A	N/A	N/A	N/A	N/A
Wildlife habitat		Unknown	0	0	0	0	0
Wetlands		Unknown	0	0	0	0	0
Industrial reuse		Feasible	0	0	0	0	0
Groundwater recharge		Unknown	0	0	0	0	0
Seawater barrier		Not Feasible	0	0	0	0	0
Geothermal/Energy		Feasible	17952	19299	19846	21193	22100
Indirect potable reuse		Unknown	0	0	0	0	0
Total		0	24,283	25,807	27,330	28,854	29,938

^a Technical and economic feasibility

^b Agricultural use offsets groundwater pumping. Includes areas outside of the City.

^c Includes parks, schools, cemeteries, churches, residential, or other public facilities

^d Includes commercial building use such as landscaping, toilets, HVAC, etc. and commercial uses (car washes, laundries, nurseries, etc)

4.6.4.1 Technical and Economic Feasibility of Projected Use

Recycled water use within the City is both technically and economically feasible. Expansion of recycled water use within the City’s service area is dependent on new development, because it is that growth that will result in new demand for recycled water. As noted above, many existing large non-residential landscapes in the City’s service area have been converted to recycled water.

4.6.5 Comparison of Previously Projected Use and Actual Use

In the 2005 UWMP, the City projected that it would be using approximately 1,200 acre-feet per year of recycled water in 2010 and 1,300 acre-feet per year thereafter. These projections reflected both the City’s historic use, which was as much as 1,000 acre-feet per year, and planned development.

Because of the general economic downturn in California, planned development in the City did not occur on the schedule projected in the 2005 UWMP. While the City still has the policy tools necessary to assure that new development utilizes recycled water, expanded use will not occur until economic conditions favor development.

Additionally, because of relatively cool damp weather conditions, the City’s existing recycled water customers actually used approximately 710 acre-feet per year in 2010 instead of the previously projected amount of 1,200 acre-feet per year. This reflects the normal variation that can be expected in irrigation demands, not a decrease in recycled water customers.

Table 4.8 summarizes the comparison of the 2005 UWMP projections and actual 2010 use.

**Table 4.8 (DWR Table 24)
Recycled water — 2005 UWMP Use Projection Compared to 2010 Actual (AFY)**

User Type	2010 Actual Use	2005 Projection for 2010 ^a
Agricultural irrigation	0	0
Landscape irrigation ^b	710	1,200
Commercial irrigation ^c	-	-
Golf course irrigation	-	-
Wildlife habitat	-	-
Wetlands	-	-
Industrial reuse	-	-
Groundwater recharge	-	-
Seawater barrier	-	-
Geothermal/Energy	-	-
Indirect potable reuse	-	-
Total	710	1,200

^a From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the existing categories or modified to the new categories, at the discretion of the water supplier.

^b Includes parks, schools, cemeteries, churches, residential, or other public facilities

^c Includes commercial building use such as landscaping, toilets, HVAC, etc. and commercial uses (car washes, laundries, nurseries, etc)

4.6.6 Promoting Recycled Water Use

4.6.6.1 City Promotion of Recycled Water Use

The City has fully integrated recycled water use with its land use planning. Specifically within the Water Supply and Conservation Section of its 2000 General Plan, the City has adopted the following goals and policies:

- *Goal PF-G: Continue to encourage water conservation through the use of reclaimed water and reduction of water consumption and discharge for both existing and new development.*
- *Policy PF-21: Continue to use reclaimed water to irrigate parks, recreation facilities and landscapes.*

On October 26, 2004, the City adopted its Ordinance 723, a Water Waste Prohibition Ordinance. This Ordinance requires the use of recycled water when it is available and of appropriate quality. This Ordinance will assure that the recycled water supply is fully utilized where appropriate. A copy of the City’s Water Waste Ordinance is included in Appendix E. This Ordinance provides City staff with the authority necessary to condition new development to install the infrastructure required to deliver recycled water.

On June 13, 2006 the City adopted its 2006 Public Facilities Finance Plan Update and its revised its Public Facilities (PF) Fees. The PF Fees were established to provide a funding source for the infrastructure required to serve new development. The IRWP Master Plan and EIR have identified new seasonal storage as necessary to serve new urban reuse projects. While the PF Plan and program are currently being updated, the City will continue to include expansion of Subregional System facilities in its planning in order to assure that funding is available to support planned expansions of the recycled water system.

4.6.6.2 Subregional System Promotion of Recycled Water Use

The Subregional System’s IRWP Master Plan and EIR provide critical programmatic guidance and planning support for an expanded recycled water system. The Subregional System has historically priced recycled water at 75% of the alternative supply. This financial incentive provides property owners with a reason to convert to recycled water use.

4.6.6.3 SCWA Promotion of Recycled Water Use

The SCWA encourages recycled water use by collecting, as part of its water rates, funds that are held in a special reserve for water recycling and Tier 2 water conservation projects that are carried out by its water contractors. This funding source provides an incentive to the water contractors to invest in local recycling and conservation projects because the Agency will contribute to the costs of these projects.

Methods to encourage recycled water use are summarized in Table 4.9.

**Table 4.9 (DWR Table 25)
Methods to Encourage Recycled Water Use (AFY)**

Actions	Projected Results					
	2010	2015	2020	2025	2030	2035
City General Plan Policies	x	x	x	x	x	x
City Mandatory Use Ordinance	x	x	x	x	x	x
City PF Fee Funding	x	x	x	x	x	x
Subregional System Planning Support	x	x	x	x	x	x
Subregional System Financial Incentives	x	x	x	x	x	x
Agency Financial Incentives	x	x	x	x	x	x

4.7 WHOLESALE WATER SUPPLIERS AND WATER SUPPLY SUMMARY

The City has one existing wholesale source (SCWA) and one wholesale source for recycled water. Table 4.10 shows the existing and future supply requested from wholesalers.

Table 4.10 (DWR Table 17)
Wholesale Supplies – Existing and Planned Sources of Water (AFY)

Wholesale Sources	Contracted Volume	2015	2020	2025	2030	2035
Sonoma County Water Agency ^a	7,500 (max.)	3,514	4,583	4,937	5,292	5,646
Subregional System ^b	1,300	1,300	1,300	1,300	1,300	1,300

^a Under the Restructured Agreement for Water Supply, the contracted volume is the entitlement limit.

^b Recycled water capacity is based on Subregional System's Incremental Recycled Water Program master plan.

The supply amount is based on the City's water demands described in Section 3. 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.

Table 4.11 (DWR Table 16)
Water Supplies – Current and Projected (AFY)

Water Supply Sources		2010	2015	2020	2025	2030	2035
Water Purchased From:	Wholesaler Supplied Volume (Y/N)						
Sonoma County Water Agency	yes	2,974	3,514	4,583	4,937	5,292	5,646
Supplier-produced groundwater ^a		1,582	1,800	903	667	475	340
Supplier-produced surface water		--	--	--	--	--	--
Transfers in		--	--	--	--	--	--
Exchanges In		--	--	--	--	--	--
Recycled Water (See Table 4.10)		710	1,300	1,300	1,300	1,300	1,300
Desalinated Water		--	--	--	--	--	--
Other		--	--	--	--	--	--
Total		5,266	6,614	6,786	6,904	7,067	7,286

^a The City can produce up to 2,577 AFY to supplement its SCWA supply during periods of drought and water shortages

4.8 FUTURE WATER SUPPLY PROJECTS

The City's water supply projects and programs include:

- **Groundwater Wells Replacement/Upgrade.** 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 rehabilitating its local groundwater supply well system.
- **Groundwater Banking.** The City is working with the SCWA and other interested participants in a groundwater banking 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.

- SCWA Russian River Diversion Rights Increase.** While the City has adequate supplies from the SCWA, some of the other water contractors to the SCWA Russian River water supply will need an increase to the water supply entitlements, as provided for under the Restructured Water Supply Agreement, by year 2030 to 2035. This increase is also needed for the reliability of the SCWA supply. 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.
- Recycled Water System Expansion.** Consistent with IRWP Master Plan, its General Plan and the environmental documents for proposed new development, the City will work with the Subregional System to incrementally expand the recycled water system within its service area in order to provide recycled water for irrigation and other non-potable uses. This expansion will provide up to 300 acre-feet per year of additional supply. All environmental clearances are complete for this expansion. The actual timing of the expansion is dependent on the timing of new development.

4.8.1 Amount of Supply Increase

The water supply projects listed in this section are preliminary, and supply increase amounts have not been determined. For the groundwater well replacement/upgrade, it is assumed that the upgraded well will produce as much as what was being produced historically before production decreased due to age of the well.

**Table 4.12 (DWR Table 26)
Future Water Supply Projects (AFY)**

Project Name	Projected Start Date	Projected Completion Date	Potential Project Constraints	Normal Year Supply	Single-Dry Year Supply	Multiple-Dry Year		
						Year 1	Year 2	Year 3
Groundwater Wells Replacement and Upgrade	2013	2035	Funding	TBD	TBD	TBD	TBD	TBD
Groundwater Banking	2011	2020	Feasibility	TBD	TBD	TBD	TBD	TBD
SCWA Russian River Diversion Rights Increase ^a	2015	2035	Environ.	0	0	0	0	0
Recycled Water System Expansion	2012	2030	Timing of Development	300	300	300	300	300
Total				300	300	300	300	300

This table represents 2035 projected water supply needs.

^a Increased entitlement not needed, but increase is needed to "perfect" the SCWA's water rights for reliability of supply.

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SECTION 5

WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

This section compares the water demand information developed in Chapter 3 and the water supply information developed in Chapter 4. Comparisons are provided under DWR's required range of hydrologic conditions including the normal, single-dry year and multiple-dry year scenarios. This section also describes the City's water shortage contingency and drought planning as required by Water Code Section 10632.

5.1 SUMMARY OF FACTORS AFFECTING SUPPLY

The City has three sources of water supply: Sonoma County Water Agency (SCWA) supply, groundwater, and recycled water. Table 5.1 (DWR Table 29) summarizes the City's supplies and factors affecting the consistency of these supplies. The City's supply projections indicate that its long term water supply portfolio is composed of the following:

- Sixty-three percent SCWA water;
- Twenty-five percent local groundwater;
- Twelve percent recycled water.

The City is able to balance these supplies using a conjunctive use strategy. The City's current Agency supply, groundwater supply and recycled water supply are all highly stable and supported by contracts, policy and a court judgment.

The SCWA's proposed supply increase is not predictable, particularly with respect to the schedule upon which it can be delivered. The City's supply planning strategy is to rely only upon the SCWA's currently permitted supply, its own sustainable groundwater production and a modest increase in recycled water deliveries. The anticipated increase in recycled water deliveries is highly predictable because major distribution infrastructure already exists; the Subregional System has completed the planning and environmental studies; predesign studies are currently underway; and the City has adopted development impact fee programs to fund the construction of the expanded system.

Table 5.1 (DWR Table 29) summarizes the factors affecting the City's water supplies described above.

**Table 5.1 (DWR Table 29)
Factors Resulting in Inconsistency of Supply**

Water Supply Sources	Sonoma County Water Agency	Groundwater Wells	Subregional System
Specific Sources Name (if any)	Russian River surface water	Santa Rosa Plain groundwater subbasin	Recycled Water
Limitation Quantification	7,500 acre-feet per year 15 million gallons per day	2,577 acre-feet per year	1,300 acre-feet per year
Legal	Controlled by 4 SWRCB permits and subject to permit constraints including reductions in water supply during water shortage years; District will need to increase entitlement limit by 2035 to meet demands	none	none
Environmental	Biological Opinion calls for reduction of impacts to salmonids and results in minimum flow requirements during normal and dry years	none	none
Water Quality	None	None; some wells have pretreatment for iron and manganese	none
Climatic	Water supply curtailments during drought conditions	Groundwater is generally used to further supplement Russian River supply during drought conditions	none
Additional Information			

5.2 HYDROLOGIC RELIABILITY

The SCWA has developed a model of its water system in order to project hydrologic reliability. This model, which is described in detail in SCWA’s Urban Water Management Plan, is based on the water year types presented in Table 5.2 (DWR Table 27).

**Table 5.2 (DWR Table 27)
Basis of Water Year Data**

Water Year Type	Base Year(s)
Average Water Year	1962
Single-Dry Water Year	1977
Multiple-Dry Water Years	1988-1991

SCWA’s model indicates that its system is not impaired by hydrology in the normal and multiple dry years. However, in single dry years the system’s reliability is reduced slightly. Based on SCWA’s analysis for the single-dry year, it can deliver the following percentages of its supply to its customers (see SCWA 2010 UWMP Tables 6-1 and 6-2):

- 2015: 78.9 percent
- 2020: 80.1 percent
- 2025: 82.3 percent
- 2030: 79.4 percent
- 2035: 81.3 percent

Section 3.5 of the Restructured Agreement for Water Supply includes an allocation methodology that will be used when there are water supply shortages. This allocation methodology takes into account each contractors’ basic health and safety needs and current conservation practices. As a result of this, shortages are not uniformly shared by all contractors (i.e., if 80 percent of the SCWA’s water supply is available, all contractors will not automatically experience a 20 percent cutback). Contractors with lower baseline demands, reflecting more mature water conservation programs, receive somewhat smaller water shortage reductions than contractors with higher baseline demands and less mature conservation programs.

SCWA and its contractors developed a spreadsheet-based allocation model that reflected the commitments of Section 3.5 of the Restructured Agreement. The City has reviewed the Water Shortage Allocation Model and it indicates that the City could generally expect to receive more water than a straight-line percentage reduction would predict. However, there have been changes to the SCWA’s water contractors and their populations since the model was developed and it may no longer perfectly reflect each contractor’s current conditions. The process of updating the model is discussed in more detail in Section 5.3.1.

In an effort to be conservative in estimating potential single-dry year reductions, the City has used a straight-line percentage allocation to arrive at an estimated single-dry year supply. This assumption is reflected in Table 5.3 (DWR Table 28) below. While the City is utilizing conservative assumptions to estimate its supply in dry years, should a dry year even occur, the City will work with the SCWA and other contractors to appropriately implement the provisions of Section 3.5 of the Restructured Agreement.

Table 5.3 (DWR Table 28)
Supply Reliability – Historic Conditions (AFY)^a

Water Supply Sources	Average/Normal Water Year Supply	Single-Dry Water Year	Multiple-Dry Water Years			
			Year 1	Year 2	Year 3	Year 4
Sonoma County Water Agency ^b	3,514	2,776	3,514	3,514	3,514	3,514
Groundwater ^c	1,800	2,538	1,800	1,800	1,800	1,800
Recycled Water ^d	1,300	1,300	1,300	1,300	1,300	1,300
Total Supply	6,614	6,614	6,614	6,614	6,614	6,614
Percent of Average/Normal Year		100%	100%	100%	100%	100%

^a 2015 is used as basis (see Table 4.11)

^b Reliability for SCWA supply is 79% for single-dry year; 100% for all other water years (see SCWA 2010 UWMP)

^c Reliability for groundwater is 100% for all water years and can be pumped up to 2,577 AFY during periods of drought

^d Reliability for recycled water is 100% for all water years

5.3 LEGAL & ENVIRONMENTAL CONSTRAINTS

There are factors that cause or have the potential to cause inconsistent supply to meet demands. These factors that affect the reliability of the City’s water supply are legal, environmental, water quality or climatic issues and are described in this section.

5.3.1 SCWA Water Supply Agreement

The City is one of nine water contractors under contract with the SCWA, known as the *Restructured Agreement for Water Supply* (“Restructured Agreement”). Under the contract, the SCWA is obligated to

deliver up to 15 million gallons per day (mgd) during any month and up to 7,500 acre-feet of water during a fiscal year. The term of the agreement is through 2037 and can be extended by amendment.

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 eight 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 set forth within the Restructured Agreement for each of SCWA's water contractors and other customers such as Marin Municipal Water District were premised on SCWA's diversion/redirection water rights being increased from 75,000 acre-feet per year 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 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 2011-2012 to address changes that have occurred over the last five years. These include changes in customer demands, local supply and recycled water.

5.3.1.1 Water Rights

Four State Water Resources Control Board (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 of water in Lake Sonoma, and to divert and redivert 180 cubic feet per second (cfs) of water from the Russian River at SCWA's Wohler and Mirabel facilities, up to 75,000 acre-feet per year. SCWA has a pending application with the SWRCB for increasing its Russian River diversion limit from 75,000 to 101,000 acre-feet. SCWA plans to modify that petition to match the amount of water that would be needed in future years (2025 to 2035) for the water contractors including the City.

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, 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). The BO affects the SCWA's water supply operations and subsequent delivery to its water contractors, 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 "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 State Water Resources control Board to reduce summertime flows in the Russian River;
- Creating a freshwater lagoon in the estuary at the mouth of the Russian River during the summer months.

NMFS concluded that lower flows in Dry Creek and Russian River create a better environment for juvenile salmon and steelhead, and 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. For a more complete and comprehensive discussion of minimum flow requirements, refer to the SCWA’s 2010 UWMP found at the website link noted in Section 4. 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. In summary, the SCWA is managing its water supply operations and activities in a manner consistent with the BO and is protecting its Russian River water rights and its ability to deliver water to the City and other SCWA water contractors and customers.

5.3.1.2 Entitlements

Water entitlements are set forth in terms of average day peak month demand. The City’s entitlement limit is 15 mgd and an annual entitlement limit of 7,500 acre-feet. As long as 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.

5.4 WATER QUALITY CONSTRAINTS

The quality of the City’s water deliveries is regulated by the California Department of Health Services (DHS), which requires regular collection and testing of water samples to ensure that the quality meets regulatory standards and does not exceed MCLs. The City, the SCWA and the Subregional System perform water quality testing, which has consistently yielded results within the acceptable regulatory limits (Dyett & Bhatia, 2000).

The quality of existing surface water, groundwater, and recycled water supply sources over the next 25 years is expected to be adequate. Surface and groundwater water will continue to be treated to drinking water standards, and no surface water, groundwater, or recycled water quality deficiencies are foreseen to occur in the next 25 years. Table 5.4 (DWR Table 30) shows that there is not anticipated to be any impacts to the current and projected water supply due to water quality.

**Table 5.4 (DWR Table 30)
Water Quality – Current and Projected Water Supply Impacts**

Water source	Description of Condition	2010	2015	2020	2025	2030	2035
Sonoma County Water Agency	no impacts	-	-	-	-	-	-
Groundwater	no impacts	-	-	-	-	-	-
Recycled Water	no impacts	-	-	-	-	-	-

5.5 SUPPLY AND DEMAND COMPARISONS

The following tables compare the projected normal year water supply available to the City under a current multiple-dry water year condition to the supply and demand from 2015 to 2035, in 5-year increments.

Table 5.5 (DWR Table 31)
Supply Reliability – Current Water Sources (AFY) ^a

Water Supply Sources	Average/Normal Water Year Supply	Multiple-Dry Water Year Supply ^b			
		Year 1	Year 2	Year 3	Year 4
Sonoma County Water Agency ^c	3,514	3,514	3,514	3,514	3,514
Groundwater	1,800	1,800	1,800	1,800	1,800
Recycled Water	1,300	1,300	1,300	1,300	1,300
Total Supply	6,614	6,614	6,614	6,614	6,614
Percent of Normal Year		100%	100%	100%	100%

^a Basis year is 2015

^b 100% reliability for SCWA supply for multiple-dry years (see SCWA 2010 UWMP)

^c See Table 4.11

Table 5.6 (DWR Table 32)
Supply and Demand Comparison – Normal Year (AFY)

	2015	2020	2025	2030	2035
Supply (from Table 4.11):					
Sonoma County Water Agency	3,514	4,583	4,937	5,292	5,646
Groundwater	1,800	903	667	475	340
Recycled Water (Subregional System)	1,300	1,300	1,300	1,300	1,300
Supply Totals	6,614	6,786	6,904	7,067	7,286
Demand Totals (from Table 3.15)	6,614	6,786	6,904	7,067	7,286
Difference (supply minus demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Table 5.7 (DWR Table 33)
Supply and Demand Comparison – Single Dry Year (AFY)

	2015	2020	2025	2030	2035
Supply:					
SCWA Supply Reliability ^a	79%	80%	82%	79%	81%
SCWA Supply ^b	2,776	3,666	4,048	4,181	4,573
Groundwater ^c	2,538	1,820	1,556	1,586	1,413
Recycled Water ^d	1,300	1,300	1,300	1,300	1,300
Supply Totals	6,614	6,786	6,904	7,067	7,286
Demand Totals (Table 3.15)	6,614	6,786	6,904	7,067	7,286
Difference (supply minus demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

^a Single-dry year reliability based on SCWA reliability analysis (see SCWA 2010 UWMP)

^b SCWA supply equals reliability times SCWA supply from Table 5.6

^c Groundwater reliability is 100% and can be pumped up to 2,577 AFY during periods of drought

^d Recycled water supply reliability is 100%

Table 5.8 (DWR Table 34)
Projected Supply & Demand Comparison during Multiple Dry Year Period (AFY)

		2015	2020	2025	2030	2035
Multiple Dry Year - First Year Supply	Supply Totals (see Table 4.11)	6,614	6,786	6,904	7,067	7,286
	Demand Totals (see Table 3.15)	6,614	6,786	6,904	7,067	7,286
	Difference (supply minus demand)	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
Multiple Dry Year - Second Year Supply	Supply Totals (see Table 4.11)	6,614	6,786	6,904	7,067	7,286
	Demand Totals (see Table 3.15)	6,614	6,786	6,904	7,067	7,286
	Difference (supply minus demand)	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
Multiple Dry Year - Third Year Supply	Supply Totals (see Table 4.11)	6,614	6,786	6,904	7,067	7,286
	Demand Totals (see Table 3.15)	6,614	6,786	6,904	7,067	7,286
	Difference (supply minus demand)	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%

5.6 SUMMARY OF SUPPLY AND DEMAND ANALYSIS

As indicated in Section 1, the City, often in cooperation with the SCWA, has previously prepared water supply planning documents. This document is a regular update to the City’s UWMP as anticipated by the Act. The regular update process allows water suppliers to provide current information regarding their projected water supplies and demands. While this document is generally consistent with previous work, it does incorporate information that became available after the completion of the City’s previous comprehensive analysis in January 2005.

Highlights of this analysis include:

- The City is basing its projections of available SCWA supply on the SCWA’s current water rights, which are more restrictive than hydrologic constraints.
- The City is basing its projections of groundwater availability upon the findings of a court-ordered judgment and an ongoing analysis of groundwater pumping and levels in the basin from which it pumps. The City projects that up to 2,577 acre-feet per year of groundwater supply is available over the horizon of this Plan. This projection is consistent with legal decisions, is sustainable based on analysis of the City’s demands and other demands in the area, and is identical to the projections the City made in its 2005 City-wide Water Supply Assessment.
- The City is basing its projections of available recycled water on existing contracts for supply and planned expansion. The City projects that a total 1,300 acre-feet per year of recycled water will be available over the horizon of this Plan. This projection is consistent with Subregional System’s adopted IRWP Master Plan and EIR and is identical to the projections the City made in its 2005 City-wide Water Supply Assessment.
- The City is basing its demand projections on a detailed demand model developed in partnership with the SCWA. The demand model utilizes the City’s current billing records as the basis for projections and includes allowances for Plumbing Code Changes and a variety of demand management measures.

The City's combined projected water supplies are sufficient to meet projected demands. The City's projected water supply portfolio is highly stable because it relies largely on current contracted and permitted water supplies that are not subject to hydrologic constraints.

5.7 WATER SHORTAGE CONTINGENCY AND DROUGHT PLANNING

This section provides information required by Water Code Section 10632. The City has adopted a Water Shortage Emergency Plan within Section 13.66 of its Municipal Code, which is included in Appendix F of this UWMP.

5.7.1 Actions in Response to Water Supply Shortages (Water Code 10632(a))

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 percent. This section also requires the water supplier to outline the specific water supply conditions that are applicable at each stage of action.

The City has the authority to declare a water shortage emergency under Section 375 and 10632 of the Water Code and has implemented an ordinance to exercise this authority (Appendix F). Emergencies are declared in three stages with specific reduction methods used for each stage. The stages of action, including a 50 percent reduction goal, are shown in Table 5.9 (DWR Table 35).

**Table 5.9 (DWR Table 35)
Water Shortage Contingency – Rationing Stages to Address Water Supply Shortages**

Stage No.	Water Supply Conditions	% Shortage
1 Voluntary	Irrigation morning and evening only	10%
	Inspection/repair/adjustment of irrigation systems	
	Reduction in irrigation run times for weather	
	Reduction of irrigation run time if runoff occurs	
	Utilization of City information, incentives & rebates	
	Serve water in restaurants on request only	
2 Mandatory	Prohibition against filling swimming pools and using ornamental fountains	20%
	Prohibition against noncommercial vehicle washing	
	Prohibition against use of water from fire hydrants (except for fighting fires)	
	Prohibition against use of water for construction dust control	
	Restrictions on hours for residential irrigation	
	20% reductions for potable water irrigation accounts	
	20% reductions for vehicle washing facilities	
	20% reductions for most non-residential land uses	
3 Mandatory	Prohibition against filling swimming pools and using ornamental fountains	30%
	Prohibition against noncommercial vehicle washing	
	Prohibition against use of water from fire hydrants (except for fighting fires)	
	Prohibition against use of water for construction dust control	
	Restrictions on automatic sprinkler use in residential settings	
	Restrictions on new landscaping	
	30% reductions for potable water irrigation accounts	
	30% reductions for vehicle washing facilities	
	30% reductions for most non-residential land uses	
4 Mandatory	Prohibition against filling swimming pools and using ornamental fountains	50%
	Prohibition against noncommercial vehicle washing	
	Prohibition against use of water from fire hydrants (except for fighting fires)	
	Prohibition against use of water for construction dust control	
	Restriction on new landscaping	
	Irrigation prohibition (exceptions for established perennial plants/trees)	
	Vehicle washing prohibition	
	50% reductions for most non-residential land uses	
	100% offset for new development demands	

5.7.2 Minimum Water Supply during the Next Four Years (Water Code 10632(b))

The minimum water supply available during the next four years during a multiple year drought is shown in Table 5.5 (DWR Table 31), above. Because the City has based its planning on SCWA’s current water rights. 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.

5.7.3 Catastrophic Supply Interruption Plan (Water Code 10632(c))

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. Table 5.14 provides a summary of the actions included in the EOP for specific catastrophic events.

**Table 5.10
Preparation Actions for Catastrophes**

Possible Catastrophe	Summary of Actions
Earthquake	Shut-off isolation valves and use of 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 Agency 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

5.7.4 Prohibitions, Penalties and Consumption Reduction (Water Code 10632(d)-(f))

Section 13.62 of the Municipal Code specifies prohibited water uses. These are outlined in Table 5.11 (DWR Table 36) below.

**Table 5.11 (DWR Table 36)
Water Shortage Contingency – Mandatory Prohibitions**

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Washing of sidewalks, walkways, driveways, parking lots and other hard-surfaced areas by direct hosing, except in specific circumstances	Permanent Prohibition
The escape of water through breaks or leaks within the customer’s plumbing or private distribution system	Permanent Prohibition
Irrigation in a manner or to an extent which allows excessive runoff	Permanent Prohibition
Washing cars, boats, trailers or other vehicles with a hose not equipped with a shutoff nozzle	Permanent Prohibition
Water for single pass evaporative cooling systems for air conditioning	Permanent Prohibition
Water for new non-recirculating conveyor car wash systems	Permanent Prohibition
Water for new non-recirculating industrial clothes washing systems	Permanent Prohibition
Use of potable water when recycled water of adequate quality is available	Permanent Prohibition

Section 13.66.070 of the Municipal Code outlines the City’s enforcement process, which is presented in Table 5.12 (DWR Table 38).

**Table 5.12 (DWR Table 38)
Water Shortage Contingency – Penalties and Charges**

Penalty or Charge	Stage When Penalty Takes Effect
Personal contact with the customer	Any Stage
Delivery of written notice	Any Stage
Installation of a flow restricting device	Any Stage
Imposition of water waste fees	Any Stage

Table 5.17 (DWR Table 37) presents the consumption reduction method, stage and projected reduction in DWR’s required form.

**Table 5.13 (DWR Table 37)
Water Shortage Contingency – Consumption Reduction Methods**

Consumption Reduction Method	Stage When Method Takes Effect	Projected Reduction (%)
Irrigation morning and evening only	1	10%
Inspection/repair/adjustment of irrigation systems		
Reduction in irrigation run times for weather		
Reduction of irrigation run time if runoff occurs		
Utilization of City information, incentives & rebates		
Serve water in restaurants on request only		
Prohibition against filling swimming pools and using ornamental fountains	2	20%
Prohibition against noncommercial vehicle washing		
Prohibition against use of water from fire hydrants (except for fighting fires)		
Prohibition against use of water for construction dust control		
Restrictions on hours for residential irrigation		
20% reductions for potable water irrigation accounts		
20% reductions for vehicle washing facilities		
20% reductions for most non-residential land uses		
All Stage 2 Prohibitions	3	30%
Restrictions on new landscaping		
30% reductions for potable water irrigation accounts		
30% reductions for most non-residential land uses		
All Stage 3 Prohibitions	4	50%
Irrigation prohibition (exceptions for established perennial plants/trees)		
Vehicle washing prohibition		
50% reductions for most non-residential land uses		
100% offset for new development demands		

5.7.5 Effect on Revenues and Expenditures (Water Code 10632 (g))

The Water Code requires the City to analyze the impacts on revenue from a 50% reduction in supplies. When water deliveries are reduced, the City also experiences reduced revenue from water rates. 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. The City manages its Water Enterprise Fund to maintain cash reserves, and these operating reserves currently exceed 50% of its annual operating costs.

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 on water delivered. For the purpose of this analysis, FY 2006-2007 budget data was used. The City’s current water rate¹ includes a monthly service charge and a commodity charge. These are presented in Table 5.14.

**Table 5.14
Water Shortage Contingency – Rate Schedule**

Monthly Service Charge		Commodity Rate Charge
Residential		
\$18.32		\$0.003/gallon
Commercial and Multifamily		
¾" or 1" meter	\$18.32	\$0.003/gallon
1 ½" meter	\$31.10	\$0.003/gallon
2" meter	\$44.27	\$0.003/gallon
3" meter	\$79.65	\$0.003/gallon
4" meter	\$124.49	\$0.003/gallon
6" meter	\$242.45	\$0.003/gallon
8" meter	\$384.00	\$0.003/gallon

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. Table 5.15 illustrates this calculation.

**Table 5.15
Water Shortage Contingency – Effect of Reduced Water Sales on Total Revenue**

	No. of Accounts	Monthly Service Charge ^a	Revenue from Monthly Service Charge	Total Budgeted Revenue	Budgeted Revenue Subject to Reduction
	(a)	(b)	(c)	(d)	(e)
			=		=
			(a)*(b)*12 mos/yr		(d)-(c)
Residential	7655	\$18.32	\$1,682,875	\$3,443,672	\$1,760,797
Commercial/MFR	1345	\$44.27	\$714,518	\$2,912,332	\$2,197,814

^a Assumes average Commercial/MFR meter at the 2" rate

Should the City experience a drop in revenues as a result of a water shortage emergency, it would incur lower costs (because it would be purchasing less water from the SCWA); it would defer capital projects as necessary and use available reserves to cover operational expenses. The effect of potential revenue reductions on overall expenditures and reserve balances is illustrated in Table 5.16 below.

¹ Ordinance No. 801

Table 5.16
Water Shortage Contingency – Effect of Reduced Supply on Revenues & Expenditures

	Normal	20% Reduction in Supply	30% Reduction in Supply	50% Reduction in Supply
Revenues				
Residential	\$3,443,672	\$3,091,513	\$2,915,433	\$2,563,274
Commercial/MFR	\$2,912,332	\$2,472,769	\$2,252,988	\$1,813,425
Other	\$6,000	\$6,000	\$6,000	\$6,000
Totals	\$6,362,004	\$5,570,282	\$5,174,421	\$4,382,699
Expenditures				
Purchase of Water	\$1,707,137	\$1,365,710	\$1,194,996	\$853,569
Operations & Maintenance	\$2,382,923	\$2,382,923	\$2,382,923	\$2,382,923
Demand Management	\$20,000	\$20,000	\$20,000	\$20,000
Capital Outlay	\$618,284	\$618,284	\$618,284	\$618,284
Net Transfers	\$1,533,024	\$1,533,024	\$1,533,024	\$1,533,024
Totals	\$6,261,368	\$5,919,941	\$5,749,227	\$5,407,800
Surplus (Deficit)	\$100,636	(\$349,659)	(\$574,806)	(\$1,025,101)
Reserves ^a	\$4,171,722	\$4,171,722	\$4,171,722	\$4,171,722
Available Balance	\$4,272,358	\$4,171,722	\$4,171,722	\$4,171,722
Used to Cover Operations	\$0	(\$349,659)	(\$574,806)	(\$1,025,101)
Ending Balance	\$4,272,358	\$3,822,063	\$3,596,916	\$3,146,621

^a Reserves for "Normal" scenario from April 30, 2011 Cash Report from the City

Currently, the City is able to manage even a 50% reduction in supplies with funding available from its current reserves. However, as demands grow in the future, the City will need to take more actions to manage supply reductions, and the revenue impacts will be more severe. The City will continue to monitor its reserves in order to assure that reserve funding remains available to manage unanticipated reductions in demand.

5.7.6 Water Shortage Contingency Ordinance (Water Code 10632(h))

As noted above, the City has adopted a Water Shortage Emergency Plan which was codified by Ordinance in Section 13.66 of the Municipal Code. This Ordinance has recently been updated and the update is attached in Appendix F.

5.7.7 Mechanisms for Determining Actual Reductions (Water Code 10632(i))

The City's wells and SCWA supply turnouts are all equipped with water meters. Additionally, 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 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.

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SECTION 6

DEMAND MANAGEMENT MEASURES

Demand management measures (DMMs) are water conservation measures. The DMMs listed in the UWMP Act correlate to the California Urban Water Conservation Council's (CUWCC) original Best Management Practices (BMPs) for water conservation. The 2010 UWMP Guidebook uses the terms DMMs and BMPs interchangeably. The CUWCC revised and updated its BMP program in December of 2008 and its BMPs no longer correlate identically to the DMMs described in the 2010 UWMP Guidebook. The City is a signatory to the CUWCC's Memorandum of Understanding, and has worked to voluntarily implement the CUWCC program beginning in the year 2000. The Act requires that if an agency is a CUWCC signatory, it must document compliance with the CUWCC program in its UWMP.

