State Water Resources Control Board
Order WR 2009-0034-EXEC

Term 17 Water Conservation Plan

April 6, 2010

Prepared by

Sonoma County Water Agency
404 Aviation Blvd
Santa Rosa, CA 95403

LIST OF FIGURES AND TABLES

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1 Introduction and Purpose

This report has been prepared by the Sonoma County Water Agency (Agency) to fulfill the requirements of Term 17 of the State Water Resources Control Board (State Board) Order WR 2009-0034 EXEC (Order).

1.1 Background on the 2009 Temporary Urgency Change Petition

In early 2009, the Agency completed a hydrologic analysis that indicated that by the end of the dry season, Lake Mendocino water levels in 2009 would be far worse than they were in water year 2007, which was the last time the State Board approved a temporary urgency change reducing the Russian River instream flow requirements. As of April 1, 2009, storage levels in Lake Mendocino were approximately 53,000 acre-feet (AF), roughly 20,000 AF less than in 2007. During water years 2002, 2004 and 2007, hydrologic conditions in the Eel and Russian River watersheds caused Lake Mendocino storage levels to decline to dangerously low levels by the end of the dry season. Recreation at Lake Mendocino was severely impaired, and serious risks existed for water supply and state and federally listed Russian River salmonid fishery resources, particularly adult Chinook salmon.

In June 2004, the Federal Energy Regulatory Commission (FERC) directed Pacific Gas & Electric Company (PG&E) to reduce the amount of water diverted through its Potter Valley Project (PVP) tunnel into the Russian River, further reducing flow to Lake Mendocino. Between water year 2007 and water year 2009, approximately 24,000 AF less water flowed through the PVP tunnel and into Lake Mendocino.

Without the requested reductions in the instream flow requirements, the Agency's hydrologic analysis predicted that Lake Mendocino storage would drop to 10,000 AF by mid-August 2009 and go dry by the end of September.

In 1986, when Decision 1610 was adopted, the State Board recognized that conditions could change and expressly reserved jurisdiction to modify the minimum flow requirements in the Agency's water-rights permits. Since 1986, PVP diversions have decreased, demands on the Russian River system have increased, and three fish species have been listed as threatened or endangered under the federal Endangered Species Act. Additionally, the evidence from water years 2002, 2004 and 2007 demonstrates that reductions in the minimum instream flow requirements can preserve water in storage to protect Chinook salmon during migration and spawning, while still maintaining recreational values and water quality in the Russian River.

The report filed by the Agency with its April 6, 2009 temporary urgency change petition provided the information upon which the Agency based its decision to file the petition with the State Board to temporarily reduce the instream flow requirements in the mainstem Russian

River. The Agency's petition requested that minimum flows from the Russian River be established based on dry year criteria for the period from April 6, 2009 to October 2, 2009 and critical year criteria for the period from July 1 to October 2, 2009 in the event that storage in Lake Mendocino was below 65,630 AF as of July 1, 2009. No changes to the instream flow requirements for Dry Creek were requested.

1.2 State Board Order Requirements for 2009

On April 6, 2009, Victoria A. Whitney, SWRCB Deputy Director, Division of Water Rights, issued Order WR 2009-0027-DWR, which granted the Agency's petition, subject to terms and conditions. After a workshop and public comment, on May 28, 2009 an amended order (WR 2009-0034 EXEC) was issued by State Board Member Arthur G. Baggett, Jr., which modified some of the terms and conditions. Appendix A contains a copy of the amended order.

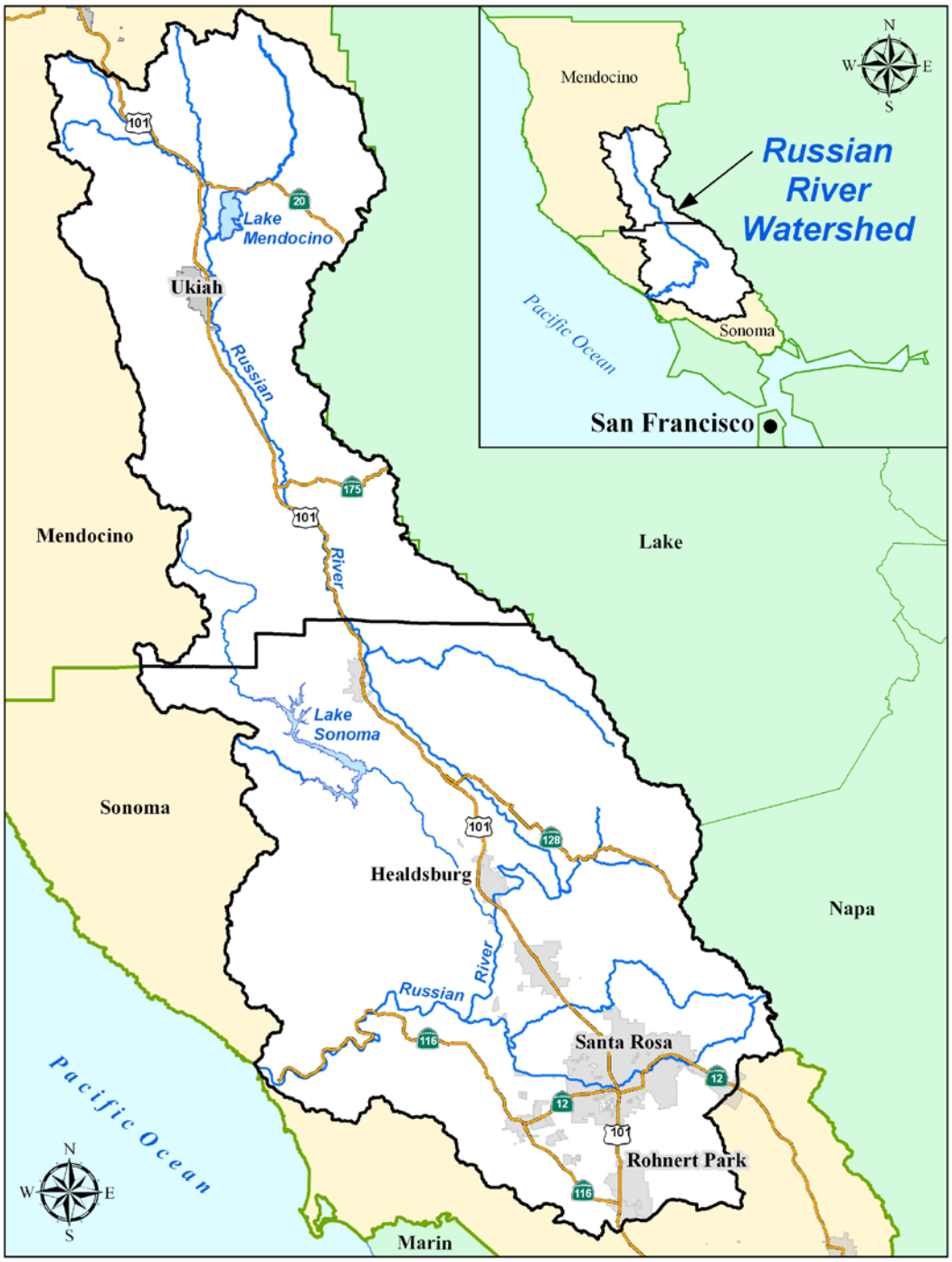
1.3 Term 17 Requirements

Term 17 of this order directs the Agency to take the following actions:

> SCWA shall prepare a Water Conservation Plan for SCWA's service area and other areas served by Lake Mendocino. The Water Conservation Plan shall describe and quantify current water conservation efforts and the water conservation measures that can be implemented in the future, including measures to eliminate the use of residential water wasting devices. The Water Conservation Plan shall provide estimates of the quantity of water applied to commercial turf in the SCWA service area and provide recommendations for long term reductions in water use on commercial turf. The Water Conservation Plan shall include a description of the authority or mechanisms that will be used to implement the identified conservation measures and a schedule for implementation. This plan shall be submitted to the Deputy Director by April 6, 2010. For the purposes of this Order, residential water wasting devices are defined as indoor residential plumbing fixtures and appliances that use more water than readily available cost effective alternatives, including but not limited to showerheads, toilets, faucets, dishwashers, and clothes washing machines.

This Water Conservation Plan is filed by the Agency in response to Term 17.

Figure 1. Russian River Watershed



2 Current Water Conservation Programs

Term 17 requires that this plan "shall describe and quantify current water conservation efforts and the water conservation measures that can be implemented in the future, including measures to eliminate the use of residential water wasting devices."

In order to obtain information required for this report, the Agency held two meetings with the Water Conservation Subcommittee of the Technical Advisory Committee. This group represents all the Agency's retail customers, including the cities of Santa Rosa, Rohnert Park, Cotati, Petaluma and Sonoma, the Town of Windsor and the Valley of the Moon and North Marin Water Districts. Information needed by the Agency to complete this report was discussed at the meetings held on January 21, 2010 and February 25, 2010, and was also requested in writing.

In addition, the Agency held meetings with the North Coast Water Conservation Coordinators, a group which includes representatives from the other areas served by Lake Mendocino, representatives from the business and agricultural users, as well as other interested parties. Information to complete this report was discussed at the meeting on January 25, 2010 and also requested in writing via email to the fifty members of this group.

Appendix E contains lists of the members of the groups described above, as well as copies of the actual correspondence between the Agency and these groups.

The results of the Agency's outreach efforts are documented in this section. Current water conservation programs that are in place in the Agency's service area and other areas also served by Lake Mendocino fall into the categories listed below.

- Programs implemented and/or offered by the Agency's retail contractors;
- Programs implemented and/or offered by the Agency for benefit of its service area;
- Programs implemented and/or offered by the Agency for its sanitation district customers;
- Programs implemented and/or offered by other Russian River water providers; and
- Programs implemented and/or offered by agricultural users.

The Agency's own water conservation programs are discussed below, as well as measures and outreach efforts undertaken by retailers and agricultural and business users.

2.1 Programs within Agency's Service Area

Most of the current water conservation programs in the Agency's service area (shown in Figure 2) are related to the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP). The Agency and its water contractors are members of the CUWCC. The CUWCC was created to assist in increasing water conservation statewide, under a Memorandum of Understanding (MOU). As signatories to the MOU, the Agency and its contractors have pledged

their good faith effort towards implementing BMPs identified in the CUWCC MOU Regarding Urban Water Conservation.

The two primary purposes of the MOU are:

- to expedite implementation of reasonable water conservation measures in urban areas, and
- to establish assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures. Estimates of reliable savings are the water conservation savings that can be achieved with a high degree of confidence in a given service area.

The Agency is the first wholesale water agency in California to have all its water contractors sign the CUWCC MOU. The Agency signed the CUWCC MOU on June 1, 1998, and submits annual BMP reports to the CUWCC in accordance with the MOU. The MOU requires that a water utility implement only the BMPs that are economically feasible. If a BMP is not economically feasible, the utility may request an economic exemption for that BMP. To date, the Agency has not requested an economic exemption from any BMP.

The Agency's contractors and other customers have previously committed to implementing all of the CUWCC BMPs. The CUWCC BMPs are currently in various stages of completion. Several of the contractors have conducted conservation activities that exceed the CUWCC BMP requirements. The CUWCC is in the process of revising its reporting site to allow signatories to account for water savings from such programs and has revised the BMP process as well.

Since 1998, the Agency and its contractors have invested over $15 million dollars in water conservation programs. These programs eliminate the use of residential water wasting devices by funding and promoting their replacement with the efficient devices listed in Table 1, below. Table 1 shows the water conservation programs currently being implemented or offered by the Agency and its contractors.

Figure 2. Sonoma County Water Agency's Service Area

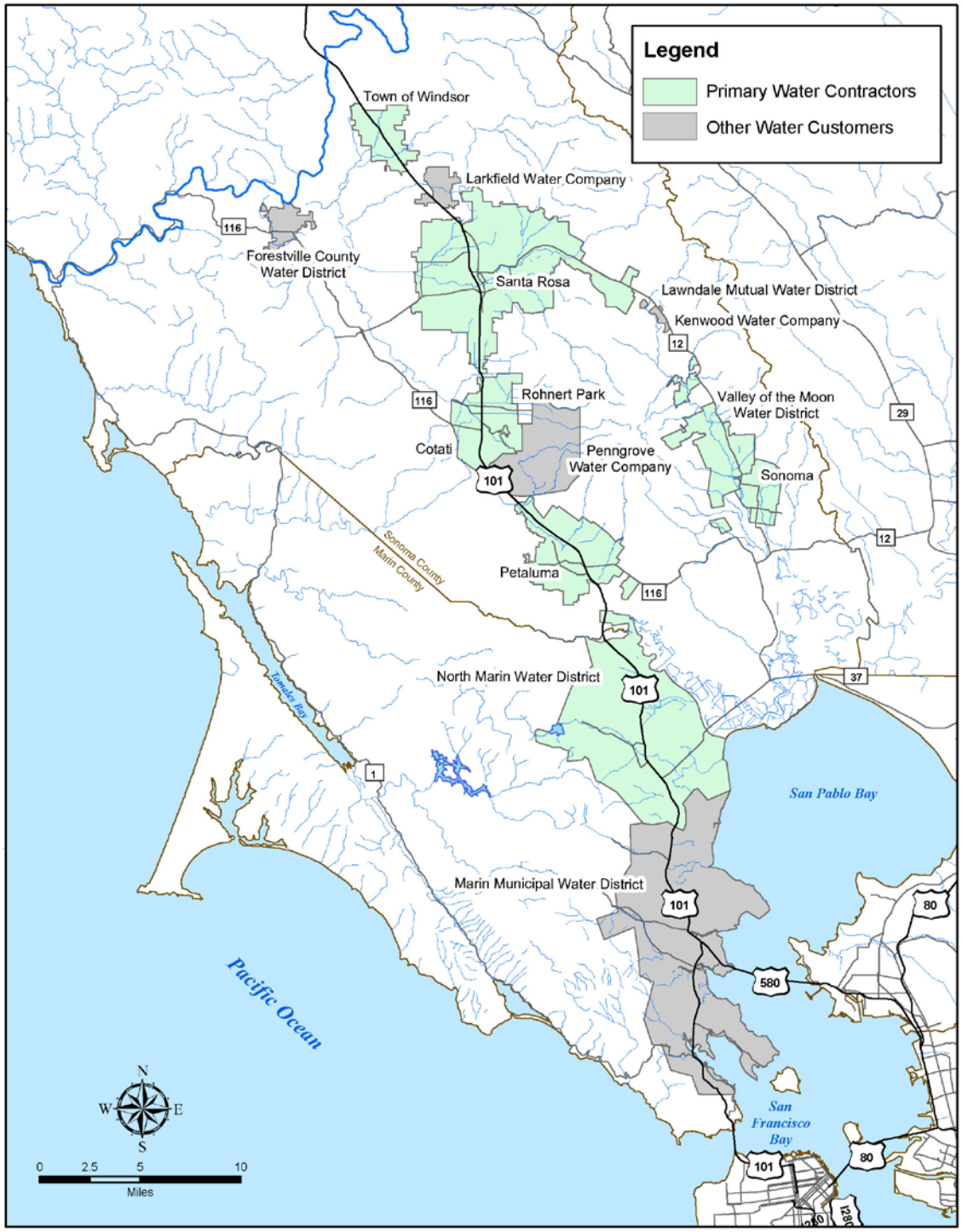


Table 1. Water Conservation Programs of Agency Retail Contractors

	City of Cotati	Marin Municipal Water District	North Marin Water District	City of Petaluma	City of Rohnert Park	City of Santa Rosa	City of Sonoma	Valley of the Moon Water District	Town of Windsor
Low Flow Showerheads	Free	Free with survey	Free	Free with surveys and at City facilities	Free	Free	Free	Free	Free
Low Flow Aerators	Free	Free	Free	Free with surveys and at City facilities	Free	Free	Free	Free	Free
Self-Closing Hose Nozzles	Free		Free	Free with surveys and at City facilities	Free	Free	Free	Free	Free
ULFT (1.6 gpf)	Free Direct Install program for 1.6 gpf up to 2 toilets								
High Efficiency Toilet (HET = 1.28 gpf or less) Program	Free Direct Install program. HET required for all new buildings and remodels.	Up to $250 Rebate for all customers; Free direct-install for Commercial and Multi-Family. Program will resume with additional funding in July, 2010.	$150 Rebate or Free Giveaway for Residential, $200 or Free for Commercial	$150 Rebate for Residential, $260 for Commercial	$150 Rebate Residential and Commercial	$150 Rebate for Residential, Free Direct Install for Commercial	$150 Rebate for Residential and Commercial	$150 Rebate for Residential and Commercial	$50 Rebate for upgrading from 1.6 gpf, $150 Rebate for upgrading 3.5 gpf, $150 for Commercial
Urinal Replacement Programs: Replace 1.0 gpf or greater with 1/8 gpf or less		Rebates up to $400, $350 and $200 for no-water urinals, 0.125 GPF and 0.5 GPF urinals, respectively. Program will resume with additional funding in July, 2010.	$200 Rebate	$260 Rebate	$150 Rebate	$450 Rebate			$150 Rebate for HEUs
High Efficiency Appliance Requirement				All new construction must have HETs, HEWs (for new planned development neighborhoods), efficient faucet aerators (1.5 gpm) and efficient shower heads (2.0 gpm)					
Clothes Washer Rebate	$75	Rebates up to $400 for Commercial. Rebates of $95 or $125 (depending on efficiency level) for residential HECW's through a regional collaboration with PG&E and other water agencies. Program will resume with additional funding in July, 2010	$75 for Residential, Case by Case for Commercial	$125 for Residential, $500 for Commercial	$75 for Residential, $220 for Commercial	$75 for Residential, $350 for Commercial	$75.00 for Residential	$75 for Residential only	$125
Water Use Surveys (Indoor/Outdoor), Residential and Commercial	Free	Free	Free	Free Water Wise HouseCall. The City performs a minimum of 810 SFR , 413 MFR, and 16 CII surveys per year per City's Water Conservation Plan. This is above and beyond the CUWCC BMP requirements (BMP's required City to complete 1563 by end of 09/10 reporting period. City is at 2401).		Free	Free	Free	Free
Commercial Water Efficient Ice Machine Rebate				Qualifies under CII Incentive program		$200 per 1000 gal/mo saved up to the cost of equipment			

	City of Cotati	Marin Municipal Water District	North Marin Water District	City of Petaluma	City of Rohnert Park	City of Santa Rosa	City of Sonoma	Valley of the Moon Water District	Town of Windsor
Pressurized Water Broom Rebate									
Sustained Reduction Rebate				CII incentive program provides rebate equal to water savings achieved by particular equipment or technology. For example, if equipment results in a 30% water savings, City will rebate 30% of the equipment cost.		$200 per 1000 gal/mo saved up to the cost of equipment			water only accts; $4.50/1000 gal /yr saved, water & sewer accts; $11.40/1000 gal/yr saved up to 50% of the cost of equipment
Best Available Technologies				Qualifies under CII Incentive program		Yes			
Rainwater Harvesting Rebate		Technical Assistance Program	Pilot starting in 2010	Qualifies under CII Incentive program		$0.25/gal of storage			
Turf Watering Recommendations: Obtain current information on precipitation rates, evapotranspiration rates and irrigation		Yes - 415-945-1525 or http://www.marinwater.org/controller?action=menuclick&id=345. The Weekly Watering Schedule is emailed to 1500 customers.	Yes	http://cityofpetaluma.net/wrcd/customized-watering-schedule.html	www.rpcity.org	Free	Free	Free	Free
Landscape Standards for New Development	Yes	Yes, new standard effective 12/16/09	Yes	Yes - City adopted a new Water Conservation Regulations Ordinance in February 2009 which is a comprehensive ordinance that encompasses water waste, landscape standards, and requirements for new construction and renovated existing accounts. This ordinance meets and exceeds the State Ordinance. The Ordinance is part of the City's master Water Conservation Plan which is a comprehensive plan forecasting conservation through 2025	Yes	Yes - Regional WELO			Yes
Rain Sensor Rebate		Free with survey	Yes (included in the Efficient Irrigation Rebate)	Rain sensors are required for new and renovated construction. Existing accounts may receive rebate under CII incentive program		Yes	$50 if QWEL installed or $50.00 maximum if self installed	$50 if QWEL installed or 100% of cost if self installed, up to $50	Part of WEL Program

	City of Cotati	Marin Municipal Water District	North Marin Water District	City of Petaluma	City of Rohnert Park	City of Santa Rosa	City of Sonoma	Valley of the Moon Water District	Town of Windsor
Efficient Irrigation Rebate Provider pays for a percentage of equipment required to make system more efficient		Up to $350 for residential meters, $650 for mixed use meters, and $3,500 for dedicated irrigation meters for qualifying products through MMWD's Bay-Friendly Landscaping Rebate. MMWD rebate was for 100% of qualifying costs up to rebate limit. Program will resume with additional funding in July, 2010.	50% rebate hardware that increases the efficiency of an irrigation systems (Residential up to $200 and Commercial and Large Landscape up to $2000)	Qualifies under CII Incentive program.	50% - 100% rebate hardware that increases the efficiency of an irrigation system, commercial only. Program Suspended	Up to $350 residential / Up to $3500 commercial	50% - 100% rebate hardware that increases the efficiency of an irrigation system	50% - 100% rebate hardware that increases the efficiency of an irrigation system	Water Efficient Landscape program. Residential up to $350, mixed-use up to $650, commercial up to $2500
SMART Controller Rebate: For installation of a weather based controller		Smart controllers were rebated through MMWD's Bay-Friendly Landscaping Rebate Program. See box immediately above this one for more information. Program will resume with additional funding in July, 2010.	Yes - existing site only	City also installed Smart Controllers for free (pilot program) at 73 SFR accounts and installed Smart controllers at all City Parks.	Yes - part of the Efficient Irrigation Rebate. Program Suspended	Part of Green Exchange Program			Part of WEL Program
Water Budget: Watering amount based on weather and landscape square footage. Financial incentives = Tier 2	Yes	Residential water budgets are set at a standard base. CII and irrigation accounts were revised in 1986 and are in the process of being updated.	Yes	100% of City's dedicated irrigation accounts have been issued water budgets.	Yes. Program Suspended.	Yes - tied to rates for irrigation accounts	No	Yes	Yes
Service Split Incentive: Non-residential customers may apply for a rebate to split a mixed use meter into two separate meters (indoor and dedicated irrigation)		Submeter rebates for commercial meters were included within the Bay-Friendly Landscaping Rebate program as described above. Program suspended 10/09 until funding is restored.	Case by Case	As part of City's CII incentive program, customer may receive rebate for splitting service.	50% Rebate on Hardware to split a mixed use meter. Program Suspended	100% reimbursement for much of the cost associated with installing a separate meter for irrigation water use.			
Water Smart Landscape Conversions /Cash for Grass: Upgrade existing turf to water smart landscaping and receive a rebate for grass and water features that are converted to water wise landscapes.	$1.00/sqft for Residential and 50% of the actual cost of the retrofit up to $1.00/sqft for Commercial and Multi-Family participants	Rebates for residential accounts of up to $350 and commercial accounts of up to $3500. Rebates did not require a conversion from turf or water features. Program will resume with new funding in July, 2010. The Cover Your Grass program is scheduled to begin in July 2010.	$1.00/sqft up to a maximum determined on a case by case basis for large landscapes and up to $1000 for Single Family Residential	City is launching a program to offer free mulch (with delivery), card board, drip irrigation conversion kit, and nursery discount to any customer who decides to sheet mulch turf areas. Program starts in May 2010.		Part of "Green Exchange Program" $0.50 per sqft up to $250 Residential and up to $2500 Large Landscape	$0.75 per sf. Limit of $1000 for residence; $150 available for drip irrigation and mulch. A limit of $3000 for Commercial, $300 available for drip and mulch	$0.50 per sf. Limit of $400 for residence, additional $150 for drip and mulch	$0.50/sqft up to $350 Part of WEL Program. Visit website for details www.townofwindsor.com

	City of Cotati	Marin Municipal Water District	North Marin Water District	City of Petaluma	City of Rohnert Park	City of Santa Rosa	City of Sonoma	Valley of the Moon Water District	Town of Windsor
Seminars/Workshops: Offers different ways on hot to conserve water though irrigation, plant selection and also in home conservation. Workshops may include new technologies such as SMART controllers.	Yes	Yes	Yes	City hosted 8 public seminars/workshops, taught 4 irrigation classes for landscape professionals, hosted a booth at the Sonoma -Marin Fair and spoke at a variety of local community groups. In all over 1500 customers were reached. The city will continue to offer seminars, workshops, and public outreach venues.		Yes	Yes	Yes	Yes
Adoption of Regional Water Efficient Landscape Ordinance	Yes, by May 2010	Yes	Yes	City adopted a new Water Conservation Regulations Ordinance in February 2009 which is a comprehensive ordinance that encompasses water waste, landscape standards, and requirements for new construction and renovated existing accounts.		Yes	Adopt our own ordinance by March 2010	Yes	Yes
Water Waste Ordinance	Yes	Yes	Yes	Part of Water Conservation Regulations Ordinance.	Yes	Yes	Yes	Yes	Yes
Water Management Contracts: Water Conservation language for landscape maintenance contracts		2010		Yes-When account exceeds water budget, City works with property owner to get back on budget and recommends water management language be part of landscape maintenance contract.		Pilot starting 09/10			
Water Management Rebate and Certification				Certified Water Conserving Residence (CWCR) Program - City works with realtors to have home sellers get home certified as Water Conserving Residence.		$1.53 per 1,000 gallons below budget			
Graywater Rebate			Pilot starting in 2010	Yes. Qualifies under CII Incentive program.		$75 per qualifying fixture retrofit			
Sub-Metering Requirement				Yes. City requires all new MFR and CII (with multiple tenants) accounts be sub-metered.					
DIY Home Audit Kit		Yes. Distributed by Marin Master Gardeners and free for our customers.				Free Mailed to all customers in May			

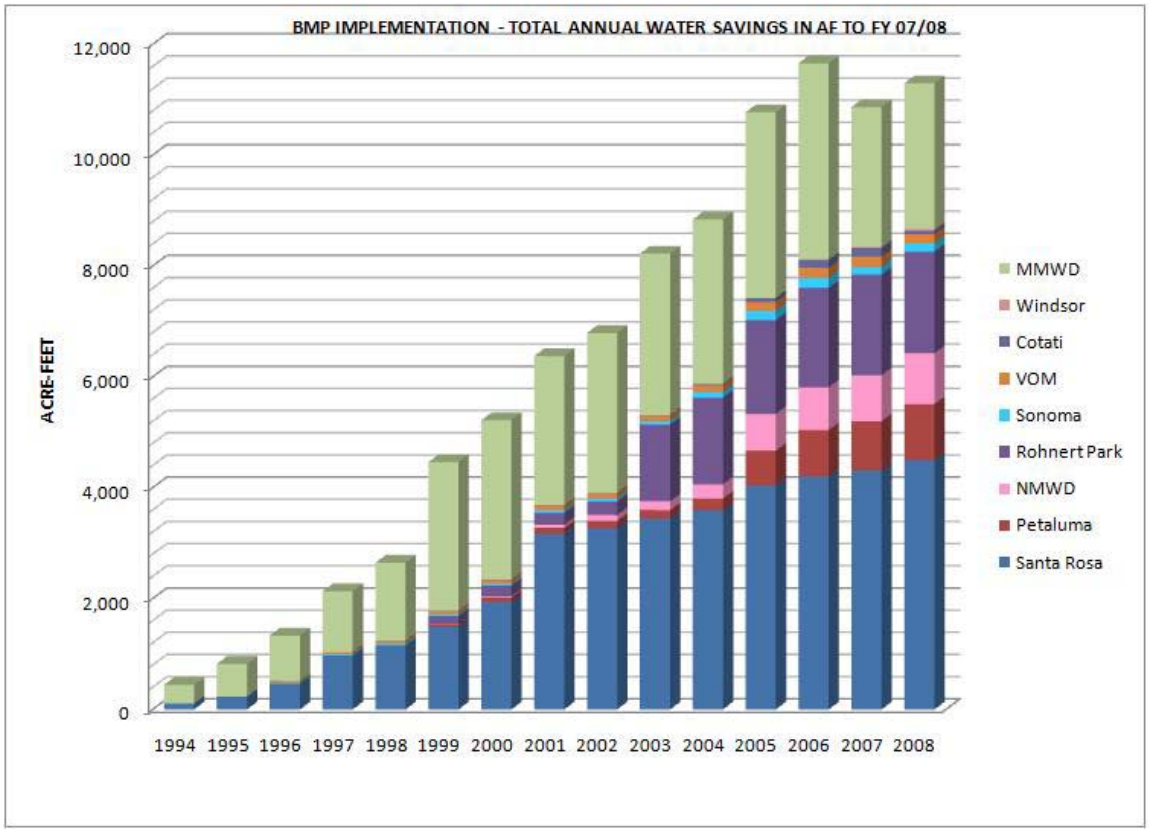
* In addition to original BMP requirements, also meets recommendations for Tier 2 measures per DSS modeling done in 2006.
* In addition to original BMP requirements, not included in DSS modeling done in 2006.