The purpose of this section is to provide a comprehensive description of the City's currently implemented and planned water conservation programs, to correlate these programs to the water use reduction plan meant to achieve the 2015 and 2020 water use targets of the Water Conservation Act and to document its voluntary compliance with the CUWCC's Memorandum of Understanding.

6.1 DESCRIPTION OF DEMAND MANAGEMENT MEASURES

The 2010 UWMP Guidebook lists 14 conservation measures to be addressed. These DMMs correspond to the 14 BMPs in the original CUWCC Memorandum of Understanding (MOU). In this UWMP, the DMMs are listed and described consistently with the Water Conservation Act of 2009 and the 2010 UWMP Guidebook. The Maddaus Report identifies three conservation categories: Tier 1, Tier 2, and New Development Standards (ND). Tier 1 refers to the original CUWCC BMPs which are documented in the CUWCC reporting forms that the City files annually. Tier 2 refers to DMMs that are "above and beyond" the Tier 1 measures and can apply to new or existing development. ND refers to conservation standards and requirements that are applicable only to new development. The Maddaus Report provides detail on the combination of Tier 1, Tier 2 and New Development Standards that the City will use to meet its 2015 and 2020 water use targets.

Historically the CUWCC required a signatory agency like the City to work on all 14 BMPs in a prescribed fashion until it achieved a certain "penetration rate" in its service area, in order to stay in compliance with the Memorandum of Understanding. Compliance with the Memorandum of Understanding is necessary for agencies to be eligible for State grants and loans for water and wastewater systems. Starting in 2009, the CUWCC provided a new option for BMP compliance, the "CUWCC GPCD Option." This option allows members to selectively implement the BMPs that are best suited for their service areas as long as they achieve a certain water use "target" (which is not necessarily identical to the targets adopted under the Water Conservation Act of 2009). Because its water use reduction plan relies on a combination of Tier 1, Tier 2 and New Development standards, not just implementation of the 14 original BMPs, the City has chosen the CUWCC gallon per capita per day (GPCD) Option for compliance with the CUWCC MOU.

6.2 CUWCC GPCD OPTION BASELINE AND TARGET

The CUWCC's GPCD Option requires calculation of a baseline and conservation target but uses a different methodology from the Water Conservation Act of 2009. The CUWCC GPCD Option requires a specific baseline time period (1997-2006), whereas the Water Conservation Act of 2009 allows calculation over a rolling 10-15 year period beginning as early as 1989. The CUWCC GPCD Option requires an 18 percent reduction by 2018, whereas the Water Conservation Act of 2009 requires a nominal 20 percent reduction by 2020. Despite these differences in methodology, the CUWCC GPCD option provides the City with the

best method to simultaneously achieve its 2015 and 2020 targets while staying in compliance with the CUWCC’s Memorandum of Understanding.

The City’s baseline for the CUWCC GPCD Option compliance is 148 gpcd. The City’s 2018 target for the CUWCC GPCD Option is 122 gpcd. The CUWCC GPCD Option water use target of 122 gpcd is higher than the City’s target calculated on an individual agency basis but is 7 gpcd lower than the Regional Alliance figure that the City has chosen to use as its Water Conservation Act target. This is illustrated in Table 6.1 below.

**Table 6.1
Water Use Targets for the City of Rohnert Park (gpcd)**

Year	Regional Alliance Target ^a	City Individual Target ^b	CUWCC MOU GPCD Option Target (Voluntary)	Projected Per Capita Water Use ^b	Meets Target?
2015	142	140	-	102	Yes
2018	-	-	122	102	Yes
2020	129	119	-	102	Yes

^a From Table 3.6

^b From Table 3.5

The data used to calculate this baseline and target is presented in Appendix G. As the spreadsheets attached illustrate, the City’s water use in 2010 was 93 gpcd, well below the City’s 2018 target. The 2010 use is considered atypically low due to the current economic conditions in the City. Although it is projected to increase as the economy improves, the City’s water use is also expected to be below the CUWCC GPCD Option target.

The calculations for, and descriptions of, the Regional Alliance and Individual water use targets are explained in Section 3.

According to DWR’s 2010 UWMP Guidebook, a CUWCC member is in compliance with the DMM reporting requirements of the Water Conservation Act if the member is in compliance with their CUWCC GPCD Option reporting requirements. The requirements for CUWCC GPCD Option compliance are as follows:

- Potable water gpcd for each year in the baseline period
- 2018 gpcd target and five biennial gpcd targets
- Supporting data to calculate gpcd for this period’s potable water gpcd
- Calculations showing the reporting period’s potable water gpcd is less than or equal to that period’s biennial gpcd target
- Completed water supply and water use CUWCC reporting forms for 2009 and 2010 for both potable and non-potable water
- Completed Foundational BMP reporting forms for 2009 and 2010

Spreadsheets presenting data for calculating the CUWCC GPCD Option baseline, targets and use are presented in Appendix G. Copies of the CUWCC reporting forms listed above are also presented in Appendix G.

6.3 DMMs CURRENTLY BEING IMPLEMENTED

As permitted by in the Water Conservation Act, the City has attached the CUWCC reporting forms in lieu of supplying a narrative of DMMs being implemented. These documents are presented in Appendix G.

6.4 OTHER MEASURES (ADDITIONAL DMMs CURRENTLY BEING IMPLEMENTED BEYOND THE DMMs LISTED IN THE UWMP ACT)

Section 3.6 of this UWMP details the DMMs planned for implementation.

6.5 CONSERVATION SAVINGS

As detailed in Section 3.5 of this UWMP, the water conservation implementation plan is expected to yield 418 AFY of water savings by 2035. Conservation savings are described in detail in the Maddaus report (Appendix B) and described in Section 3 of this UWMP.

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March 17, 2011



City Council

Gina Belforte
Mayor

Jake Mackenzie
Vice-Mayor

Amy Ahanotu
Joseph T. Callinan
Pam Stafford
Council Members

Gabriel A. Gonzalez
City Manager

John Dunn
Interim Assistant City Manager

Judy Hauff
City Clerk

Michelle Marchetta Kenyon
City Attorney

Benjamin D. Winig
Assistant City Attorney

Brian Masterson
Director of Public Safety

Darrin W. Jenkins
*Director of Development Services
/ City Engineer*

Sandra M. Lipitz
Director of Administrative Services

John McArthur
*Director of Public Works and
Community Services*

Pete Parkinson
Director
Sonoma County Permit and Resource Management Department
550 Ventura Avenue
Santa Rosa, CA 95403

Re: Notice of Review and Preparation of 2010 Urban Water Management Plan

Dear Mr. Parkinson,

Each urban water supplier serving more than 3,000 connections is required by the State of California to prepare an Urban Water Management Plan every five years. The due date for the 2010 UWMP is July 1, 2011.

The City of Rohnert Park is providing notice that it is in the process of preparing its 2010 UWMP. The 2010 UWMP will provide information relating to water demand, water supply, and water supply reliability for the next 25 years.

If Sonoma County would like to provide input on the preparation of the City's 2010 UWMP, please feel free to contact me at (707) 588-2243 or via email at dajenkins@rpcity.org.

Sincerely,

Original Signed

Darrin Jenkins, PE
Director of Development Services/City Engineer

ec: Sonoma County Water Agency, Attn: Grant Davis
City of Cotati, Attn: Damien O'Bid
City of Petaluma, Attn: Pamela Tuft
City of Santa Rosa, Attn: Miles Ferris
City of Sonoma, Attn: Milenka Bates
North Marin Water District, Attn: Chris De Gabriele
Town of Windsor, Attn: Richard Burt
Valley of the Moon Water District, Attn: Krishna Kumar
City of Sebastopol, Attn: Sue Kelly
Penngrove Water Company, Attn: Jim Downey
Sonoma State University, Attn: Christopher Dinno
City of Rohnert Park, Attn: John McArthur, Pat Barnes, Ellen Beardsley

CERTIFICATION OF PUBLICATION IN
"The Community VOICE"
(Published every Friday)
in the
SUPERIOR COURT
of the
STATE OF CALIFORNIA
In and For the County of Sonoma
COUNTY OF SONOMA

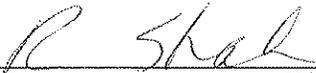
City of Rohnert Park
Public Notice
City's Urban Water Management Plan

STATE OF CALIFORNIA, The undersigned does hereby certify and declare: That at all times hereinafter sworn, deposes and says: That at all times hereinafter mentioned she was a citizen of the United States, over the age of eighteen years and a resident of said county and was at all said times the principal clerk of the printer and publisher of The Community VOICE, a newspaper of general circulation, published in the City of Rohnert Park, in said County of Sonoma, State of California; that The Community VOICE is and was at all times herein mentioned, a newspaper of general circulation as that term is defined by Section 6000 of the Government Code; its status as such newspaper of general circulation having been established by Court Decree No. 35815 of the Superior Court of the State of California, in and for the County of Sonoma, Department No. 1 thereof; and as provided by said Section 6000, is published for the dissemination of local and telegraphic news and intelligence of a general character, having a bona fide subscription list of paying subscribers, and is not devoted to the interest, or published for the entertainment or instruction of a particular class, profession, trade, calling, race or denomination, or for the entertainment and instruction of such classes, professions, trades, callings, races or denominations; that at all said times said newspaper has been established and published in the said City of Rohnert Park, in said County and State at regular intervals for more than one year preceding the first publication of this notice herein mentioned; that said notice was set in type not smaller than non-pareil and was preceded with words printed in black face type no smaller than non-pareil, describing and expressing in general terms, the purport and character of the notice intended to be given; that the "City of Rohnert Park Public Notice City's Urban Water Management Plan" of which the annexed is a printed copy, was published in said newspaper at least 1 consecutive time(s), commencing on the 8 day of April, and ending on the 8 day of April, 2011.

* * *

I HEREBY CERTIFY AND DECLARE UNDER THE PENALTY OF perjury that the foregoing is true and correct.
EXECUTED this 8 day of April, 2011 at Rohnert Park, California

Signed



Rose Shah

Chief Clerk

*

CITY OF ROHNERT PARK • 130 AVRAM AVENUE • ROHNERT PARK, CA 94928
PHONE: (707) 588-2225 • FAX: (707) 792-1876 • WEB: www.rpcity.org
OFFICE OF THE CITY CLERK

PUBLIC NOTICE

Notice of Commencement of UWMP Review and Update

The City of Rohnert Park is currently reviewing and updating the City's Urban Water Management Plan ("UWMP"), as is required by law every five years. The 2010 UWMP is due to the California Department of Water Resources July 1, 2011. The UWMP will provide an analysis of projected water demand and supply over the next 25 years as well as an updated water conservation plan. The public will have an opportunity to review and comment on the draft UWMP. For any questions regarding this Notice or if you are interested in providing input during the preparation of the UWMP, please contact Darrin Jenkins at (707) 588-2243 or dajenkins@rpcity.org. A draft review will be available for public review at a later date.

DATED: April 6, 2011

Judy Hauff, City Clerk

PUBLICATION DATE: April 8, 2011
The Community Voice





NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Rohnert Park will be holding a PUBLIC HEARING.

WHERE: Rohnert Park City Hall – Council Chamber
130 Avram Avenue
Rohnert Park, California

WHEN: Tuesday, June 14, 2011, at the hour of 6:00 p.m. or as soon thereafter as the matter is reached on the agenda.

PURPOSE: To solicit input regarding:
1) Community Water Use Target for 2020, as required by the Water Conservation Act of 2009, and
2) draft 2010 Urban Water Management Plan.

The City Council of the City of Rohnert Park will hold a public hearing on June 14, 2011, at 6:00 p.m. to receive comments on 1) Community Water Use Target for 2020, as required by the Water Conservation Act of 2009 and 2) draft 2010 Urban Water Management Plan (Plan). The City's proposed Community Water Use Target for 2020 is included in the Plan. The purpose of the Plan is to consolidate information regarding water supply and demand, provide public information, and improve statewide water planning. Documents related to this item are available for public review during normal business hours at:

Rohnert Park City Hall - City Clerk's Office
130 Avram Avenue, Rohnert Park, CA

Rohnert Park-Cotati Regional Library
6250 Lynne Conde Way, Rohnert Park, CA

On the Rohnert Park City Web Page
at <http://www.rpcity.org> under Public Notices

All persons interested in this matter should appear at the June 14, 2011, City Council meeting. Written statements may be submitted in advance for presentation to the Council as part of the public hearing addressed to Judy Hauff, City Clerk, City of Rohnert Park, 130 Avram Avenue, Rohnert Park, CA 94928. Comments may also be received by email to: UWMP@rpcity.org prior to the hearing date.

NOTE: If you challenge this matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Rohnert Park at, or prior to, the public hearing.

Questions regarding this matter should be directed to Darrin Jenkins, Director of Development Services/City Engineer, (707) 588-2243.

Dated: May 25, 2011

Judy Hauff, City Clerk

Published: May 27, 2011 and June 3, 2011

CERTIFICATION OF PUBLICATION IN
 "The Community VOICE"
 (Published every Friday)
 in the
SUPERIOR COURT
 of the
 STATE OF CALIFORNIA
 In and For the County of Sonoma
 COUNTY OF SONOMA

City of Rohnert Park
 Notice of Public Hearing

STATE OF CALIFORNIA, The undersigned does hereby certify and declare: That at all times hereinafter sworn, deposes and says: That at all times hereinafter mentioned she was a citizen of the United States, over the age of eighteen years and a resident of said county and was at all said times the principal clerk of the printer and publisher of The Community VOICE, a newspaper of general circulation, published in the City of Rohnert Park, in said County of Sonoma, State of California; that The Community VOICE is and was at all times herein mentioned, a newspaper of general circulation as that term is defined by Section 6000 of the Government Code; its status as such newspaper of general circulation having been established by Court Decree No. 35815 of the Superior Court of the State of California, in and for the County of Sonoma, Department No. 1 thereof; and as provided by said Section 6000, is published for the dissemination of local and telegraphic news and intelligence of a general character, having a bona fide subscription list of paying subscribers, and is not devoted to the interest, or published for the entertainment or instruction of a particular class, profession, trade, calling, race or denomination, or for the entertainment and instruction of such classes, professions, trades, callings, races or denominations; that at all said times said newspaper has been established and published in the said City of Rohnert Park, in said County and State at regular intervals for more than one year preceding the first publication of this notice herein mentioned; that said notice was set in type not smaller than non-pareil and was preceded with words printed in black face type no smaller than non-pareil, describing and expressing in general terms, the purport and character of the notice intended to be given; that the "City of Rohnert Park Notice of Public Hearing To solicit input regarding Community Water Use Target for 2020, Draft 2010 Urban Water Management Plan" of which the annexed is a printed copy, was published in said newspaper at least 2 consecutive time(s), commencing on the 27 day of May, and ending on the 3 day of June, 2011.

* * *

I HEREBY CERTIFY AND DECLARE UNDER THE PENALTY OF perjury that the foregoing is true and correct.
 EXECUTED this 3 day of June, 2011 at Rohnert Park, California

Signed R Shah
 Rose Shah Chief Clerk

*
 Rose Shah

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Rohnert Park will be holding a PUBLIC HEARING.

WHERE: Rohnert Park City Hall – Council Chamber
 130 Avram Avenue
 Rohnert Park, California

WHEN: Tuesday, June 14, 2011, at the hour of 6:00 p.m. or as soon thereafter as the matter is reached on the agenda.

PURPOSE: To solicit input regarding:
 1) Community Water Use Target for 2020, as required by the Water Conservation Act of 2009, and
 2) draft 2010 Urban Water Management Plan.

The City Council of the City of Rohnert Park will hold a public hearing on June 14, 2011, at 6:00 p.m. to receive comments on 1) Community Water Use Target for 2020, as required by the Water Conservation Act of 2009 and 2) draft 2010 Urban Water Management Plan (Plan). The City's proposed Community Water Use Target for 2020 is included in the Plan. The purpose of the Plan is to consolidate information regarding water supply and demand, provide public information, and improve statewide water planning. Documents related to this item are available for public review during normal business hours at:

Rohnert Park City Hall - City Clerk's Office
 130 Avram Avenue, Rohnert Park, CA
 Rohnert Park-Coiati Regional Library
 6250 Lynne Conde Way, Rohnert Park, CA

On the Rohnert Park City Web Page
 at <http://www.rpcty.org> under Public Notices

All persons interested in this matter should appear at the June 14, 2011, City Council meeting. Written statements may be submitted in advance for presentation to the Council as part of the public hearing addressed to Judy Haurf, City Clerk, City of Rohnert Park, 130 Avram Avenue, Rohnert Park, CA 94928. Comments may also be received by email to: UWMP@rpcty.org prior to the hearing date.

NOTE: If you challenge this matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Rohnert Park at or prior to the public hearing.

Questions regarding this matter should be directed to Darrin Jenkins, Director of Development Services/City Engineer, (707) 588-2243.

Judy Haurf, City Clerk



Dated: May 25, 2011
 Published: May 27, 2011 and June 3, 2011
 The Community Voice



May 27, 2011

To: Interested Agencies

Re: Notice of Availability of the 2010 Draft Urban Water Management Plan

City Council

Gina Belforte
Mayor

Jake Mackenzie
Vice Mayor

Amy O. Ahanotu
Joseph T. Callinan
Pam Stafford
Council Members

The City of Rohnert Park Draft 2010 Urban Water Management Plan (draft plan) is now available for public review. A copy of the draft plan is available for public review during normal business hours at:

Rohnert Park City Hall - City Clerk's Office
130 Avram Avenue, Rohnert Park, CA, 94928

Rohnert Park-Cotati Regional Library
6250 Lynne Conde Way, Rohnert Park, CA

On the Rohnert Park City Web Page
at <http://www.rpcity.org>

Gabriel A. Gonzalez
City Manager

Judy Hauff
City Clerk

Michelle Marchetta Kenyon
City Attorney

Benjamin D. Winig
Assistant City Attorney

Brian Masterson
Director of Public Safety

Darrin W. Jenkins
Director of Development Services
/ City Engineer

Sandra M. Lipitz
Director of Administrative Services

John McArthur
Director of Public Works and
Community Services

The City Council will hold a public hearing at 6:00 p.m. on June 14, 2011, at the City Hall Council Chamber to receive comments to the draft plan. Written statements may be submitted to the City Clerk in advance for presentation to the Council as part of the public hearing. Comments can also be received by emailing to: UWMP@rpcity.org prior to the hearing date.

Sincerely,

Darrin Jenkins

Director of Development Services / City Engineer

ec: Sonoma County Water Agency, Attn: Grant Davis
City of Cotati, Attn: Damien O'Bid
City of Petaluma, Attn: Pamela Tuft
City of Santa Rosa, Attn: Miles Ferris
City of Sonoma, Attn: Milenka Bates
North Marin Water District, Attn: Chris De Gabriele
Town of Windsor, Attn: Richard Burt
Valley of the Moon Water District, Attn: Krishna Kumar
City of Sebastopol, Attn: Sue Kelly
Peningrove Water Company, Attn: Jim Downey
Sonoma State University, Attn: Christopher Dinno
City of Rohnert Park, Attn: John McArthur, Pat Barnes, Ellen Beardsley
Winzler & Kelly, Attn: Toni Bertolero, Cristina Goulart

RESOLUTION NO. 2011-48

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROHNERT PARK ADOPTING THE CITY OF ROHNERT PARK 2010 URBAN WATER MANAGEMENT PLAN AND AUTHORIZING ITS FILING WITH THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

WHEREAS, the Urban Water Management Planning Act (the Act, California Water Code Section 10610 et. seq.) requires that every urban water supplier that supplies water for municipal purposes to more than 3,000 customers prepare an Urban Water Management Plan (UWMP) every five years, the primary objectives of which are to plan for the efficient management and use of the water supply;

WHEREAS, the City of Rohnert Park (City) is an urban water supplier within the meaning of the Act;

WHEREAS, the City of Rohnert Park staff and its consultants, in consultation with the Sonoma County Water Agency and other local water agencies, have prepared an UWMP (the City of Rohnert Park 2010 Urban Water Management Plan) to meet the requirements of the Act, as supplemented by the Water Conservation Act of 2009 (the 2009 Act), in accordance with the guidelines published by the California Department of Water Resources;

WHEREAS, the City staff, Agency staff, and the respective consultants who prepared the City of Rohnert Park 2010 Urban Water Management Plan have the training, experience and expertise necessary to prepare an UWMP meeting the requirements of the Act and the 2009 Act;

WHEREAS, the 2009 Act requires that the State of California reduce daily per capita water use by twenty percent by the year 2020, and that urban water suppliers identify baseline water usage and set community water use targets in the 2010 UWMP;

WHEREAS, the City of Rohnert Park 2010 Urban Water Management Plan has been available for public review since May 27, 2011 in compliance with the requirements of the Act;

WHEREAS, the City Council conducted a public hearing on June 14, 2011, in compliance with the Act and the 2009 Act to receive oral and written comments upon the City of Rohnert Park 2005 Urban Water Management Plan, including community water use targets and their potential economic impact, having published notice on May 27, 2011, and June 3, 2011;

WHEREAS, the City Council has reviewed the City of Rohnert Park 2010 Urban Water Management Plan, City staff reports and presentations and the oral and written comments received;

WHEREAS, the economic impacts of the 2010 Urban Water Management Plan may be positive, in that the Plan identifies adequate and reliable water supplies and finds the City's existing water conservation measures adequate to meet the requirements of the 2009 Act;

WHEREAS, the City of Rohnert Park 2010 Urban Water Management Plan was prepared in accordance with and meets the requirements of the Act and the 2009 Act, and the

facts, assumptions and analyses in the City of Rohnert Park 2010 Urban Water Management Plan are reasonable and supported by substantial evidence; and

WHEREAS, in accordance with CEQA Guidelines Section 15282(v), the preparation and adoption of an Urban Water Management Plan pursuant to the provisions of Section 10652 of the Water Code is exempt from the California Environmental Quality Act.

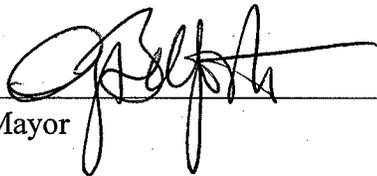
NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Rohnert Park that it does hereby find, determine and declare as follows:

1. All of the above recitals are true and correct.
2. The City Council hereby elects to use the method described in Water Code Section 10608.20(b)(1), (eighty percent of baseline use) in calculating its individual water use target for 2020.
3. The City elects to use the regional water use target established by the region for determining compliance with the 2009 Act.
4. The City of Rohnert Park 2010 Urban Water Management Plan is adopted.

BE IT FURTHER RESOLVED that the City Manager is hereby authorized and directed to make the appropriate filings with the California Department of Water Resources in accordance with the requirements of the Act.

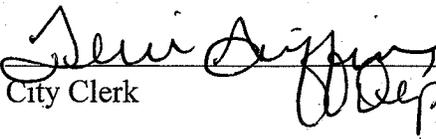
DULY AND REGULARLY ADOPTED this 14th day of June, 2011.

CITY OF ROHNERT PARK



Mayor

ATTEST:



City Clerk



AHANOTU: <u>AYE</u>	CALLINAN: <u>AYE</u>	MACKENZIE: <u>ABSENT</u>	STAFFORD: <u>AYE</u>	BELFORTE: <u>AYE</u>
AYES: (4)	NOES: (0)	ABSENT: (1)	ABSTAIN: (0)	



July 8, 2011

Department of Water Resources (DWR)
Statewide Integrated Water Management
Water Use and Efficiency Branch
P.O. Box 942836
Sacramento, CA 94236-0001
Attention: Coordinator, Urban Water Management Plans

City Council

Gina Belforte
Mayor

Jake Mackenzie
Vice Mayor

Amy O. Ahanotu
Joseph T. Callinan
Pam Stafford
Council Members

California State Library (State Library)
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans

County of Sonoma
2300 County Center Drive, Suite B177
Santa Rosa, CA 95403
Attention: County Clerk

Gabriel A. Gonzalez
City Manager

Michelle Marchetta Kenyon
City Attorney

Benjamin D. Winig
Assistant City Attorney

Terri A. Griffin
City Clerk

Darrin W. Jenkins
Director of Development Services
/ City Engineer

Sandra M. Lipitz
Director of Administrative Services

Brian Masterson
Director of Public Safety

John McArthur
Director of Public Works and
Community Services

Enclosed is your copy of the Final Urban Water Management Plan 2010 for the City of Rohnert Park in the following formats: Print copy plus CD (DWR), CD copy (State Library), and Print copy (County Clerk).

A copy of the UWMP checklist can be found in Appendix H of the attached report. For any questions regarding this report, please feel free to call me at (707) 588-2243 or email at dajenkins@rpcity.org.

Sincerely,

Darrin Jenkins
Director of Development Services / City Engineer

Enclosure

cc (letter only): City Council
City Manager
City Attorney

cc (w/ CD): City Clerk

FILE: Water/2010 Urban Water Management Plan



City of Rohnert Park



2010 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update

November 19, 2010



*MADDAUS
WATER
MANAGEMENT*

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1. EXECUTIVE SUMMARY

1.1 Introduction

The 2010 Urban Water Management Plan demand and conservation technical analysis was conducted by Maddaus Water Management (MWM) for the City of Rohnert Park. The purpose of the analysis was to:

1. Calculate a demand forecast for the year 2010 to 2035.
2. Calculate the range of conservation costs and savings for the year 2010 to 2035. This effort included:
 - Incorporate activity from current conservation measures for the year 2005 and 2009 into the DSS model.
 - Evaluate up to three new conservation measures that will reduce future water demand.
 - Estimate the costs and water savings of these measures.
 - Combine the measures into increasingly more aggressive programs and evaluate the costs and water savings of these programs.

1.2 Long-Term Demand and Conservation Program Analysis Results

The project for the Sonoma County Water Agency (SCWA) contractors included two main parts, (1) create a demand and conservation analysis for 2010 to 2035 and (2) evaluate conservation savings potential for the years 2010 to 2035 with a variety of different measures and conservation programs.

The first step in the analysis was to review and analyze historical water use production and billing data. For most contractors, the billing data was provided for the years 2000 to 2009 (a few contractors had data back to 1995 and one contractor has new meters, so data is only available after the year 2006). The data was graphically analyzed and discussed with the individual contractors. The historical water use along with the selected population and employment projections were used to create a demand forecast for the year 2010 to 2035.

Once the demands were completed, the conservation measures were analyzed for a total of 31 measures. The conservation analysis included all the measures from the 2005 conservation study that MWM completed for the SCWA contractors along with up to three new measures for each contractor. The following important assumptions about the conservation measures were included in this analysis:

1. Due to increased regulations and additional research and analysis on conservation measures, conservation measures Tier 2-8 (Reduced Connection Fees), Tier 2-9 (Synthetic Turf Rebate) and Tier 2-11 (Dishwasher Rebate) were removed from all programs at the request of the contractors.
2. No modifications to costs or savings assumptions were made to any of the Tier One and Tier Two Measures. To comply with new regulations and ordinances, minimal changes were made to the New Development measures ND-1 to ND-8
3. The table of the new measures for each contractor is listed in Section 5.1. An analysis of the new state law SB 407 was included for all contractors.
4. New development ordinances were updated to reflect new local ordinances, the Model Water Efficient Landscape Ordinance, and the Cal Green building code.

Table ES-1, ES-2 and ES-3 and Figure ES-1 show the water demands and conservation savings for the years 2010 to 2035. The Plumbing Code includes the new California State Law requiring High Efficiency Toilets and High Efficiency Urinals by 2014.

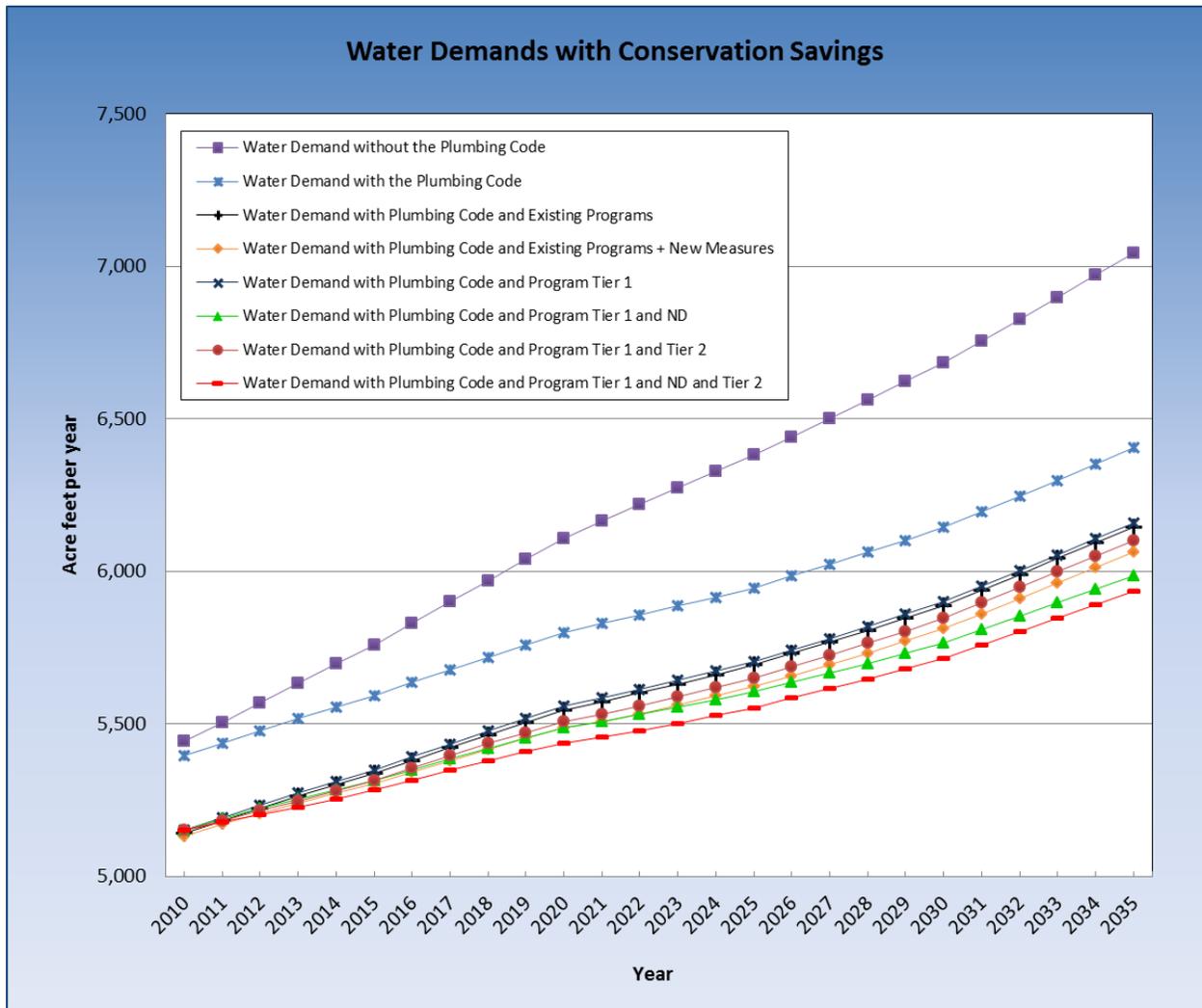
Table ES-1

Conservation Measures

City of Rohnert Park Conservation Measures in each Program						
Measure Name	Program Existing	Program Existing and New	Program Tier One	Program Tier 1 and ND	Program Tier 1 and Tier 2	Program Tier 1 and Tier 2 and ND
CUWCC #1a - Residential Water Surveys - Interior	✓	✓	✓	✓	✓	✓
CUWCC #1b - Residential Water Surveys - Outdoor	✓	✓	✓	✓	✓	✓
CUWCC #2 - Plumbing Retrofit Kits	✓	✓				
CUWCC #5a - Large Landscape Water Budgets	✓	✓	✓	✓	✓	✓
CUWCC #6 - Washer Rebates	✓	✓	✓	✓	✓	✓
CUWCC #7 - Residential Public Education	✓	✓	✓	✓	✓	✓
CUWCC #9 - Commercial Water Audits	✓	✓	✓	✓	✓	✓
CUWCC #14a - RSF Toilet Replacement			✓	✓	✓	✓
CUWCC #14b - RMF Toilet Replacement			✓	✓	✓	✓
Tier2 - 1Rain Sensor Retrofit					✓	✓
Tier2 - 2Cash for Grass					✓	✓
Tier2 - 3Financial Incentives for Being Below Water Budget					✓	✓
Tier2 - 4Irrigation Meter Rebates					✓	✓
Tier2 - 5aSmart Irrigation Controller Rebates - RSF					✓	✓
Tier2 - 5bSmart Irrigation Controller Rebates - RMF, CII, IRR					✓	✓
Tier2 - 6Financial Incentives/Rebates for Irrigation Upgrades					✓	✓
Tier2 - 7Hotel Retrofit					✓	✓
Tier2 - 10 High Efficiency Toilets					✓	✓
Tier2 - 12CII Rebates - Replace Inefficient Water Using Equipment					✓	✓
Tier2 - 13New Commercial Urinals					✓	✓
Tier2 - ND1Rain Sensor Retrofit				✓		✓
Tier2 - ND2Smart Irrigation Controller				✓		✓
Tier2 - ND3 High Efficiency Toilets				✓		✓
Tier2 - ND4Dishwasher New Efficient				✓		✓
Tier2 - ND5Clothes Washing Machine Requirement				✓		✓
Tier2 - ND6Hot Water on Demand				✓		✓
Tier2 - ND7High Efficiency Faucets and Showerheads				✓		✓
Tier2 - ND8Landscape and Irrigation Requirements				✓		✓
SB-407 Requirements (Plumbing Retrofit on Resale or Remodel)		✓				
Require Multifamily Submeter - New Accounts		✓				
Require Multifamily Submeter - Existing Account Retrofit		✓				

NOTE – Due to increased regulations and additional research and analysis, conservation measures Tier 2-8, Tier 2-9 and Tier 2-11 are out of date and were removed from analysis at the request of all the contractors.