2.1.1 Total Water Savings to Date

Table 2 shows the total annual water savings of 11,299 acre feet per year associated with BMP implementation by the Agency's contractors. The contractor's average annual demand from 2005 – 2008 was 92,257 AF. The water conservation savings represent a 12.25% reduction in this average demand.

Table 2 show savings associated with quantifiable CUWCC BMPs only. It does not show savings from programs implemented that go beyond the CUWCC BMPs, non-quantifiable programs, and behavioral changes resulting in water savings. Those programs are shown (shaded) in Table 1 on the previous pages. The slight reduction in water savings from 2006 to 2007 and 2008 reflects the degradation of water savings over time from certain BMPs, such as on-site water audits.

Table 2. Annual Water Savings in Acre-Feet from CUWCC Best Management Practices Only



2.2 Additional Sonoma County Water Agency Conservation Measures

In addition to the CUWCC BMPs, the Agency has also implemented the measures described below.

2.2.1 Water Efficient Landscape Ordinance

Under Assembly Bill 325, the California Department of Water Resources (DWR) required local planning agencies to adopt the state's Model Water Efficient Landscape Ordinance or an equivalent version in the early 1990s. In 2007, Assembly Bill 1881 was passed, directing the DWR staff to revise its Model Water Efficient Landscape Ordinance to include higher standards of landscape water efficiency. This new state law requires planning agencies to revise their landscape ordinances to be equal to the new revised Model Landscape Ordinance or even more restrictive by January 1, 2010.

In the hopes of streamlining compliance with the ordinance for applicants and enforcement of the ordinance for local planning department staff, a local Water Efficient Landscape Ordinance committee was created in March 2009. This committee was led by staff from the City of Santa Rosa and the Agency. The experience of committee members included local planning, building inspection, engineering, landscape design and architecture, landscape installation and maintenance, water conservation, environmental and construction.

Agency and County of Sonoma staff finalized the Water Efficient Landscape Ordinance in November 2009. Ordinance No. 5872 was adopted by the Sonoma County Board of Supervisors on December 15, 2009 and became effective on January 15, 2010.

Appendix B contains a copy the ordinance.

2.2.2 Water Conservation Ordinance

The Agency and County of Sonoma staff are working collaboratively to prepare a draft Sonoma County water conservation ordinance. If adopted by the Board of Supervisors, this ordinance would require the installation of water saving devices and prohibit the use of water wasting devices in all new construction and remodels for residential and commercial customers connected to water or sewer service in the County of Sonoma service area.

The draft ordinance is currently under review. The ordinance may be considered by the Board of Supervisors in early 2010. Appendix C contains a draft of the Agency's proposed water conservation specifications, upon which the ordinance is built.

2.2.3 Low Impact Development (LID) Guide

The Agency is developing a countywide expanded Low Impact Development (LID) guide that describes various storm water management, water conservation, and reuse measures, technologies, and practices that could be implemented in new development projects. The guide

will describe current practices and programs that are available within the county. It will also suggest additional approaches and technologies that developers may want to consider.

Through local implementation, a comprehensive LID program will be established throughout Sonoma County to improve the reliability and quality of the water supply and reduce flood risks. Strategically applying these practices when designing development projects will result in reduced impacts on water resources and the environment, as well as help to promote long-term reliability and sustainability of limited water resources.

The Agency anticipates that a draft of the LID Guide will be available for public review by July 2010.

2.2.4 Sonoma County Energy Independence Program

The Sonoma County Energy Independence Program (SCEIP) allows property owners to finance energy efficiency, water efficiency and renewable energy improvements through the County. Financing received will attach to the property, not the owner, and will be paid back through an annual assessment on the owner's property tax bill. SCEIP provides a mechanism to dramatically reduce energy use, water use and greenhouse gas emissions in Sonoma County while stimulating the economy through development of green jobs.

This program takes advantage of Assembly Bill 811, which allows municipalities to fund improvements to private properties to reduce their energy and water use. Specific water efficiency improvements that may be financed through the program include high efficiency toilets and urinals (including water-free), high efficiency showerheads (1.5 gpm), rain catchment systems, hot water recirculation systems, whole house manifold systems, tankless water heaters, drip irrigation systems, matched precipitation rate sprinklers, and weather-based irrigation controllers

2.2.5 Qualified Water Efficient Landscaper (QWEL)

Landscape water use represents one of the largest components of urban water demand. Through the Qualified Water Efficient Landscaper (QWEL) program, local landscape professionals are making a positive impact towards reducing landscape water demand by becoming more water efficient in landscape design, maintenance, and operation. QWEL provides 20 hours of educational foundation based on principals of proper plant selection for the local climate, irrigation system design and maintenance, and irrigation system programming and operation. Classes are offered in both Spanish and English.

Both the United States Environmental Protection Agency (US EPA) WaterSense program and QWEL share the common goal of conserving water resources and promoting the importance of water efficiency. QWEL is one of two approved US EPA WaterSense Irrigation Auditor certification programs in the nation and was developed in cooperation with the California Landscape Contractors Association (Cagwin & Dorward, GardenWorks, and Pacific Landscapes),

Sonoma County Water Agency, City of Santa Rosa, Marin Municipal Water District and community colleges in Santa Rosa and Marin.

QWEL is a WaterSense labeled Irrigation Auditor certification program and those that are certified will also be eligible to become a WaterSense Irrigation Partner. In order to keep training current, QWEL graduates need to submit two (2) hours of continuing education units each calendar year.

Since receiving WaterSense recognition, the Agency has certified 326 landscapers through the QWEL program.

2.2.6 Water Reuse Projects: Sonoma Valley Recycled Water Feasibility Study

In the past few years, Sonoma Valley has seen an increase in groundwater use. Increased reliance on groundwater has caused localized decline in water levels and the possible intrusion of saline water from the San Pablo Bay. Many residents, agricultural users (vineyards, dairies, and pastures), and public officials are aware of the water situation in Sonoma Valley. Public water forums, such as the Sonoma Valley Water Summit in January 2004, have helped to increase awareness of the water resource issues within Sonoma Valley. As a result, public officials are looking at different tactics to offset peak demand and residents and agricultural users are interested in a more reliable water supply.

In 2005, the Sonoma Valley Recycled Water Feasibility Study (Feasibility Study) was conducted by the Agency on behalf of SVCSD, the Valley of the Moon Water District (VOMWD), the City of Sonoma (City), and in consultation with the Sonoma Ecology Center. This study evaluated the feasibility of, and options for, expanded recycled water use in the Sonoma Valley. Expanded use of recycled water in Sonoma Valley could result in significant water supply and environmental benefits, including reduced discharge to waters of the United States, reduction of peak potable water demands on the VOMWD and the City's distribution systems (including Russian River and groundwater supplies), and potential reduction of groundwater pumping for agricultural and private municipal landscape irrigation purposes.

Alignments 1A, 1B, 2, & 3 (shown in Figure 3) comprise the recommended project alternative by identifying potential potable water customers who irrigate large parcels, such as schools, parks, large landscaped areas (golf courses and community gardens), and agricultural users. If these targeted customers convert from pumping groundwater to using recycled water, this could potentially reduce potable water demand and may help alleviate current problems.

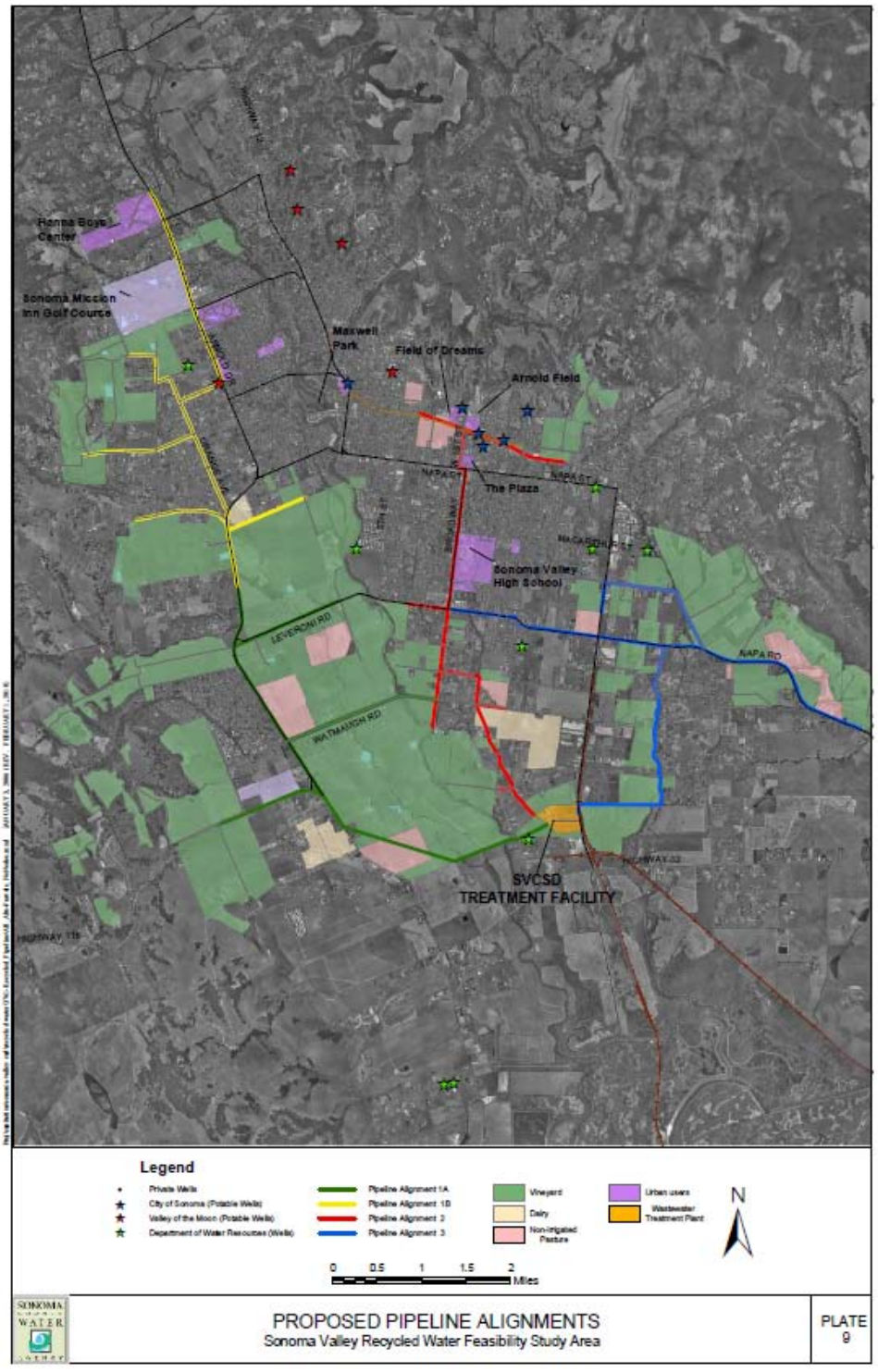
The recommended Feasibility Study alternative helps to address concerns regarding over-pumping of groundwater; pumping of water from local streams/creeks; maintaining fish and wildlife habitats; reliability of water supply delivered through the Agency's Sonoma Aqueduct (offsetting potable water use); and poor groundwater quality.

The Sonoma Valley County Sanitation District (SVCSD) has received letters of support from property, vineyard, dairy and pastureland owners as well as vineyard managers for the use of recycled water in Sonoma Valley.

The Agency, in cooperation with the United States Geological Service (USGS), conducted a five-year study to characterize groundwater conditions in Sonoma Valley, which was completed in 2006. The study provided a quantitative and qualitative evaluation of groundwater pumping, the sustainable yield of the basin, and formed the basis for groundwater management activities. An increase in recycled water use may permit the groundwater table to stabilize to a more natural state, protect against saline water intrusion, and reduce the need to capture flow from local streams/creeks. The increase in stream/creek flow will also benefit water quality issues of receiving streams of San Pablo Bay.