**Figure ES-1
Long Term Demands with Conservation Programs**



**Table ES-2
Water Demand Projections**

Water Demand with Conservation Program Savings						
Water Demand (AFY)	2010	2015	2020	2025	2030	2035
Water Demand without the Plumbing Code	5,444	5,760	6,109	6,380	6,684	7,042
Water Demand with the Plumbing Code	5,396	5,593	5,800	5,946	6,143	6,404
Water Demand with Plumbing Code and Existing Programs	5,142	5,337	5,546	5,693	5,887	6,144
Water Demand with Plumbing Code and Existing Programs + New Measures	5,132	5,305	5,487	5,622	5,811	6,062
Water Demand with Plumbing Code and Program Tier 1	5,151	5,348	5,557	5,705	5,900	6,157
Water Demand with Plumbing Code and Program Tier 1 and ND	5,151	5,314	5,486	5,604	5,767	5,986
Water Demand with Plumbing Code and Program Tier 1 and Tier 2	5,151	5,316	5,506	5,650	5,845	6,102
Water Demand with Plumbing Code and Program Tier 1 and ND and Tier 2	5,151	5,282	5,437	5,553	5,715	5,935

**Table ES-3
Economic Analysis of Alternative Programs**

Comparison of Conservation Program Costs and Savings									
Conservation Program	Water Utility Benefit-Cost Ratio	Community Benefit-Cost Ratio	2035 Water Savings (AFY)	2035 Indoor Water Savings (AFY)	2035 Outdoor Water Savings (AFY)	Total Water Savings as a % of Total Production in 2035*	30 Year	Total Utility Cost for Five Years 2011-2015 (\$1,000)	Utility Cost of Water Saved (\$/AF)
							Present Value of Water Utility Costs (\$1,000)		
Existing Program	2.50	4.04	260	119	141	4.06%	\$1,654	\$398	\$216
Existing Program + New Measures	2.04	3.41	342	201	141	5.34%	\$2,371	\$757	\$259
Tier One	2.42	3.49	247	106	141	3.85%	\$1,635	\$398	\$223
Tier One + Tier Two	1.73	1.81	302	119	184	4.72%	\$2,594	\$1,053	\$306
Tier One + New Development	2.84	1.19	418	176	242	6.53%	\$1,735	\$429	\$182
Tier One + Tier Two + New Development	2.02	1.01	469	189	280	7.33%	\$2,694	\$1,084	\$254

2. INTRODUCTION AND PURPOSE

The purpose of this report is to present an overview of the demand and conservation evaluation process which has been completed for the City of Rohnert Park (City). The goal was to develop forecasts of demand and conservation savings for the 2010 Urban Water Management Plan.

The City of Rohnert Park has a current water conservation program. This report evaluates whether expanding existing efforts is a cost-effective way to meet future water needs.

The conservation measures and programs were analyzed using the Least Cost Planning Water Demand Management Decision Support System (DSS Model). In this report demand management and water conservation are used interchangeably. The evaluation includes measures directed at existing accounts as well as new development measures to make new residential and business customers more water efficient. Six programs were provided to help evaluate the net effect of running multiple measures together over time. Assumptions and results for each of the 31 individual measures and six programs will be described in detail in this report.

2.1 Contents

This report provides a general overview for the methodology, assumptions, and results for the demand forecast and conservation analysis. The following information is included in this report and is discussed in individual sections below:

- Overview of evaluation process
- Baseline water demands with and without the plumbing code
- Comparison of individual conservation measures
- Results of the conservation analysis
- Conclusions
- Appendix A: Assumptions for the Conservation Measures Evaluated
- Appendix B: Water Production and Billing Data Graphs for all Customer Categories

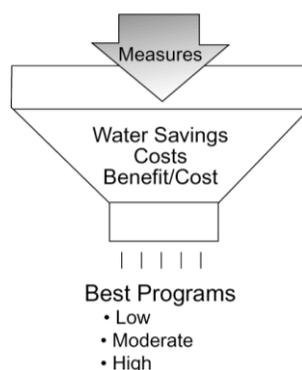
3. OVERVIEW OF EVALUATION PROCESS

Long Term Demand and Conservation Evaluation Process

During the evaluation process, water demand and savings were estimated. Benefits and costs were compared in a formal present value analysis and conclusions were drawn about which measures produce cost-effective water savings. The measure costs were previously developed by MWM and the contractors as part of the 2005 conservation study MWM completed for the SCWA contractors. This process can be thought of as an economic screening process, shown in Figure 1. Packaging the best measures into alternative programs allows City of Rohnert Park to consider what level of conservation implementation is appropriate.

Figure 1

Evaluation Process



Benefit-cost analysis has been used by many water agencies to evaluate and help select a water conservation measure best suited to local conditions. This analysis requires a locale-specific set of data, such as historical water consumption patterns by customer class, population projections, age of housing stock, and prior conservation efforts.

The following ten steps were used to implement the methodology by expanding upon the same DSS Model used to prepare the demand projections.

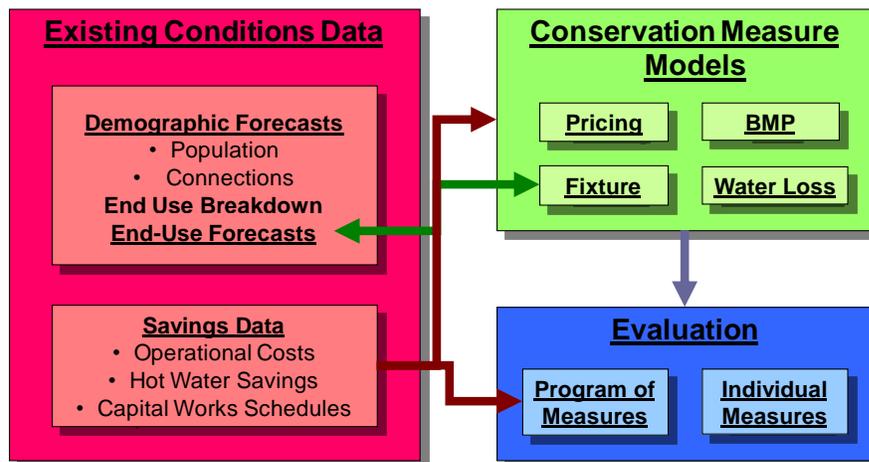
1. **Generate water use projections with and without the state and national plumbing code.** Projections cover each key customer category and are broken down into indoor and outdoor end uses. Evaluate the impact of the plumbing code changes arising from the 1992 and 2005 Federal Energy Policy Act. The plumbing code also includes fixture changes that will result from the State of California plumbing code which requires only high efficiency toilets and high efficiency urinals be sold in the state after the year 2014.
2. **Evaluate previous conservation measures and up to three new measures** to identify those that are applicable to the service area. Develop appropriate unit water savings and costs for each measure.
3. **Estimate the affected customers (or number of accounts) for each conservation measure** by dividing the measure's projected customers (or accounts) that implement the measure by the total service area customers (accounts). This factor is called the market penetration or installation rate.
4. **Estimate total annual average day water savings.** The water savings are computed by multiplying unit water savings, per measure, by the market saturation or installation rate (i.e. 10% to 90% of accounts), and then multiplying by the number of units in the service area (such as

dwelling units) targeted by a particular measure. The indoor and outdoor water savings were also calculated.

5. **Identify benefits to the water agency** including potential reduced water purchases from SCWA, calculated as the wholesale water rate and delivery cost per acre-foot for each contractor with an escalator based on historical water rates and Consumer Price Index (CPI).
6. **Quantify total benefits for each year** in the planning period by multiplying average water savings for each measure by the computed value of the benefits.
7. **Determine initial and annual costs to implement the measures** based upon current conservation program data, local experience, and the costs of goods, services, and labor in the community. This is multiplied by the number of units participating each year and then added to overall administration and promotion costs to arrive at a total measure cost, which may be spread over a number of years. For this project the costs for all measures were used from the 2005 study, except for the three new measures selected by each contractor which had all new parameters developed.
8. **Compare costs of measures** by computing the present value of costs and costs of water saved over the planning period.
9. **Compile six programmatic packages** or programs containing various new and existing measures.
10. **Evaluate the six programs for water savings and cost-effectiveness** and identify the point of diminishing returns from further investments in conservation.

For conservation measure evaluation, the DSS Model performs economic analysis by using net present value and benefit-to-cost ratio as economic indicators. The benefit cost analysis is performed from various perspectives including the utility and community (community perspective equates to the utility plus customer). Figure 2 shows the structure of the model. Results are presented in subsequent sections.

Figure 2
Structure of the DSS Model



4. WATER DEMANDS WITH AND WITHOUT PLUMBING CODE

4.1 Future Population and Employment Projections

Description of Population and Employment Forecasts

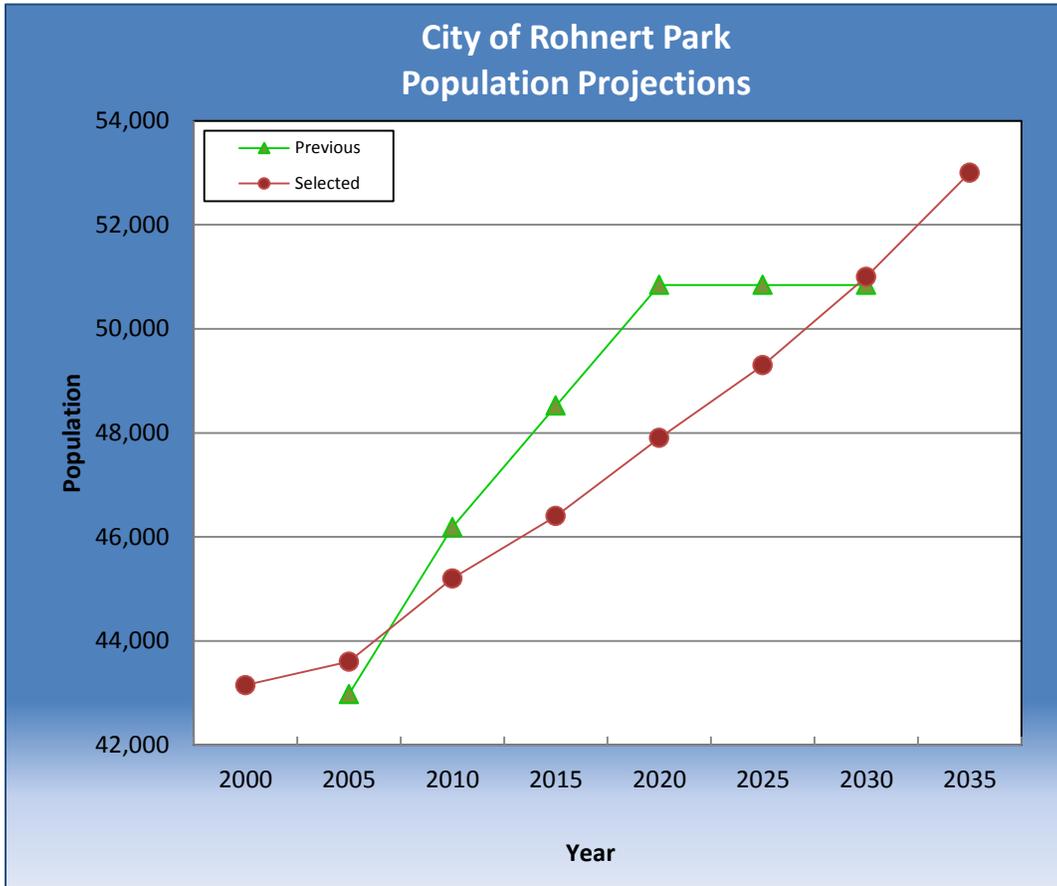
There are generally two main sources of population and employment projections used to generate future water demands for the 2010 Urban Water Management Plans.

Available Demographic Projections

- *Local General Plan (population and employment)* – Typically these plans, depending upon when they were published, have a population and jobs forecast for 2030 and build out.
 - The City of Rohnert Park provided a copy of their General Plan dated 2000 (published in 2002). The plan contains build out population and a build out employment within the City.
- *Association of Bay Area Governments (ABAG) (population and employment)* - ABAG recently published a new projections report in 2009 that includes population and employment estimates for each city in the Bay Area. This report provides estimates for 2000, 2005, 2010, 2015, 2020, 2025, 2030 and 2035. ABAG publishes demand projections every two years. The previous DSS Model projections and ABAG Projections for 2005, 2007, and 2009 were reviewed to determine the most appropriate data set to use in this DSS Model update.

The City of Rohnert Park selected the 2009 ABAG population and employment projections as shown in Figure 3, 4 and Table 1 and 2. The values shown in the “Selected” column, the 2009 ABAG projections were used to create the demand projections. The 2009 ABAG projections are the most current information available for Rohnert Park. They take into account the recent economic conditions, especially the loss of jobs. By using this employment information, this analysis effectively accounts for commercial vacancies Rohnert Park is experiencing. Lower jobs in 2010 correlate with higher vacancies, lower water use per account, and lower jobs per account. Job growth in the future is used to increase the number of accounts in the future. The City previously used 2000 General Plan projections which do not account for current economic conditions and end in 2020. Because of those limitations, 2009 ABAG projections were substituted in this 2010 analysis.

**Figure 3
Population Projections**



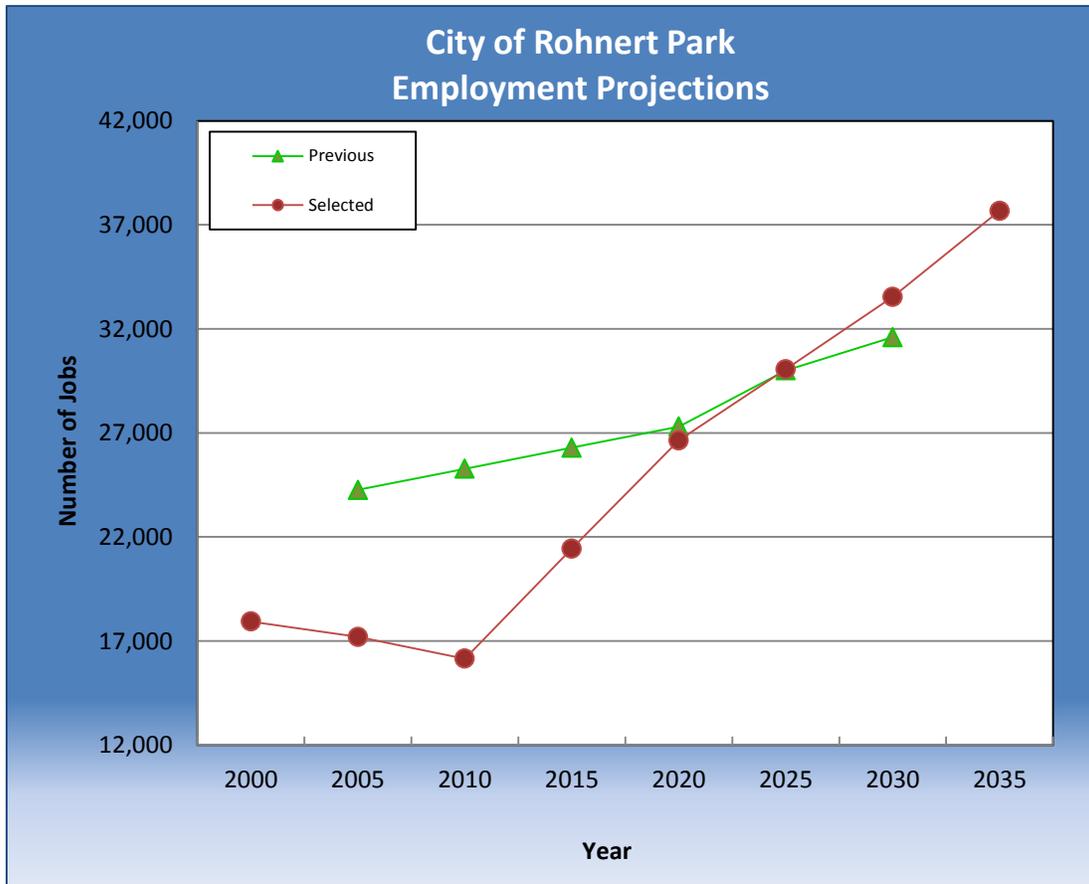
**Table 1
Table of Population Projections**

City of Rohnert Park Population Projections		
Year	Previous ¹	Selected ²
2000		43,148
2005	42,971	43,600
2010	46,183	45,200
2015	48,517	46,400
2020	50,841	47,900
2025	50,841	49,300
2030	50,841	51,000
2035		53,000

Notes:

- 1) 2005 DSS Model data based on the 2000 City of Rohnert Park General Plan
- 2) Based on 2009 ABAG subregional data

**Figure 4
Employment Projections**



**Table 2
Table of Employment Projections**

City of Rohnert Park Employment Projections		
Year	Previous ¹	Selected ²
2000		17,940
2005	24,264	17,200
2010	25,279	16,150
2015	26,293	21,440
2020	27,308	26,640
2025	30,003	30,060
2030	31,600	33,540
2035		37,670

Notes:

- 1) 2005 DSS Model data based on the 2000 City of Rohnert Park General Plan
- 2) Based on 2009 ABAG subregional data

4.2 Water Use and Demographic Data Inputs to the Model

Description of “Water Use Data Input Sheet”

Figure 5 is a two-page print out of an Excel spreadsheet. The purpose of this “Water Use Data Input Sheet” is to gather and document basic information about the individual service area. The data shown on the “Water Use Data Input Sheet” can be broken into two main categories, (a) current water use data and (b) demographic data. Each area is broken out below and helps to provide some basic definitions and assumptions.

(a) Water Use Data

- *Model Start Year* – This is the starting year for the analysis. For this project, the start year for the model is 2005. The selection of 2005 as a model start year allowed the historical conservation efforts to be included for the past 5 years (2005 to 2009). The DSS Model includes 30 years of data projecting information until the year 2035.
- *Base Year for Future Water Factors* - Based on an analysis of historical water billing data, each contractor selected a year or average of multiple years that is representative of current water use and used as a base year demand factor for developing future water use projections. The year 2007 was chosen by the City of Rohnert Park for the following reasons:
 1. The selected year, 2007, shows less of an effect of the recession. For all contractors the years 2008 and 2009 show a dip in water demand in many areas due to reduction in economic activity.
 2. The year selected had relatively “normal” climate conditions – i.e. not a drought or excessively wet year, so no significant weather adjustments were necessary. For all contractors the years 2008 and 2009 were affected by drought conditions. The water billing or production data was not weather normalized for this analysis.
 3. Meter reading data anomalies due to reading cycles for multifamily and commercial in 2005, 2006, and 2008 made averaging of multiple years problematic.
- No additional adjustment factors were added other than the “new single family home category” for three of the contractors (City of Santa Rosa, Valley of the Moon and North Marin Water District). The adjustment was made based on analysis of actual data which showed an increase in water use for homes built since 2000. Because Rohnert Park does not have data for new single family homes (no more than ten have been constructed in the last decade) this factor is not used in Rohnert Park. New single family homes are assumed to use the same amount of water as existing single family homes.
- *Average gal/day/acct*- This is the amount of water in gallons that is used per day, per account.
- *Indoor/outdoor water use* – This is the amount of water per account split into the percent that is used indoors and outdoors.
- *Consumption by customer class*- This shows the annual amount of water used for an entire calendar year, broken down by customer class (Single Family, Multi Family, Commercial, Irrigation, etc.)
- *Provision for New Single Family Account Use*– For selected agencies, and upon their specific request, a new category was created to model water use of new single family homes. This value is held constant in the baseline projection and not subject to plumbing codes. All new homes include the plumbing code change in the State of California that requires HETs in 2014. The new homes will also be affected by Cal Green building code after July 1, 2011 and required to install efficient fixtures for the toilets, low flow shower heads and faucets. The effects from Cal Green were run as a conservation measure as they were not in effect at the time of this analysis.

- *Unaccounted for water (UFW) also known as Non-Revenue Water* – This is the sum of all water input to system that is not billed (metered and unmetered) water consumption, including apparent (metering accuracy) and real losses. The values were calculated by taking the difference between the amount of water produced and the amount of water that was sold. Data provided by the water contractor was used, if provided, unless UFW was less than 7 percent, in which case 7 percent was used.
- *Water Produced*– This is the total amount of potable water produced. The water can come from multiple sources including amount purchased from SCWA, purchased from other agencies, local surface water, or obtained from groundwater. This does not include recycled water.
- *Peak day factor* – The ratio of water produced on the maximum day of the year to that produced on the average day.

(b) Demographic Data

- *Census 2000* – The 2000 Census data was used as a general reference when determining population and household sizes for each individual city (and/or unincorporated area) serviced by the water agencies.
- *2005 City of Rohnert Park Service Area Population*- The 2005 total population for the City of Rohnert Park was taken directly from the 2005 selected population source discussed earlier in this report.
- *Single and multi family dwelling units*- The 2005 single family dwelling units is equal to the number of single family accounts for 2005. The 2005 multi family dwelling unit estimate was calculated by applying a growth factor to the 2000 data as noted on the water use data sheet in Figure 5.
- *Procedure for service areas not contiguous with city boundaries* – When a service area serves outside a city boundary, estimates were generated either from census tract data when available for the unincorporated areas, Department of Finance data, ABAG Projections, DWR reported data, General Plan or by the local water district if known. If none of the six sources were available, then the modeling team worked with the local water district to make reasonable estimates.
- *Employment data*– The employment figures were obtained from the selected source as discussed earlier in this report.

In summary, the key features of this sheet include the existing 2005 level of water use, 2005 baseline accounts in each customer category, and 2005 baseline forecasts for population and employment.

**Figure 5
Water Use Data Input Sheet**

City of Rohnert Park Service Area ¹								
DSS Input Sheet								
November 12, 2010								
Base Year Average Use and Indoor Percentages by Billing Category for DSS Model ²								
Year	Single family		Multifamily		Commercial		Institutional/Ind	
	Average, gpd/a	Indoor	Average, gpd/a	Indoor	Average, gpd/a	Indoor	Average, gpd/a	Indoor
2007	287	59%	3320	78%	1051	78%	1001	23%
New Single Family category was removed at the request of Darrin Jenkins of Rohnert Park due to lack of new single family home data.								
Irrigation								
	Average, gpd/a	Indoor						
	1453	0%						
Data for DSS Model - - Start Year: 2005								
Category	Number of Accounts	Water Use gpd/a ²	Water Use, MGD	Use Profile	Water Use gcd	Indoor Water Use gcd		
				Percent				
Single family	7,590	287	2.177	49.48%	95	57		
Multifamily	413	3,320	1.371	31.18%	70	54		
Commercial	462	1,051	0.485	11.04%	28	22		
Institutional/Ind	2	1,001	0.002	0.05%				
Irrigation	250	1,453	0.363	8.26%				
Total ⁹	8,717	7,112	4.399	100%				
Projected UFW for DSS Model⁵			7.0%	Percent	7% if actual is < 7%, otherwise = agreed upon % by agency for 30 year forecast			
Water Produced for use in DSS Model⁴			4.73	MGD	Add UFW % to Total Billed Water Use			
Peaking Factor			1.5	Ratio of average day in peak month to average day water produced				
Peaking Factor for DSS Model=			1.5	Ratio of average day in peak month to average day water produced				
- Blue cells are entered by modeler								
- Yellow cells are input to DSS Model								
NOTES								
1. - The City of Rohnert Park, located in the southern Santa Rosa plain of Sonoma County, depends upon ground water and Sonoma County Water Agency (SCWA) aqueduct water to meet the demands of its 42,000 residents. Water is obtained during peak demand periods from 12 turnout connections to the SCWA. The principal source of water is the SCWA (80 percent) and local groundwater makes up the remaining 20 percent of supply. The City does not deliver water outside the city limits. The water distribution system consists of approximately 90 miles of water mains. Rohnert Park has seven reservoirs with 4.2 million gallons of storage.								
2 - Average gpd/a is based on data supplied by the water agency								
3 - Number of accounts is from data provided by water agency for this project								
4 - Total water produced is calculated from the total billed water use and the projected UFW.								
5 - Unaccounted for Water (UFW) is the percent difference between the total water purchased and the total billed water use. As noted above if the UFW was lower than 7%, for planning purposes a value of 7% was used.								
6 - For reference see additional population estimates provided in population and employment estimates corresponding to service area table.								
7 - Initial estimate based on census data for renter occupied units. For reference see table with 2000 census data for corresponding water service area.								
8 - Group Quarters Population includes Institutionalized and non-Institutionalized and assumes their water use is in the Commercial sector.								
Definitions / Abbreviations								
ABAG	Association of Bay Area Governments			HHS	household size			
DOF	Department of Finance			NA	not available			
DSS	Decision Support System Model			MF	multi family			
du	dwelling unit			MGD	million gallons per day			
DWR	Department of Water Resources			No.	number			
FY	Fiscal Year			Pop	population			
gcd	gallons per capita / per day			Res	residential			
gpd/a	gallons per day / per account			SF	single family			
gpd	gallons per day			UFW	unaccounted for water			
Data Prepared :	June 26, 2005			By: W. Maddaus				
Revised:	July 21, 2010			By: W. Maddaus				
	November 12, 2010			By: C. Matyas				

Water Use Data Input Sheet (Page 2)

City of Rohnert Park Service Area ¹						
Reconcile agency account billing data and census data						
Total Dwelling Units in Census 2000 for Rohnert Park by Census Tract						
	2000 Units	No. Buildings	Service Area Billing Accounts - Year 2000 ³	Difference between billing and census data	Data Sources / Notes	
Single family						
1-detached	7,662	7,662				
1-attached	1,699	850				
Subtotal	9,361	8,512	7,590	-922	When negative value some of the attached units classified by City as Multifamily	
Multi family						
2-units	106	53			Assumes average of 2 units per account	
3-4 units	824	235			Assumes average of 3.5 units per account	
5 to 9 units	615	88			Assumes average of 7 units per account	
10 to 19 units	562	37			Assumes average of 15 units per account	
20 or more units	2,938	84			Assumes average of 50 units per account	
mobile homes	1,362	27			Assumes average of 50 mobile home units per master meter	
Subtotal	6,407	525	413	-112	Must be more than one building on an MF meter.	
	MF Average =	12.2	units/building	15.5	units/account	This is a typical value of DUs/account
	MF for Billing =	8,106	1,374	19.63	units/account	Water use at 150 gpd/unit 2944.1
	Total SF + MF units =	15,768			150 say	2800 gpd/account
2000 Census Group Quarters Data			2000 Census Data			
Institutionalized	0	Average household size			2.65	
Non-Institutionalized	1,101	Average household size of single family unit			3.06	
Total	1,101	Average household size of multi family unit			2.04	
		Homeowner vacancy rate (percent)			0.01	
		Rental vacancy rate (percent)			0.02	
Population and Household Size in Census 2000 for Rohnert Park						
	Census Data Service Area 2000	2009 ABAG Projections Estimated Population 2005	Estimated Service Area Residential Population 2005	Data Sources / Notes		
				Estimated annual growth from 2000 to 2005 (ABAG 2009 Subregional Projections):		0.21%
				Estimated annual employment growth from 2000 to 2005 (ABAG 2009 Employment Projections):		-0.82%
Total Population from Census data ⁶ =	42,236	43,600	Based on 2009 ABAG data			
Subtract Group Quarter Population =	1,101	1,113				
Residential Population =	41,135	42,487				
Avg. HHS ⁷ =	2.61	2.61	Water use for the institutionalized population is accounted for in nonresidential billing categories			
MF Pop @ MF HHS ⁷ =	2.40	19,454	19,659	19,659	45.1%	Residential population shown corresponds to the city or cities represented by Census data
SF Pop =	21,681	22,829	22,829	52.4%	Percent of Population that is MF	
SF HHS ⁷ =	2.86	3.01	1,113	2.6%	Percent of Population that is SF	
		Total	43,600	100.0%	Percent of Population in Group Quarters	
Estimate Service Area Dwelling Units for 2005						
SF Res	7,590	Equals No. of single family accounts in start year				
MF Res	8,106	Equals No. of multifamily accounts times average units per account				

4.3 Key Assumptions for the DSS Model

Table 3 shows the key assumptions used in the model. 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 water losses.

Table 3
List of Baseline Demand Projection Assumptions for DSS Model

List of Baseline Demand Projection Assumptions for DSS Model	
Parameter	Model Input Value, Assumptions, and Key References
Model Start Year	2005
Water Demand Factor Year(s)	Average of Years: 2007
Peak Day Factor	1.49
Unaccounted for Water in the Start Year	7.0%
Population Projection Source	2009 ABAG Subregional
Employment Projection Source	2009 ABAG Subregional
Number of Water Accounts for Start Year	8717
Avoided Cost of Water \$/AF (includes SCWA cost + \$27.7 / AF for pumping cost)	\$631.62
Distribution of Water Use Among Categories	Single Family: 49.5% Multifamily: 31.2% Commercial: 11% Industrial/Institutional: 0% Irrigation: 8.3%
Indoor Water Use by Category	Single Family: 59.4% Multifamily: 77.8% Commercial: 77.7% Industrial/Institutional: 23.3% Irrigation: 0%
Residential End Uses	AWWARF Report "Residential End Uses of Water" 1999
Non-Residential End Uses, %	AWWARF Report Commercial End Uses of Water" 1999
Efficient Residential Fixture Current Installation Rates	U.S. Census, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Reference "High Efficiency Plumbing Fixtures - Toilets and Urinals" Koeller & Company July 23, 2005. Reference Consortium for Efficient Energy (www.cee1.org)
Water Savings for Fixtures, gal/capita/day	AWWARF Report "Residential End Uses of Water" 1999, CUWCC Cost and Savings Study April 28, 2005, Agency supplied data on costs and savings, professional judgement where no published data available
Non-Residential Fixture Efficiency Current Installation Rates	U.S. Census, assume commercial establishments built at same rate as housing, plus natural replacement
Residential Frequency of Use Data, Toilets, Showers, Washers, Uses/user/day	Falls within ranges in AWWARF Report "Residential End Uses of Water" 1999
Non-Residential Frequency of Use Data, Toilets and Urinals, Uses/user/day	Estimated based using AWWARF Report "Commercial and Institutional End Uses of Water" 1999
Natural Replacement Rate of Fixtures	Residential Toilets 3% (1.28 gpf toilets), 4% (1.6 gpf and higher toilets), Commercial Toilets 3% (1.28 gpf toilets), 4% (1.6 gpf and higher toilets) Residential Showers 4% Residential Clothes washers 6.7% A 3% replacement rate corresponds to 33 year life of a new fixture. A 6.67% replacement rate corresponds to 15 year washer life based on "Bern Clothes Washer Study, Final Report, Energy Division, Oak Ridge National Laboratory, for U.S. Department of Energy, March 1998, Internet address: www.energystar.gov
Future Residential Water Use	Increases Based on Population Growth
Future Non-Residential Water Use	Increases Based on Employment Growth

4.4 Water Demand Projections With and Without the Plumbing Code

Development of the Water Demand Projections Table and Graph

Water demand projections were developed out to the year 2035 using the Demand Side Management Least Cost Planning Decision Support System (DSS) model. This model incorporates information from the:

- “Water Use Data Sheet” and the “Key Assumptions”
- Questions asked of agencies
- Contractor provided data
- 2000 Census data and 2006-08 American Community Survey 3 year estimates
- Local General Plans
- Association of Bay Area Governments Projections

Water demand projections were input for 30 years using the DSS Model. This model incorporates information from the:

- Contractor selected population and employment forecasts.
- Data provided by City of Rohnert Park staff including estimates for value of water saved, historical water use, past conservation efforts, and water system facilities.

Table 4 shows the projected demands with and without plumbing codes and appliance standards. This page includes both a table and a graph. Each will be described below.

National Plumbing Code

The Federal Energy Policy Act of 1992, as amended in 2005 requires 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 that requires only devices with the specified level of efficiency (shown above) can be sold today (2010). 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.

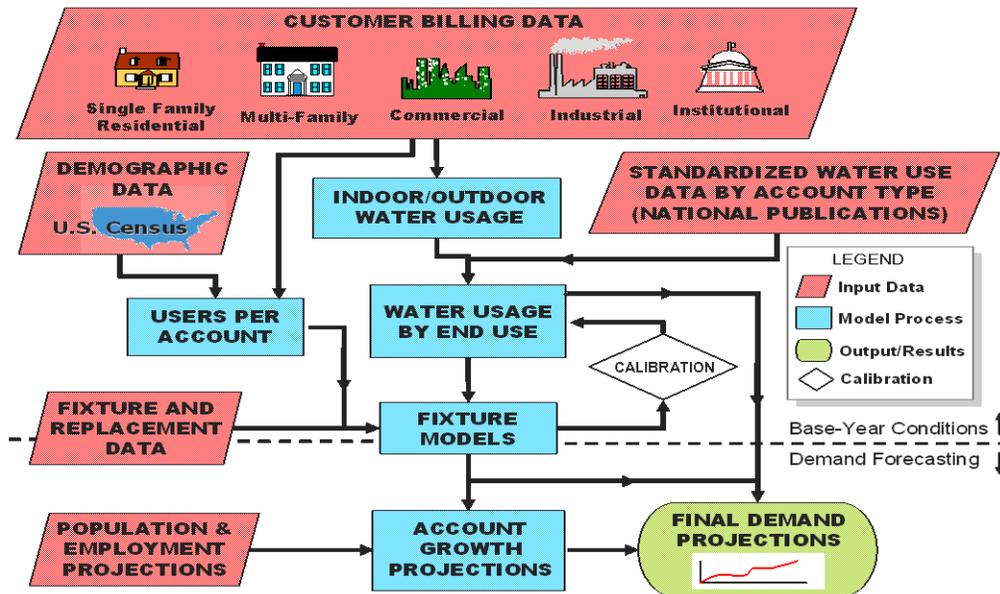
In addition to the plumbing code the US Department of Energy regulates appliances such as residential clothes washers. Regulations to make these appliances more energy efficient has driven manufacturers to dramatically reduce the amount of water these efficient machines use. Generally horizontal axis washing machines use 30-50 percent less water than conventional models (which are still available). In the analysis for City of Rohnert Park, the DSS Model forecasts a gradual transition to high efficiency clothes washers (using 19 gallons or less) so that by the year 2020 this will be the only type of machines purchased. 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 15 years eventually all machines in the City of Rohnert Park area will be of this type.

State Plumbing Code

The Plumbing Code includes the new California State Law requiring High Efficiency Toilets and High Efficiency Urinals be exclusively sold in the state by 2014. Figure 6 below describes conceptually how the above listed items are incorporated into the flow of information in the DSS Model.

Figure 6
DSS Model Overview Used to Make Potable Water Demand Projection
“With the Plumbing Code”



Graph of projected demands (Figure 7)

Figure 7 shows the potable water demand projection at five-year increments. The graph shows projections for demand with and without the plumbing code through 2035.