As a result of this study, the Agency led a community-based stakeholder group, representing a broad range of constituencies (agriculture, business, environmental, municipal) to develop a groundwater management plan. The Sonoma Valley Basin Advisory Panel (BAP) is currently in its third year of implementing the program. Increased use of recycled water was one of the four recommended measures by the BAP for improved water resource management. The Valley of the Moon Water District, City of Sonoma, Sonoma Valley County Sanitation District, County of Sonoma, and the Sonoma County Open Space and Agriculture Preservation District are partners with the Agency in this program.

Figure 3. Proposed Pipeline Alignments – Sonoma Valley Water Reuse Project



2.3 County Sanitation District and Sanitation Zone Programs

The Agency has implemented rebate programs and "direct install" programs in the sanitation districts listed below.

- Airport / Larkfield / Wikiup Sanitation Zone
- Geyserville Sanitation Zone
- Occidental County Sanitation District
- Penngrove Sanitation Zone
- Russian River County Sanitation District
- Sea Ranch Sanitation Zone
- Sonoma Valley County Sanitation District
- South Park County Sanitation District

These programs encourage indoor water efficiency resulting in water savings. Each of the programs listed in this section eliminates the use of residential water wasting devices by funding installation of replacement appliances listed in the program description below.

2.3.1 Water Efficiency Rebate Program

The Agency has implemented a Water Efficiency Rebate Program to encourage sanitation district customers* to save water indoors. The program offers rebates on High-Efficiency clothes washers and High-Efficiency Toilets (HET) to home owners.

The following rebates are offered to residential sanitation district customers:

- High-Efficiency Toilet – up to $150
- High-Efficiency Clothes Washer – up to $125 **

The following rebates are offered to commercial sanitation district customers:

- High-Efficiency Toilet – up to $300
- High-Efficiency Urinal – up to $300
- High-Efficiency Clothes Washers – up to $125
- Water Efficient Ice Machines – up to $600
- Connectionless Food Steamers – up to $200
- Medical Equipment Steam Sterilizers – up to $700
- Dry Vacuum Pumps – up to $250
- Pressurized Water Brooms – up to $700
- Cooling Tower pH Controllers – up to $1,500
- Cooling Tower Conductivity Controllers – up to $5,000
- Sustained Reduction – Rebate is based on the water savings achieved through permanent equipment upgrades.

* Sea Ranch Sanitation Zone does not offer rebates.
** Sonoma Valley CSD does not offer this rebate.

2.3.2 High-Efficiency Fixture Direct-Install Program

The Agency has implemented the High-Efficiency Fixture Direct-Install Program (HEFDIP) in certain sanitation districts*. The Agency reimburses participating local plumbers to install high-efficiency plumbing fixtures (toilets, urinals, faucet aerators, showerheads) for no cost to commercial, industrial, institutional, residential and multi-family customers.

The program includes:

- Replacement of at least one high-flush toilet (3.5 gpf or more) with a high-efficiency toilet (1.1 gpf or less) from our Qualifying HET Model List or
- Replacement of at least one urinal (1.0 gpf or more) with a high efficiency urinal (0.125 gpf or less) from our Qualifying HEU Model List

In addition, the program offers the following free services:

- Replacement of all high-flow faucet aerators with high efficiency models (1.5 gpm or less)
- Replacement of all high-flow showerheads with high efficiency models (1.5 gpm or less).

*South Park CSD does not offer this program.

2.3.3 Water Savings to Date

By March 1, 2010, over 3,000 high-efficiency toilets have been installed through HEFDIP saving an estimated 68,000 gallons of water per day, translating to nearly 25 million gallons annually.

2.4 Other Russian River Water Users Conservation Programs

This section describes programs carried out by other public and private water suppliers from information provided by those suppliers. Many of the programs eliminate the use of residential water wasting devices by promoting and funding installation of water saving devices such as low flow showerheads, faucet aerators, water conservation kits, and toilets; and educating and raising the awareness of customers about irrigation practices, leak detection, and on-site audits.

2.4.1 Russian River County Water District

Russian River County Water District (RRCWD) has retained a consultant for water conservation program advice. The RRCWD has provided free toilets in the past and plans on providing free HET dual flush units this Spring. Future savings from these actions are estimated to be between 2-5% annually.

RRCWD will utilize the Allocation-based Conservation Water Pricing AB 2882 Water Code, (b) (2) for the next rate hearing and as the authority/mechanism used to implement the identified conservation measures and schedule for implementation. RRCWD is not a CUWCC signatory; therefore the CUWCC BMPs will not be used.

2.4.2 Gill Creek Mutual Water Company

Gill Creek Mutual Water Company has implemented the following water conservation measures:

- Customers are urged to set landscape irrigation systems to run only at night.
- Customers have been asked to call the manager if they see water escaping the system.
- During drought circumstances, customers are requested to reduce their usage as much as possible.

2.4.3 California American Water Company

California American Water Company reports that it has a very active Water Conservation Program. A summary of their current conservation programs and actions organized by BMP are listed below.

- BMP-1: Residential audits are offered. There were seven completed in 2008 and 34 completed in 2009.
- BMP-1: Turf Exchange Program - It will be initiating this program this year. It will be offering up to $1,000/residential rebate and $2,500/commercial rebate with a $75 rebate for the installation of a smart controller.
- BMP-2: It offers free water conservation devices such as shower heads, garden nozzles, low flow aerators, leak kits, and accessories used for residential audits such as toilet flappers and irrigation heads.
- BMP-3: It completed a System Leak Survey this year, concentrating on service piping and identifying possible customer leaks.
- BMP-5: It completed two demonstration gardens (2005 & 2009), completed and mailed out dedicated irrigation water budgets and commercial turf water budgets.
- BMP-6: It has been offering Clothes Washer Rebates since 2007. In 2009, there were 28 rebates.
- BMP-7: It provides bill inserts and/or individual mailers. It has an annual water conservation newsletter. It has held public meeting and trade booths promoting water conservation. This year, it will be hosting a Conservation Gardening Workshop, presented by the Master Gardener's of Sonoma County (April).
- BMP-8: It initiated a School Education program (2009/2010) that reached up to 185 students in the Mark West School District.
- BMP-9: Commercial Audits are offered. There were four completed last year, including Vintners Inn. The rebates include water brooms ($50).
- BMP-10: In the past, it received assistance from the Agency; however, by the end of June 2009, the program was stopped due to budget cuts.
- BMP-13: It instituted water waste patrols last summer as a result of the state ordered cutback in purchased water.
- BMP-14: It has been offering Toilet Rebates since 2007. In 2009, there were 25 rebates. In addition, over 500 Larkfield customers took advantage of the Agency's Direct Install or rebate program through January 2010.

2.4.4 Sweetwater Springs Water District

Sweetwater Springs Water District's (SSWD) board directed the District to implement a water conservation program that fits with the regional efforts and that will continue during all kinds of weather and seasons. A voluntary water conservation program was approved last May. The major challenge for the District however, is reducing unaccounted for water. Using the approach stated in the draft water conservation report that sets the 2020 water use standard at 137 gpcd (the District is currently at approximately 125 gpcd), the connection water loss is approximately 65-70 gpd and the 2020 standard stated in the report is 40 gpd per connection. SSWD is working on an aggressive capital improvement program that will average $1.2 million per year for the next six years on revenues of approximately $3 million per year.

SSWD has the following water conservation measures:

- Low flow showerheads, faucet aerators and water conservation kits are provided to customers for free.
- Rebates are available for customers connected to sewer that fund low flow toilet replacement, including installation, and high efficiency clothes washers (funded by Russian River Sanitation District and operated by the Agency). The Water District is looking into expanding the program District wide.
- Customers are urged to find and repair leaks on their properties.
- Customers are encouraged to tune up their irrigation systems and check their irrigation controllers prior to turning it on for the summer.
- Customers are urged to clean hard surfaces with brooms instead of hosing them down.
- When washing cars customers are urged to take their cars to a car wash or to use a bucket and a hose with an automatic shutoff nozzle.
- Customers are encouraged to cover pools and hot tubs to reduce evaporation.
- Customers are asked to run the dishwasher and clothes washer with full loads only.
- SSWD has a water waste hotline.

2.5 Agricultural Water Users and Business Efforts

2.5.1 Outreach to Growers

In an effort to expand public outreach and education activities to growers, the Agency has entered into contract with vineyard manager and viticulturist Dr. Mark Greenspan of Advanced Viticulture, LLC. Dr. Greenspan will continue to work with the Agency to develop and distribute irrigation best management practices to growers, develop irrigation demonstration projects and convene targeted outreach to growers within the Russian River Watershed.

2.5.2 Vineyard Irrigation and Cooling Program

On April 29, 2009, the Agency broke ground on two vineyard water conservation demonstration projects that continued throughout duration of the State Board Order. The demonstration

projects utilized state-of-the-art irrigation and cooling technologies and best management practices to illustrate how water and energy could be conserved in vineyards. The demonstration projects took place at Hoot Owl Creek/Alexander Valley Vineyards. Dr. Mark Greenspan implemented the demonstration projects.

The purpose of the demonstration projects was to provide a venue for both education and two-way communication on the subject of vineyard water use, and to show growers how they can easily save water, energy and money while still producing excellent wine grapes. These events allowed grape growers and those interested in attending the opportunity to speak with the technicians who have developed and implemented the demonstration program. These events provided hands-on demonstration, educational materials, and enhanced awareness regarding water conservation and the State Board Order.

The Agency hosted demonstrations on July 6, 2009 (130 attendees) and August 12, 2009 (100 attendees).

2.5.3 Sonoma County Winegrowers

The Sonoma County Winegrape Commission represents over 1,800 Sonoma County winegrape growers and has provided extensive outreach efforts through its website, newsletters, and promotion of demonstrations and other events. The Commission's *Vine Times* newsletter has a distribution of 3,200 readers, including growers, suppliers, public officials, media, and businesses in Sonoma County. Among other things, the newsletter promotes water conservation field days and demonstration events.

In late 2009, the Commission received a grant from USDA Risk Management Agency to educate growers on options available to mitigate against the risks of water loss and subsequent crop loss to frost, due to potential environmental conservation mandates. Long-term mitigation includes increased use of wind machines and minimizing direct stream diversions by building off-stream storage for use during the frost season. The Commission conducted a series of grower meetings in December and January to discuss potential new limitations on water use for frost protection and crop insurance options available. There also will be ongoing water conservation education for frost protection and irrigation. Water conservation will remain an important topic for Sonoma County growers even when the drought is over.

Appendix H contains Best Management Practices developed by Dr. Greenspan to address post-harvest water conservation, frost protection, and irrigation initiation guidelines.

2.5.4 Sonoma County Commercial Business Park Coalition

The Sonoma County Commercial Business Park Coalition (Business Park Coalition), representing the majority of commercial park ownership in Sonoma County, is actively pursuing efforts to reduce water use in Sonoma County business parks by 35% (based on 2004 usage) by working with the Agency and business park landscape contractors to develop a menu of options to

increase water use efficiency. These options range from retrofitting indoor water using fixtures with high-efficiency models to a comprehensive list of landscape water use efficiency options, including water efficient landscape equipment retrofits, water efficient landscape management practices, soil improvements, and modifications in landscape composition to reduce areas of high water use crops such as turf grass.

The Business Park Coalition is also developing a detailed long-term Commercial Business Water Conservation Program aiming to achieve a water budget based on 60% ET by 2017. The program will include an inventory of landscape areas, long-term monitoring, comprehensive menu of conservation measures, and a funding mechanism to assist in achieving the conservation goals. A complete listing of measures being developed by the Business Park Coalition can be found in Appendix D.

3 Commercial Turf in Sonoma County

3.1 Estimates of Water Applied to Commercial Turf and Long Term Measures to Reduce Water Use on Commercial Turf

Term 17 requires that this Plan provide estimates of the quantity of water applied to commercial turf in the SCWA service area and provide recommendations for long term reductions in water use on commercial turf. Term 13 of Order 2009-0034-EXEC defines commercial turf as follows:

> For the purposes of this Order, commercial turf is defined as turf that is not used regularly by a significant number of people, including commercial and governmental ornamental turf located in median strips along streets, at public and private office buildings, business parks, out-of-bounds areas at golf courses and unused areas in parks. Commercial turf does not include regularly used turf, such as athletic fields, golf courses, and parks and other areas where turf is actually used by substantial numbers of people to walk, play or sit on (as opposed to turf that is primarily ornamental).

The Agency requested by emails (dated 1/22/2010 and 2/25/2010, and included in Appendix E) that each water contractor provide estimates of the quantity of water applied to commercial turf. For the most part Agency contractors reported difficulty providing this information but did provide other pertinent information, including the number of dedicated irrigation accounts and the overall percentage of water used by these customers. This section provides the information received by the Agency from the contractors.

3.1.1 City of Cotati

The information below was supplied by City of Cotati representatives.

The City of Cotati (Cotati) reports that the following data represents total irrigation of landscaped areas. No records exist for irrigation of turf or commercial turf areas as a subset of total irrigation. In addition, there are mixed uses in some categories, including 73 commercial accounts that may have some irrigation, and single family dwelling accounts.

Table 3. Cotati Irrigation Data - Calendar Year 2008

Category	# Accts	2008 Summer	2008 Winter
Commercial	168	21,960,310	17,227,315
City Water	7	570,390	258,650
Single Family Dwelling	2115	114,545,225	68,977,889
Multi-Family Dwelling	102	24,864,940	18,947,320
Subtotal Other Accounts	2392	161,940,865	105,411,174
City Irrigation	40	13,173,470	2,187,070
Commercial Irrigation	82	20,037,649	4,641,711
Multi-Family Irrigation	61	23,143,670	3,976,240
Subtotal Irrigation Accounts	183	56,354,789	10,805,021
TOTAL	**2575**	**218,295,65**	**116,216,195**

Dedicated Irrigation Connections	183	
% Irrigation Sales vs Total Water Sales	20%	Includes city park irrigation
% Comm Irrigation vs Total Irrigation	37%	Includes city park irrigation

The City of Cotati (Cotati) is currently planning its first recycled water project for Thomas Page School. The usage in 2008 was 2,411,028 gallons, which will be offset by recycled water in 2011.