Table of water demand projections (Table 4)

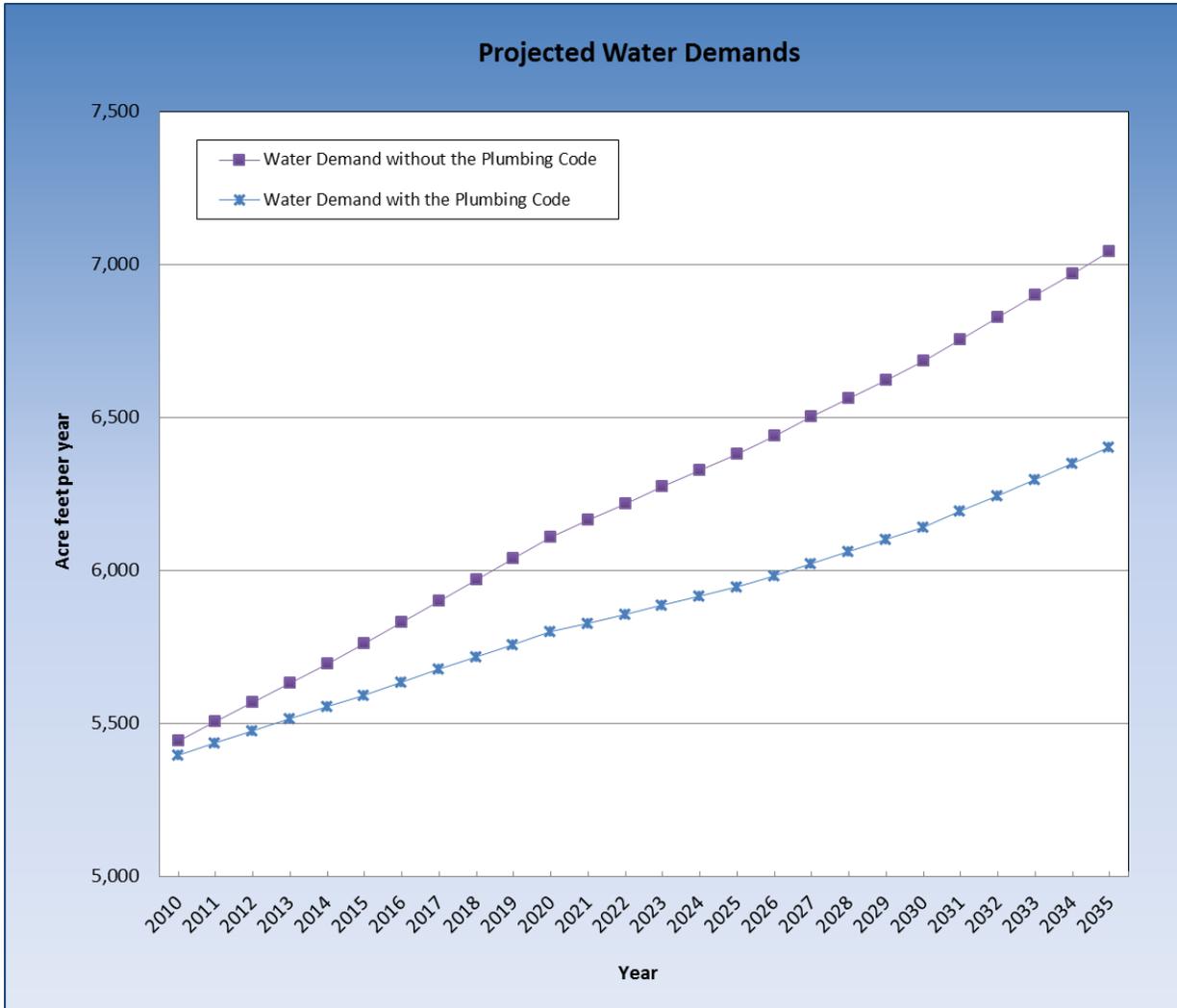
The table of water demands projections includes:

1. The water demand projections shown in Table 4 are based on the future population and employment projections provided in Table 1 and Table 2.
2. Projections were made *with and without* the plumbing codes.
3. Projections are for potable water only. It does not include recycled water use. Recycled water use and projections are included in a separate Chapter of the UWMP.

Dry Year Demands

The demand projections reflect average weather conditions and **do not** reflect drier and hotter drought conditions. Climate change, which might alter weather patterns, either increased or decreased rainfall, and possibly increased irrigation demand in the spring and fall due to a warmer climate have also not been addressed in this analysis.

**Figure 7
Potable Water Use Projections for City of Rohnert Park**



**Table 4
Potable Water Use Projections for City of Rohnert Park**

Water Demands						
Water Demand (AF/Yr)	2010	2015	2020	2025	2030	2035
Water Demand without the Plumbing Code	5,444	5,760	6,109	6,380	6,684	7,042
Water Demand with the Plumbing Code	5,396	5,593	5,800	5,946	6,143	6,404

*Data is not weather normalized. Total Water use is potable only. Does not include recycled water use. Recycled water use and projection are in a separate section in the UWMP.

4.5 Water Demand Projections – 2005 Urban Water Management Plan (UWMP) Format

The 2010 Urban Water Management Plan Guidance Document from the California Department of Water Resources is not planned to be released until after December 2010. Without the guidance document, the exact formatting of the tables for the 2010 UWMP are not known. Therefore, it was elected to place the demand data into the 2005 UWMP format.

Conversion of the Water Demand Projections Table and Graph to 2005 UWMP Format

The 2005 Urban Water Management Plan Guidance Document from the California Department of Water Resources (DWR) requests that future demand information be in a specific format. Provided below are the five tables relating to future average day demands they requested. The demand projection shown is the “with Plumbing Code” demands and is otherwise the same as Table 4 and Figure 7. The demand projections in the Urban Water Management Plan appeared in the required DWR tables 2, 12, 13, 14, and 15 (2005 Plan requirement table numbers).

Urban Water Management Plan Tables for of 2005 UWMP

Table 5 below provides population projections for City of Rohnert Park service area.

Table 5 (DWR Table 2) Population – Current and Projected

Current and Projected Population	
Year	Population
2010	45,200
2015	46,400
2020	47,900
2025	49,300
2030	51,000
2035	53,000

Current and Future Water Use by Customer Type

The current and projected number of connections and deliveries to the City’s water distribution system, by sector are identified below on Table 6.

Table 6 (DWR Table 12) Current and Projected Water Deliveries

Demands and Accounts By Customer Category (Based on Demand with Plumbing Code, excluding UFW)							
Year		Single			Industrial/		Total
		Family	Multifamily	Commercial	Institutional	Irrigation	
2010	Number of Accounts	7,869	435	434	2	259	8,998
	Deliveries (AF/Yr)	2,510	1,579	504	2	422	5,016
2015	Number of Accounts	8,077	453	576	2	266	9,375
	Deliveries (AF/Yr)	2,537	1,593	637	3	433	5,202
2020	Number of Accounts	8,339	475	716	3	275	9,807
	Deliveries (AF/Yr)	2,569	1,609	766	3	447	5,394
2025	Number of Accounts	8,582	490	807	3	283	10,166
	Deliveries (AF/Yr)	2,597	1,620	849	4	460	5,530
2030	Number of Accounts	8,878	507	901	4	292	10,582
	Deliveries (AF/Yr)	2,650	1,647	935	4	476	5,713
2035	Number of Accounts	9,226	527	1,012	4	304	11,073
	Deliveries (AF/Yr)	2,727	1,689	1,041	5	495	5,956

Water Sales to Other Agencies

The City of Rohnert Park does not currently sell water to any other agency. According to City of Rohnert Park, all “outside sales” are local businesses and residents, and not to another agency.

Table 7 (DWR Table 13) Sales to Other Agencies

Sales to Other Agencies						
	2010	2015	2020	2025	2030	2035
Water Distributed (AF/Yr)	0	0	0	0	0	0

Unaccounted-for Water and Additional Water Use

For this project unaccounted for water is defined to be the difference between water produced and water sold to customers. Unaccounted-for water use normally includes unmetered water use such as for fire protection and training, system and street flushing, sewer cleaning, construction, system leaks, meter inaccuracy, and unauthorized connections. Unaccounted-for water can also result from meter inaccuracies.

Table 8 (DWR Table 14) Additional Water Uses and Losses, AF/yr

Unaccounted for Water						
	2010	2015	2020	2025	2030	2035
Unaccounted-for system losses (AF/Yr)	379	391	406	416	430	448

Total Water Use

The total current and future water use for the system is shown in the table below.

Table 9 (DWR Table 15) Total Potable Water Use, AF/yr*

Total Demand with Plumbing Code						
	2010	2015	2020	2025	2030	2035
Total Demand with Plumbing Code and UFW (AF/Yr)	5,396	5,593	5,800	5,946	6,143	6,404

*Total Water use is potable only. Does not include recycled water use. Recycled water use and projection are in another section of the UWMP.

5. COMPARISON OF INDIVIDUAL CONSERVATION MEASURES

5.1 Selecting Conservation Measures to be Evaluated (Conservation Measure Screening)

An important step in updating the water conservation program is the review and screening of new water conservation measures. In 2005, a list of 75 potential conservation measures was developed by Maddaus Water Management from known technology that included devices or programs (e.g., such as a high efficiency toilet) that would save water if installed by a water retailer, contractor, or customer. These measures are considered to be beyond the Tier One measures. A description of the potential conservation measure was developed that addressed the methods through which the device or program will be implemented, including the distribution method, or mechanism, that would be used to activate the device or program.

A screening process was undertaken to reduce the number of measures to a more manageable number and to eliminate those measures that are not as well suited to the Marin-Sonoma County area as other

potential measures. Each potential measure was screened based on four qualitative criteria (below), scored on a scale of 1 to 5, with 5 being the most acceptable, and 20 being the maximum possible number of points for all criteria. The screening was completed by local conservation professionals, in a one day meeting in July 2005, facilitated by Maddaus Water Management.

Qualitative Criteria

The rating group used the following criteria to evaluate the measures:

- **Technology/Market Maturity** – Refers to whether the technology needed to implement the conservation measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure was scored low if the technology was not commercially available or high if the technology was widely available in the service area. A device may be screened out if it is not yet commercially available in the region.
- **Service Area Match** – Refers to whether the measure or related technology is appropriate for the area’s climate, building stock, or lifestyle. For example, promoting Xeriscape gardens for multi-family or commercial sites may not be appropriate where water use analysis indicates little outdoor irrigation. Thus, a measure scored low in this category if it was not well suited for the area’s characteristics and could not save water. A measure scored high in this criterion if it was well suited for the area and could save water.
- **Customer Acceptance/Equity** – Refers to whether retail customers within the wholesale customer service area would be willing to implement and accept the conservation measures. For example, would retail customers attend homeowner irrigation classes and implement lessons learned from these classes? If not, then the water savings associated with this measure would not be achieved and a measure with this characteristic would score low for this criterion. This criterion also refers to retail customer equitability (i.e., one category of retail customers receives benefit while another pays the costs without receiving benefits). Retail customer acceptance may be based on:
 - Convenience
 - Economics
 - Perceived fairness
 - Aesthetics
- **Relative Effectiveness of Measure Available** – Refers to the selection of the most effective measure if alternate conservation measures address the same end use (example – irrigation for single family customers). If the measures are equally effective the most appropriate was selected (e.g., the measure that was easier or less expensive to implement).

Measures with low scores were eliminated from further consideration, while those with high scores passed into the next evaluation phase (cost-effectiveness analysis using the DSS Model). To reduce the list to a more manageable number, normally a score of 17 or more was necessary to pass. The process reduced the measures to be evaluated further down to 22 new measures in addition to the 10 Tier One measures.

Upon inspection of the overall list of new measures it became apparent that some measures could be combined and others could be separated into two categories as follows:

- Measures that were voluntary and incentive based
- Measures that were regulatory and applied to new development only

This division was used to create two lists of measures that could be evaluated separately. Tier Two targets various types of customers and offers a range of incentives to enhance participation. New Development measures were originally targeted at single family homes (including town homes and condos), as this category represents the largest category of new development with the most water savings potential.

The following table presents the measure descriptions that were originally analyzed as part of the 2005 study for “Tier 2” and “New Development” (ND) as well as the new measures that the contractors selected for this analysis. We have not modified the Tier 2 and New Development measure descriptions from their original description other than to add information for Cal Green, SB 407, and the Model Water Efficient Landscape Ordinance. The Tier 1 measures follow the definition of the CUWCC BMPs.

Cal Green (New Development Building Code): MWM added the Cal Green requirements that effect all new development in the State of California after January 1, 2011. MWM modeled water savings from the Cal Green building code by adding Multifamily and Commercial customer categories as appropriate to the following six measures: Tier 2 – 13 (Urinals), ND 1 (Rain Sensors), ND 2 (Smart Controllers), ND 3 (HETs), ND 7 (High Efficiency Faucets and Showerheads) and ND 8 (Landscape Requirements). As this is a new development law and based on discussions with contractors it was assumed actual water savings seen by contractor would begin to occur in the year 2012. The new development ordinances for each contractor are listed in Table 10.

SB 407 (Plumbing Fixture Retrofit on Resale or Remodel): MWM included the new California Law SB 407 to the measure description table and in all of the contractors’ models as a new measure. In the model MWM worked carefully such that SB 407 takes into account the overlap with the plumbing code (natural replacement), Cal Green and rebate programs (such as through Tier 2-10 Toilets). SB 407 begins from the year 2017 in residential and 2019 in commercial properties. SB 407 program length continues until all the older high flush toilets have been replaced in each service area.

Tables 11, 12, 13 and 14 summarize the new measures selected for each contractor. Note that measures Tier 2-8, Tier 2-9 and Tier 2-11 were removed from this program at the request of all the contractors on August 2, 2010 for the following reasons:

- Measure Tier 2-8 was removed because new development regulations have changed significantly since this measure was analyzed in 2005 and the regulations require higher efficiency fixtures than this measure.
- Measure Tier 2-9 was removed as rebates for installing synthetic turf are incorporated into Measure Tier 2-2, Cash for Grass.
- Measure Tier 2-11 was removed because this measure is not cost-effective.

The removed measures are included in Table 13 for reference purposes only, but were not included in any of the DSS Model or any of the quantitative water saving calculations.

**Table 10
New Development Ordinances**

New Development Ordinances								
ND Measure	City of			City of Santa	Town of	City of	Valley of the	Draft Cal
	NMWD	Rohnert Park ¹	City of Cotati ²	Rosa	Windsor	Sonoma	Moon WD	Green Requirement
Applicability (Customer Classes)	All	All	All	All	All	All	All	All
ND1-Rain Sensor Retrofit	2005	No	No	2010	2010 (SF>4 lots) & >2,500 sq ft/lot	No	2010, SF>5,000 sq ft	No
ND2-Smart Irrigation Controller	2005	No	2010	2010	2010 (SF>4 lots) & >2,500 sq ft/lot	No	2010, SF>5,000 sq ft	Yes
ND3- High Efficiency Toilets	2005	No	2009	2011	No	No	No	Yes
ND4- Dishwasher New Efficient	2005	No	2009	No	No	No	No	No
ND5-Clothes Washing Machine Requirement	2000	No	2009	No	No	No	No	No
ND6-Hot Water on Demand	No	No	No	No	No	No	No	No
ND7-High Efficiency Faucets and Showerheads	2006	No	2009	2011	No	No	No	Yes
ND8-Landscape and Irrigation Requirements	2004	2010 (State ordinance)	2010	SF since 2007. All other since 1993	2011 for landscapes > 2,500 sq ft (applies to all but SF<5 lots)	2010 (adopted ordinance planned to be adopted September 1, 2010, budgets w/ 60% ET	2010 for All except SF<5,000 sq. ft. and turf<600 sq ft	Yes
Urinals	2008	No	No	2011	No	2009	No	Yes
Source	NMWD Reg 15	Use Build it Green Checklist (Mandatory)	Use Build it Green Checklist (Mandatory)	Adopting Cal Green 2010	Adopting Landscape ordinance June 2010	Use Build it Green Checklist (Mandatory)	County ordinance effective Jan 1, 2010	State Reqmt; May take effect 2012

¹City of Rohnert Park has extensive green building ordinance requiring developers to select from a set of green building measures including some of the listed measures.

²City of Cotati ND-3 confirmed to start in 2009 based on July 27, 2010 with City of Cotati at the request of Damien O'Bid. Build It Green Checklist mandatory, beginning in the year 2004. The year 2009 was selected as a start date for 100% deployment of measures, as the measures can be selectively deployed providing the overall point minimum is achieved.

**Table 11
Cal Green Building Code**

Cal Green Building Code						
Building Class	Component	Effective Date[i]	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

[i] Effective date is 7/1/2011 for toilets

Table 12
Tier One Conservation Measures Evaluated in the DSS Model

Measure Number	Original CA BMP Number	Target Customer Category	Measure	Short Description
1	1	RSF, RMF	Residential Water Surveys - Indoor	This is the <u>indoor</u> component of indoor and outdoor water surveys for existing single-family and multi family residential customers. Normally those with high water use are targeted and provided customized report to homeowner.
2	1	RSF, RMF	Residential Water Surveys - Outdoor	This is the <u>outdoor</u> component of indoor and outdoor water surveys for existing single-family and multi family residential customers. Normally those with high water use are targeted and provided customized report to homeowner.
3	2	RSF, RMF	Residential Retrofit	Provide owners of pre-1992 homes with retrofit kits that contain easy-to-install low flow showerheads, faucet aerators, and toilet tank retrofit devices, until saturation reaches 75%.
4	5a	IRR	Water Budgets	90% of all irrigators of landscapes with separate irrigation accounts would receive a monthly or bi-monthly irrigation water use budget.
5	5b	IND	Large Landscape Conservation Audits	All public and private irrigators of landscapes larger than one acre would be eligible for free landscape water audits upon request.
6	6	RSF	Clothes Washer Rebate	Homeowners would be eligible to receive a rebate on a new water efficient clothes washer.
7	7	RSF, NRSF	Public Information Program	Public education would be used to raise awareness of other conservation measures available to customers. Programs could include poster contests, speakers to community groups, radio and television time, and printed educational material such as bill inserts, etc.
8	9	COM	Commercial Water Audits	High water use accounts would be offered a free water audit that would evaluate ways for the business to save water and money.
9	14	RSF	Single Family Residential ULF Toilet Rebate	Homeowners would be eligible to receive a rebate to replace an existing high volume toilet with a new water efficient toilet.
10	14	RMF	Multi family Residential ULF Toilet Rebate	Homeowners would be eligible to receive a rebate to replace an existing high volume toilet with a new water efficient toilet.

Notes:

RSF = Residential Single Family

RMF = Residential Multi Family

NRSF = New Residential Single Family

COM = Business

INS = Institutional

IND = Industrial

Table 13
Tier Two and New Development Conservation Measures Evaluated in the DSS Model

Measure No.	Name of Measure	Customer Sector	Description
Tier 2-1	Rain-sensor (shut off device) retrofit on irrigation controllers	Existing Customers SF	Agency pays for the rain sensor, homeowner pays for the optional installation (\$35).
Tier 2-2	Cash for Grass (turf removal program)	Existing Customers SF, MF, CII	Provide a rebate for customers who remove irrigated turf grass and replace it with low water using plants. The rebate would require that an appropriate irrigation system be installed for the replacement landscaping. Limited to \$500 rebate at \$1.00 per square foot.
Tier 2-3	Financial Incentives for Being Below Water Budget	All Dedicated Irrigation Meter customers	For dedicated irrigation customers, link a landscape water budget to a retail water agency's rate schedule so that the dedicated irrigation meter customer pays less when their water use is at or under their water budget.
Tier 2-4	Financial Rebates for Irrigation Meters	Existing CII Customers with mixed water use (indoor and outdoor)	Provide financial incentives/rebates for selected permits and equipment to convert mixed use meters to a separate dedicated irrigation meter. Model implementation program after City of Santa Rosa's Service Split program. Utility will provide a water budget for the new irrigation meter.
Tier 2-5	Smart Irrigation Controller Rebates	Existing Customers SF, MF, CII, IRR	Provide an up to \$450 rebate for the purchase of a SMART irrigation controller and associated signal fees (up to \$150). Assume one controller for RSF and two for others. Minimum participant requirements: at least 500 sq ft of well maintained turf irrigated with an automatic irrigation control system.
Tier 2-6	Financial Incentives/ Rebates for Irrigation Upgrades	Existing Customers MF, CII, IRR, and SF for some contractors if requested as a new measure	For MF & CII customers with landscape provide rebates for selected types of irrigation equipment upgrade including rain sensors, rain harvesting, and grey water. Each contractor can include any equipment desired and allow the customers to select the items they prefer up to the maximum rebate value per customer. Water savings assumes a mixture of many different irrigation technologies. Model program after water agencies such as EBMUD or Contra Costa Water District or Santa Rosa.
Tier 2-7	Hotel retrofit (w/financial assistance) - CII Existing	Existing Customers: CII	Following a free water audit, offer the hotel a rebate for equipment identified that would save water. Provide a rebate schedule for certain efficient equipment such as air-cooled ice machines, steamers, washers, cooling towers, and spray rinse valves.
Tier 2-10	High Efficiency Toilet (HET)	Existing Customers: SF & MF	Provide a rebate or voucher for the installation of a high efficiency toilet (HET). HET are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost.

Measure No.	Name of Measure	Customer Sector	Description
Tier 2-12	CII Rebates - replace inefficient water using equipment	Existing Customers: CII	Provide a rebate for a standard list of water efficient equipment. Included would be x-ray machines, icemakers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, add conductivity meters on cooling towers, etc.
Tier 2-13	0.5 gal/flush urinals in new buildings	New Customers: CII	Require that new buildings be fitted with 0.5 gpf or less urinals rather than the current standard of 1.0-gal/flush models.
ND1	Rain-sensor shut off device on irrigation controllers	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require-sensor or rain shut off devices with all new automatic irrigation system installations on new homes.
ND2	Smart Irrigation Controller	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require developers to provide the latest state of the art SMART irrigation controllers. These SMART controllers have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly.
ND3	High Efficiency Toilet (HET)	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require new single family and multifamily residents to install a high efficiency toilet (HET). HET are defined as any toilet to flush 20% less than an ULFT and include dual flush technology.
ND4	Dishwasher New Efficient	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require new single-family residents to install an efficient dishwasher (meeting certain water efficiency standards, such as gallons/load).
ND5	Clothes washing machines requirement for new residential	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Building departments would be responsible to ensure that an efficient washer was installed before new home occupancy.
ND6	Hot Water on Demand	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require developers to equip new homes with a hot water on demand system or tankless hot water heaters, such as those made by Metland Systems and others. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater.
ND7	High efficiency faucets and showerheads	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Require developers to install Lavatory faucets that flow at no more than 1.5 gpm, kitchen faucets at 2.2 gpm, showerheads at 2.0 gpm
ND8	Landscape and irrigation requirements	New Customers: SF, MF and CII depending upon local ordinances and contractor request of new measures	Enforce a regulation that specifies that homes be landscaped according to Xeriscape principals and the Model Water Efficient Landscape Ordinance, with appropriate irrigation systems. (Combines with Smart Controller listed above). Goal is overall 25% reduction in irrigation water use.

Measure No.	Name of Measure	Customer Sector	Description
New Measure	SB 407	Existing: SF, MF and CII	Measure will start in the year 2017 for SF accounts and 2019 for MF and CII accounts to coincide with the California State Law SB 407. The law includes working with the real estate industry to require a certificate of compliance be submitted to the City stating that, when a property is sold, information on whether or not indoor water fixtures are efficient was disclosed to the buyer.
Potential New Measure Selected by One or More Contractors	Rainwater harvesting	New Customers SF; Existing SF, MF	Provide a rebate (\$100 RSF and \$200 RMF) to assist a certain percentage of single family homeowners per year with installation of rain barrels or cisterns.
Potential New Measure Selected by One or More Contractors	Grey Water System Rebate	New Customers SF; Existing SF	Provide a rebate (up to \$500) to assist a certain percentage of single family homeowners per year to install gray water systems. Parts cost approx \$200, installation is approx \$400-\$500
Potential New Measure Selected by One or More Contractors	Tiered Water Rates	Existing Customers: SF, MF, CII	Change Rate Structure to an inclining block rate and increase prices significantly periodically to maintain savings, such as every ten years.
Potential New Measure Selected by One or More Contractors	Submetering and Consumption Billing of Apartments and Mobile Homes	New Customers: MF	Require installation of submeters on all new MF and mobile home accounts unless the building has a central, circulating hot water system (which precludes a meter on all water going to each unit).

RSF = Residential Single Family

RMF = Residential Multi Family

NRSF = New Residential Single Family

COM = Business

INS = Institutional

IND = Industrial

**Table 14
Conservation Measures Evaluated in the DSS Model**

New Conservation Measures for Analysis (New for the 2010 analysis)							
Measure	North Marin				Valley of the		
	City of Cotati	Water District	City of Rohnert Park	City of Santa Rosa	City of Sonoma	Moon Water District	Town of Windsor
Rainwater Harvesting Rebate				✓			
Grey Water System Rebate				✓		✓	
Tiered Water Rates (Conservation Pricing)	✓				✓		
Submetering and Consumption Billing of Apartments and Mobile Homes - New and Existing			✓				
Add CII to New Development Requirements	✓	✓					✓
SB407 - Retrofit of High Efficiency Fixtures	✓	✓	✓	✓	✓	✓	✓
Add SF Residential to Irrigation System Upgrades (T2-6)		✓			✓	✓	✓

5.2 Perspectives on Benefits and Costs

The determination of the economic feasibility of water conservation programs depends on comparing the costs of the programs to the benefits provided. The analysis was performed using the DSS Model. The DSS Model calculates savings at the end-use level; for example, the model determines the amount of water a toilet rebate program saves in daily toilet use for each single family account.

Present value analysis using constant 2010 dollars and a real discount rate of 3% is used to discount costs and benefits to the base year. From this analysis, benefit-cost ratios of each measure are computed. When measures are put together in programs, the model is set up to avoid double counting savings from multiple measures that act on the same end use of water. For example, multiple measures in a program may target toilet replacements. The model includes assumptions to apportion water savings between multiple measures.

Economic analysis can be performed from several different perspectives, based on which party is affected. For planning water conservation programs for utilities, the perspectives most commonly used for benefit-cost analyses include the utility and the community. The “utility” benefit-cost analysis is based on the benefits and costs to the water provider. The “community” benefit-cost analysis includes the utility benefit and costs together with account owner/customer benefits and costs. These include customer energy and other capital or operating cost benefits plus costs of implementing the measure, beyond what the utility pays.

The utility perspective offers two advantages for this analysis. First, it considers only the program costs that will be directly borne by the utility. This enables the utility to fairly compare potential investments for saving and supplying water. Second, because revenue shifts are treated as transfer payments, the analysis is not complicated with uncertainties associated with long-term rate projections and retail rate design assumptions. Because it is the water provider’s role in developing a conservation plan that is paramount in this study, the utility perspective was primarily used to evaluate elements of the plan.

The community perspective is defined to include the utility and the customer costs and benefits. Costs incurred by customers striving to save water while participating in conservation programs are considered, as well as the benefits received in terms of reduced energy bills (from water heating costs) and wastewater savings, among others. Other factors external to the utility, such as environmental effects and climate change, are not included in the benefit-cost analysis. Because these external factors are often difficult to quantify and are not necessarily under the control of the utility, they are therefore frequently excluded from economic analyses, including this one.

5.3 Present Value Parameters

The time value of money is explicitly considered. The value of all future costs and benefits is discounted to 2005 (the model start year) at the real interest rate of 3.0%. The DSS Model calculates this real interest rate, adjusting the current nominal interest rate (assumed to be approximately 6.1%) by the assumed rate of inflation (3.0%). Cash flows discounted in this manner are herein referred to as “Present Value” sums.

5.4 Assumptions about Measure Costs

Costs were determined for each of the measures based on industry knowledge, past experience and data provided by the City of Rohnert Park. Costs may include incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; variable costs, such as the costs to staff the measures and to obtain and maintain equipment; and a one-time set-up cost. The set-up cost is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure. Measure costs were estimated for 30 years, (each year between 2005 and 2035). Costs were spread over the time period depending on the length of the implementation period for the measure and estimated voluntary customer participation levels.

Lost revenue due to reduced water sales is not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

5.5 Assumptions about Measure Savings

Data necessary to forecast water savings of measures include specific data on water use, demographics, market penetration, and unit water savings. Savings normally develop at a measured and predetermined pace, reaching full maturity after full market penetration is achieved. This may occur three to ten years after the start of implementation, depending upon the implementation schedule.

5.6 Assumptions about Avoided Costs

The most expensive source of water for almost all of the contractors, and in some cases the only source of water is the SCWA Russian River Supply. The price of the water to the contractors is set by SCWA every year and varies by contractor location, depending upon which aqueduct they draw from. Since 1990 the annual price of water has increased significantly. The annual rate of increase for 1989/1990 to 2010/11 has varied from 4.5 to 5.1% per year depending upon the aqueduct.

Since 1990 the annual rate of inflation has increased 2.64% per year in the San Francisco Bay Area, as measured by the Consumer Price Index (CPI). Based on this data the price of SCWA water has increased faster than the CPI.

Therefore in evaluating the benefit cost ratio of conservation measures and programs it is appropriate to consider the net increase in benefits (i.e., the net increase in the avoided cost of water). Other costs, such as the cost of conservation will increase presumably at the CPI rate. Also the cost of conservation programs will be paid for with inflated dollars.

For this evaluation the avoided costs were escalated from the 2010/11 value to a projected 2025/26 value (15 years). The cost escalated was the 2010/11 current price plus a distribution cost of \$27.70 per acre-foot taken from pumping costs documented by North Marin Water District, which was the only contractor that had pumping costs readily available, and used for all contractors.

The net increase and the avoided costs used in this evaluation are listed below:

- Santa Rosa aqueduct contractors - 1.86% per year escalation or \$ 832 per acre-foot
- Petaluma aqueduct contractors - 1.81% per year escalation or \$ 827 per acre-foot
- Sonoma aqueduct contractors - 2.43% per year escalation or \$1,006 per acre-foot
- Windsor was escalated at the Santa Rosa rate to \$ 991 per acre-foot

This has the effect of raising the benefit-cost ratios in our evaluation by the amount that is roughly the percentage difference in the future vs. the current price of SCWA water. In our opinion this escalation represents a more realistic comparison of benefits and costs of conservation.

5.7 Measure Assumptions including Unit Costs, Water Savings, and Market Penetrations

Appendix A includes assumptions in the DSS Model for each of the following variables for all measures modeled:

- *Targeted Water User Group; End Use* – Water user group (e.g., single-family residential) and end use (e.g., indoor or outdoor water use).
- *Utility Unit Cost (for contractor)* – Cost of rebates, incentives, and contractors hired (by the utility) to implement measures.
- *Retail Customer Unit Cost* – Cost for implementing measures that is paid by retail customers (i.e., the remainder of a measure’s cost that is not covered by a utility rebate or incentive).
- *Utility Administration and Marketing Cost* – The cost to the utility administering the measure, including consultant contract administration, marketing, and participant tracking. The mark-up is sufficient (in total) to cover local agency conservation staff time and general expenses and overhead.

The unit costs vary according to the type of account and implementation method being addressed. For example, a measure might cost a different amount for a residential single family account, than a residential multi-family account, and for a rebate versus a direct installation implementation method. Typically water utilities have found that there are increased costs associated with achieving higher market saturation, such as more surveys per year. Appendix A shows the unit costs used in the study. The model calculates the annual costs based on the number of participants each year. The general formulas for calculating annual costs are:

Annual Utility Cost = Annual market saturation x total accounts in category x utility unit cost per account x (1+administration and marketing markup)

Annual Customer Cost = Annual number of participants x retail customer unit cost

Annual Community Cost = Annual utility cost + annual customer cost

5.8 Comparison of Individual Measures

Table 15 presents how much water the measures would save over 30 years, how much they would cost, and what cost of water saved is *if the measures were run on a stand-alone basis (i.e. without interaction or overlap from other measures that might address the same end use(s))*. Only the net or highest water savings for overlapping conservation measures was included in each program.

Economic indicators are defined below:

- *Utility costs:* those costs that the utility would spend include measure set-up, annual administration, and payment of rebates or purchase of devices or services as specified in the measure design.
- *Customer costs:* those costs customers would spend to participate in City of Rohnert Park programs and maintaining its effectiveness over the life of the measure.
- *Community costs:* Community costs include utility and customer costs to implement measures.

The column headings in Table 15 are defined as follows:

- *Year 2035 Water Savings (AF/Yr)* = Water savings in 2035 (AF/Yr) where AF/Yr = acre-feet per year.
- *Present Value of Water Utility Costs* = 30 year present value of the time stream of annual costs.
- *Utility Benefit-Cost ratio* = NPV of utility costs/NPV of utility benefits over 30 years.
- *Community Benefit-Cost ratio* = (NPV of Utility Benefits plus NPV of customer energy savings)/NPV of utility plus NPV of customer costs).
- *Utility Cost of Savings per Unit Volume (\$/AF, by cost category)* = NPV of Category Costs divided by 30-year volume of water saved.
- *Total Utility Cost for Five Years 2011-2015* = Total cost in dollars to run the program for the years 2011 to 2015 (five years). This is a five year cost often useful for short term financial budgeting purposes.

**Table 15
Conservation Measure Cost and Savings**

Conservation Measure Cost and Savings						
Measure Name	Year 2035 Water Savings (AF/Yr)	Present Value of Water Utility Costs	Utility Benefit Cost Ratio	Community Benefit Cost Ratio	Utility Cost of Savings per Unit Volume (\$/AF)	First Five Years of Utility Cost
CUWCC #1a - Residential Water Surveys - Interior	69.0	\$436,119	2.4	5.6	\$677	\$106,850
CUWCC #1b - Residential Water Surveys - Outdoor	42.6	\$382,679	1.6	1.3	\$1,043	\$96,500
CUWCC #2 - Plumbing Retrofit Kits	16.0	\$47,783	5.5	25.0	\$301	\$49,679
CUWCC #5a - Large Landscape Water Budgets	83.7	\$293,411	4.8	4.8	\$349	\$24,380
CUWCC #6 - Washer Rebates	7.2	\$70,065	2.1	3.2	\$808	\$53,528
CUWCC #7 - Residential Public Education	25.8	\$264,863	1.5	3.1	\$1,090	\$60,602
CUWCC #9 - Commercial Water Audits	16.6	\$158,872	1.7	2.4	\$955	\$162,000
CUWCC #14a - RSF Toilet Replacement	0.0	\$29,067	2.0	1.0	\$893	\$0
CUWCC #14b - RMF Toilet Replacement	0.0	\$204	92.1	36.8	\$19	\$0
Tier2 - 1Rain Sensor Retrofit	8.4	\$33,101	2.3	1.0	\$613	\$7,931
Tier2 - 2Cash for Grass	2.2	\$27,082	0.9	0.5	\$1,609	\$22,124
Tier2 - 3Financial Incentives for Being Below Water Budget	14.1	\$233,814	0.5	0.2	\$2,810	\$0
Tier2 - 4Irrigation Meter Rebates	1.2	\$8,758	1.5	0.9	\$970	\$6,983
Tier2 - 5aSmart Irrigation Controller Rebates - RSF	6.7	\$220,069	0.3	0.2	\$5,158	\$46,398
Tier2 - 5bSmart Irrigation Controller Rebates - RMF, CII, IRR	12.7	\$178,858	0.7	0.6	\$2,131	\$42,989
Tier2 - 6Financial Incentives/Rebates for Irrigation Upgrades	1.7	\$23,623	0.6	0.3	\$2,327	\$3,987
Tier2 - 7Hotel Retrofit	4.3	\$9,408	3.8	1.5	\$367	\$1,588
Tier2 - 10 High Efficiency Toilets	5.5	\$185,807	0.4	0.2	\$3,790	\$225,290
Tier2 - 12CII Rebates - Replace Inefficient Water Using Equipment	1.1	\$24,462	0.4	0.8	\$3,450	\$4,129
Tier2 - 13New Commercial Urinals	2.5	\$13,242	3.4	0.4	\$466	\$8,266
Tier2 - ND1Rain Sensor Retrofit	28.3	\$16,148	9.6	1.9	\$140	\$1,591
Tier2 - ND2Smart Irrigation Controller	47.1	\$16,148	15.9	0.4	\$84	\$1,591
Tier2 - ND3 High Efficiency Toilets	2.8	\$3,082	11.9	0.5	\$127	\$2,528
Tier2 - ND4Dishwasher New Efficient	1.8	\$10,827	0.8	0.2	\$1,592	\$1,149
Tier2 - ND5Clothes Washing Machine Requirement	19.0	\$10,827	10.3	1.3	\$131	\$1,149
Tier2 - ND6Hot Water on Demand	9.9	\$10,827	4.7	0.2	\$283	\$1,149
Tier2 - ND7High Efficiency Faucets and Showerheads	39.7	\$16,148	13.5	9.9	\$99	\$1,591
Tier2 - ND8Landscape and Irrigation Requirements	31.4	\$16,148	10.6	0.0	\$126	\$1,591
Tier2 - SB-407	0.0	\$2	21.7	0.6	\$61	\$0
Require Multifamily Submeter - New Accounts	46.5	\$2,052	178.4	5.3	\$8	\$519
Require Multifamily Submeter - Exsiting Account Retrofit	41.5	\$714,791	0.5	1.4	\$2,688	\$88,601

6. RESULTS OF CONSERVATION PROGRAM EVALUATION

6.1 Selection of Measures for Programs

Table 16 provides a summary of which measures are included in each of the six draft alternative programs. The six packages are designed to illustrate a range of various measure combinations and resulting water savings.

These programs are not intended to be rigid programs but rather to demonstrate the range in savings that could be generated if selected measures were run together. In this step we account for a percent overlap in water savings (and benefits) and estimate combined savings and benefits from programs or packages of measures.

A description of each program evaluated follows. For most contractors Tier Two measures are modeled to commence in 2011. The only reason the measure would not start in 2011 is if an agency had submitted data showing activity in one of the Tier 2 programs from 2005 to 2009. Most agencies have shown significant activity on the Tier One measures since the model start year of 2005.

Program – Existing

Savings for the “Existing Program” include the measures that have been run during the time period of 2005 and 2009 as submitted by each individual contractor. For the City of Rohnert Park, the following measures were included:

Existing Program Conservation Measures:

- CUWCC #1 - Residential Water Surveys - Interior
- CUWCC #1 - Residential Water Surveys - Outdoor
- CUWCC #2 - Plumbing Retrofit Kits
- CUWCC #5a - Large Landscape Water Budgets
- CUWCC #6 - Washer Rebates
- CUWCC #7 - Residential Public Education
- CUWCC #9 - Commercial Water Audits

Program – Existing + New Measures

Savings for the “Existing Program + New Measures” include the measures that have been run during the time period of 2005 and 2009 as submitted by each individual contractor in addition to the three new measures evaluated for each contractor. The new measures for each contractor are listed in Table 14.

Program – Tier One Measures

This program was designed to be the future program with full compliance for “Tier One Measures” including all the CUWCC BMPs. Program water savings includes actual achievements for the years 2005 to 2009 and then projected participation rates starting in 2011 in accordance with those specified in the California Urban Water Conservation Council’s Memorandum Of Understanding, which may be higher (or lower) than you are currently achieving. If you continue to implement the BMPs as planned, your future demands will be reduced by the amount of savings from Tier One future measures.

Program - Tier One + New Development Measures

Savings for Tier One + New Development Measures were designed to isolate the effects of the New Development measures that would be implemented as well as the completion of Tier One measures. These eight New Development measures target new single family homes, multifamily homes, and commercial development based on the local ordinances or Cal Green as shown in Table 12 and 13.

Program – Tier One + Tier Two Measures

Savings for Tier One + Tier Two Measures includes 13 additional measures beyond the CUWCC BMPs. Tier One Future was designed to be the future program with full compliance for all the CUWCC BMPs. The participation rates starting in 2005 are in accordance with historical conservation efforts for the years 2005 to 2009. Then they proceed with the rate specified in the California Urban Water Conservation Council's Memorandum Of Understanding, which may be higher (or lower) than you are currently achieving. If you continue to implement these measures, your future water demands will be reduced by the amount of conservation savings. Descriptions of the Tier Two measures are in Table 13 and cost and saving assumptions for each individual measure can be found in Attachment A. Note that due to increased regulations and additional research and analysis on conservation measures, measures Tier 2-8, Tier 2-9 and Tier 2-11 were removed from this program at the request of all the contractors on August 2, 2010.

Program: Tier One, Tier Two, New Development

Savings for Tier One, Tier Two, and New Development includes all analyzed conservation measures except for the "new measures" because the new measures are unique to each contractor and did not go through the original measure screening process as the other measures in 2005. Also note that measures that either saved a small amount of water or were not cost-effective (Benefit-Cost ratio less than 1.0 and a high cost of water saved) were included here. Some of the Tier Two measures are small programs in that the target number of accounts is very small. So even though they appear to be relatively expensive from a measure point of view, their impact on the overall program costs and savings is relatively minor. Note that due to increased regulations and additional research and analysis on conservation measures, measures Tier 2-8, Tier 2-9 and Tier 2-11 were removed from this program at the request of all the contractors on August 2, 2010.

**Table 16
Conservation Measures Selected for Programs**

City of Rohnert Park Conservation Measures in each Program						
Measure Name	Program Existing	Program Existing and New	Program Tier One	Program Tier 1 and ND	Program Tier 1 and Tier 2	Program Tier 1 and Tier 2 and ND
CUWCC #1a - Residential Water Surveys - Interior	✓	✓	✓	✓	✓	✓
CUWCC #1b - Residential Water Surveys - Outdoor	✓	✓	✓	✓	✓	✓
CUWCC #2 - Plumbing Retrofit Kits	✓	✓				
CUWCC #5a - Large Landscape Water Budgets	✓	✓	✓	✓	✓	✓
CUWCC #6 - Washer Rebates	✓	✓	✓	✓	✓	✓
CUWCC #7 - Residential Public Education	✓	✓	✓	✓	✓	✓
CUWCC #9 - Commercial Water Audits	✓	✓	✓	✓	✓	✓
CUWCC #14a - RSF Toilet Replacement			✓	✓	✓	✓
CUWCC #14b - RMF Toilet Replacement			✓	✓	✓	✓
Tier2 - 1Rain Sensor Retrofit					✓	✓
Tier2 - 2Cash for Grass					✓	✓
Tier2 - 3Financial Incentives for Being Below Water Budget					✓	✓
Tier2 - 4Irrigation Meter Rebates					✓	✓
Tier2 - 5aSmart Irrigation Controller Rebates - RSF					✓	✓
Tier2 - 5bSmart Irrigation Controller Rebates - RMF, CII, IRR					✓	✓
Tier2 - 6Financial Incentives/Rebates for Irrigation Upgrades					✓	✓
Tier2 - 7Hotel Retrofit					✓	✓
Tier2 - 10 High Efficiency Toilets					✓	✓
Tier2 - 12CII Rebates - Replace Inefficient Water Using Equipment					✓	✓
Tier2 - 13New Commercial Urinals					✓	✓
Tier2 - ND1Rain Sensor Retrofit				✓		✓
Tier2 - ND2Smart Irrigation Controller				✓		✓
Tier2 - ND3 High Efficiency Toilets				✓		✓
Tier2 - ND4Dishwasher New Efficient				✓		✓
Tier2 - ND5Clothes Washing Machine Requirement				✓		✓
Tier2 - ND6Hot Water on Demand				✓		✓
Tier2 - ND7High Efficiency Faucets and Showerheads				✓		✓
Tier2 - ND8Landscape and Irrigation Requirements				✓		✓
SB-407 Requirements (Plumbing Retrofit on Resale or Remodel)		✓				
Require Multifamily Submeter - New Accounts		✓				
Require Multifamily Submeter - Existing Account Retrofit		✓				

NOTE – Due to increased regulations and additional research and analysis on conservation measures, Measures Tier 2-8, Tier 2-9 and Tier 2-11 were removed from analysis at the request of all the contractors

6.2 Results of Program Evaluation

Figure 8 shows annual water demand with no conservation, plumbing code only, and the six programs. Table 17 shows the savings in 5 year increments for all six programs. The savings in Table 17 are just from the conservation programs alone and do not include the plumbing code savings. The separate starting points for the demand with and without the plumbing code versus the conservation programs is directly correlated to the fact that the contractors have existing conservation programs active from 2005 and 2009 that are already saving water by the year 2010. MWM has thoroughly checked the differences for each year and they remain relatively consistent between the Demand with plumbing code and all the conservation programs. The graph makes it appear as they slightly “converge” but in fact the numbers show that they do not vary more than 4 AF/Yr over the 30 year analysis period. The slight fluctuations are due to the differences in rates of new development, measure lives, and project program activity.

Figure 8
Long Term Demands with Conservation Programs

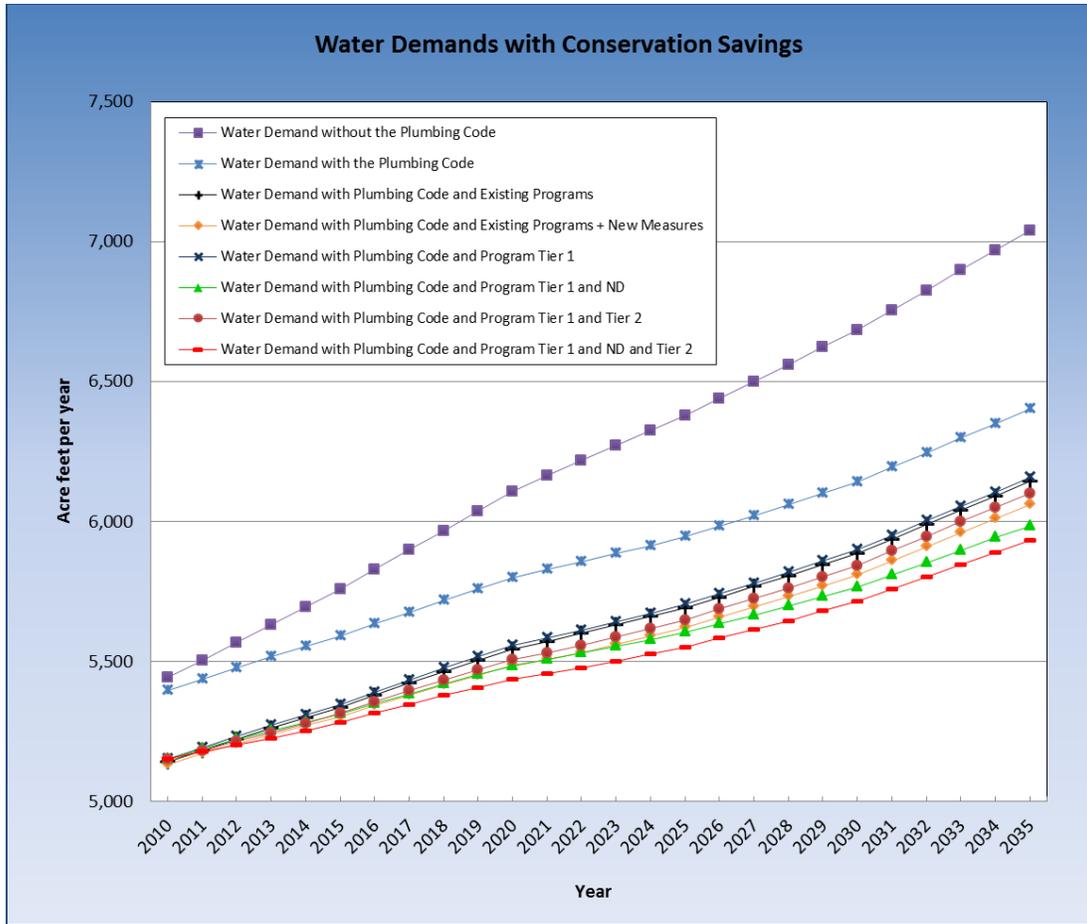


Table 17
Long Term Conservation Program Savings

Water Conservation Savings							Benefit to Cost Ratio Utility	Benefit to Cost Ratio Community
Conservation Savings (AF/Yr)	2010	2015	2020	2025	2030	2035		
Existing Programs	254	256	254	253	256	260	2.5	4.0
Existing Programs + New Measures	264	288	313	324	332	342	2.0	3.4
Program Tier 1	245	245	243	241	243	247	2.4	3.5
Program Tier 1 and ND	245	279	314	342	376	418	2.8	1.2
Program Tier 1 and Tier 2	245	277	293	296	298	302	1.7	1.8
Program Tier 1 and ND and Tier 2	245	311	363	394	428	469	2.0	1.0

Figure 9 shows how marginal returns change as more money is spent to achieve savings. As the figure shows the cost versus saving curve is starting to decline after Program Tier One + New Development. This means that the added cost of going from that Program to Tier One + Tier Two will save less water per unit expenditure. In other words there are diminishing returns when the curve starts to flatten out as Tier Two measures are added to the program. It is clear that the New Development measures are more cost-effective to the utility than Tier Two measures. It is not to say that the Tier Two measures are a poor investment. The decision on which program is appropriate for each agency is dependent on many

factors. Most recently it may be impacted by the goals set forth by SB7x-7 which calls for a reduction in per capita water use by 2020, which is independent of the economic analysis.

Figure 9
Present Value of Utility Costs versus Cumulative Water Saved

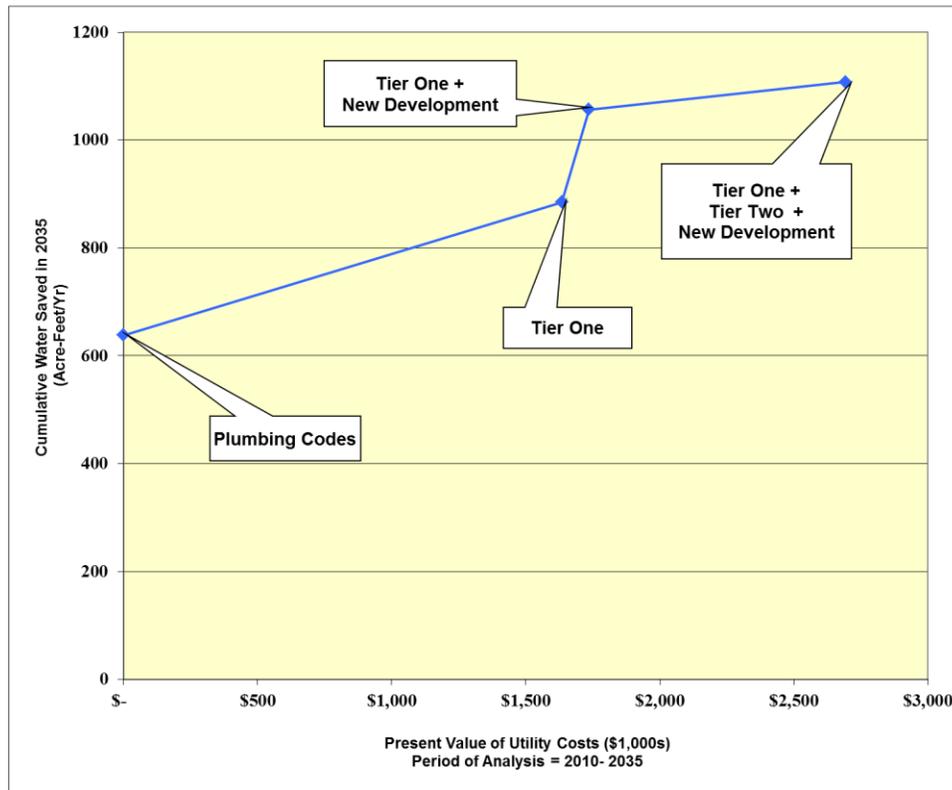


Table 18 presents key evaluation statistics compiled from the DSS Model. Assuming all measures are successfully implemented, projected water savings for 2030 in AF are shown, as are the costs of achieving this reduction. Water savings for programs have been shown for 2035 in Table 18.

The costs are expressed two ways.

1. Total present value over the analysis period,
2. The cost of water saved. Cost of water saved is presented two ways: for the utility and the total community (customer plus utility).

These cost parameters are derived from the annual time stream of utility, customer and community costs.

The water savings are expressed as a percentage of the projected 2035 demand. One column indicates the percentage of the new water demand in 2035 each program could provide. The new water needed by new customers over the full planning period is the difference between 2005 demand and 2035 demand without the plumbing code. The plumbing code is an additional savings that could be added on top of the water savings shown in Table 18. This allows the plumbing code savings percent and water savings in AF/Yr shown in Table 4 to be additive to the conservation program savings in AF/Yr and percentages shown in Table 18.

Table 18
Comparison of Long-Term Conservation Programs – Utility Costs and Savings

Comparison of Conservation Program Costs and Savings										
Conservation Program	Water Utility Benefit-Cost Ratio	Community Benefit-Cost Ratio	2015 Water Savings (AFY)	2035 Water Savings (AFY)	2035 Indoor Water Savings (AFY)	2035 Outdoor Water Savings (AFY)	Total Water Savings as a % of Total Production in 2035*	30 Year Present Value of Water Utility Costs (\$1,000)	Total Utility Cost for Five Years (\$1,000)	Utility Cost of Water Saved (\$/AF)
Existing Program	2.50	4.04	256	260	119	141	4.06%	\$1,654	\$398	\$216
Existing Program + New Measures	2.04	3.41	288	342	201	141	5.34%	\$2,371	\$757	\$259
Tier One	2.42	3.49	245	247	106	141	3.85%	\$1,635	\$398	\$223
Tier One + Tier Two	1.73	1.81	277	302	119	184	4.72%	\$2,594	\$1,053	\$306
Tier One + New Development	2.84	1.19	279	418	176	242	6.53%	\$1,735	\$429	\$182
Tier One + Tier Two + New Development	2.02	1.01	311	469	189	280	7.33%	\$2,694	\$1,084	\$254

Notes:

- Present Value is determined using an interest rate of 3%
- Cost of water saved is present value of water utility cost divided by total 30-year water savings.
- * % of water saved refers to the demand without the plumbing code
- Total water savings in 2035 as a percent of production is relative to no plumbing code production
- Conversion 1 MGD is equal to 1120 AF/Yr

7. CONCLUSIONS

7.1 Relative Savings and Cost-Effectiveness of Programs

The City of Rohnert Park service area has a relatively high portion of residential water use and a significant amount of outdoor water use. Consequently, residential conservation programs produce the most savings. City of Rohnert Park's service area is not a heavy manufacturing sector so the conservation potential in the commercial sector is relatively low. Based on the assumed avoided cost of new water, water conservation programs are cost-effective. Overall conclusions are:

- The decrease in demand for Rohnert Park compared to the water demand projections in the 2005 Demand and Water Conservation Measure Analysis completed by MWM was due to the reduction in population, employment projections, removal of the new single family home category, and change to using actual water use data rather than estimated values for water use.
- Water savings from implementation of the Tier One, Tier Two and New Development conservation programs would reduce water needs in 2035 by about 7.33 percent (469 AF/Yr as shown on Table 18) when compared to the 2035 water demand without the plumbing code.
- Water savings from implementation of the Tier One conservation programs would reduce water needs in 2035 by about 3.85 percent (247 AF/Yr as shown on Table 18) when compared to 2035 water demands without the plumbing code.
- For Future Tier One measures, more than half of the conservation potential in 2035 is in reducing outdoor use; the rest is indoor use reduction potential.
- The average cost of water saved over 30-years is lower than the current price of SCWA water. Thus measures that are cost-effective at today's water rates will be more so if SCWA rates rise in the future.
- Savings contributed by Tier Two measures alone are 55 acre-feet in 2035.
- Savings contributed by the New Development measures alone are 171 acre-feet by 2035.
- Benefit-cost ratios of program combinations range from 1.73 to 2.84 so all program combinations are cost-effective from the utility standpoint.
- The average cost of water saved for all of the programs from the utility standpoint (as shown on Table 18) is lower than the forecasted 2025 price of \$827 per AF.
- The cost for the new development measures is largely funded by the builders of the new homes, which tends to reduce the overall cost to the utility for all measures.

Appendix A - Assumptions for Water Conservation Measures Evaluated in the DSS Model

Measure	BMP 1a	BMP 1a	BMP 1b	BMP 1b	BMP 2 Plumbing
	Residential Audits	Residential Audits	Residential Audits	Residential Audits	Retrofits
Account Category	RSF	RMF	RSF	RMF	RSF / RMF
Affected End Uses	Internal	Internal	External	External	Toilets, Faucets, Showers
Percent Reduction in Water Use	5%	5%	10%	10%	5%/5%/21%
CUWCC MOU Sign-on Year	2002	2002	2002	2002	2002
Evaluation Start Year	2005	2005	2005	2005	2005
Required Interventions Starting in 2005 (Accounts)	1148	75	1148	75	0/0
Market Penetration by End Of Program,%	15	15	15	15	75
Measure Life (years)	7	7	7	7	permanent
Initial Cost	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Unit Cost, per site one time cost	\$ 40.00	\$ 80.00	\$ 40.00	\$ 50.00	\$ 30.00
Customer Unit Cost to achieve savings	\$ 10.00	\$ 30.00	\$ 5.00	\$ 20.00	\$ 0
Administration Cost, percent of unit cost	25%	25%	25%	25%	10%
Affected Units	dwelling unit	dwelling unit	dwelling unit	dwelling unit	1992 and older dwelling units
Comments	Assume audits are renewed every 7 years to maintain water savings				BMP Complete

Notes:

RSF = Residential Single Family

RMF = Residential Multi Family

BUS/COM= Commercial

IND = Industrial

IRR = Dedicated irrigation meters

INS = Institutional/Public, buildings / grounds owned by the Water Utility or City

NRSF = New Single Family Homes

GOV = Government

Measure	BMP 5a Water Budgets	BMP 5b Water Audits	BMP 6 Washer Rebates	BMP 7 Public Education	BMP 9 CII Audits	BMP 14 Toilet Rebates
Account Category	IRR	IND	RSF	RSF/RMF	COM	RSF/RMF
Affected End Uses	Irrigation	Irrigation	Laundry	All	All	Internal
Percent Reduction in Water Use	15%	15%	34%	1%	12%	60%
CUWCC MOU Sign-on Year	2002	2002	2002	2002	2002	2002
Evaluation Start Year	2005	2005	2005	2005	2005	2005
Required Interventions Starting in 2005 (Accounts)	65	0	0	7,655	6	241/20
Market Penetration by End Of Program, %	90	15	4.8	100	34	Match resale rate
Measure Life (years)	10	10	permanent	2	permanent	permanent
Initial Cost	\$ -	\$ -	\$ -	\$ -	\$ -	NA
Utility Unit Cost, per site one time cost	\$ 400.00	\$ 1,500.00	\$ 75.00	\$ 2.50	\$ 4,000.00	\$50
Customer Unit Cost to achieve savings	\$ -	\$ 1,000.00	\$ 200.00	\$ -	\$ 2,000.00	\$75
Administration Cost, percent of unit cost	15%	30%	30%	25%	50%	included
Affected Units	Irrigation accounts	large landscape accounts	per dwelling unit	per dwelling unit	CII accounts	per toilet
Comments	Assume audits are renewed every 10 years to maintain water savings		BMP 6 complete			Complete in 2010

Notes:

RSF = Residential Single Family
 RMF = Residential Multi Family
 BUS/COM= Commercial
 IND = Industrial
 IRR = Dedicated irrigation meters
 INS = Institutional/Public, buildings / grounds owned by the Water Utility or City
 NRSF = New Single Family Homes
 GOV = Government

Measure	T2 - 1	T2 - 2	T2 - 3	T2 - 4	T2 - 5a	T2 - 5b	T2 - 6
	Rain-sensor (shut off device) retrofit on irrigation controllers	Cash for Grass (turf removal program)	Financial Incentives for Being Below Water Budget	Financial Rebates for Irrigation Meters	Smart Irrigation Controller Rebates	Smart Irrigation Controller Rebates	Financial Incentives/ Rebates for Irrigation Upgrades
Applicable Customer Classes	SF	Existing Customers SF, MF, CII	IRR	Existing CII Customers with mixed water use (indoor and outdoor)	SF	Existing Customers MF, CII, IRR	Existing Customers MF, CII, IRR
Applicable End Uses	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation
Market Penetration by End Of Program	10%	1%	100%	10%	5%	20%	10%
Water Use Reductions For Targeted End Uses	9%	39%	15%	15%	15%	15%	15%
Program Length, years	5	5	10	5	10	10	15
Measure Life, years	10	permanent	permanent	permanent	21	permanent	permanent
Utility Unit Cost for SFaccounts, \$/unit	\$ 20.00	\$ 500.00	\$ 25,000.00	\$ -	\$ 450.00	\$ -	\$ -
Utility Unit Cost for MF accounts, \$/unit	--	\$ 500.00	\$ -	\$ -	\$ -	\$ 900.00	\$ -
Utility Unit Cost for non-Res accounts, \$/unit	--	\$ 500.00	\$ -	\$ 500.00	\$ -	\$ 900.00	\$ 500.00
Customer Unit Cost. \$/unit	\$ 35.00	\$ 500.00	\$ 3,333.33	\$ 500.00	\$ 100.00	\$ 100.00	\$ 500.00
Annual Utility Admin & Marketing Cost	25%	25%	35%	25%	30%	30%	25%

Notes:

RSF = Residential Single Family

RMF = Residential Multi Family

BUS/COM= Commercial

IND = Industrial

IRR = Dedicated irrigation meters

INS = Institutional/Public, buildings / grounds owned by the Water Utility or City

NRSF = New Single Family Homes

GOV = Government

Measure	T2 - 7	T2 - 10	T2 - 12	T2 - 13
	Hotel retrofit (w/financial assistance) - CII Existing	High Efficiency Toilet (HET)	CII Rebates - replace inefficient water using equipment	0.5 gal/flush urinals in new buildings
Applicable Customer Classes	Existing Customers: CII	SF, MF	CII	COM New
Applicable End Uses	Indoor uses	Toilet end use	Process end use	COM Urinal
Market Penetration by End Of Program	20%	20%	10%	100%
Water Use Reductions For Targeted End Uses	20%	45 to 55%	10%	65 to 75%
Program Length, years	15	10	15	30
Measure Life, years	permanent	permanent	permanent	permanent
Utility Unit Cost for SF accounts, \$/unit	\$ -	\$ 150.00		\$ 50.00
Utility Unit Cost for MF accounts, \$/unit	\$ -	\$ 150.00		
Utility Unit Cost for non-Res accounts, \$/unit	\$ 100.00		\$ 500.00	
Customer Unit Cost. \$/unit	\$ 200.00	\$ 150.00	\$ 1,000.00	\$ 500.00
Annual Utility Admin & Marketing Cost	25%	35%	30%	25%

Notes:

RSF = Residential Single Family
RMF = Residential Multi Family
BUS/COM= Commercial
IND = Industrial
IRR = Dedicated irrigation meters
INS = Institutional/Public, buildings / grounds owned by the Water Utility or City
NRSF = New Single Family Homes
GOV = Government

Measure	ND 1	ND 2	ND 3	ND 4	ND 5	ND 6	ND 7	ND 8
	Rain-sensor shut off device on irrigation controllers	Smart Irrigation Controller	High Efficiency Toilet (HET)	Dishwasher New Efficient	Clothes washing machines requirement for new residential	Hot Water on Demand	High efficiency faucets and showerheads	Landscape and irrigation requirements
Applicable Customer Classes*	Varies	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Applicable End Uses	Irrigation	Irrigation	Toilet end use	Dishwasher end use	Clothes Washer end use	Faucet and shower end use	Faucet and shower end use	Irrigation
Market Penetration by End Of Program	100%	100%	100%	100%	100%	100%	100%	100%
Water Use Reductions For Targeted End Uses	9%	15%	50 to 55%	34%	50%	14.2 gpd per house	15%	10%
Program Length, years	30	30	30	30	30	30	30	30
Measure Life, years	permanent	permanent	permanent	permanent	permanent	permanent	permanent	permanent
Utility Unit Cost for SFaccounts, \$/unit	\$ 12.50	\$ 12.50	\$ 12.50	\$ 12.50	\$ 12.50	\$ 12.50	\$ 12.50	\$ 12.50
Utility Unit Cost for MF accounts, \$/unit	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Unit Cost for non-Res accounts, \$/unit	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Unit Cost. \$/unit	\$ 55.00	\$ 500.00	\$ 300.00	\$ 400.00	\$ 500.00	\$ 700.00	\$ 50.00	\$ 3,000.00
Annual Utility Admin & Marketing Cost	10%	10%	10%	10%	10%	10%	10%	10%

Notes:

RSF = Residential Single Family

RMF = Residential Multi Family

BUS/COM= Commercial

IND = Industrial

IRR = Dedicated irrigation meters

INS = Institutional/Public, buildings / grounds owned by the Water Utility or City

NRSF = New Single Family Homes

GOV = Government

*Customer class varies depending upon local ordinances, Cal Green and contractor request of new measure or planned ordinances

Measure	Fixture Replacement SB 407	Require MF Submetering on New Accounts	Require MF Submetering on Existing Accounts
Applicable Customer Classes	Pre-1994 Existing Accounts	New MF (5 or more units)	MF/Condo
Applicable End Uses	Toilet, urinal, shower, lavatory faucet	Indoor	Indoor/outdoor
Market Penetration by End Of Program (%)	4% SF, 2% MF and CII	100% of new	20% of existing
Annual Market Penetration (% of accounts)	1% 2017-2020 SF, 1% 2019-2020 MF, 1% CII 2019-2020	100% of new	2% of existing
Water Use Reductions For Targeted End Uses	Varies	15%	15%
Evaluation Start Year	2014	2005	2012
Evaluation End Year	2020	2035	2022
Program Length, years	7	30	10
Measure Life, years	Permanent	Permanent	Permanent
Utility Unit Cost for SF accounts, \$/unit	\$ 25	\$ -	\$ -
Utility Unit Cost for MF accounts, \$/unit	\$ 25	\$ 25.00	\$ 25.00
Utility Unit Cost for non-Res accounts, \$/unit	\$ 25	\$ -	
Customer Unit Cost. \$/SF unit	Varies		
Customer Unit Cost. \$/MF unit	Varies	\$ 3,000.00	\$ 400.00
Customer Unit Cost. \$/CII unit	Varies	0%	0%
Annual Utility Admin & Marketing Cost	25%	30%	30%
Affected Units (used for Cost calculations)	Dwelling unit or CII account	dwelling unit	dwelling unit
Comments	Measure will start in the year 2017 (SF) and 2019 (CII) to coincide with the California State Law SB 407. Work with the real estate industry to require a certificate of compliance be submitted to the City that the property and efficient fixtures where either already there or were installed at the time of sale, before close of escrow. Consider allowing this certification to be made as a part of the conventional private building inspection report process.		10 year Grant Program

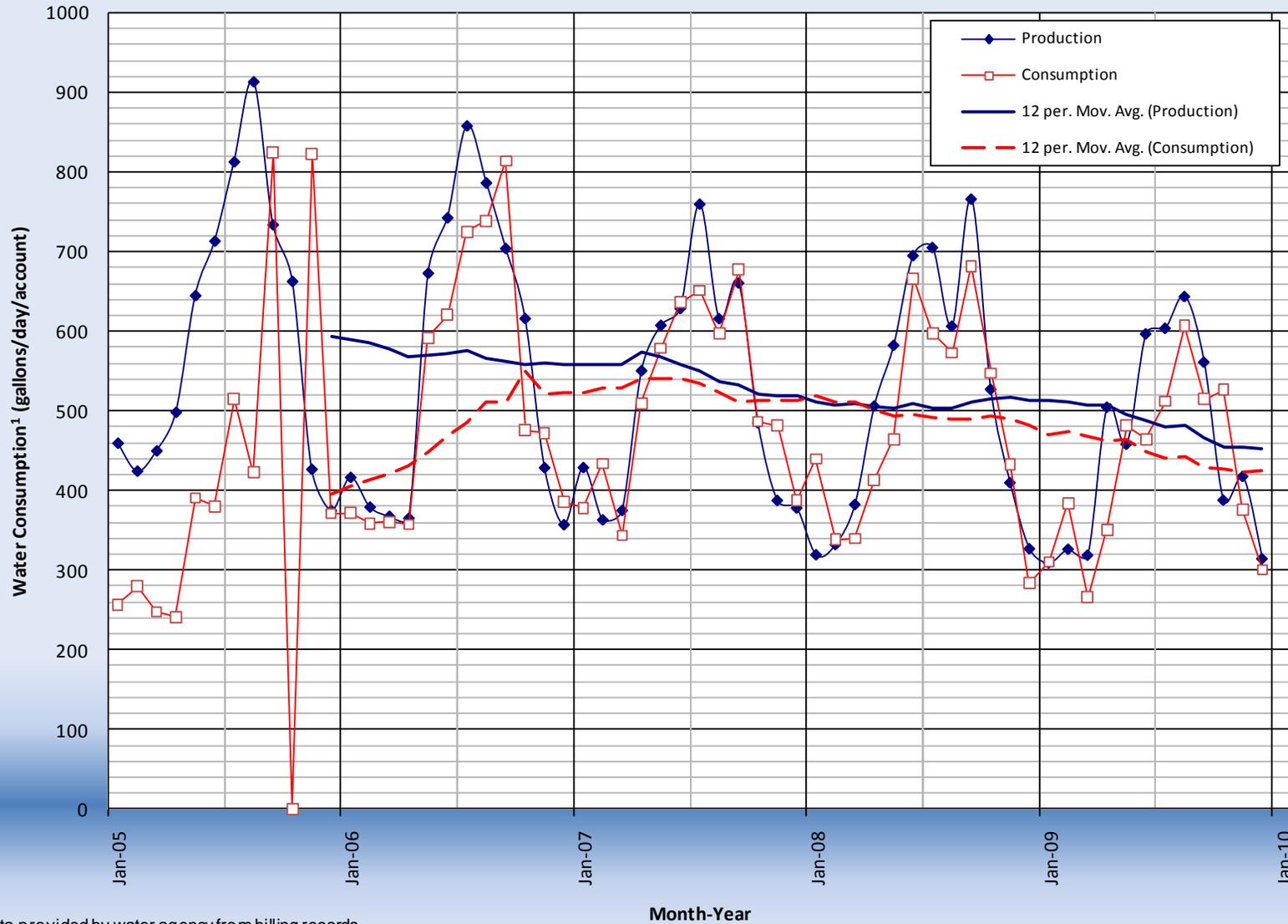
Notes:

RMF = Residential Multi Family

CII = Commercial, Industrial and Institutional

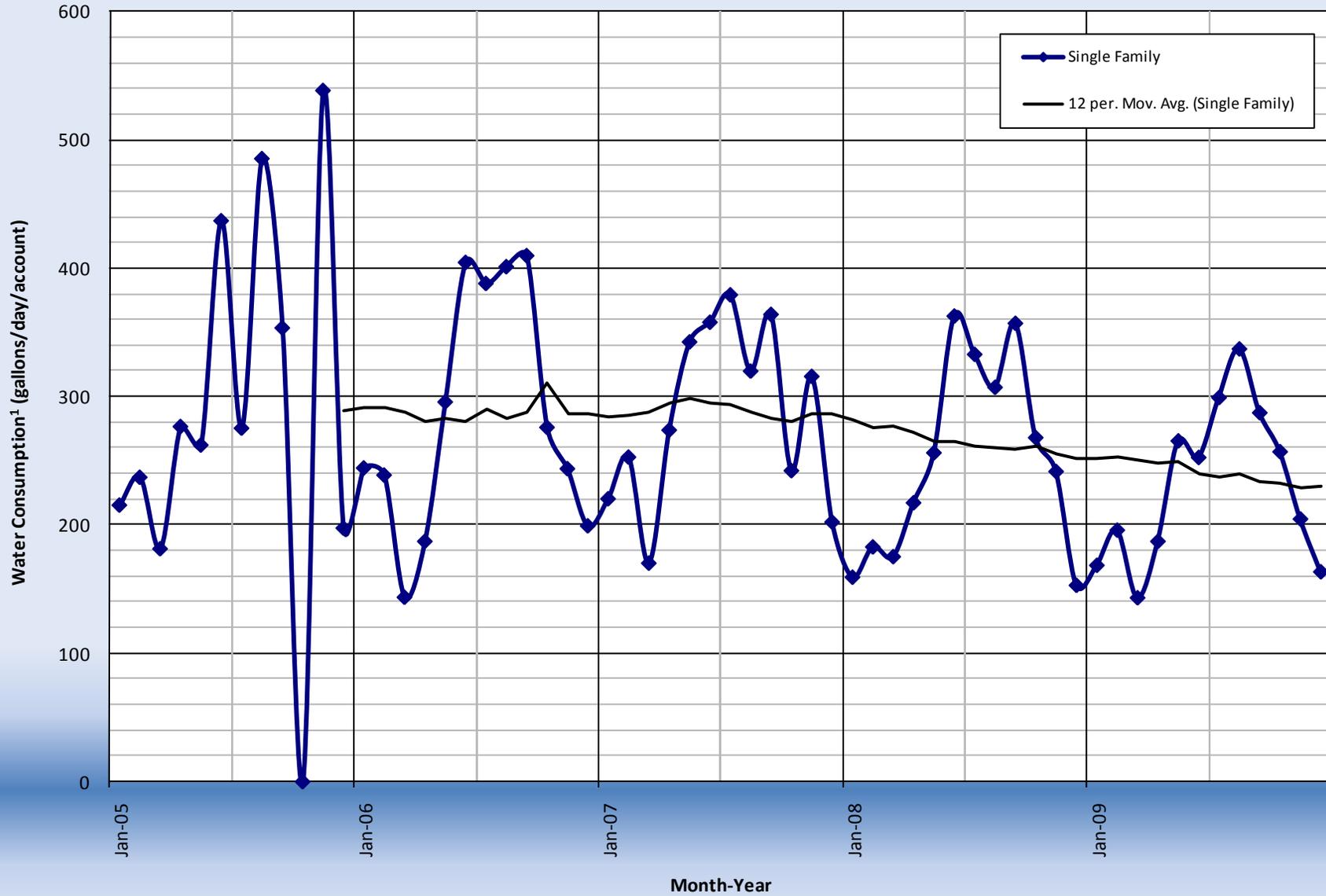
Appendix B - Water Use Data Graphs for Production and Customer Categories

CITY OF ROHNERT PARK Water Production vs Water Consumption



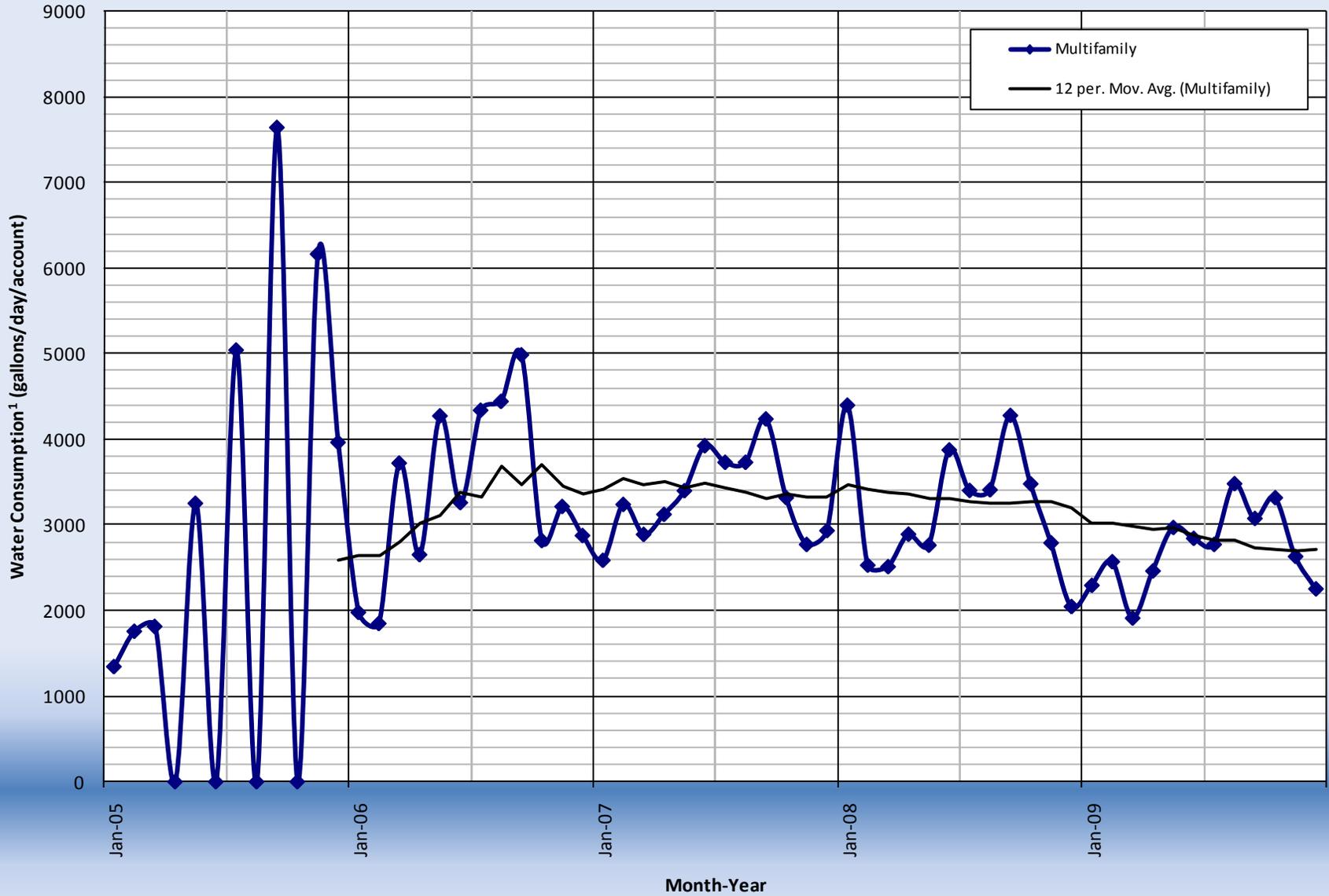
1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Single Family Residential



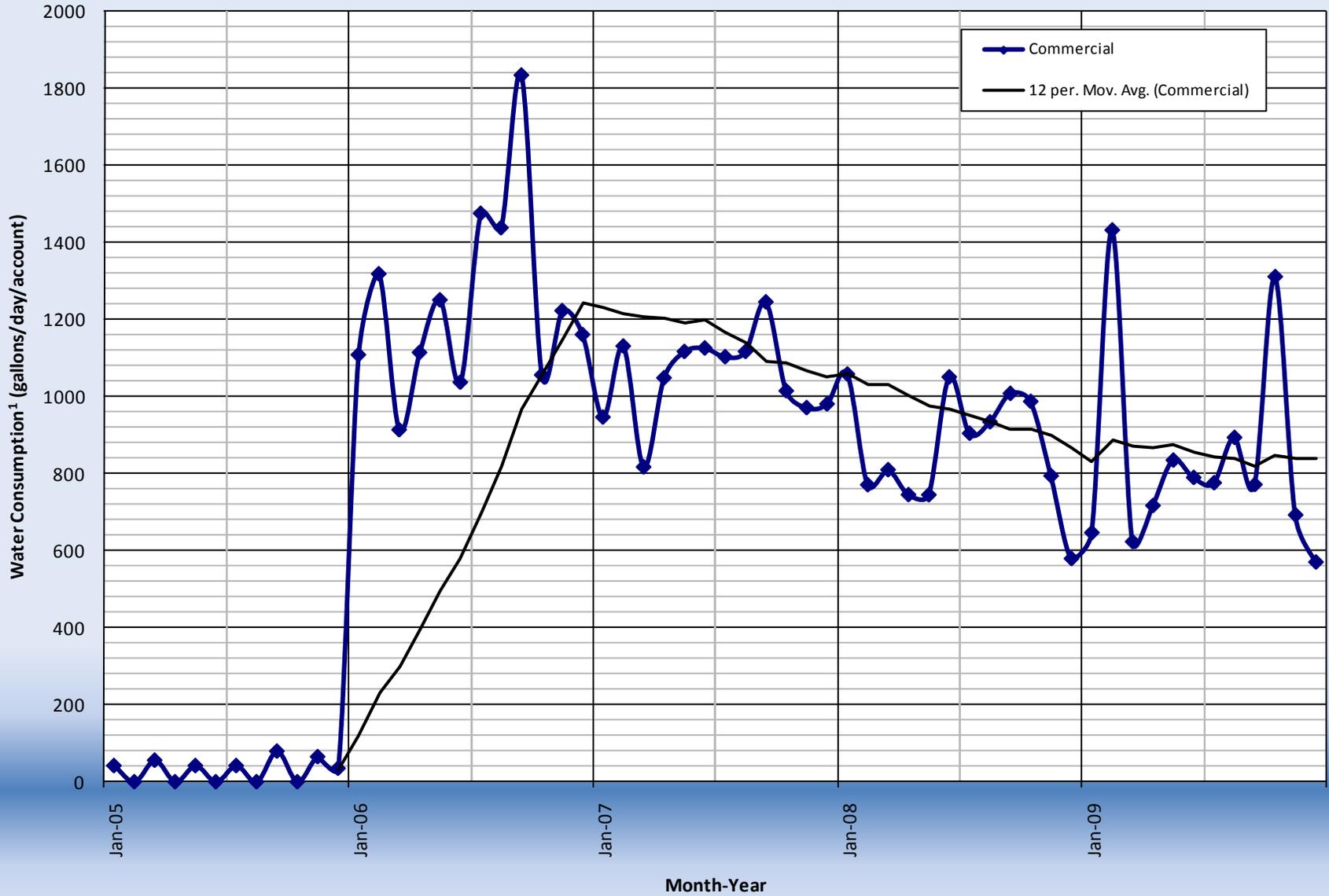
1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Multifamily Residential



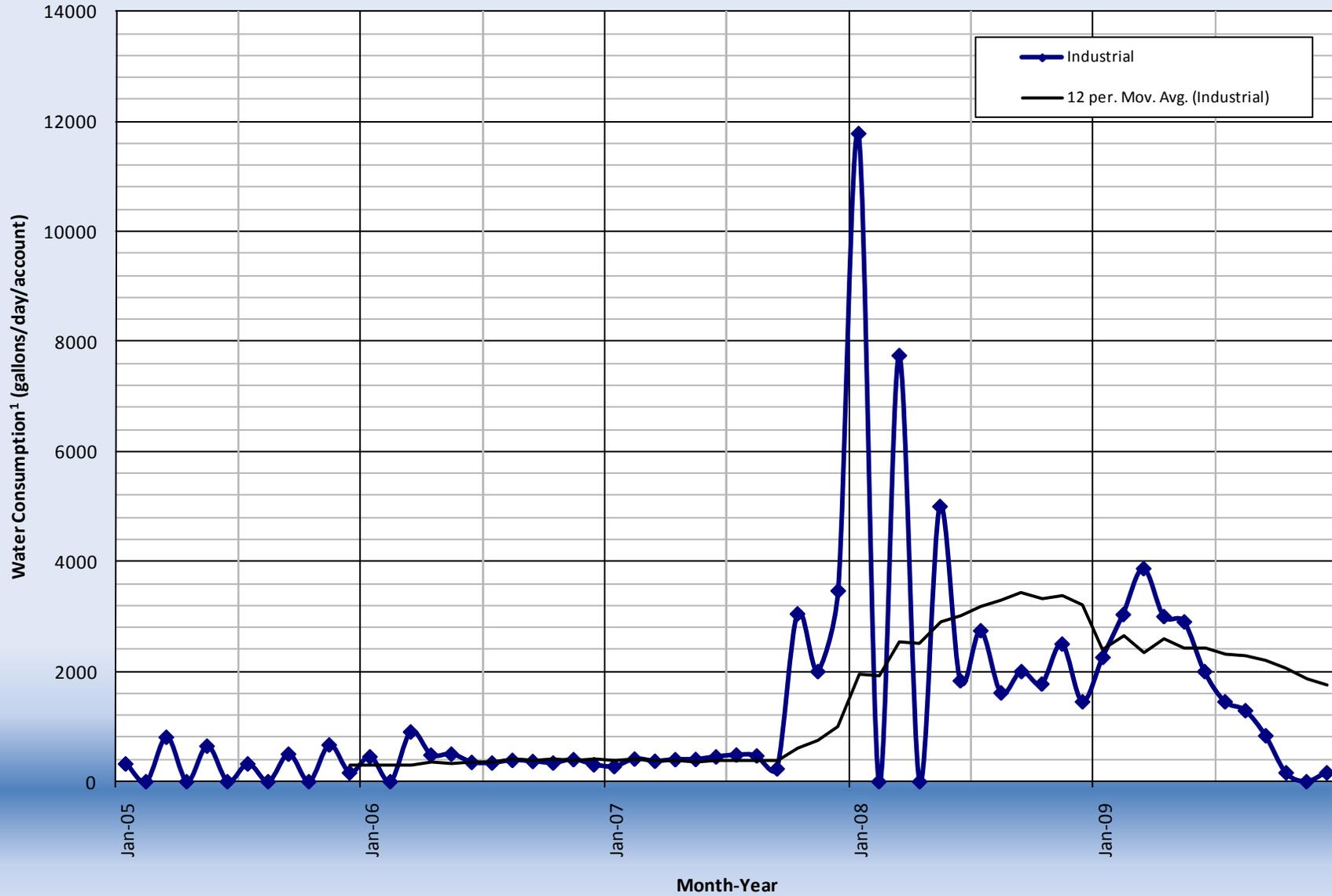
1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Commercial



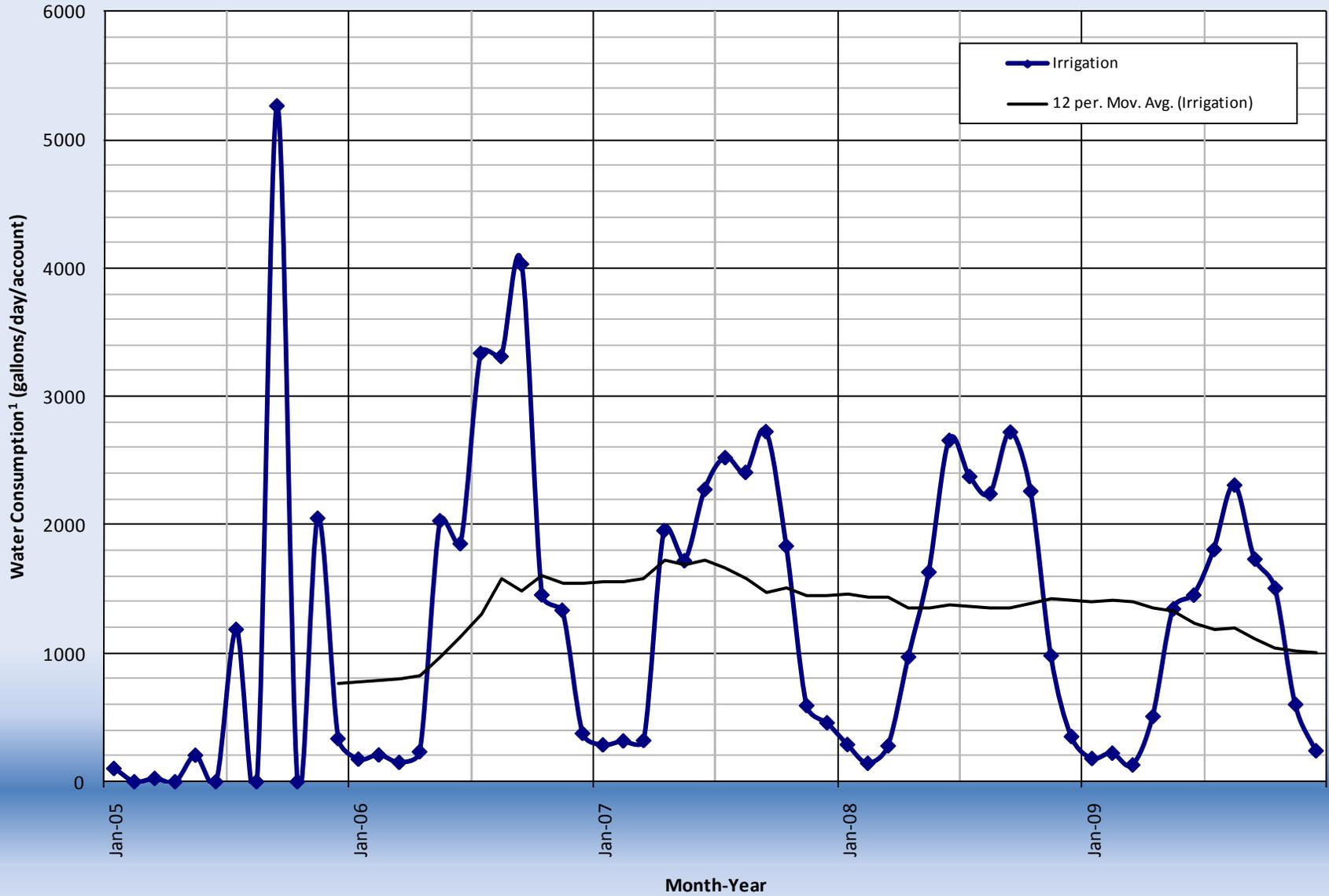
1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Industrial



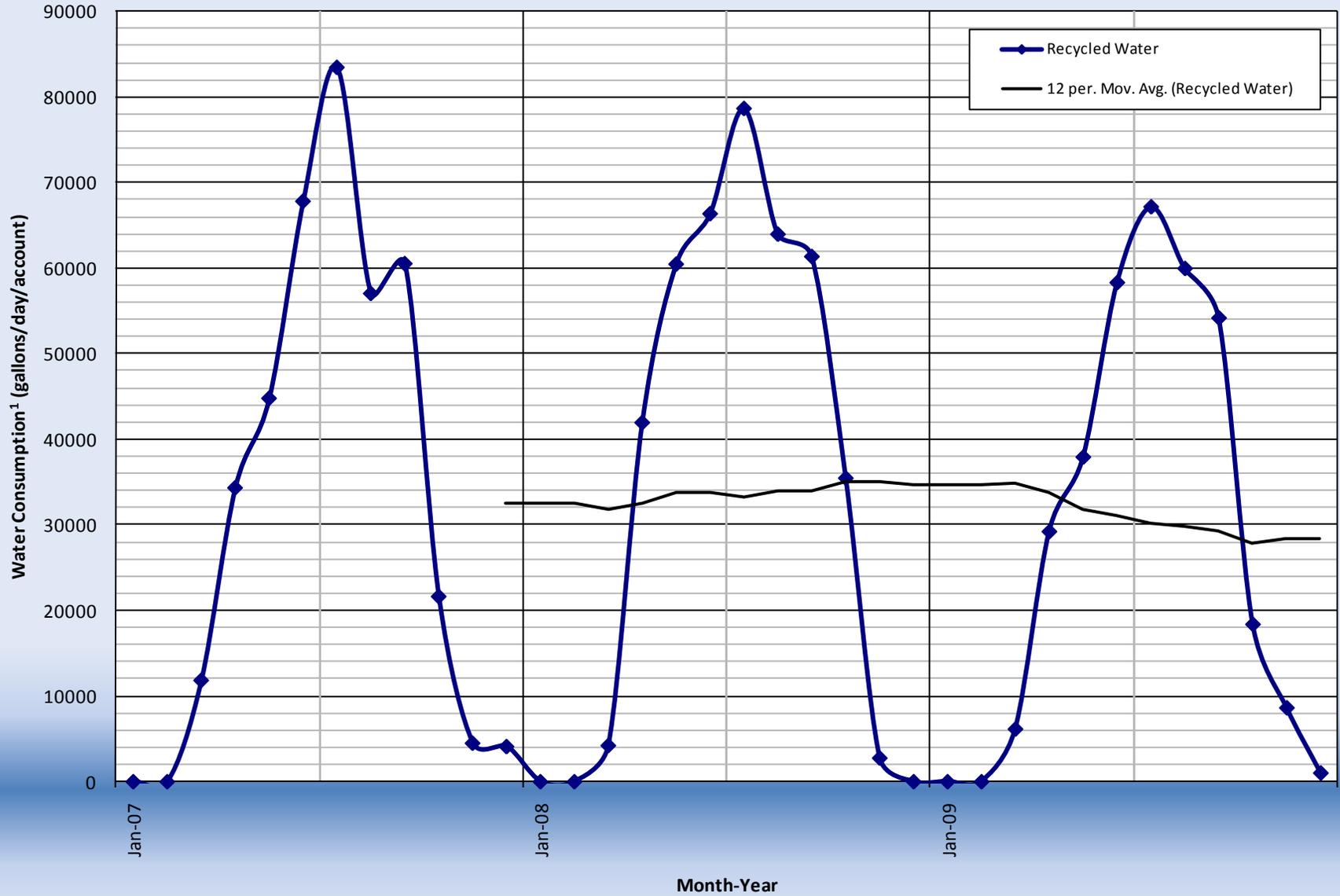
1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Irrigation



1 - Data provided by water agency from billing records

CITY OF ROHNERT PARK Customer Category : Recycled Water



1 - Data provided by water agency from billing records

Regional Alliance Baseline and Water Use Target Calculations for the Sonoma County Water Agency Water Contractors

Senate Bill x7-7, the Water Conservation Act, was signed into law in 2009. The legislation set a goal of 20% reduction in statewide urban per capita water use and requires urban water retailers that must comply with the Urban Water Management Planning Act to set a 2020 urban per capita water use target.

The legislation provides that urban water retail suppliers may plan, comply, and report on the 2020 urban per capita water use target on a regional basis, an individual basis, or both.

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

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

- (1) Through an urban wholesale water supplier.*
- (2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31(commencing with Section 81300)).*
- (3) Through a regional water management group as defined in Section 10537.*
- (4) By an integrated regional water management funding area.*
- (5) By hydrologic region.*
- (6) Through other appropriate geographic scales for which computation methods have been developed by the department.*

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

Regional Alliance Baseline and Target Calculation

Per Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (DWR Methodologies), the Water Contractors of the Sonoma County Water Agency (Water Contractors) are eligible to form a regional alliance because we are recipients of water from a common wholesale water supplier.

Per the DWR Methodologies, there are three options for calculating a regional alliance target. The first option is for each member of the regional alliance to calculate their individual target and then weight the individual targets by each member's population. The weighted targets are then averaged to determine the regional alliance target. Current population data can be used for generating the regional target.

The second option is to sum up each member's gross water use and service area populations to develop a regional gross water use and population. A base daily per capita water use would be calculated and a target would be calculated using one of the following four methods:

1. 80% of the regional alliance's baseline per capita daily water use;

2. Performance standards of 55 gallons per capita per day for indoor water use, water efficiency equivalent to the Model Water Efficient Landscape Ordinance for landscapes irrigated through dedicated or residential meters, and a 10% reduction in Commercial, Industrial, Institutional water use;
3. 95% of the applicable state hydrologic region target as set forth in the State's 20x2020 Water Conservation Plan. If the area includes more than one hydrologic region, the area should be apportioned to each region based on population or area; or
4. Provisional Target Method 4 developed by DWR.

Alliances must have all of their members use the same baseline period.

The third option is to calculate regional gross water use or population directly for the entire regional alliance area. A base daily per capita water use would be calculated and a target would be calculated using one of the four methods listed above. As with the second option, alliances must have all of their members use the same baseline period. The regional target may not exceed 95% of the region's 5-year Base Daily Per Capita Water Use.

The data to calculate the third option is not easily available. Therefore, option 1 and option 2 were used for calculating a regional target for the Water Contractors. Upon review and evaluation, the Water Contractors are recommending option 1, below, for calculating the regional target.

Option 1 - Target

SCWA Service Area Regional 2020 Targets (DWR Methodology # 9)

SCWA Water Contractor	2015			2020		
	Current Population*	Water Contractor Staff Recommended Individual GPCD Target**	Product of Individual Population Size and GPCD Target [(1) x (2)]	Current Population	Water Contractor Staff Recommended Individual GPCD Target**	Product of Individual Population Size and GPCD Target [(1) x (2)]
	(1)	(2)	(3)	(1)	(2)	(3)
Santa Rosa	163,436	136	22,227,296	163,436	127	20,756,372
North Marin	61,012	161	9,822,932	61,012	143	8,724,716
Petaluma	58,401	153	8,935,353	58,401	136	7,942,536
Rohnert Park	43,398	140	6,075,720	43,398	119	5,164,362
VOMWD	23,478	136	3,193,008	23,478	124	2,911,272
Sonoma	11,426	194	2,216,644	11,426	173	1,976,698
Cotati	7,711	134	1,033,274	7,711	130	1,002,430
Windsor	28,134	143	4,023,162	28,134	130	3,657,420
MMWD	190,600	137	26,074,080	190,600	124	23,634,400
Total	587,596		83,601,469	587,596		75,770,206
Regional GPCD Target [Total of (3) / Total of (1)]				<u>2015</u>	<u>2020</u>	
				142	129	
<i>* Current population from Water Contractor or from Department of Finance when not available from Water Contractor.</i>						
<i>** Subject to change. Target has to be set via public hearing.</i>						

Option 1 – Compliance Daily Per Capita Water Use Calculation

SCWA Service Area Regional Compliance Daily Per Capita Water Use (DWR Methodology # 9)				
SCWA Water Contractor	2015		2020	
	Projected Population	Annual Projected Water Demand after conservation and recycled water deducts in A.F.*	Projected Population	Annual Projected Water Demand after conservation and recycled water deducts in A.F.*
	(1)	(2)	(1)	(2)
Santa Rosa	194,851	27,194	204,519	27,934
North Marin	62,589	11,471	64,804	11,376
Petaluma	64,704	11,090	67,425	10,270
Rohnert Park	46,400	5,348	47,900	5,306
VOMWD	24,174	3,465	24,873	3,445
Sonoma	12,149	2,605	12,871	2,643
Cotati	8,105	1,079	8,518	1,096
Windsor	29,515	5,019	30,715	5,173
MMWD	195,200	27,761	198,200	27,359
Total	637,687	95,032	659,825	94,602
Projected Regional GPCD [Total of (2), in gpd / Total of (1)]			<u>2015</u>	<u>2020</u>
Is the Projected Regional GPCD equal to or under Regional GPCD Target?			133	128
			YES	YES
<i>* Water Conservation and recycled water deducts subject to change.</i>				

Data Reporting

A regional alliance must send a letter to DWR by July 1, 2011 stating that an alliance had been formed and including a list of alliance members. Regional alliances that do not submit a regional UWMP must submit regional alliance reports, including the following information:

- A list of the individual members in the alliance
- Baseline gross water use and service area population
- Individual 2015 and 2020 Water Use Targets for each alliance member as well as the regional 2015 and 2020 Water Use Targets
- Compliance year gross water use and service area population
- Adjustments to gross water use in compliance year

The above information must also be included in each regional alliance member's individual UWMP.

Compliance Assessment

If a regional alliance meets its regional target, all members in the alliance will be deemed compliant. If a regional alliance fails to meet its regional target, individual members who meet their individual targets will be deemed compliant. If a regional alliance fails to meet its regional target and an individual member fails to meet its individual target, the individual member will be deemed non-compliant.

Public Hearing Requirement

The legislation requires the urban retail water agency to select its 2020 water use target as detailed below:

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

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

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

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

Regional Alliance Agreements and Dissolution

It is up to each regional alliance to determine the appropriate Memorandum of Understanding (MOU) or Agreement for a Regional Alliance. DWR will not review or approve MOUs or Agreements used to create a Regional Alliance, however any MOU or Agreement must be in compliance with all applicable sections of the Water Code.

Individual members can withdraw from a regional alliance. The individual member that withdraws must comply individually with the water use target and the Regional Alliance must recalculate the regional baseline and target data. The Regional Alliance may dissolve prior to 2020. If a Regional Alliance dissolves, individual members must comply individually with the water use target.

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-Marín 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: _____
City of Santa Rosa

Date



Name: Gabriel A. Gonzalez
City of Rohnert Park

4/13/11

Date
Per Rohnert Park City Council
Resolution No. 2011-30 adopted on
April 12, 2011

Name: _____
City of Sonoma

Date

Name: _____
City of Cotati

Date



CITY OF ROHNERT PARK
OFFICE OF THE CITY MANAGER/CITY CLERK

*** City Clerk Use Only ***

NOTICE OF COUNCIL/CDC MEETING ACTION

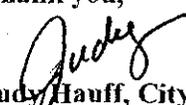
Date: April 29, 2004
To: Toni Bertolero, City Engineer
For Agenda Title: Consider and approve the Water Policy Resolution

Meeting Date: April 27, 2004
Agenda Item No: #8
Council Action: Approved as Amended
Vote: 5 - 0
Resolution No:
2004-95 Implementing Requirements Imposed on Specific Plan Areas Outside the City's 1999 Boundaries

The City Council approved the above item authorizing you to proceed with the appropriate follow-up and handling process. The enclosed documents checked below are provided for this purpose:

- Transmittal Report provided to Council for this agenda item.
- Resolution/executed
- Ordinance/executed
- One set of the fully executed agreement with original signatures for you to forward to the contractor. The second set with original signatures has been retained in the City Manager's Office for the City's Agreement Files.
- Two (2) sets of the Agreement signed by the appropriate City representatives and forwarded to you for signing. When available, please RETURN one set to the City Manager's Office for the City's Agreement Files.
- Other: The adoption of this resolution included amendments as recommended by Interim City Attorney, Michelle Kenyon, to change the word "defined" to "estimated" in 4.b.6, and to make some minor typographical corrections as follows: change 4.b.7 to 4.c; change 4.b.8 to 4.d; and change 4.b.9 to 4.e

Thank you,


Judy Hauff, City Clerk
For Carl Eric Leivo, City Manager

cc: Gabrielle Whelan, Interim City Attorney
Mike Bracewell, PW Utilities Services Supervisor
Engineering Staff: Darrin Jenkins, Civil Engineer; Rick Pedroncelli, Sr. Eng. Tech.; Eydie Tacata,
Admin. Asst.

FILE - ENGINEERING DEPT. - Water Policy Resolution

FILE - CROSS REFERENCE - Water Policy Resolution [SEE: ENGINEERING DEPT.]

FILE - Council Agenda Chron File/ADD TO: Agreement File List

JH/cam-M:2004 Council Agenda Action

FOR RESO. NO. 2004-95

CITY OF ROHNERT PARK
COUNCIL AGENDA ITEM TRANSMITTAL REPORT

Meeting Date: April 27, 2004
Department: Engineering
Submitted By: Toni Bertolero, City Engineer
(Name & Title)
Submittal Date: April 20, 2004
Agenda Title: Water Policy Resolution

Council:	X
Miscellaneous	
Communications	
Agenda 4/27/04	X
Copy to:	
Copy to:	

4/21/04
adm

Requested Council Action: Consider and approve the Water Policy Resolution

Summary:

The Water Policy Resolution implements a provision of the Judgement entered by the Sonoma County Superior Court in *South County Resource Preservation Committee v. City of Rohnert Park* (Case No. 224976 – the “Penngrove litigation”). That provision prevents the City from approving development within the specific plan areas identified in the General Plan if the development’s “net consumptive use impact” causes the City to exceed an average annual groundwater pumping rate of 2.3 mgd. The purpose of this resolution is to set forth the procedure the City will follow to implement this provision of the Judgement.

This resolution was first presented to Council on February 24, 2004. Three letters of opposition to the resolution were received at the meeting. In an effort to consider the comments and to make appropriate changes, the resolution was continued until such changes were made. Staff has attempted, on several occasions, to meet with John King and his attorney but was unsuccessful in meeting to discuss their concerns. Nevertheless, the attached resolution has been revised from the version presented on February 24, 2004 in an effort to address concerns stated in the letters that were submitted.