Cotati's WELO that is going through its commissions currently is 0.6 of ETo, which is what Cotati will use uniformly in all audits, etc.

Cotati's water rates are not currently tied to water budgets. It plans to change that with a new rate study planned for the end of 2010.

Cotati is exploring ways to monitor water usage through radio read meters for real time usage, and we are in discussions with a software provider for web-based software to track usage against budgets. This would be available to the customers and city. Cotati bills every two months, so the current "feedback" is inadequate for both the city and our customers, thus the move to explore AMR.

Currently, Cotati enforces excessive water usage through its water waste ordinance. It issues letters, and can follow up with turning off services if customers don't comply.

3.1.2 Marin Municipal Water District

The information below was supplied by Marin Municipal Water District representatives.

3.1.2.1 Existing Situation

MMWD does not have a customer class designation of "commercial turf." MMWD customers use water on turf in many of the customer classifications – single-family residential, multi-family residential, dedicated irrigation, institutional, etc. The user category that would most likely include "commercial turf" that resembles the definition described in the 2009 Sonoma County Water Agency Temporary Urgency Change Order is the irrigation category.

Of MMWD's 60,000 customer accounts, irrigation accounts number approximately 800. These accounts include landscapes that are a mix of various vegetation, including trees, bushes, food-bearing plants, ornamental plants, groundcover and turf. Some of these accounts are athletic fields that are used heavily. The water used by irrigation accounts in MMWD's service territory represents 5% of the total used by MMWD customers, or approximately 1,400 acre-feet per year. During the June-September window, the amount of Russian River water purchased from Sonoma County Water Agency and used in these irrigation accounts is approximately 55 acre-feet, which represents approximately 0.1% of the total water delivered by SCWA to its retail water contractors every year.

Most of these accounts were in existence prior to 1986, the year that MMWD reset water budgets to reflect actual use at the time. Subsequent to 1986, MMWD adopted various ordinances to require that new landscapes, and existing landscapes that were significantly renovated, meet certain water usage limits (usually a mix of evapotranspiration coefficients applied to the types of vegetation used.) The most recent revision of this code is from December, 2009, when MMWD adopted the North Bay version of the water-efficient landscape ordinance.

MMWD has water budgets and usage data for all of its irrigation accounts, and can provide this information quickly. The information that MMWD has concerning the type and areal extent of

vegetation in its 800 irrigation accounts is contained in plans and specifications that are on file at MMWD offices. These plans and specifications are not in digital format, and cannot be easily or quickly evaluated, to determine what the areal extent of turf was at the time these plans were submitted. Furthermore, this data would have been accurate at the time the plans were submitted, but changes may have been made since that time that have not been verified by MMWD staff, so that any estimate using the plans on file at MMWD would be inaccurate. No information exists about the proportion of annual water used by these accounts that is applied to turf, nor to the subset defined as "commercial turf."

MMWD is planning to revise existing water budgets in the future, to reflect appropriate use of water on vegetation types that exist in customer landscapes. This would include the 800 or so irrigation accounts noted above. To accomplish this task, MMWD plans to develop a calculator that uses a GIS interface capable of measuring separate areas of different types of vegetation, based on classified multi-spectral digital landscape images. MMWD estimates that it will take approximately 12 months and $100,000 to develop this calculator and then another 12 months to complete the evaluations and prepare new water budgets.

3.1.2.2 Programs to Reduce Potable Water Use in Irrigation Accounts

As part of its 2007 Water Conservation Master Plan, which is the foundation of MMWD's efforts to meet the SB 7X7 goal of 20% water use reduction by 2020, MMWD has a number of programs designed to reduce the use of potable water by irrigation accounts, and the subsets of turf and "commercial turf." MMWD offers audits and customer assistance advice for all of its accounts, which includes providing information on changes that can be made to landscaping to reduce water usage. MMWD offers rebates for a variety of landscape measures, such as weather-based irrigation controllers, turf replacement, irrigation system retrofits, mulch, etc. MMWD is also implementing the new water-efficient landscape ordinance, with its various requirements for limited turf landscaping and efficient water use on landscapes.

3.1.3 North Marin Water District

The information below was supplied by North Marin Water District representatives.

North Marin Water District (NMWD) reports that it does not have a mechanism to calculate the applied water to commercial turf as defined by the State Order. It states that to provide an exact volume of use would be extremely difficult, given that each site has non-turf irrigated areas, turf areas regularly used by people, and turf areas as defined by the State Order, in varying percentages of total site area. In Table 4 below, entry 4 shows Commercial Dedicated Irrigation Water Sales at 404 AF for calendar year 2008. Out of the 404 acre feet used in 2008, NMWD estimates the value for water applied to commercial turf, as defined by the State Order, is less than or equal to 202 AF/YR. Recycled water plans for the near future include 390 AF/YR of recycled water to offset potable irrigation use.

Table 4. NMWD Irrigation Data - Calendar Year 2008

1) Number of Dedicated Irrigation Meters:	423
2) Number of Commercial Dedicated Irrigation Meters:	143
3) Total Dedicated Irrigation Water Sales:	1078 AF
4) Commercial Dedicated Irrigation Water Sales:	404 AF
5) Percentage of Total Dedicated Irrigation Water Sales (#3 above) to Total Water Sales:	10.5% of Total Water Sales
6) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Dedicated Irrigation Water Sales (#3 above):	37.5% of Dedicated Irrigation Water Sales
7) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Water Sales:	3.9% of Total Water Sales

Initially the water budgets at NMWD were developed at 1.00 of ETo for turf areas and 0.60 of ETo for non turf areas. Since 2008, the budgets have been based on 0.75 of ETo.

New and rehabilitated landscapes (affected by the Water Efficient Landscape Requirements) shall be designed with a maximum applied water allowance using 0.60 of ETo. NMWD is considering a reduction in the factor for the existing landscape budgets to 0.70 of ETo (sites not applicable to the Water Efficient Landscape Requirements).

NMWD currently maintains a large landscape database of water budget versus actual use for all dedicated irrigation meters and some mixed use meters. Daily ETo factors, provided by a local CIMIS Station (#187), along with site landscape measurements and estimated indoor usage (for mixed use meters) are used to create the budget. The database produces letters to the customers stating the water budget, actual usage, and water use percent of budget and is mailed to customers shortly after they receive their bills.

NMWD regularly contacts (by phone or e-mail) dedicated irrigation customers that consistently exceed their water budget. Staff discusses site specific issues that might be causing the higher use, compared to water budget, and offers to perform detailed water audits of the site to help reduce the site water use below budget. NMWD also offers substantial rebates to customers who make water efficient irrigation upgrades and also heavily emphasizes irrigated turf removal projects and rebates replacement projects at $1.00 per square foot. To date, NMWD has rebated the removal of over 500,000 square feet of turf removed and replaced with California

Native and/or drought tolerant plants or synthetic turf, and plans more turf removal rebate projects in the future.

3.1.4 City of Petaluma

The information below was supplied by City of Petaluma representatives.

The City of Petaluma (Petaluma) estimates that is uses 571 acre-ft of water to irrigate commercial turf. Petaluma has offset 1423 acre-ft of potable irrigation water use with recycled water.

Water budgets were calculated for all dedicated irrigation meters at 70% of ETo.

The Water Efficient Landscape Policy, which covers new and revised landscapes, has been adopted at .70 of ETo or less. The budgets are monitored manually by Petaluma staff who work with those exceeding their budget until they become compliant.

Petaluma is currently working on automatic notification on the utility bill for those customers who exceed their water budget. Violation of water conservation ordinance will result in a site visit meeting with the property owner and landscaper to survey for leaks.

3.1.5 City of Rohnert Park

The information below was supplied by City of Rohnert Park representatives.

Table 5. Rohnert Park Irrigation Data - Calendar Year 2008

1) Number of Dedicated Irrigation Meters:	312
2) Number of Commercial Dedicated Irrigation Meters:	160
3) Total Dedicated Irrigation Water Sales:	494.70 AF
4) Commercial Dedicated Irrigation Water Sales:	51.80 AF*
5) Percentage of Total Dedicated Irrigation Water Sales (#3 above) to Total Water Sales:	9.5% of Total Water Sales
6) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Dedicated Irrigation Water Sales (#3 above):	2% of Dedicated Irrigation Water Sales
7) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Water Sales:	1% of Total Water Sales

Estimates of water applied to Commercial Turf: 51.80 AF* (includes ALL high water use plant types)

*Disclaimers from Rohnert Park:

1. Commercial Dedicated Irrigation Meters include multi-family residential and institutional accounts. We have done our best to exclude those accounts, but are not able to declare with any certainty that we were 100% successful.
2. Water budgets are created based on square foot measurements of "high" water use plants and "other" water use plants. "High" water use plants are those that require 100% of Reference ET. MANY plants fall into this category, including but not limited to Turf grass.
3. It is impossible to separate the water used specifically for Commercial Turf as defined in the Order. We can only provide total irrigation water use as applied to all "high" water use plants associated with a given dedicated irrigation meter.

The City of Rohnert Park (Rohnert Park) reports that it 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 parks and school grounds, various commercial and industrial sites, and the Foxtail Golf Course. Recycled water use offsets historic demands on the Rohnert Park's potable water system and demands on irrigation wells. Since 1996, Rohnert Park has offset potable water irrigation demand by 16,530 AF.

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

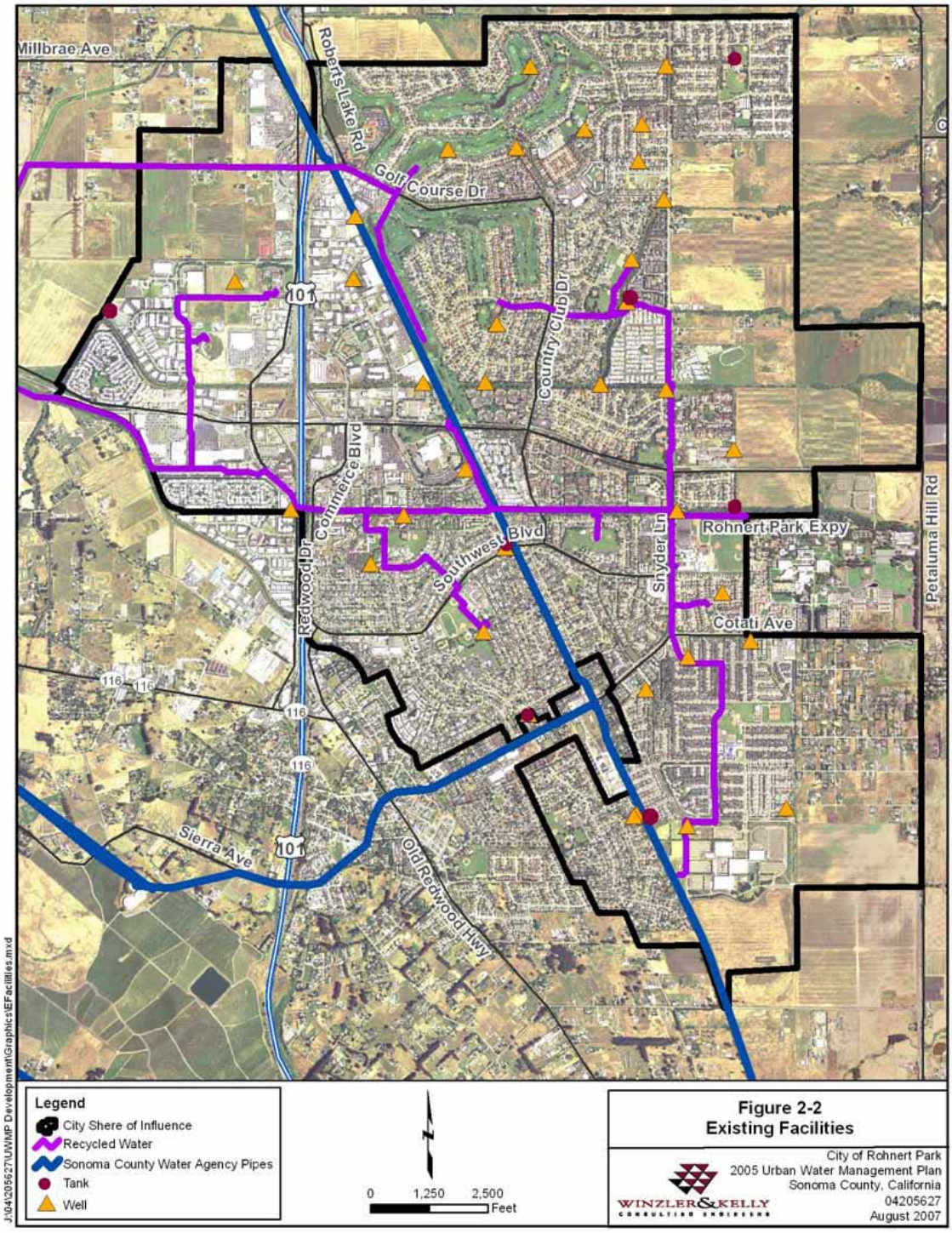
Goal PF-G*: Continue to encourage water conservation through the use of reclaimed water and reduction of water consumption and discharge for both existing and new development.*

Policy PF-21*: Continue to use reclaimed water to irrigate parks, recreation facilities and landscapes.*

On October 29, 2004, Rohnert Park adopted its Ordinance 723, a Water Waste 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. This ordinance provides Rohnert Park staff with the authority necessary to condition new development to install the infrastructure required to deliver recycled water.