- CITY MANAGER'S RECOMMENDATION:** () Consent Item (✓) Regular Time
 (✓) Approval () Public Hearing Required
 () Not Recommended () Submitted with Comment
 () Policy Determination by Council
 () City Comments:

City Manager's Signature: Toni Bertolero Date: 4/21/04

**A Resolution of the City Council of the City of Rohnert Park
Implementing Requirements Imposed on Specific Plan Areas
Outside the City's 1999 Boundaries**

WHEREAS, a Judgment was entered on September 5, 2002 by the Sonoma County Superior Court in *South County Resource Preservation Committee and John King v. City of Rohnert Park* (Case No. 224976) (hereinafter "Judgment"), which directed that certain General Plan policies be interpreted and applied consistent with language included in the Judgment, and that the language in the Judgment be treated as part of the General Plan; and

WHEREAS, the General Plan of the City of Rohnert Park requires that all development outside the City's 1999 boundaries be included within one of the specific plan areas identified in the General Plan; and

WHEREAS, the purpose of this resolution is to implement language included in the Judgment by describing the way in which certain interpretations of the General Plan will be applied to new developments in specific plan areas outside the City's 1999 boundaries; and

WHEREAS, nothing in this Resolution shall be construed to impair the City's ability to deliver water to its customers or respond to the needs of its water customers.

NOW, THEREFORE, the City Council of the City of Rohnert Park does hereby resolve as follows:

1. This Resolution applies to the Specific Plan Areas outside the City's 1999 boundaries that are identified in the General Plan and development projects within those Areas for which the City determines a negative declaration, mitigated negative declaration or environmental impact report is required ("Projects"). The City's 1999 boundaries are depicted on Exhibit A to this Resolution.
2. A negative declaration, mitigated negative declaration, or environmental impact report for a Project shall include the following information:
 - a. Projected water demand for the Project before and after water supply reduction measures are implemented and an explanation of how these measures are planned to reduce consumption.
 - b. 20-year projection of water supplies available to the City during normal, single-dry, and multiple-dry years. These terms shall have the same meaning as set forth in the most recent Urban Water Management Plan for the City of Rohnert Park.
 - c. Analysis of whether the total projected water supplies will meet the projected water demand associated with the Project.
3. The approval of any tentative map for a Project shall be conditioned upon identification, before final map approval, of the water supply that is projected to serve the Project. Groundwater pumped from new or existing private wells within the Penngrove community (with zip code 94951 as of September 2002) will not be permitted as a water supply source.

4. Net Consumptive Water Use Impact Determinations. The information required by this section shall be submitted as part of the application for the first discretionary approval for a Project.
- a. Definitions for Net Consumptive Water Use Impact Determinations: The following definitions shall be used to make the Net Consumptive Water Use Impact Determinations required by this section:
- *Net Consumptive Water Use Impact* is the amount of potable water demand of a Project less reductions for (1) Potable Water Conservation Practices and (2) Potable Water Use Offsets. Only those Potable Water Use Conservation Practices and Potable Water Use Offsets that the City Engineer determines will be acceptable, feasible and consistent with the City's water conservation program may be used in determining a project's Net Consumptive Water Use Impact.
 - *Potable Water Conservation Practices* are on-site water conservation equipment and practices, including use of recycled water that reduces the projected potable water consumption of a Project and that can be implemented and completed with the Project.
 - *Potable Water Use Offsets* are water conservation equipment, practices or programs that are funded, constructed, installed or implemented by a Project and that offset the amount of potable water consumed by that Project, including use of recycled water, that are applied outside of the project area ("off-site"), but which reduce demand on the City's water system for potable water, or, the funding, construction or implementation of facilities or practices in any location that increase recharge to the groundwater supplies available to the City's municipal wells; all of which can be implemented and completed with the Project.
 - *Average Annual Groundwater Pumping Rate of 2.3 mgd* is the projected pumping rate from the City's municipal wells for the year estimated to be the Project's buildout year
- b. The following calculations shall be included in the application for the first discretionary approval for a Project and shall be reviewed by the City Engineer.
1. Determine a Project's potable water demand (before any proposed Potable Water Conservation Practices or Water Use Offsets) using information and a methodology approved by the City Engineer.
 2. Identify Potable Water Conservation Practices and estimated water savings. Potable water conservation practices selected for use in a Project requires concurrence from the City Engineer that the practices are acceptable and consistent with the City's Water Conservation Program. Water savings shall be determined using information and a methodology approved by the City Engineer.
 3. Identify onsite and/or offsite recycled water use that is included in the Potable Water conservation Practices or Water Use Offsets proposed for the Project. Offsite use is limited to areas of use in the City's water service area.

4. Identify Water Use Offsets. Said offsets must identify a projected reduction in potable water use in the City's water service area and/or increase in recharge of groundwater supplies available to the City's municipal wells. In calculating the projected reduction in potable water use savings from Potable Water Conservation Practices and Water Use Offsets, estimates shall comply with guidelines established by the California Urban Water Conservation Council or other recognized professional water industry organizations such as the American Water Works Association.
 5. Estimate the Project's Net Consumptive Water Use Impact taking into consideration the Potable Water Conservation Practices, and Water Use Offsets.
 6. Provide an estimated year of when buildout of all commercial and residential development for the Project will occur. For purposes of this document, the "buildout year" is estimated as the year when 80 percent of the commercial and residential development have been constructed and occupied. For the percentage calculation, commercial development will be based on square footage and residential development will be based on number of dwelling units.
- c. The City Engineer shall determine whether the Project's Net Consumptive Water Use Impact is projected to contribute to the City exceeding an Average Annual Groundwater Pumping Rate of 2.3 mgd. Said determination will consider the City's water supply sources, based on best reasonable information available at the time the determination is made. Such determination is without prejudice to the applicant submitting new or additional information and seeking a different determination.
 - d. The Project cannot be approved if its Net Consumptive Water Use Impact is determined to contribute to the City exceeding an Average Groundwater Pumping Rate of 2.3 mgd.
 - e. If a Project's Potable Water Conservation Practices and/or Recycled Water Use and/or Water Use Offsets include ongoing activities, the Developer will identify how these ongoing activities will remain in place and identify long-term operation and maintenance of the practices and water systems.
5. This Resolution implements General Plan policy by determining the reasonableness, legality and validity of decisions relating to Specific Plans. As such this Resolution is subject to the 90-day statute of limitations of Government Code section 65009(c).

DULY AND REGULARLY ADOPTED by the Rohnert Park City Council this 27th day of April, 2004.

ATTEST:

CITY OF ROHNERT PARK

Judy Hauff
 City Clerk Judy Hauff



Gregory A. Nordin
 Mayor Gregory A. Nordin

FLORES: AYE MACKENZIE: AYE SPRADLIN: AYE
VIDAK-MARTINEZ: AYE NORDIN: AYE
AYES: (5) NOES: (0) ABSENT: (0) ABSTAIN: (0)

Appendix E

Water Waste Prohibition Ordinance No. 723



CITY OF ROHNERT PARK
OFFICES OF THE CITY MANAGER & THE CITY CLERK

*** City Clerk Use Only ***

NOTICE OF COUNCIL/CDC MEETING ACTION

Date: October 29, 2004

To: **Darrin Jenkins, City Engineer**

For Agenda Title: Water Waste Ordinance, Second Reading

Meeting Date: October 26, 2004

Agenda Item No: # 11

Council Action: Approved as Submitted

Vote: 5 - 0

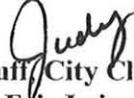
Ordinance No:

723 (for adoption) Repealing and Replacing Chapter 13.62, Water Waste Regulations, of the Rohnert Park Municipal Code (Recycled Water Use)

The City Council approved the above item authorizing you to proceed with the appropriate follow-up and handling process. The enclosed documents checked below are provided for this purpose:

- Transmittal Report provided to Council for this agenda item.
- Resolution/executed
- Ordinance/executed
- One set of the fully executed agreement with original signatures for you to forward to the contractor. The second set with original signatures has been retained in the City Manager's Office for the City's Agreement Files.
- Two (2) sets of the Agreement signed by the appropriate City representatives and forwarded to you to obtain other necessary signatures. When available, please RETURN one fully executed set to the City Manager's Office for the City's Agreement Files.
- Other

Thank you,


Judy Hauff, City Clerk
For Carl Eric Leivo, City Manager

cc: Eydie Tacata, Administrative Assistant
Toni Bertolero, Winzler & Kelly Engineers
Mary Grace Pawson, Winzler & Kelly
Carol Mendenhall, Office Asst. II/Deputy City Clerk (to handle process for posting, summary publication and codification of this ordinance)
FILE – ORDINANCE FILES – Water Waste Regulations (Recycled Water Use)
FILE - Council Agenda Chron File

JH/cam-M:2004 Council Agenda Action

ORDINANCE NO. 723

**AN ORDINANCE REPEALING AND REPLACING
CHAPTER 13.62, WATER WASTE REGULATIONS, OF THE ROHNERT PARK
MUNICIPAL CODE (Recycled Water Use)**

WHEREAS, the City of Rohnert Park ("City") is an urban water supplier that delivers water directly to more than 42,000 customers using water from the Sonoma County Water Agency ("Agency"), local groundwater and recycled water and;

WHEREAS, the City is committed to avoiding waste and assuring that its water resources are employed for beneficial use and;

WHEREAS, recycled water is an important part of the City's overall water supply strategy and;

WHEREAS, the Chapter 7 of Division 7 of the State of California's Water Code (beginning with section 13550) provides that it is a waste and unreasonable use to employ raw and/or potable water in certain circumstances when recycled water is available;

NOW THEREFORE, the City Council of the City of Rohnert Park does ordain as follows:

SECTION 1. Chapter 13.62, "Water Waste Regulations," of the Rohnert Park Municipal Code is repealed and replaced as follows:

"Chapter 13.62

WATER WASTE REGULATIONS

Sections:

13.62.010	Purpose.
13.62.020	Definitions.
13.62.030	Non Essential Uses.
13.62.040	Recycled Water Service Required.
13.62.041	Recycled Water Service Connection Fees.
13.62.042	Recycled Water Service Charges.
13.62.050	Violation--Enforcement.
13.62.060	Exempt Water Uses.
13.62.070	Special Exemptions.

13.62.010 Purpose.

The purpose of this chapter is to promote the efficient use of the entire water supply provided by the city; to eliminate the intentional or unintentional waste of water when a reasonable alternative solution is available; and to prohibit the use of equipment that is wasteful.

13.62.020 Definitions.

- A. "City" means the City of Rohnert Park acting by and through the City of Rohnert Park public works department as operator of the City of Rohnert Park water system.
- B. "City council" means the City Council of the City of Rohnert Park.
- C. "City manager" means the city manager of the city or his or her designee.
- D. "Customer" means any person, within or outside of the geographic boundaries of the city of who uses water supplied by the city.
- E. "Person" means any person, firm, partnership, association, corporation, company, organization, or governmental entity.
- F. "Recycled water" means water treated in accordance with Title 22, Section 60301 et. seq. of the California Code of Regulations and suitable for reuse under the circumstances outlined.
- G. "State health standards" means Title 22 Section 60301 et. seq. as it may be amended from time to time.
- H. "Subregional system" means the City of Santa Rosa's Subregional Water Reclamation System which is the current supplier of recycled water in the City.

13.62.030 Nonessential uses.

No customer of the city shall use or permit the use of potable water from the city for residential, commercial, institutional, industrial, agricultural or other purposes for the following nonessential uses:

- A. 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 reduce or eliminate materials dangerous to public safety.
- B. The escape of water through breaks or leaks within the customer's plumbing or private distribution system for a period greater than 72 hours after discovery of the break or leak or receipt of notice from the city.
- C. Irrigation in a manner or to an extent which allows excessive runoff of water or unreasonable over-spray of the areas being watered.
- D. Washing cars, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle.
- E. Water for non-recycling decorative water fountains.
- F. Water for single pass evaporative cooling systems for air conditioning in all connections installed after the effective date of this ordinance, unless required for health or safety reasons.
- G. Water for new non-recirculating conveyor car wash systems.
- H. Water for new non-recirculating industrial clothes washing systems.

13.62.040 Recycled Water Service Required.

Upon written notification from the city, new applicants for water service whose properties may be served by recycled water, shall connect their property to recycled water service for those uses for which the use of potable domestic water would be deemed a waste or unreasonable use of water as specified in Division 7, Chapter 7, of the California Water Code (Section 13550 et. seq.) and the state and local regulations promulgated pursuant thereto. Failure of a new customer to accept service of recycled water when it is made available, where use of potable water would otherwise be deemed a waste or unreasonable use of water, shall be grounds for termination of the customer's potable water service. Failure of a recycled water customer to comply with the conditions specified for its use shall be deemed a violation and shall be subject to enforcement as outlined in Section 13.64.050.

13.62.041 Recycled Water Connection Fees.

Recycled Water Connection Fees for new customers shall be in accordance with the schedule adopted by resolution by the city or the subregional system.

All customers are liable for the cost of connecting plumbing at the point of connection as determined by the city and any costs of making private plumbing and irrigation systems conform to state health standards.

13.62.042 Recycled Water Service Charges.

Recycled Water Service Charges shall be established by resolution of the city and/or the subregional system.

13.62.050 Violation--Enforcement.

The violation of each provision of this chapter, and each separate violation thereof, shall be deemed a separate offense, and shall be enforced as an infraction in accordance with Chapter 1.24 of the Rohnert Park Municipal Code. Fees and charges for the activities below shall be established by resolution of the city council.

- A. Personal contact with the customer at the address of the water service.
- B. Written notice, sent by certified mail, to the customer of the water waste violation including a specified period of time to correct the violation or request a hearing.
- C. The city may levy a water waste penalty to the customer.
- D. After notice and a hearing provided in accordance with section 13.64.051 below, the city may authorize 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, service shall not be reinstated until verified by the city manager that the violation has been corrected and all charges and fees have been paid.

13.62.051 Notice and Hearing.

Before terminating water service, the city manager shall give written notice to the customer. The customer shall have five business days from the date of service of the notice to request a hearing before the city manager or his or her designee in order to present any and all evidence they may have as to why a restrictor should not be installed or service terminated. If a hearing is requested, the city manager or his or her designee shall schedule a date and time for said hearing as soon as possible after the request is filed, but not later than five business days after the filing or such request for hearing. At the hearing, the customer and the city may offer evidence. The city manager shall make a final determination as to whether service should be restricted or terminated and under what conditions.

13.62.052 Violation--Additional remedy.

As an additional remedy, the violation of any provision of this chapter by any person who has received more than one written warning pursuant to Section 13.64.040 to refrain from the same or any other violation under this chapter in one calendar year shall be deemed and is declared to be, a public nuisance and may be subject to abatement in accordance with Chapter 1.24 of the Rohnert Park Municipal Code.

13.62.070 Exempt Water Uses.

All water use associated with the operation and maintenance of fire suppression equipment or employed by the city for water quality flushing and sanitation purposes shall be exempt from the provisions of this chapter.

13.62.080 Special Exemptions.

Any customer of the city may make written application for a special exemption from the provisions of this chapter. This application shall describe in detail why the applicant believes a special exemption is justified.

The city manager may grant variances for the 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 or undue hardship on the applicant or public, including but not limited to adverse economic impacts such as loss of production or jobs.

The decision of the city manager may be appealed to the city council by submitting a written appeal to the city clerk within 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 or proper. Special exemptions granted by the city council shall be documented in writing.”

SECTION 2. REPEAL OF CONFLICTING ORDINANCES. All former Ordinances or parts thereof conflicting or inconsistent with the provisions of this Ordinance or of the Code hereby adopted are thereby repealed.

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

SECTION 4. CEQA. In accordance with Public Resources Code section 21065, this ordinance is not a Project subject to the California Environmental Quality act.

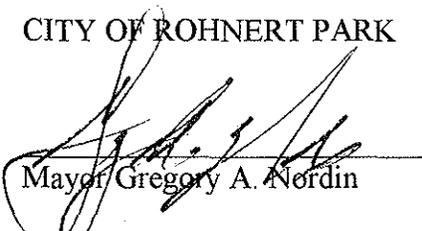
SECTION 5. EFFECTIVE DATE. This ordinance shall be in full force and effective 30 days after its adoption and shall be published and posted as required by law.

This ordinance was introduced on the 12th day of October, 2004 and

DULY AND REGULARLY ADOPTED by the City Council of the City of Rohnert Park this 26th day of October, 2004 by the following vote:

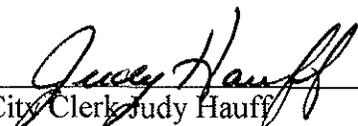
- AYES: **Five (5) Councilmembers Flores, Mackenzie, Spradlin, Vidak-Martinez and Mayor Nordin**
- NOES: **None (0)**
- ABSENT: **None (0)**
- ASBSTAIN: **None (0)**

CITY OF ROHNERT PARK



Mayor Gregory A. Nordin

ATTEST:



City Clerk Judy Hauff



Approved as to Form:



Interim City Attorney Gabrielle P. Whelan



CITY OF ROHNERT PARK
OFFICES OF THE CITY MANAGER & THE CITY CLERK

*** City Clerk Use Only ***

NOTICE OF COUNCIL/CDC MEETING ACTION

Date: October 29, 2004

To: Darrin Jenkins, City Engineer

For Agenda Title: Water Shortage Emergency Plan Ordinance, 2nd Reading and Adoption

Meeting Date: October 26, 2004

Agenda Item No: # 12

Council Action: Approved as Submitted

Vote: 5 - 0

Ordinance No:

724 (for adoption) Amending Title 13 of the Rohnert Park Municipal Code to Establish a Water Shortage Emergency Plan

The City Council approved the above item authorizing you to proceed with the appropriate follow-up and handling process. The enclosed documents checked below are provided for this purpose:

- Transmittal Report provided to Council for this agenda item.
- Resolution/executed
- Ordinance/executed
- One set of the fully executed agreement with original signatures for you to forward to the contractor. The second set with original signatures has been retained in the City Manager's Office for the City's Agreement Files.
- Two (2) sets of the Agreement signed by the appropriate City representatives and forwarded to you to obtain other necessary signatures. When available, please RETURN one fully executed set to the City Manager's Office for the City's Agreement Files.
- Other

Thank you,


Judy Hauff, City Clerk
For Carl Eric Leivo, City Manager

cc: Eydie Tacata, Administrative Assistant
Toni Bertolero, Winzler & Kelly Engineers
Mary Grace Pawson, Winzler & Kelly
Carol Mendenhall, Office Asst. II/Deputy City Clerk (to handle process for posting, summary publication and codification of this ordinance)
FILE - ORDINANCE FILES - Water Shortage Emergency Plan
FILE - Council Agenda Chron File

JH/cam-M:2004 Council Agenda Action

ORD. 724

Council:	X
Miscellaneous	
Communications	
Agenda 10/26/04	X
Copy to:	
Copy to:	

CITY OF ROHNERT PARK
COUNCIL AGENDA ITEM TRANSMITTAL REPORT

Meeting Date: October 26, 2004
 Department: Engineering
 Submitted By: Darrin Jenkins, City Engineer
 (Name & Title)
 Submittal Date: October 18, 2004
 Agenda Title: Water Shortage Emergency Plan Ordinance
 2nd Reading and Adoption

10/26/04
EB

Requested Council Action: Second reading and adoption of the Ordinance Amending Title 13 *Water and Sewers* and Adding Section 13.66 to the Municipal Code and Waive the Reading and Request the Reading of the Title Thereof.

Summary:

Council is advised that the first reading had a clerical error on the title. The section that is being added is Section 13.66 and not Section 13.64 as previously referenced in the introduction and first reading. The appropriate corrections have been made to the ordinance. The Interim City Attorney has advised that this second reading and adoption can remain on the Consent Calendar so long as the clerical errors have been corrected.

The City is an urban water supplier that delivers water directly to more than 42,000 customers using water from the Sonoma County Water Agency ("Water Agency") as well as its own local groundwater supply. Because of the number of water customers it has, the State required the City to prepare an Urban Water Management Plan (UWMP). The City of Rohnert Park, along with other water contractors and the Water Agency, prepared the 2000 UWMP. The document identified a "model" water shortage emergency plan ordinance that should be adopted countywide. The reason for adopting such an ordinance is to have a plan in place should deliveries from the Water Agency or other sources be reduced due to drought and other limitations resulting from water supply shortage conditions. Rohnert Park would be the first to adopt the ordinance but it is expected that other cities and agencies would follow.

The proposed ordinance identifies three stages of water conservation. Stage 1 is voluntary water conservation. This stage identifies how water customers could voluntarily cut back usage to result in a 10 percent reduction in the system's overall water use. Stage 2 is mandatory water conservation and would be "triggered" by declaration of a Stage 2 emergency by City Council resolution. The declaration would be made upon recommendation by the City Manager based on a water supply and delivery projection by the City Engineer. Stage 3 is also mandatory conservation but would effect a greater reduction in water use by prohibiting additional water use activities. The trigger mechanism is the same as Stage. There are exceptions that may be granted by the City Manager and the ordinance outlines how those exceptions would be made.

The proposed ordinance is not intended to prevent the City 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. The City is required by the State to prepare an Emergency Response Plan for its drinking water system by the end of December 2004. The emergency response plan is the appropriate document to address such catastrophic events and how the City would handle notifications and procedures for responding to such an event.

- CITY MANAGER'S RECOMMENDATION:**
- Approval
 - Not Recommended
 - Policy Determination by Council
 - City Comments:
- Consent Item
 - Public Hearing Required
 - Submitted with Comment
- Regular Time

City Manager's Signature: Thomas Bullard Date: 10-20-2004
 City Manager Pro Tempore Thomas R. Bullard

AN ORDINANCE AMENDING
TITLE 13 OF THE ROHNERT PARK MUNICIPAL CODE
TO ESTABLISH A
WATER SHORTAGE EMERGENCY PLAN

WHEREAS, nothing in this ordinance will preclude the City 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.

NOW THEREFORE, the City Council of the City of Rohnert Park does ordain as follows:

SECTION 1. The Municipal Code of the City of Rohnert Park is hereby amended by adding Chapter 13.66 Water Shortage Emergency Plan, to Title 13, Water and Sewers, to read as follows:

Chapter 13.66

WATER SHORTAGE EMERGENCY PLAN

Sections:

13.66.010	Definitions.
13.66.020	Authorization.
13.66.030	Application.
13.66.040	Water waste prohibitions.
13.66.050	Water conservation stages.
13.66.060	Exceptions and application procedures for exceptions.
13.66.070	Violation--Enforcement.
13.66.080	Notice and hearing.
13.66.090	Violation--Additional remedy.

13.66.010 Definitions.

- A. The "City" means the City of Rohnert Park acting by and through the City of Rohnert Park public works department as operator of the City of Rohnert Park water system.
- B. "Manager" is the city manager of the City of Rohnert Park.

- C. "Person" means any person, firm, partnership, association, corporation, company, organization, or governmental entity.
- D. "Customer" means any person, whether within or without the geographic boundaries of the City of Rohnert Park, who uses water supplied by the City.
- E. "GPD" means gallons per day.
- F. "Water" means potable water.

13.66.020 Authorization. The City Manager or his or her designee, is authorized and directed to implement the applicable provisions of this chapter upon adoption of a City Council resolution determining that such implementation is necessary to protect the public health, safety, and welfare.

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

13.66.040 Water Waste Prohibitions. Non-essential uses and exemptions are those set forth in Chapter 13.62 of the Rohnert Park Municipal Code and shall be adhered to notwithstanding any provision in this chapter.

13.66.050 Water conservation stages. No customer of the City shall make, cause, use, or permit the use of water from the City for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this chapter, or in an amount in excess of that use permitted by either Conservation Stage 2 or 3 when in effect as declared by separate resolution of the City Council, in accordance with the provisions of this Chapter.

- A. Stage 1. Voluntary Conservation. In order to achieve an overall system-wide reduction goal of 10 percent, 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. Utilize water conservation incentive, rebate and giveaway programs to replace water guzzling plumbing fixtures and appliances with water efficient models.
 - 6. Utilize City information regarding using water efficiently, reading water meters, repairing ordinary leaks, and water efficient landscape.
- B. Stage 2. Mandatory Compliance -- Water Alert. The City Council may by resolution declare a Conservation Stage 2 upon recommendation by the City Manager based on water supply and delivery projections by the City Engineer that an overall system-wide reduction of 20 percent is necessary, taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water

supply. In order to achieve an overall system-wide reduction of 20 percent, the following activities shall be prohibited:

1. Non-essential uses of water, including the following:
 - a. Refilling or initial filling of a swimming pool
 - b. Non-commercial washing of privately-owned motor vehicles, trailers and boats except from a bucket and except that a hose equipped with a shut-off nozzle may be used to rinse a vehicle.
 - d. Any use of water from a fire hydrant except for fighting fires or essential construction needs.
 - e. Use of water for dust control at construction sites.
2. Water use by a vehicle washing facility in excess of 20% less than the amount used by it during the corresponding billing period in the prior year.
3. Water use for any non-residential use in excess of 20% less than the amount used by the customer during the corresponding billing period in the prior year.

C. Stage 3. Mandatory Compliance -- Water Emergency. The City Council may by resolution declare a Conservation Stage 3 upon recommendation by the City Manager based on water supply and delivery projections by the City Engineer that an overall system-wide reduction of 30 percent is necessary, taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply. In order to achieve an overall system-wide reduction of 30 percent, the following activities shall be prohibited:

1. Any activities prohibited during a Conservation Stage 2.
2. Watering any residential lawn, or any commercial or industrial area lawn irrigated with potable water, at any time day or night.
3. Planting any new landscaping, except for designated drought resistant landscaping prescribed by the city manager or designated representative.
4. All day and night-time irrigation sprinkling unless only a hand held nozzle is used. An exception will be made to permit drip irrigation for established perennial plants and trees using manual or automatic time-controlled water application.
5. Planting of new annual plants, vegetables, flowers or vines may not be planted until the Stage 3 emergency is over.

13.66.060 Exceptions and application procedures for exceptions. Any customer of the City may make written application for an exception. Said application shall describe in detail why applicant believes an exception is justified.

- A. The City Manager may grant exceptions 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 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 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. Exceptions granted by the City Council shall be prepared in writing and the City Council may require the exception be recorded at applicant's expense.

13.66.070 Violation--Enforcement. The violation of each provision of this chapter, and each separate violation thereof, shall be deemed a separate offense, and shall be enforced as an infraction in accordance with Chapter 1.24 of the Rohnert Park Municipal Code. The City may take some or all of the following actions. Fees and charges for the activities below may be established by resolution of the City Council.

- A. 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.
- B. Written notice to the customer of the water waste violation including a specified period of time to correct the violation.
- C. After notice and a hearing provided in accordance with section 13.66.080 below, the City Council may authorize the installation of a flow-restricting device on the service line and require payment of a fee in amount set by City Council resolution.
- D. The City Council may charge a water waste fee to the customer in an amount set by City Council resolution.
- E. After notice and a hearing provided in accordance with section 13.66.080 below, the City Council may authorize 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, service shall not be reinstated until verified by the City Manager that the violation has been corrected and all charges and fees have been paid.

13.66.080 Notice and hearing. Before either installing a water restrictor or terminating water service, the City shall give written notice to the person responsible for the service connection to be either restricted or terminated of its intention to do so. The person or persons to whom notice is given shall have five business days from the date of service of the notice to request a hearing before the city manager or his or her designee in order to present any and all evidence they may have as to why a restrictor should not be installed or service terminated. If a hearing is requested, the City Manager or his or her designee shall schedule a date and time for said hearing as soon as possible after the request is filed, but not later than five business days after the filing or such request for hearing. At the hearing, the person whose service connection is to be restricted or terminated and the utilities personnel may offer evidence. The City Manager or his or her designee shall make a final determination as to whether service should be restricted or terminated and under what conditions.

13.66.090 Violation--Additional remedy. As an additional remedy, the violation of any provision of this chapter by any person who has received more than one written warning pursuant to Section 13.66.070 to refrain from the same or any other violation under this chapter in one calendar year shall be deemed and is declared to be, a public nuisance and may be subject to abatement in accordance with Chapter 1.24 of the Rohnert Park Municipal Code.

SECTION 2. Repeal of Conflicting Ordinances. All former Ordinances or parts thereof conflicting or inconsistent with the provisions of this Ordinance or of the Code hereby adopted are thereby repealed.

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

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. Pursuant to Health and Safety Code section 21065, this Ordinance is not a project subject to the California Environmental Quality Act.

This ordinance was introduced on the 12th day of October, 2004 and

DULY AND REGULARLY ADOPTED by the City Council of the City of Rohnert Park this 26th day of October, 2004 by the following vote:

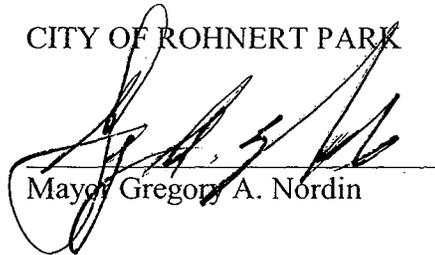
AYES: **Five (5) Councilmembers Flores, Mackenzie, Spradlin, Vidak-Martinez and Mayor Nordin**

NOES: **None (0)**

ABSENT: **None (0)**

ASBSTAIN: **None (0)**

CITY OF ROHNERT PARK



Mayor Gregory A. Nordin

ATTEST:



City Clerk Judy Hauff



Approved as to Form:



Interim City Attorney Gabrielle Whelan



CITY OF ROHNERT PARK
OFFICES OF THE CITY MANAGER & THE CITY CLERK

*** City Clerk Use Only ***

NOTICE OF COUNCIL/CDC MEETING ACTION

Date: October 14, 2004

To: Darrin Jenkins, Interim City Engineer

For Agenda Title: Water Shortage Emergency Plan Ordinance

Meeting Date: October 12, 2004

Agenda Item No: # 9

Council Action: Approved as Submitted

Vote: 4 - 0 - 1 (JM absent)

Ordinance No:

724 (for Intro.) Amending Title 13, Water and Sewers, of the Rohnert Park Municipal Code to Establish a Water Shortage Emergency Plan

The City Council approved the above item authorizing you to proceed with the appropriate follow-up and handling process. The enclosed documents checked below are provided for this purpose:

- Transmittal Report provided to Council for this agenda item.
- Resolution/executed
- Ordinance (Original retained for future agenda item)
- One set of the fully executed agreement with original signatures for you to forward to the contractor. The second set with original signatures has been retained in the City Manager's Office for the City's Agreement Files.
- Two (2) sets of the Agreement signed by the appropriate City representatives and forwarded to you to obtain other necessary signatures. When available, please RETURN one fully executed set to the City Manager's Office for the City's Agreement Files.
- Other - By copy of this notice, Carol Mendenhall is requested to proceed with publication & posting of the summary for this ordinance when received from Mary Grace Pawson of Winzler & Kelly Engineers

Thank you,


Judy Hauff, City Clerk
For Carl Eric Leivo, City Manager

cc: Toni Bertolero, Winzler & Kelly Engineers
Mary Grace Pawson, Winzler & Kelly Engineers
Carol Mendenhall, Office Asst. II/Deputy City Clerk
FILE - FUTURE COUNCIL AGENDA ITEM: October 26, 2004
FILE - Council Agenda Chron File

JH/cam-M:2004 Council Agenda Action

FOR ORD. NO. 724

CITY OF ROHNERT PARK
COUNCIL AGENDA ITEM TRANSMITTAL REPORT

Meeting Date: October 12, 2004
Department: Engineering
Submitted By: Darrin Jenkins, City Engineer
(Name & Title)
Submittal Date: September 30, 2004

Council:	X
Miscellaneous	
Communications	
→ Agenda 10/12/04	X
Copy to:	
Copy to:	

(for Intro.)

10/6/04
CJM

Agenda Title: Water Shortage Emergency Plan Ordinance
Introduction and 1st Reading

Requested Council Action: Introduce the Ordinance Amending Title 13 *Water and Sewers* and Adding Section 13.64 to the Municipal Code and Waive the Reading and Request the Reading of the Title Thereof.

Summary:

The City is an urban water supplier that delivers water directly to more than 42,000 customers using water from the Sonoma County Water Agency ("Water Agency") as well as its own local groundwater supply. Because of the number of water customers it has, the State required the City to prepare an Urban Water Management Plan (UWMP). The City of Rohnert Park, along with other water contractors and the Water Agency, prepared the 2000 UWMP. The document identified a "model" water shortage emergency plan ordinance that should be adopted countywide. The reason for adopting such an ordinance is to have a plan in place should deliveries from the Water Agency or other sources be reduced due to drought and other limitations resulting from water supply shortage conditions or other water delivery conditions. Rohnert Park would be the first to adopt the ordinance but it is expected that other cities and agencies would follow.

The proposed ordinance identifies three stages of water conservation. Stage 1 is voluntary water conservation and is intended to be in place at all times. This stage identifies how water customers could voluntarily cut back usage to result in a 10 percent reduction in the system's overall water use. Stage 2 is mandatory water conservation and would be "triggered" by declaration of a Stage 2 emergency by City Council resolution. The declaration would be made upon recommendation by the City Manager based on a water supply and delivery projection by the City Engineer of the need for the reduction taking into consideration projections and estimates made by the Water Agency. Stage 3 is also mandatory conservation but would effect a greater reduction in water use by prohibiting additional water use activities. The trigger is the same as Stage 2 and the City Engineer's projections would show a more drastic reduction is needed as compared to Stage 2. There are exceptions that may be granted by the City Manager and the ordinance outlines how those exceptions would be made.

The proposed ordinance is not intended to prevent the City 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. The City is required by the State to prepare an Emergency Response Plan for its drinking water system by the end of December 2004. The emergency response plan is the appropriate document to address such catastrophic events and how the City would handle notifications and procedures for responding to such an event.

- CITY MANAGER'S RECOMMENDATION:**
- Approval
 - Not Recommended
 - Policy Determination by Council
 - City Comments:
 - Consent Item
 - Public Hearing Required
 - Submitted with Comment
 - Regular Time

City Manager's Signature:  Date: 10/6/04

ORDINANCE NO. 724

**AN ORDINANCE AMENDING
TITLE 13, WATER AND SEWERS, OF THE ROHNERT PARK MUNICIPAL CODE
TO ESTABLISH A
WATER SHORTAGE EMERGENCY PLAN**

WHEREAS, the City Council of the City of Rohnert Park wishes to establish a water shortage emergency plan for use in the event of a prolonged water shortage as opposed to a catastrophic event; and

WHEREAS, nothing in this ordinance will preclude the City 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.