Figure 4 shows the recycled water infrastructure in Rohnert Park.

Figure 4. Rohnert Park's Recycled Water Infrastructure



3.1.6 City of Santa Rosa

The information below was supplied by City of Santa Rosa representatives.

The City of Santa Rosa (Santa Rosa) states that it does not have the ability to determine the amount of water usage for commercial turf as defined in the State Board Order. Santa Rosa has over 1,700 dedicated irrigation meters which serve the overwhelming majority of the landscapes for commercial, industrial, institutional, and common areas of single-family and multi-family customers. On average, dedicated irrigation water use is approximately 12% of the City's total water use.

Since 2006, all of the dedicated irrigation customers have been provided monthly, real-time water budgets. Starting in 2007, Santa Rosa began billing dedicated irrigation customers based on their monthly water budget. Santa Rosa developed these budgets by measuring the landscaped area of each site. The landscaped area for each dedicated irrigation site was measured to determine the amount of high water use plants on-site as well as the sum of moderate and low water use plants on-site.

To estimate the total water use for turf in commercial settings, Santa Rosa used the average net evapotranspiration rate for Santa Rosa over the past ten years, the total high water use square footage for all dedicated irrigation meters, and subtracted the high water use square footage for City and County parks, schools, and fairgrounds. Based on this calculation, it is estimated that the total water use for turf in commercial settings is approximately 144 million gallons, or approximately 2% of Santa Rosa's total water use.

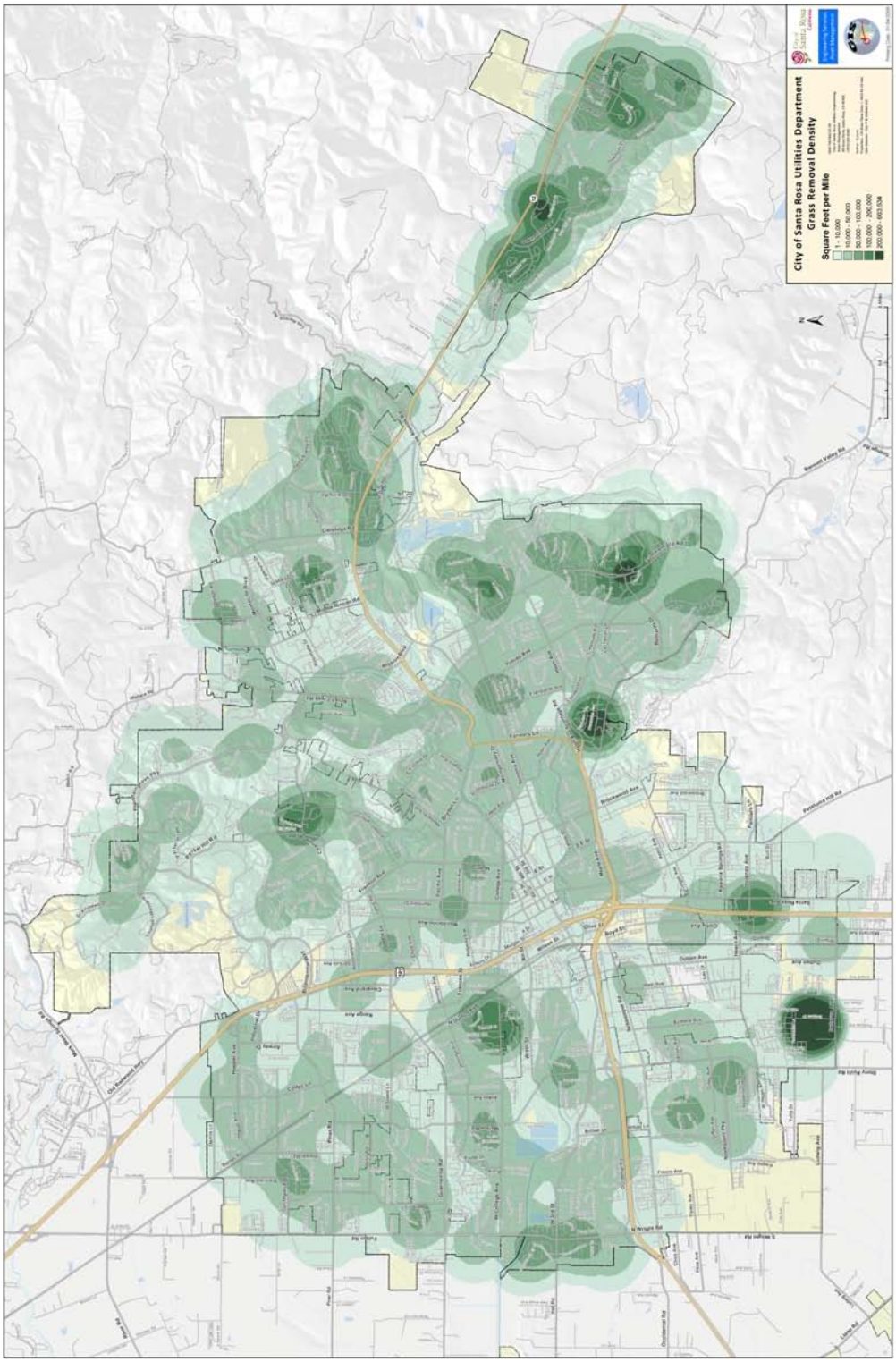
Santa Rosa has been implementing many innovative incentive programs to reduce peak demand and landscape irrigation. To improve landscape irrigation efficiency in new development, the City has adopted a Water Efficient Landscape Ordinance, with an efficiency factor that is greater than the State Model Water Efficient Landscape Ordinance. To improve landscape irrigation efficiency in existing landscapes, Santa Rosa will continue to offer the Green Exchange Rebate Program, providing rebates for removing turf and improving the efficiency of customers' irrigation systems. Santa Rosa began offering the Green Exchange rebate program in 2007. Through this program, Santa Rosa has already rebated the removal of over 1 million square feet of turf, sustainably saving over 18 million gallons of water per year. Figure 5 shows the amount and location of turf removed through Santa Rosa's Green Exchange rebate program.

In addition, to reduce landscape water use in existing sites, Santa Rosa will continue to offer a landscape water management rebate providing rebates for sites that use less water than their water budget and will continue to provide education and trainings for landscapers. Santa Rosa's rate structure for dedicated irrigation customers is a water budget based tiered water rate structure that provides water budgets based on .70 evapotranspiration. This rate structure encourages the removal and replacement of high water use plants, which typically require a

water budget based on .70 – 1.0 evapotranspiration, with moderate and low water use plants, which require water budgets based on .10 – .60 evapotranspiration.

Santa Rosa is also expanding the use of recycled water to offset potable water use for landscape irrigation and other approved uses. In December 2007, Santa Rosa approved the Urban Reuse Project which can provide up to 3,000 acre-feet per year (afy) of recycled water to current and future approved water uses, primarily landscape irrigation, to offset potable water use. This project will be implemented in phases through approximately 2020. Santa Rosa adopted Phase 1West, which is designed to provide up to 750 afy of recycled water, as the first phase of the project to be implemented. In 2010 Santa Rosa initiated construction of the initial phase of this project which will provide approximately 60 afy of recycled water use.

Figure 5. City of Santa Rosa – Green Exchange Rebate Program Turf Removal



3.1.7 City of Sonoma

The information below was supplied by the City of Sonoma representatives.

The City of Sonoma (Sonoma) estimates that it applies 74.2 acre-feet of water to commercial turf in its service area.

However, this estimate may not be accurate based on the following:

- This does not include square footage of non-recreational turf on commercial properties with mixed use meters, as those properties were not included in the water budget calculations.
- The landscape measurements are roughly estimated, not specifically measured.
- There is no way to know how much water is actually used on the irrigated turf versus non-turf.

The Agency created the original water budgets for dedicated irrigation meters and applied 100% of ETo to turf and 60% to non turf. Sonoma is currently reevaluating these sites and will adjust ETo as landscape programs are further developed.

Sonoma has adopted the state Water Efficient Landscape Ordinance at 70% of ETo.

Sonoma plans to take an educational and assistance approach to reducing irrigation water use. Water customers will be notified if they substantially exceed their water budgets and Sonoma will also offer assistance to these water customers in becoming more water efficient through rebates for upgrading irrigation systems. Sonoma will focus on the top 20% of users and monitor their water use versus water budget on a monthly basis.

3.1.8 Valley of the Moon Water District

The information below was supplied by Valley of the Moon Water District representatives.

Valley of the Moon Water District (VOMWD) reports it originally created dedicated irrigation water use budgets based on 100% of ETo for high water use plants and 60% of ETo for moderate and low water use plants.

VOMWD plans to adjust the water budgets to 60% of ETo to encourage reduced irrigation use. The District actively monitors and follows up with customers who consistently exceed their water budgets, including personal phone calls. Please note that the percent of VOMWD water sales applied to commercial turf is relatively small at 0.7%.

Table 6. VOMWD Irrigation Data - Calendar Year 2008

1) Number of Dedicated Irrigation Meters:	30
2) Number of Commercial Dedicated Irrigation Meters:	11
3) Total Dedicated Irrigation Water Sales:	59.77 AF
4) Commercial Dedicated Irrigation Water Sales:	20.76 AF
5) Percentage of Total Dedicated Irrigation Water Sales (#3 above) to Total Water Sales:	2.05% of Total Water Sales
6) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Dedicated Irrigation Water Sales (#3 above):	34.73% of Dedicated Irrigation Water Sales
7) Percentage of Commercial Dedicated Irrigation Water Sales (#4 above) to Total Water Sales:	0.71% of Total Water Sales*

*This percentage includes total landscape water use, not just turf.

3.1.9 Town of Windsor

The information below was supplied by Town of Windsor representatives.

Table 7. Town of Windsor Irrigation Data - Calendar Year 2008

1) Number of Dedicated Irrigation Meters:	373
2) Total Dedicated Irrigation Water Sales:	712.8 AF
3) Percentage of Total Dedicated Irrigation Water Sales to Total Water Sales:	16.5 % of Total Water Sales
4) Estimated Water Applied to Commercial Turf:	85.9 AF
5) Percentage of Estimated Water Applied to Commercial Turf to Total Dedicated Irrigation Water Sales:	12 % of Total Dedicated Irrigation Water Sales
6) Percentage of Estimated Water Applied to Commercial Turf to Total Water Sales:	2% of Total Water Sales

7) Total Recycled Urban Irrigation Water Sales:	588.5 AF
8) Percentage of Recycled Urban Irrigation Water Sales to Total Irrigation Water Sales (Recycled & Potable Combined):	45% of Total Irrigation Water Sales
9) Percentage of Urban Potable Offset from Recycled Water Sales:	12% of Total Water Sales (Recycled & Potable Combined)

The Town of Windsor (Windsor) states that it is not able to determine applied water to commercial turf as defined in the State Board Order. Metered water sales for dedicated irrigation accounts cannot be disaggregated to reflect water used only for commercial turf defined areas in the landscape. In an effort to provide the requested information, staff estimated the total landscape area of irrigated commercial turf from dedicated irrigation meter landscape data, and then extrapolated applied water accordingly using average evapotranspiration rates and landscape coefficients. It is estimated that applied water to commercial turf is 85.9 acre feet per year based on 2008 metered water sales data.

Landscape budgets initially developed for Windsor used 100% of ETo for turf areas and 60% of ETo for areas planted to mixed shrubs. This was more restrictive than what was specified for compliance with the CUWCC's MOU at the time.

The State's newly revised Model Water Efficient Landscape Ordinance (MWELO) specifies the use of water budgets for both new and existing landscapes. The MWELO specifies a water budget using 70% of ETo for new landscapes, and 80% of ETo for existing landscapes, recognizing that existing landscapes may require additional water to maintain due to irrigation system and landscape design inefficiencies.

In response to AB 1881 and the State's revised MWELO, Windsor adopted its own landscape ordinance in November 2009, which is more restrictive than the State's, and requires new landscapes to adhere to a water budget based on 60% of ETo. The Town is also collaborating with the Sonoma County Commercial Business Park Coalition to transition/retrofit existing commercial landscapes to achieve a water budget based on 60% of ETo by 2017.

Water rates in Windsor are not tied to water budgets. The Town's water utility billing system is not currently configured to compare actual water use against a projected water budget, although the Town is exploring how to cost effectively attain this capability. Each billing cycle a report is generated that flags accounts with water use that is high (1.5 x above cycle average) and double high (2 x above cycle average). Verified high and double high accounts are contacted by phone to make them aware of a potential problem. The Town's conservation staff provides follow up, offering assistance through audits and landscape incentive programs, and

ensuring adherence to regulations prohibiting water waste. Newly proposed water rate changes that include implementation of seasonal rates for dedicated irrigation accounts will provide additional conservation incentives for commercial irrigation customers.

The Town of Windsor has made a significant investment to utilize recycled water for beneficial reuse in landscapes. The Windsor Golf Course, Wilson Ranch Soccer Park, the Town Green, Windsor High School, the Vintage Greens Homes Subdivision, along with several other large parks and many streetscapes utilize recycled water for landscape irrigation, offsetting millions of gallons of potable water demand annually. In addition to the current recycled water distribution system, the Town is evaluating a recycled water expansion project with the intent to provide recycled water to businesses in the Town's Airport Service Area. As per the Town's water code, new connections for dedicated irrigation accounts must use recycled water if readily available.

3.2 Other Russian River Water Users

On 1/25/2010 the Agency requested information pertaining to water use and turf irrigation from members of the North Coast Water Conservation Coordinators (attached in Appendix E). The information below was supplied by representatives of those entities that chose to respond.

3.2.1 Gill Creek Mutual Water Company

Gill Creek Mutual Water Company reports that it had three dedicated irrigation meter connections in 2008. Total 2008 water sales equaled 16,436,100 gallons and .06% of the total sales were associated with the three dedicated irrigation connections.

3.2.2 Russian River County Water District

RRCWD reports that there is no commercial turf irrigation within its service area.

3.2.3 Sweetwater Springs Water District

SSWD reports that it does not have dedicated irrigation meters because there is very little turf within the district due to large trees and steep slopes. There is one golf course within the district that uses recycled water for its irrigation needs.

4 Future Water Conservation Measures

Term 17 directs the Agency to "describe and quantify…water conservation measures that can be implemented in the future, including measures to eliminate the use of residential water wasting devices….For the purposes of this Order, residential water wasting devices are defines as indoor residential plumbing fixtures and appliances that use more water than readily available cost effective alternatives, including but not limited to showerheads, toilets, faucets, dishwashers, and clothes washing machines."

4.1 Urban Water Management Plan (UWMP)

The Agency and its water contractors are developing supply and demand projections, including future water conservation measures and estimated savings, as part of the 2010 Urban Water Management Plan (UWMP) process. As previously described, the vast majority of water conservation measures and programs are implemented by the Agency's retail water contractors. The analysis of future water conservation measures is currently being analyzed by the water contractors for each of their respective service areas. This analysis is being conducted by Maddaus Water Management for each of the water contractors (except Petaluma) using the CUWCC-approved Decision Support System (DSS) model. This analysis will model savings from the plumbing code, CUWCC BMPs, and new measures beyond CUWCC BMPs. A program of conservation measures will be developed for each contractor with estimated annual water savings through the year 2035. Once the results of this analysis are complete, they will be submitted to the State Board as an addendum to this report. The Agency's water contractors anticipate that the analysis will be completed in the August/September 2010 timeframe.

4.1.1 Water Conservation Modeling and Assumptions

The BMP modeling analysis and demand projections are performed using the CUWCC-approved Decision Support System (DSS) model, a spreadsheet based program. The DSS model has been used elsewhere in northern California, including a recent project for the San Francisco Public Utilities Commission. The DSS model has been designed to provide a detailed planning evaluation framework for water demand management programs. The DSS model performs a cost-effectiveness evaluation of each BMP using the data on market potential for each conservation measure and the assumptions for each conservation measure variable. The DSS analysis projects on an annual basis the water savings and the dollar values of the benefits and costs that would result from implementing the BMPs. The DSS model components consist of the following steps:

1. Establish customer base-year water use conditions by customer-billing category and then by end use.
2. Establish service area conditions for evaluation of conservation measures by creating a database of service area data relevant to the conservation measures to be evaluated.

3. Conduct model calibration to current water use conditions by end use fixture models.
4. Use the service area data to perform a benefit and cost evaluation of each BMP.
5. Develop water conservation savings projections assuming the implementation of the selected BMPs.

4.1.2 Water Conservation Analysis

The water conservation savings projections are based on certain assumptions regarding the future implementation of water conservation measures or BMPs. The analysis projects the future water conservation savings based on four increasing levels of conservation effort:

Level 1: Current unit water use and the projected water savings from future plumbing retrofits as required by the plumbing code

Level 2: Tier 1 BMP efforts to date and remaining Tier 1 BMP efforts

Level 3: Tier 2 BMP efforts

Level 4: Adoption of new development standards

The water conservation savings projections assume that approximately half of the water savings from Tier 2 BMPs and 100% of savings from the new development standards would occur. The water contractors will use their best effort to implement these additional water conservation measures.

Existing water conservation savings due to past implementation efforts are included in the demand projection. Because the water conservation savings are projections, actual demand reduction and the manner in which the demand reduction is achieved may vary.

4.2 California's Recent Water and Water Conservation Legislation

4.2.1 Assembly Bill 1420: Demand Management Measures

Effective January 1, 2009, AB 1420 amended the Urban Water Management Planning Act. It requires that water management grants or loans made to urban water suppliers and awarded or administered by DWR, the State Water Resources Control Board, or California Bay-Delta Authority or its successor agency be conditioned on implementation of the water Demand Management Measures (DMMs).

The DMMs correspond to the 14 Best Management Practices (BMPs) listed and described in the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU). DWR has consulted with the CUWCC and appropriate funding agencies and will equate the DMMs with the BMPs described in the CUWCC MOU for loan and grant funding eligibility purposes.

Water management grants and loans include programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability and water supply augmentation.

4.2.2 Assembly Bill 715: High Efficiency Toilet Standards

In October 2007, the State adopted AB 715 to establish new water conservation standards for toilets and urinals. The bill states that beginning in January 2014, all toilets and urinals sold or installed in California shall be 1.28 gallons per flush and 0.5 gallons per flush, respectively. A timeframe is outlined for manufacturers to report compliance based on models offered. The schedule is 50% by January 1, 2010, 67% by January 1, 2011, 75% by January 1, 2012, 85% by January 1, 2013, and 100% by January 1, 2014.

4.2.3 Senate Bill 407: Statewide Retrofit on Resale

In October 2009, the passage of SB 407 imposed a state-mandated local program to inspect and require as a condition of final permit or sale that all fixtures meet specific water use criteria. The bill outlines a specific timeframe for implementation with the goal that all high water using fixtures are removed from installation and all installed fixture operate at the manufacturer rated water use by 2019. The bill specifies non-compliant fixtures as follows, but allows the implementing agency to set more stringent standards that may result in greater water savings:

- Any toilet manufactured to use more than 1.6 gallons per flush.
- Any urinal manufactured to use more than one gallon per flush.
- Any showerhead manufactured to have a flow capacity of more than 2.5 gallons per minute.
- Any interior faucet that emits more than 2.2 gallons per minute.

The bill establishes a 2014 requirement that all residential, multifamily and commercial buildings to be equipped with high efficiency fixtures prior to the local building department issuing the final permit approval for building alterations/improvements of the property. Applicability for commercial property varies by cost of alterations/improvements.

All non compliant plumbing fixtures need to be replaced by the property owner by 2017 for single family homes and 2019 for commercial and multifamily homes. By 2017, a seller or transferor of residential, multifamily or commercial real property must disclose to a purchaser or transferee, in writing, whether the property includes noncompliant plumbing.

4.2.4 Senate Bill 7: Statewide Water Conservation Goal

In November 2009, Governor Schwarzenegger approved a statewide goal of 20% reduction in urban per capita water use in California by December 31, 2020. SB 7 requires each urban retail water supplier to develop a 2020 water use target. The bill provides flexibility in determining a baseline of average gross water use as reported in gallons per capita per day (gpcd).

SB 7 states that an urban water supplier's baseline will be determined using one of the following methods:

- Urban water retailers gpcd baseline is calculated using a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010;

OR

- Urban retail water supplier's that met at least 10% of 2008 demand through recycled water can use up to a 15-year continuous period ending no earlier than December 31, 2004, and no later than December 31, 2010.

In addition, the bill outlines four distinct methods for determining each urban water supplier's water use target. The methods are as follows:

1. The urban water use target equals eighty percent of the urban retail water supplier's baseline per capita daily water use.
2. The urban water use target is the per capita daily water use that is calculated using the sum of the following performance standards:
    a. For indoor residential water use, 55 gpcd water use as a provisional standard.
    b. For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance.
    c. For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.
3. The urban water use target is equal to ninety-five percent of the applicable state hydrologic region target, as set forth in the state's 20x2020 Water Conservation Plan (dated February 2010).
4. A method that will be developed through a public process by December 31, 2010 to achieve a statewide 20% reduction in urban per capita water use.

Each water supplier will be responsible for determining their chosen method and reporting this method in their 2010 Urban Water Management Plan. Regardless of the chosen method, the bill states that per capita water use reduction should not be less than 5%. By 2015, 50% of the 2020 goal must be met by urban retail water suppliers. If the 2015 target is not met, the non-compliant urban water suppliers will not be eligible for state water grants or loans beginning on July 1, 2016.

4.2.5 CALGREEN Building Code

In 2007, Governor Schwarzenegger directed the California Building Standards Commission to work with specified state agencies on the adoption of green building standards for residential,

commercial, and public building construction for the 2010 code adoption process. On January 1, 2011, the 2010 Green Building Standards Code will go into effect. Also known as the CALGREEN Code, it will be the nation's first statewide green building standards code.

The CALGREEN Code will stipulate the following requirements:

- 20 percent mandatory reduction in indoor water use, with voluntary goal standards for 30, 35 and 40 percent reductions;
- Separate water meters for nonresidential buildings indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;
- Diversion of 50 percent of construction waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects;
- Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies;
- Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particle board.

The CALGREEN Code will be incorporated into the long-standing, established infrastructure to enforce its health, safety, fire, energy, and structural building codes, making verification of the green code for local building inspectors a simple transition. Like California's existing building code provisions that regulate construction projects throughout the state, the mandatory CALGREEN code provisions will be inspected and verified by local and state building departments.

4.3 Build It Green/LEED Measures

Build It Green (BIG) is a non-profit membership organization that offers green building guidelines for new home construction, home remodeling, and multifamily construction. These guidelines were developed by a diverse set of residential building stakeholders including production builders, contractors, architects and designers, multifamily home developers, state and local government leaders, regional and national building-science experts, product manufacturers and suppliers, and green building advocates

Guideline standards include assigning points for water-efficient landscape irrigation systems and practices, hot water heating and delivery systems, high-efficiency toilets, dishwashers and clothes-washers. Point values are assigned based on their benefits to the homeowner and the environment and reflect construction practices that exceed California's building and energy code requirements.

Every city jurisdiction within Sonoma County that has a green building program uses LEED® guidelines for new commercial construction and BIG guidelines for new residential construction. Basing a County green building ordinance on these guidelines has established consistency

among local jurisdictions for a green building program, and has met the objective set forth in the County's General Plan 2020, Open Space and Resource Conservation Element, Policy ORSC-14f.

Of the jurisdictions that have a green building program within Sonoma County, most are mandatory. The mandatory green building program approved by the County Board of Supervisors sets compliance thresholds at 50 points under the new BIG 2008-2011 Green Point Rating System for residential construction and 40 points under the new 2009 LEED® Version 3 commercial Green Building Rating System. Both plan checks and inspection verifications are done by a third party green rater who is certified under the applicable green building rating system.

5 Authority and Implementation Plan for Future Water Conservation Measures

Term 17 requires that the Water Conservation Plan include a description of the authority or mechanisms that will be used to implement the identified conservation measures and a schedule for implementation. The following subsections describe the Agency's service area, the role that Russian River water plays in the overall supply of the Agency's customers, the Agency contractors and customers' authority and mechanisms and the Agency's authority and responsibilities related to water conservation, including the Agency's authority to impose mandatory conservation measures.

5.1 Agency Service Area and Retail Customers

The Agency's water service area covers a large part of Sonoma County, as well as the northern portion of Marin County. The Agency supplies water that is diverted from the Russian River to several categories of retail customers, including "contractors," "other Agency customers," and the Marin Municipal Water District. The "contractors" are the North Marin Water District, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Valley of the Moon Water District, Town of Windsor, and City of Cotati. The "other Agency customers" are the Forestville Water District, the California-American Water Company, and several smaller water companies and public agencies. In addition, a few public water suppliers have contracts with the Agency authorizing them to divert water directly from the Russian River under the Agency's water rights. These suppliers are the Russian River County Water District, the Town of Windsor, the City of Healdsburg, and the Camp Meeker Parks and Recreation District. The relationship between the Agency, its contractors, other Agency customers, and Marin Municipal Water District is detailed in the Restructured Agreement for Water Supply (Restructured Agreement) dated June 2006 (Appendix F).

All of the Agency's customers and contractors provide water within their service areas pursuant to their individual laws, ordinances, rules and regulations. Appendix B of the Agency's Water Conservation Status Report, filed with the State Board on December 31, 2009, contains copies of water conservation and emergency water shortage plans that reflect the authority and mechanisms used to implement conservation measures within each jurisdiction's region.

5.2 Composition of Water Supply in the Agency Service Area

Russian River supplies are not the only supplies of water utilized to meet water demand in the Agency's service area. Other supplies of water that are used include groundwater (provided by the Agency and by several of its retail customers), other surface water supplies (provided primarily by North Marin and Marin Municipal Water Districts), and recycled water (provided by several retail customers). These supplies are used by the Agency's customers in conjunction with Russian River water supplied by the Agency and water conservation practices (see Section 5.3) to meet their total water demands.

5.3 Authority of the Agency to Impose Mandatory Conservation

As a water wholesaler, the Agency does not have direct relationships with individuals and businesses that are end users of water, nor does it have the ability to directly impose water use restrictions on such end users. The Agency's authority is limited to its authority under its contracts with its customers to declare a water shortage and to apportion available water supplies among those customers. Any mandatory water conservation measures that apply to end users of water must be imposed by the Agency's customers.

As described in Section 5.2, Russian River water supplies provided by the Agency on a wholesale basis are only one source of water that is available to the municipal users of Russian River water. At their discretion, the municipal Russian River water users can provide other supplies of water, such as recycled water and their own groundwater, to be used in conjunction with conservation to offset the needs of their customers.

The rights and obligations of the Agency and its wholesale customers are primarily set forth in the Restructured Agreement between the Agency and its water contractors (Appendix F). Section 3.5(a) of the Restructured Agreement specifies the manner in which the Agency allocates water to its customers in the event of a water supply shortage, and Section 3.5(b) of the Restructured Agreement describes the manner in which the Agency allocates water to its customers in the event of a temporary impairment of the capacity of some or all of the Agency's transmission system. These provisions apply to "other Agency customers" through incorporation of the provisions in the Agency's Water Service Rules. The Agency's agreements with Marin Municipal Water District and the entities that may divert water directly from the Russian River under the Agency's water rights contain similar, although not identical, provisions.