NOW THEREFORE, the City Council of the City of Rohnert Park does ordain as follows:

SECTION 1. The Municipal Code of the City of Rohnert Park is hereby amended by adding Chapter 13.64 Water Shortage Emergency Plan, to Title 13, Water and Sewers, to read as follows:

Chapter 13.64

WATER SHORTAGE EMERGENCY PLAN

Sections:

- | | |
|-----------|---|
| 13.64.010 | Definitions. |
| 13.64.020 | Authorization. |
| 13.64.030 | Application. |
| 13.64.040 | Water waste prohibitions. |
| 13.64.050 | Water conservation stages. |
| 13.64.060 | Exceptions and application procedures for exceptions. |
| 13.64.070 | Violation--Enforcement. |
| 13.64.080 | Notice and hearing. |
| 13.64.090 | Violation--Additional remedy. |

13.64.010 Definitions.

- A. The "City" means the City of Rohnert Park acting by and through the City of Rohnert Park public works department as operator of the City of Rohnert Park water system.
- B. "Manager" is the city manager of the City of Rohnert Park.
- C. "Person" means any person, firm, partnership, association, corporation, company, organization, or governmental entity.

D. "Customer" means any person, whether within or without the geographic boundaries of the City of Rohnert Park, who uses water supplied by the City.

E. "GPD" means gallons per day.

F. "Water" means potable water.

13.64.020 Authorization. The City Manager or his or her designee, is authorized and directed to implement the applicable provisions of this chapter upon adoption of a City Council resolution determining that such implementation is necessary to protect the public health, safety, and welfare.

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

13.64.040 Water Waste Prohibitions. Non-essential uses and exemptions are those set forth in Chapter 13.62 of the Rohnert Park Municipal Code and shall be adhered to notwithstanding any provision in this chapter.

13.64.050 Water conservation stages. No customer of the City shall make, cause, use, or permit the use of water from the City for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this chapter, or in an amount in excess of that use permitted by either Conservation Stage 2 or 3 when in effect as declared by separate resolution of the City Council, in accordance with the provisions of this Chapter.

- A. Stage 1. Voluntary Conservation. In order to achieve an overall system-wide reduction goal of 10 percent, 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. Utilize water conservation incentive, rebate and giveaway programs to replace water guzzling plumbing fixtures and appliances with water efficient models.
 6. Utilize City information regarding using water efficiently, reading water meters, repairing ordinary leaks, and water efficient landscape.
- B. Stage 2. Mandatory Compliance -- Water Alert. The City Council may by resolution declare a Conservation Stage 2 upon recommendation by the City Manager based on water supply and delivery projections by the City Engineer that an overall system-wide reduction of 20 percent is necessary, taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply. In order to achieve an overall system-wide reduction of 20 percent, the following activities shall be prohibited:

1. Non-essential uses of water, including the following:
 - a. Refilling or initial filling of a swimming pool
 - b. Non-commercial washing of privately-owned motor vehicles, trailers and boats except from a bucket and except that a hose equipped with a shut-off nozzle may be used to rinse a vehicle.
 - d. Any use of water from a fire hydrant except for fighting fires or essential construction needs.
 - e. Use of water for dust control at construction sites.
 2. Water use by a vehicle washing facility in excess of 20% less than the amount used by it during the corresponding billing period in the prior year.
 3. Water use for any non-residential use in excess of 20% less than the amount used by the customer during the corresponding billing period in the prior year.
- C. Stage 3. Mandatory Compliance -- Water Emergency. The City Council may by resolution declare a Conservation Stage 3 upon recommendation by the City Manager based on water supply and delivery projections by the City Engineer that an overall system-wide reduction of 30 percent is necessary, taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply. In order to achieve an overall system-wide reduction of 30 percent, the following activities shall be prohibited:
1. Any activities prohibited during a Conservation Stage 2.
 2. Watering any residential lawn, or any commercial or industrial area lawn irrigated with potable water, at any time day or night.
 3. Planting any new landscaping, except for designated drought resistant landscaping prescribed by the city manager or designated representative.
 4. All day and night-time irrigation sprinkling unless only a hand held nozzle is used. An exception will be made to permit drip irrigation for established perennial plants and trees using manual or automatic time-controlled water application.
 5. Planting of new annual plants, vegetables, flowers or vines may not be planted until the Stage 3 emergency is over.

13.64.060 Exceptions and application procedures for exceptions. Any customer of the City may make written application for an exception. Said application shall describe in detail why applicant believes an exception is justified.

- A. The City Manager may grant exceptions 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 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 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. Exceptions granted by the City Council shall be

prepared in writing and the City Council may require the exception be recorded at applicant's expense.

13.64.070 Violation--Enforcement. The violation of each provision of this chapter, and each separate violation thereof, shall be deemed a separate offense, and shall be enforced as an infraction in accordance with Chapter 1.24 of the Rohnert Park Municipal Code. The City may take some or all of the following actions. Fees and charges for the activities below may be established by resolution of the City Council.

- A. 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.
- B. Written notice to the customer of the water waste violation including a specified period of time to correct the violation.
- C. After notice and a hearing provided in accordance with section 13.30.110 below, the City Council may authorize the installation of a flow-restricting device on the service line and require payment of a fee in amount set by City Council resolution.
- D. The City Council may charge a water waste fee to the customer in an amount set by City Council resolution. E. After notice and a hearing provided in accordance with section 13.30.110 below, the City Council may authorize 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, service shall not be reinstated until verified by the City Manager that the violation has been corrected and all charges and fees have been paid.

13.64.080 Notice and hearing. Before either installing a water restrictor or terminating water service, the City shall give written notice to the person responsible for the service connection to be either restricted or terminated of its intention to do so. The person or persons to whom notice is given shall have five business days from the date of service of the notice to request a hearing before the city manager or his or her designee in order to present any and all evidence they may have as to why a restrictor should not be installed or service terminated. If a hearing is requested, the City Manager or his or her designee shall schedule a date and time for said hearing as soon as possible after the request is filed, but not later than five business days after the filing or such request for hearing. At the hearing, the person whose service connection is to be restricted or terminated and the utilities personnel may offer evidence. The City Manager or his or her designee shall make a final determination as to whether service should be restricted or terminated and under what conditions.

13.64.090 Violation--Additional remedy. As an additional remedy, the violation of any provision of this chapter by any person who has received more than one written warning pursuant to Section 13.30.100 to refrain from the same or any other violation under this chapter in one calendar year shall be deemed and is declared to be, a public nuisance and may be subject to abatement in accordance with Chapter 1.24 of the Rohnert Park Municipal Code.

SECTION 2. Repeal of Conflicting Ordinances. All former Ordinances or parts thereof conflicting or inconsistent with the provisions of this Ordinance or of the Code hereby adopted are thereby repealed.

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

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.

This ordinance was introduced on the 12th day of October, 2004 and

DULY AND REGULARLY ADOPTED by the City Council of the City of Rohnert Park this _____ day of _____, 2004 by the following vote:

AYES:

NOES:

ABSENT:

ASBSTAIN:

ATTEST:

CITY

FOR
INTRO.
ONLY

City Clerk Judy Hauff

Approved as to Form:

Gabrielle P. Whelan
Interim City Attorney Gabrielle P. Whelan



TARGETS / COMPLIANCE (CUWCC MOU)

Baseline / Initial GPCD
(Use option buttons to select)

GPCD in 2006 114.9
Baseline GPCD (1997 to 2006) 148.3

GPCD in 2010 92.5
GPCD Target for 2018 121.6

Potable Water GPCD for each Year in the
Baseline Period

Year	GPCD
2006	114.9
2005	122.8
2004	140.5
2003	141.1
2002	151.0
2001	157.4
2000	154.9
1999	163.5
1998	157.8
1997	179.3

Biennial GPCD Compliance Table

Year	Report	Target		Highest Acceptable Bound	
		% Base	GPCD	% Base	GPCD
2010	1	96.4%	143.0	100%	148.3
2012	2	92.8%	137.6	96.4%	143.0
2014	3	89.2%	132.3	92.8%	137.6
2016	4	85.6%	127.0	89.2%	132.3
2018	5	82.0%	121.6	82.0%	121.6

Monthly GPCD Data for Weather Normalization

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	51.5	63.0	82.5	73.8	90.6	113.2	119.2	137.6	120.9	101.4	77.2	79.7
Baseline avg*	101.5	97.4	110.8	129.0	161.6	195.8	214.1	205.4	189.7	156.4	113.8	104.3

* The average for each month is based on the baseline period 1997 to 2006

SCWA WATER USE											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Jan	32,257	46,268	40,779	35,180	25,319	64,464	42,303	36,051	125,104	123,015	113,299
Feb	30,628	37,470	44,032	36,993	90,152	43,504	43,036	27,925	123,059	106,976	96,448
Mar	31,280	58,975	57,410	60,440	31,850	33,327	42,487	42,187	104,062	118,959	99,314
Apr	44,639	75,918	54,020	62,998	40,364	49,399	52,833	41,397	120,785	120,520	95,114
May	72,334	84,715	35,129	92,805	72,413	96,580	93,378	62,210	188,336	170,180	182,106
Jun	88,951	111,759	85,479	131,169	104,637	126,374	137,300	113,875	156,305	131,464	185,321
Jul	143,691	130,332	138,405	129,174	123,337	161,863	152,621	122,993	111,315	136,010	198,075
Aug	117,298	110,782	153,071	121,430	120,920	140,619	111,428	112,061	182,040	175,701	175,871
Sep	110,456	91,232	120,294	102,359	90,152	92,418	105,436	149,272	159,740	145,996	164,213
Oct	77,221	56,368	93,788	71,816	85,691	82,390	93,130	126,743	151,773	177,005	167,040
Nov	44,639	36,819	84,659	82,116	46,902	44,877	41,442	75,556	134,709	111,462	111,195
Dec	59,301	67,772	49,453	53,526	52,359	33,690	29,637	130,286	113,117	101,119	94,323
Totalx1,000 gal	852,694	908,411	956,519	980,006	884,096	969,505	935,031	1,040,556	1,670,345	1,618,407	1,682,320

WELL PRODUCTION											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
JAN	126,628	103,385	110,760	105,155	82,269	82,698	66,040	93,117	0	1,048	0
FEB	103,404	97,464	82,150	102,416	72,536	73,598	80,354	85,689	278	187	28
MAR	115,579	110,690	87,910	105,904	121,384	107,691	85,509	82,886	60,486	2,489	656
APR	136,542	146,402	101,670	98,906	156,782	148,942	127,791	97,226	43,828	9,741	994
MAY	182,238	165,091	123,459	148,799	147,629	145,694	112,109	138,290	531	4,078	1,168
JUN	167,323	177,525	149,991	165,546	144,436	142,011	110,437	148,333	113,668	55,110	10,433
JUL	204,873	191,363	143,293	162,750	149,964	144,020	162,951	149,751	107,308	83,743	35,683
AUG	164,039	158,092	147,609	151,616	164,171	145,448	147,242	116,681	79,604	71,281	38,355
SEP	172,819	178,402	166,175	165,037	138,636	154,469	154,691	96,225	80,687	45,942	21,353
OCT	158,323	169,374	121,452	135,122	130,519	141,069	124,530	74,913	2,131	2,073	703
NOV	122,411	121,156	84,720	107,041	103,402	82,852	112,237	61,143	9,730	0	1,660
DEC	96,815	122,397	103,388	79,729	92,851	91,977	108,628	2,331	108	0	2,780
Totalx1,000 gal	1,750,994	1,741,341	1,422,577	1,528,021	1,504,579	1,460,469	1,392,519	1,146,586	498,359	275,692	113,813

Total Water Production											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
JAN	158,885	149,653	151,539	140,335	107,588	147,162	108,343	129,168	125,104	124,063	113,299
FEB	134,032	134,934	126,182	139,409	162,688	117,102	123,390	113,614	123,337	107,163	96,476
MAR	146,859	169,665	145,320	166,344	153,234	141,018	127,996	125,073	164,548	121,448	99,970
APR	181,181	222,320	155,690	161,904	197,146	198,341	180,624	138,623	164,613	130,261	96,108
MAY	254,572	249,806	158,588	241,604	220,042	242,274	205,487	200,500	188,867	174,258	183,274
JUN	256,274	289,284	235,470	296,715	249,073	268,385	247,737	262,208	269,973	186,574	195,754
JUL	348,564	321,695	281,698	291,924	273,301	305,883	315,572	272,744	218,623	219,753	233,758
AUG	281,337	268,874	300,680	273,046	285,091	286,067	258,670	228,742	261,644	246,982	214,226
SEP	283,275	269,634	286,469	267,396	228,788	246,887	260,127	245,497	240,427	191,938	185,566
OCT	235,544	225,742	215,240	206,938	216,210	223,459	207,660	201,656	153,904	179,078	167,743
NOV	167,050	157,975	169,379	189,157	150,304	127,729	153,679	136,699	144,439	111,462	112,855
DEC	156,116	190,169	152,841	133,255	145,210	125,667	138,265	132,617	113,225	101,119	97,103
Totalx1,000 gal	2,603,688	2,649,752	2,379,096	2,508,027	2,388,675	2,429,974	2,327,550	2,187,142	2,168,704	1,894,099	1,796,133

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Population	39,843	40,495	41,314	42,025	42,236	42,309	42,233	42,455	42,282	42,262	42,833
GPCD	179	179	158	164	155	157	151	141	141	123	115

The fields in red are required.



Agency name: Primary contact: First name:

Reporting unit name (District name): Last name:

Reporting unit number: Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

2009

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator Yes No

Contact Information

First Name:

Last Name:

Title:

Phone:

Email:

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
- b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- c. Support legislation or regulations that prohibit water waste
- d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- e. Support local ordinances that prohibit water waste
- f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

- a. A description of, or electronic link to, any ordinances or terms of service
- b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Enter a description:

The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:
 First name:
 Last name:
 Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

[View MOU](#)



2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes No

If yes, answer the following:

Determine metered sales in AF:

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF:

Determine total supply into the system in AF:

Does your agency keep necessary data on file to verify the answers above? Yes No

Did your agency complete a full-scale system water audit during 2009? Yes No

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes No

Did your agency operate a system leak detection program? Yes No

Comments:

The fields in red are required.

Agency name: City of Rohnert Park

Primary contact:

First name: Darrin

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Reporting unit name

(District name) City of Rohnert Park

Last name: Jenkins

Reporting unit number: 6290

Email: dajenkins@rpcity.org



BMP 1.3 Metering with Commodity

[Link to FAQs](#)

[See the complete MOU: View MOU](#)

[See the coverage requirements for this BMP: ?](#)

Implementation

Does your agency have any unmetered service connections? Yes No

If YES, has your agency completed a meter retrofit plan? Yes No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No

Are all new service connections being billed volumetrically? Yes No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No

Please Fill Out The Following Matrix

Account Type ?	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume ?	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	7,655	7,655	7,655	Bi-monthly	6
Multi-Family	473	473	473	Bi-monthly	6
Commercial	549	549	549	Bi-monthly	6
Industrial	2	2	2	Bi-monthly	6
Dedicated Irrigation	321	321	321	Bi-monthly	6
Other				Other	
Other				Other	
Other				Other	
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

General Comments about BMP 1.3:

The fields in red are required.

Primary contact:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Agency name: City of Rohnert Park

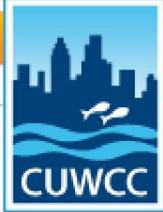
First name: Darrin

Reporting unit name (District name): City of Rohnert Park

Last name: Jenkins

Reporting unit number: 6290

Email: dajenkins@rpcity.org



BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

2009

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Increasing Block	Single-Family	1,931,400.00		1,682,875.20
Increasing Block	Multi-Family	1,405,200.00		103,984.32
Uniform	Commercial	501,300.00		120,692.16
Uniform	Industrial	3,810.00		439.68
Uniform	Dedicated Irrigation	354,900.00		70,568.34
Select a Rate Structure	Other			
Select a Rate Structure	Other			

Implementation Option (Conservation Pricing Option)

- Use Annual Revenue As Reported
- Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service Yes No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Single-Family	4,699,740.00		99,208.80
Uniform	Multi-Family	3,419,320.00		6,130.08
Uniform	Commercial	1,671,000.00		7,115.04
Uniform	Industrial	12,192.00		25.92
Select a Rate Structure	Other			
Select a Rate Structure	Other			
Select a Rate Structure	Other			

Comments:

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? Yes No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Did at least one Website Update take place during each quarter of the reporting year? Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <i>If yes, check the box.</i>	Comments
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>

Comments:

The fields in red are required.



Agency name: Primary contact: First name:

Reporting unit name (District name): Last name:

Reporting unit number: Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

2009

BMP 2.1 Public Outreach Cont'd

[View MOU](#)

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> <i>If yes, check the check box.</i>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? Yes No

Public Outreach Additional Information

Public Information Programs	Importance
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? Yes No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? Yes No

Market Research Topic

Brand Message

Brand Mission Statement

Community Committees

Do you have a community conservation committee?

Yes No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name

Type of Program

CLCA?

Green Building Programs?

Master Gardeners?

Cooperative Extension?

Local Colleges?

Other

Russian River Watershed Association (RRWA)

Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

The City is a member of the Russian River Watershed Association, which conducts some water conservation outreach activities.

The fields in red are required.



Agency name: City of Rohnert Park

Primary contact:

First name: Darrin

Reporting unit name (District name): City of Rohnert Park

Last name: Jenkins

Reporting unit number: 6290

Email: dajenkins@rpcity.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2009

BMP 2.2 School Education Programs, Retail Agencies

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? Yes No

Enter Wholesaler Names, separated by commas:

Materials meet state education framework requirements?

Description of Materials

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Number of students reached

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Number of Distribution

Annual budget for school education program

Description of all other water supplier education programs

School Program Activities

Classroom presentations:

Number of presentations

Number of attendees

Large group assemblies:

Number of presentations

Number of attendees

Children's water festivals or other events:

Number of presentations

Number of attendees

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

Number of attendees

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths

Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered

Total Funding

Teacher training workshops:

Number of presentations

Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips

Number of participants

College Internships in water conservation offered:

Number of internships

Total funding

Career fairs/workshops:

Number of presentations

Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable)

Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

Comments

2009 BMP 2.2 report from Sonoma County Water Agency is attached.

The fields in red are required.



Agency name:

Reporting unit name (District name)

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2009

BMP 2.1 Public Outreach

Is your agency performing Public Outreach for your Retailers?

Are there one or more retail agencies that count on your agency to help them comply with this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

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

Number of Public Contacts	Public Information Programs
1,325	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
11	Landscape water conservation media campaigns
19	General water conservation information
	Select a public contact
	Select a public contact

Contact with the Media

Are there one or more retail agencies that count on your agency to help them comply with this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

OR Wholesale Agency (Contacts with the Media)

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

Media Contacts List

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
12		Articles or stories resulting from outreach
20		News releases
125		Newspaper contacts
13		Television contacts
10		Radio contacts
		Select a type of media contact

Is a Wholesaler Agency Performing Website Updates?

Did one or more retail agencies rely on your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

www.sonomacountywater.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

- Water tips updated
- Save Our Water program link updated
- Campaign updated on conservation page
- Monthly water tips updated

Did at least one Website Update take place during each quarter of the reporting year?

Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <i>If yes, check the box.</i>	Comments
CII	\$85,000	<input checked="" type="checkbox"/>	Business Environmental Alliance
General	\$20,000	<input type="checkbox"/>	Sonoma County Fair
General	\$75,000	<input type="checkbox"/>	Summer Campaign
Landscape	\$15,000	<input type="checkbox"/>	Qualified Water Efficient Landscaper
Landscape	\$5,000	<input type="checkbox"/>	Bay Friendly Landscaping
		<input type="checkbox"/>	

Comments:

As a wholesaler we also do public outreach on behalf of our retailers. The flyers and/or brochures... are materials distributed at the Sonoma County Fair.

The fields in red are required.



Agency name: Sonoma County Water Agency
Reporting unit name (District name): Sonoma County Water Agency
Reporting unit number: 208

Primary contact:
First name: Carrie
Last name: Pollard
Email: carrie.pollard@scwa.ca.gov

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2009

BMP 2.2 School Education Programs

School Programs

Is your agency implementing school programs which can be counted to help another agency comply with this BMP?

Yes No

Enter retailer names, separated by commas:

Cities of Santa Rosa, Petaluma, Rohnert Park, Sonoma, Cotati, the Town of Windsor and the North Marin and Valley of the Moon Water Districts.

Materials meet state education framework requirements?

Description of Materials

Student Workbooks, Teacher Guides, Curriculum Guides, Supplemental Materials (Maps and Posters), Student Incentives (folders, pencils, pencil sharpeners, rulers, erasers, stickers, temporary tattoos)

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Student Workbooks, Student Incentives(folders, pencils, pencil sharpeners, rulers, erasers, stickers, temporary tattoos)

Number of students reached

7,380

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Student Workbooks, Incentives

Number of Distribution

5,264

Annual budget for school education program

Description of all other water supplier education programs

Assembly Program; Calendar Contest - elementary; Video Contest - high school; Lending Library (Books, Videos, Classroom Sets of Curriculum, watershed and groundwater models); Classroom Presentations; Field Trips; Creek Clean ups; Annual Newsletter for Teachers; Teacher Workshops

School Program Activities

Classroom presentations:

Number of presentations

Number of attendees

Large group assemblies:

Number of presentations

Number of attendees

Children's water festivals or other events:

Number of presentations

Number of attendees

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

Number of attendees

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Lending Library Materials
Water Awareness Calendar

Number distributed

5,105

Staffing children's booths at events & festivals:

Number of booths

7

Number of attendees

4,465

Water conservation contests such as poster and photo:

Description

Calendar Contest - grades 3-4
High School Video Contest

Number distributed

779

Offer monetary awards/funding or scholarships to students:

Number Offered

3

Total Funding

3,000

Teacher training workshops:

Number of presentations

2

Number of attendees

22

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips

65

Number of participants

1,719

College Internships in water conservation offered:

Number of internships

Total funding

Career fairs/workshops:

Number of presentations

11

Number of attendees

425

Additional program(s) supported by agency but not mentioned above:

Description

Provide Education Component for SYEC - a summer jobs program which employed 330 youth.

Number of events (if applicable)

9

Number of participants

330

Total reporting period budget expenditures for school education programs (include all agency costs):

\$588,083

Comments

Empty comment box

The fields in red are required.



Agency name:

Reporting unit name (District name)

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

2010

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator Yes No

Contact Information

First Name

Last Name

Title

Phone

Email

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
- b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- c. Support legislation or regulations that prohibit water waste
- d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- e. Support local ordinances that prohibit water waste
- f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

- a. A description of, or electronic link to, any ordinances or terms of service
- b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Enter a description:

The fields in red are required.



Agency name:

Reporting unit name (District name)

Reporting unit number:

Primary contact: First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

2010 BMP 1.2 Water Loss Control

[View MOU](#)



AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software Yes No
 Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

Water Audit Validity Score from AWWA spreadsheet

Agency Completed Training In The AWWA Water Audit Method Yes No

Agency Completed Training In The Component Analysis Process Yes No

Completed/Updated the Component Analysis (at least every 4 years)? Yes No

Component Analysis Completed/Updated Date

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective Yes No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective Yes No

Type of Program Activities Used to Detect Unreported Leaks

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)
157						

Comments:

The fields in red are required.

Agency name:

Primary contact:

Reporting unit name

(District name)

Last name:

Reporting unit number:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



BMP 1.3 Metering with Commodity 2010

[Link to FAQs](#)

See the complete MOU: [View MOU](#)

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? Yes No

If YES, has your agency completed a meter retrofit plan? Yes No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No

Are all new service connections being billed volumetrically? Yes No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	<input type="text" value="7,655"/>	<input type="text" value="7,655"/>	<input type="text" value="7,655"/>	Bi-monthly	<input type="text" value="6"/>
Multi-Family	<input type="text" value="473"/>	<input type="text" value="473"/>	<input type="text" value="473"/>	Bi-monthly	<input type="text" value="6"/>
Commercial	<input type="text" value="549"/>	<input type="text" value="549"/>	<input type="text" value="549"/>	Bi-monthly	<input type="text" value="6"/>
Industrial	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	Bi-monthly	<input type="text" value="6"/>
Dedicated Irrigation	<input type="text" value="321"/>	<input type="text" value="321"/>	<input type="text" value="321"/>	Bi-monthly	<input type="text" value="6"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	Other	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	Other	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	Other	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	Other	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	Other	<input type="text"/>

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Comments:

The fields in red are required.

Primary contact:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Agency name:

First name:

Reporting unit name (District name):

Last name:

Reporting unit number:

Email:



2010

BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
<input type="text" value="Increasing Bloc"/> ▼	<input type="text" value="Single-Family"/> ▼	<input type="text" value="1,603,500.00"/>		<input type="text" value="1,682,875.20"/>
<input type="text" value="Increasing Bloc"/> ▼	<input type="text" value="Multi-Family"/> ▼	<input type="text" value="1,433,700.00"/>		<input type="text" value="103,984.32"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Commercial"/> ▼	<input type="text" value="408,900.00"/>		<input type="text" value="120,692.16"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Industrial"/> ▼	<input type="text" value="130.50"/>		<input type="text" value="439.68"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Dedicated Irrigation"/> ▼	<input type="text" value="308,100.00"/>		<input type="text" value="70,568.64"/>
<input type="text" value="Select a Rate S"/> ▼	<input type="text" value="Other"/> ▼	<input type="text"/>		<input type="text"/>
<input type="text" value="Select a Rate S"/> ▼	<input type="text" value="Other"/> ▼	<input type="text"/>		<input type="text"/>

Implementation Option (Conservation Pricing Option)

- Use Annual Revenue As Reported
- Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service Yes No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
<input type="text" value="Uniform"/> ▼	<input type="text" value="Single-Family"/> ▼	<input type="text" value="3,901,850.00"/>		<input type="text" value="99,208.80"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Multi-Family"/> ▼	<input type="text" value="3,488,670.00"/>		<input type="text" value="6,130.08"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Commercial"/> ▼	<input type="text" value="1,363,000.00"/>		<input type="text" value="7,115.04"/>
<input type="text" value="Uniform"/> ▼	<input type="text" value="Industrial"/> ▼	<input type="text" value="416.16"/>		<input type="text" value="25.92"/>
<input type="text" value="Select a Rate S"/> ▼	<input type="text" value="Select a Custome"/> ▼	<input type="text"/>		<input type="text"/>
<input type="text" value="Select a Rate S"/> ▼	<input type="text" value="Other"/> ▼	<input type="text"/>		<input type="text"/>
<input type="text" value="Select a Rate S"/> ▼	<input type="text" value="Other"/> ▼	<input type="text"/>		<input type="text"/>

Comments:

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? Yes No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Did at least one Website Update take place during each quarter of the reporting year? Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <i>If yes, check the box.</i>	Comments
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>

Comments:

The fields in red are required.



Agency name:

Reporting unit name (District name)

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

2010

BMP 2.1 Public Outreach Cont'd

[View MOU](#)

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> If yes, check the check box.
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts?

Yes No

Public Outreach Additional Information

Public Information Programs	Importance
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? Yes No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? Yes No

Market Research Topic

Brand Message

Brand Mission Statement

Community Committees

Do you have a community conservation committee?

Yes No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name

Type of Program

CLCA?

Green Building Programs?

Master Gardeners?

Cooperative Extension?

Local Colleges?

Other Russian River Watershed Association

Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

The City is a member of the Russian River Watershed Association which conducts some water conservation outreach activities.

The fields in red are required.



Agency name: City of Rohnert Park

Reporting unit name (District name): City of Rohnert Park

Reporting unit number: 6290

Primary contact:

First name: Darrin

Last name: Jenkins

Email: dajenkins@rpcity.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2010

BMP 2.2 School Education Programs, Retail Agencies

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? Yes No

Enter Wholesaler Names, separated by commas:

Materials meet state education framework requirements?

Description of Materials

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Number of students reached

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Number of Distribution

Annual budget for school education program

Description of all other water supplier education programs

School Program Activities

Classroom presentations:

Number of presentations

Number of attendees

Large group assemblies:

Number of presentations

Number of attendees

Children's water festivals or other events:

Number of presentations

Number of attendees

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

Number of attendees

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths

Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered

Total Funding

Teacher training workshops:

Number of presentations

Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips

Number of participants

College Internships in water conservation offered:

Number of internships

Total funding

Career fairs/workshops:

Number of presentations

Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable)

Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

Comments

2010 BMP 2.2 report from Sonoma County Water Agency is attached.

The fields in red are required.



Agency name:
 Primary contact: First name:

 Reporting unit name (District name):
 Last name:

 Reporting unit number:
 Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2010

BMP 2.1 Public Outreach

Is your agency performing Public Outreach for your Retailers?

Are there one or more retail agencies that count on your agency to help them comply with this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

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

Number of Public Contacts	Public Information Programs
1,325	Newsletter articles on conservation
11	Newsletter articles on conservation
19	General water conservation information
	Select a public contact
	Select a public contact

Contact with the Media Are there one or more retail agencies that count on your agency to help them comply with this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

OR Wholesale Agency (Contacts with the Media)

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

Media Contacts List

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
12		Articles or stories resulting from outreach
20		News releases
125		Newspaper contacts
13		Television contacts
10		Radio contacts
		Select a type of media contact

Is a Wholesale Agency Performing Website Updates?

Did one or more retail agencies rely on your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP?

Yes No

Enter the name(s) of the retail agency (comma delimited)

Town of Windsor, City of Santa Rosa, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, City of Sonoma, Valley of the Moon Water District

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

www.sonomacountywater.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

- Water tips updated
- Save Our Water program link updated
- Campaign updated on conservation page
- Monthly water tips updated

Did at least one Website Update take place during each quarter of the reporting year?

Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <i>If yes, check the box.</i>	Comments
CII	\$85,000	<input checked="" type="checkbox"/>	Business Environmental Alliance
General	\$20,000	<input type="checkbox"/>	Sonoma County Fair
General	\$75,000	<input type="checkbox"/>	Summer Campaign
Landscape	\$15,000	<input type="checkbox"/>	Qualified Water Efficient Landscaper
Landscape	\$5,000	<input type="checkbox"/>	Bay Friendly Landscaping
		<input type="checkbox"/>	

Comments:

As a wholesaler we also do public outreach on behalf of our retailers. The flyers and/or brochures... are materials distributed at the Sonoma County Fair.

The fields in red are required.



Agency name: Sonoma County Water Agency
Reporting unit name (District name): Sonoma County Water Agency
Reporting unit number: 208

Primary contact:
First name: Carrie
Last name: Pollard
Email: carrie.pollard@scwa.ca.gov

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2010

BMP 2.2 School Education Programs

School Programs

Is your agency implementing school programs which can be counted to help another agency comply with this BMP?

Yes No

Enter retailer names, separated by commas:

Cities of Santa Rosa, Petaluma, Rohnert Park, Sonoma, Cotati, the Town of Windsor and the North Marin and Valley of the Moon Water Districts.

Materials meet state education framework requirements?

Description of Materials

Student Workbooks, Teacher Guides, Curriculum Guides, Supplemental Materials (Maps and Posters), Student Incentives (folders, pencils, pencil sharpeners, rulers, erasers, stickers, temporary tattoos)

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Student Workbooks, Student Incentives (folders, pencils, pencil sharpeners, rulers, erasers, stickers, temporary tattoos)

Number of students reached

7,380

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Student Workbooks, Incentives

Number of Distribution

5,264

Annual budget for school education program

Description of all other water supplier education programs

Assembly Program; Calendar Contest - elementary; Video Contest - high school; Lending Library (Books, Videos, Classroom Sets of Curriculum, watershed and groundwater models); Classroom Presentations; Field Trips; Creek Clean ups; Annual Newsletter for Teachers; Teacher Workshops

School Program Activities

Classroom presentations:

Number of presentations: 218

Number of attendees: 2,892

Large group assemblies:

Number of presentations: 43

Number of attendees: 10,661

Children's water festivals or other events:

Number of presentations: 1

Number of attendees: 300

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: 202

Number of attendees: 4,598

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Lending Library Materials
Water Awareness Calendar

Number distributed

5,105

Staffing children's booths at events & festivals:

Number of booths

7

Number of attendees

4,465

Water conservation contests such as poster and photo:

Description

Calendar Contest - grades 3-4
High School Video Contest

Number distributed

779

Offer monetary awards/funding or scholarships to students:

Number Offered

3

Total Funding

3,000

Teacher training workshops:

Number of presentations

2

Number of attendees

22

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips

65

Number of participants

1,719

College Internships in water conservation offered:

Number of internships

Total funding

Career fairs/workshops:

Number of presentations

11

Number of attendees

425

Additional program(s) supported by agency but not mentioned above:

Description

Provide Education Component for SYEC - a summer jobs program which employed 330 youth.

Number of events (if applicable)

9

Number of participants

330

Total reporting period budget expenditures for school education programs (include all agency costs):

\$588,083

Comments

City of Rohnert Park
Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	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.	10620(d)(2)		Section 1.2.1 Table 1.2
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, 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. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Section 1.2.2 Table 1.3 Appendix A.1
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Section 1.3 Appendix A.5
54	Provide supporting documentation that the urban water management 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 this urban water management plan.	10635(b)		Section 1.3
55	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.	10642		Section 1.2
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Section 1.2.2 Appendix A.2 Appendix A.3
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Section 1.3 Appendix A.5
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Section 1.3 Table 1.4

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Section 1.3 Appendix A.6
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 1.3
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 2.1
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 2.3 Table 2.1
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 2.4
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.4 Table 2.2
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 2.2 Section 2.4
SYSTEM DEMANDS				
1	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.	10608.20(e)		Section 3.1
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Section 1.3 Table 1.4

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Section 6 Rohnert Park reports through SCWA's Regional Alliance described in Section 3.1
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 3.2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 3.3 Table 3.17
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 3.2.6 Table 3.16
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 4.1
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4.3

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
15	Indicate whether a groundwater management plan 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.	10631(b)(1)		Section 4.3.2
16	Describe the groundwater basin.	10631(b)(2)		Section 4.3.3
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Section 4.3.3.3
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Not Applicable
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Section 4.3.4
20	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	10631(b)(3)		Section 4.3.4
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Section 4.3.5
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4.4
30	Include a detailed description of all 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, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4.8 Table 4.12
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 4.5
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 4.6

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 4.6.2
46	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.	10633(b)		Section 4.6.2 Tables 4.5 and 4.6
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 4.6.3
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 4.6.4 Table 4.7
49	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.	10633(e)		Section 4.6.4 Section 4.6.5 Table 4.8
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 4.6.6 Table 4.9
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 4.6.4
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING ^b				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 3.4 Section 6
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 5.2
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 5.3 Section 5.4

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 5.7 Table 5.9
36	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's water supply.	10632(b)		Section 5.7.2 Table 5.5
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 5.7.3 Table 5.10
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 5.7.4 Table 5.11
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 5.7.4 Table 5.13
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 5.7.4 Table 5.12
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Section 5.7.5
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Section 5.7.6 Appendix F
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 5.7.7
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Section 5.4

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
53	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, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 5.5
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 6.3 Section 6.4
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 6.3 Section 6.4
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Section 6.5
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Section 6
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix G

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.