Section 3.5(d) of the Restructured Agreement requires the Agency to "have an adopted water shortage allocation methodology sufficient to inform each Customer of the water that would be available to it pursuant to Section 3.5(a) in the event of reasonably anticipated shortages…." The Agency has adopted such a methodology, which is set forth in an appendix to the Agency's 2005 Urban Water Management Plan. The Restructured Agreement requires the Agency's customers to limit the amounts of water that they take from the transmission system to the allocations specified by the Agency under Section 3.5. The water contractors may also unanimously agree upon an alternative allocation of available supply.

These provisions give the Agency the ability to allocate the water it supplies (but not the Agency's customers' other supplies of water, such as local customer groundwater and surface water) among its customers if a shortage occurs. The Agency has a number of methods available to it under the Restructured Agreement to ensure that its customers do not use more than the amounts of water allocated to them by the Agency, although the Agency has no ability to directly restrict the use of water by end users, or to impose financial penalties on end users for excessive use. The one exception is the Agency's few "surplus water" customers, who use water delivered directly by the Agency primarily for agricultural purposes. Under Section 3.5(a) of the Restructured Agreement, the Agency is required to terminate deliveries to surplus customers in the event of a shortage. The Agency notified its surplus customers on March 23, 2009 that it will temporarily suspend all deliveries to these surplus customers as of June 1, 2009, through September 2009.

Under Section 3.5(e) of the Restructured Agreement, a contractor taking more than its allocated amount of water from the transmission system during a shortage is subject to a liquidated damages surcharge equal to 50 percent of the then-current operations and maintenance charge for each acre-foot of water taken by the contractor in excess of its allocation. Section 3.5(e) also allows the Water Advisory Committee to request that the Agency physically limit the quantity of Agency-supplied water taken by a contractor or other Agency customer to the amounts authorized by Section 3.5, or to pursue all other available legal and equitable remedies applicable to such violations.

It is up to each Agency retail water contractor to reduce end user demands as necessary to reduce its deliveries from the transmission system to the amount allocated to it by the Agency. To accomplish this, the Agency's contractors have adopted ordinances placing limitations on the uses of water by end customers in the event of a water shortage. These ordinances were developed in consultation with the Agency and are described in detail in each contractor's individual Urban Water Management Plans. These ordinances impose mandatory water conservation measures on end users under certain specific conditions. In addition, as noted in Section 5.2, the Agency's customers also have other sources of water to meet some of the needs of their end-user customers. See Appendix B in the Agency's December 31, 2009 Term 16 Report for copies of these ordinances.

In addition to the provisions in Section 3.5, Section 1.12 of the Restructured Agreement requires the Agency's regular customers to "implement or use their best efforts to secure the implementation of any water conservation requirements that may be added as terms or conditions of the Agency's appropriative water rights permits or licenses, or with which the Agency must comply under compulsion of regulation or law." The Agency's regular customers are thus required to use their "best efforts" to comply with any water conservation requirements adopted by the SWRCB in connection with the Agency's water right permits. The Agency's Water Contractors, acting through the "Water Advisory Committee" created by the Restructured Agreement, determine whether the Agency's regular customers are acting in compliance with Section 1.12. The Agency itself has no control over the actions taken by its customers to comply with Section 1.12.

The Agency has no authority to impose mandatory water conservation measures on, or to limit the diversions of, agricultural diverters or municipal diverters of Russian River water that do not have contractual relationships with the Agency.

In summary, the Agency has only an indirect, limited ability to impose mandatory water conservation measures related to the water it supplies to its retail customers and no ability to limit use of its customers' alternative supplies. During a shortage, the Agency can only allocate the specific amounts of water it supplies to each of its customers, but restrictions on end users of water must be imposed by the Agency's customers themselves. The Agency has no authority to impose mandatory conservation measures or to limit the diversions of any user of Russian River water other than those with whom the Agency has contractual relationships.

Figure 6. Russian River Watershed Boundary and the Agency's Service Area

5.4 Other Russian River Water Users Outside of Agency's Authority

Although the Agency has no authority to impose mandatory conservation measures on Russian River water users outside its service area, the Agency will continue to provide guidance and technical support.

5.4.1 Description of Other Russian River Water Users

In addition to the Agency and its retail water customers, there are numerous other water users in the Russian River watershed. Figure 6 shows the boundary of the watershed relative to the Agency's Service Area. These users are comprised of agricultural operations such as vineyards, orchards, and family farms, some of which are supplied by various private and public water supply systems.

Water supply systems providing water for human consumption range in size from single households and small wineries to large industrial and municipal systems. Cities such as Ukiah, Cloverdale, Healdsburg, and the Sweetwater Springs Water District (serving the communities of Guerneville and Monte Rio), serve potable water to tens of thousands of people. Appendix G is a list of the approximately 300 public water systems within the Russian River watershed that was developed from a database maintained by the California Department of Public Health (CDPH). This database represents the best available inventory of regulated water users in the Russian River watershed, but it does not include water users such as single family residential households or other systems that do not meet the CDPH criteria for public water systems.

5.5 Implementation Schedule

As a wholesale water supplier, the Agency does not implement retail water conservation programs. However, the Agency will implement the Water Conservation Ordinance in 2010 and will implement the upcoming applicable legislation described above in Section 4.2.

The Agency's retail water contractors will continue to develop future water conservation measures and implementation schedules based on the outcomes of their respective Urban Water Management Planning processes. As a result, this information will be made available to the Board as part of the Addendum discussed above in Section 4.1, Urban Water Management Plan, upon the completion of modeling analysis (anticipated by the water contractors to be completed by August-September 2010).

Appendix A: State Board Order WR 2009-0034-EXEC

(Starts on following page)

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

ORDER WR 2009-0034-EXEC

In the Matter of Permits 12947A, 12949, 12950, and 16596 (Applications 12919A, 15736, 15737, 19351)

Sonoma County Water Agency

SOURCES: Dry Creek and Russian River

COUNTIES: Sonoma and Mendocino Counties

ORDER AMENDING ORDER WR 2009-0027-DWR AND CONDITIONALLY APPROVING TEMPORARY URGENCY CHANGE IN PERMITS 12947A, 12949, 12950, AND 16596

BY BOARD MEMBER ARTHUR G. BAGGETT, JR.:

1.0 INTRODUCTION

On April 6, 2009, Sonoma County Water Agency (SCWA or Permittee) filed a petition with the State Water Resources Control Board (State Water Board or Board) requesting approval of a Temporary Urgency Change to the subject permits pursuant to California Water Code section 1435. This order amends Order WR 2009-0027-DWR, which was issued by the Division of Water Rights (Division), and conditionally approves SCWA's petition.

The petition requests that from April 6, 2009 through October 2, 2009, instream flow requirements for the Upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) be reduced from 185 cubic feet per second (cfs) to 75 cfs, and the requirements for the lower Russian River (downstream of its confluence with Dry Creek) be reduced from 125 cfs to 85 cfs. The petition also requests that instream flow requirements be further reduced from July 1 through October 2, 2009, to 25 cfs for the upper Russian River and 35 cfs for the lower Russian River if during the period from April 1 through June 30 total inflow to Lake Mendocino is less than or equal to 25,000 acre-feet. The petition, in effect, requests that minimum flows for the Russian River be established based on dry-year

criteria for the period from April 6 to October 2, 2009 and, in the event that cumulative inflow to Lake Mendocino is less than or equal to 25,000 acre feet from April 1 through June 30, critical year criteria for the period from July 1 to October 2, 2009. No changes to the instream flow requirements for Dry Creek are requested. The request is made to prevent depletion of storage in Lake Mendocino, which would severely impact threatened or endangered Russian River fish species, create serious water supply impacts in Mendocino County and in Sonoma County upstream of the Dry Creek confluence, and harm Lake Mendocino and Russian River recreation.

2.0 DELEGATION

Pursuant to Resolution No. 2007-0057, the State Water Board has delegated authority to the Division Chief to act on petitions for temporary urgency change, provided no objections are outstanding. As explained below, the Division issued Order WR 2009-0027-DWR on April 6, 2009, conditionally approving the change petition. The State Water Board then provided notice of the change petition, received written comments and objections, and held a public workshop on the change petition. This Order revising Order WR 2009-0027-DWR is issued pursuant to Resolution No. 2007-0057, which delegates the authority to an individual Board Member to act on a petition for temporary urgency change.

3.0 BACKGROUND

SCWA's petition involves the following permits:

- Permit 12947A is for direct diversion of 92 cubic feet per second (cfs) from the East Fork Russian River and storage of 122,500 acre-feet per annum (afa) in Lake Mendocino from January 1 through December 31 of each year.

- Permit 12949 is for direct diversion of 20 cfs year-round from the Russian River at the Wohler and Mirabel Park Intakes near Forestville.

- Permit 12950 is for direct diversion of 60 cfs from the Russian River at the Wohler and Mirabel Park Intakes from April 1 through September 30 of each year.

- Permit 16596 is for year-round direct diversion of 180 cfs from the Russian River and storage of 245,000 afa in Lake Sonoma from October 1 of each year to May 1 of the succeeding year.

SCWA submitted with the petition a document prepared by its staff titled, "Hydrologic Analysis of Lake Mendocino Storage Under Dry 2009 Conditions" (Hydrologic Analysis) dated April 2009. The Hydrologic Analysis indicates that projections for Lake Mendocino water levels in 2009 are far more severe than they were in water year 2007, the last time the State Water Board approved a temporary urgency change reducing the Russian River instream flow requirements. As of April 1, 2009, storage level in Lake Mendocino was approximately 53,000 acre-feet (af). This is roughly 20,000 af less than Lake Mendocino storage was in 2007 at this time. During water years 2002, 2004, and 2007, hydrologic conditions in the Eel River and Russian River watersheds caused Lake Mendocino storage levels to decline to dangerously low levels by the end of the dry season. Recreation at Lake Mendocino was severely impaired, and serious risks existed for water supply and state and federally listed Russian River salmonid fishery resources, particularly adult Chinook salmon. The storage levels in Lake Mendocino dropped to a low of 24,400 af in December 2002. Water year 2004 and 2007 presented similar risks that were mitigated by SCWA filing for, and the State Water Board approving, a temporary urgency change petition that reduced the minimum instream flow requirements on the Russian River, thereby allowing more water to remain in Lake Mendocino for a longer period of time.

In June 2004, the Federal Energy Regulatory Commission directed Pacific Gas and Electric Company (PG&E) to reduce the amount of water diverted through the Potter Valley Project (PVP) tunnel into the Russian River, further reducing inflow to Lake Mendocino. Since October 2008, approximately 27,000 af less water has flowed through the PVP tunnel and into Lake Mendocino than during the same period during water year 2007, the last time the State Water Board approved a Temporary Urgency Change to reduce the Russian River instream flow requirements.

Without the requested reductions in the instream flow requirements, SCWA Hydrologic Analysis predicted that Lake Mendocino storage would drop to 10,000 acre-feet by mid August 2009 and go dry by the end of September. Lake Mendocino has never dropped below 12,000 af since it was first filled in 1959, and it is uncertain whether water could continue to be released from Lake Mendocino into the East Fork Russian River if lake storage were to drop to 10,000 af. If water cannot be released from Lake Mendocino during October and November 2009, there most likely will be severe impacts on the fishery and recreation resources that depend on the upper Russian River, and on water users that rely on the upper Russian River for their water

supplies. On March 23, 2009, the Mendocino County Board of Supervisors declared a local emergency and imminent threat of disaster due to drought conditions.

Following is the language contained in SCWA's permits regarding minimum instream flow requirements:

Term 18 of SCWA's Permit 12947A states:

For the protection of fish and wildlife, and for the maintenance of recreation in the Russian River, Permittee shall pass through or release from storage at Lake Mendocino sufficient water to maintain:

(A) A continuous streamflow in the East Fork Russian River from Coyote Dam to its confluence with the Russian River of 25 cfs at all times.

(B) The following minimum flows in the Russian River between the East Fork Russian River and Dry Creek:

(1) During normal water supply conditions when the combined water in storage, including dead storage, in Lake Pillsbury and Lake Mendocino on May 31 of any year exceeds 150,000 af or 90 percent of the estimated water supply storage capacity of the reservoirs, whichever is less:

From June 1 through August 31	185 cfs
From September 1 through March 31	150 cfs
From April 1 through May 31	185 cfs

(2) During normal water supply conditions and when the combined water in storage, including dead storage, in Lake Pillsbury and Lake Mendocino on May 31 of any year is between 150,000 af or 90 percent of the estimated water supply storage capacity of the reservoirs, whichever is less, and 130,000 af or 80 percent of the estimated water supply storage capacity of the reservoirs, whichever is less:

From June 1 through March 31	150 cfs
From April 1 through May 31	185 cfs
If from October 1 through December 31, storage in Lake Mendocino is less than 30,000 acre-feet	75 cfs

(3) During normal water supply conditions and when the combined water in storage, including dead storage, in Lake Pillsbury and Lake Mendocino on May 31 of any year is less than 130,000 af or 80 percent of the estimated water supply storage capacity of the reservoirs, whichever is less:

From June 1 through December 31	75 cfs
From January 1 through March 31	150 cfs
From April 1 through May 31	185 cfs

(4) During dry water supply conditions 75 cfs

(5) During critical water supply conditions 25 cfs

(C) The following minimum flows in the Russian River between its confluence with Dry Creek and the Pacific Ocean to the extent that such flows cannot be met by releases from storage at Lake Sonoma under Permit 16596 issued on Application 19351:

(1) During normal water supply conditions	125 cfs
(2) During dry water supply conditions	85 cfs
(3) During critical water supply conditions	35 cfs

For the purposes of the requirements in this term, the following definitions shall apply:

(1) Dry water supply conditions exist when cumulative inflow to Lake Pillsbury beginning on October 1 of each year is less than:

8,000 acre-feet as of January 1
39,200 acre-feet as of February 1
65,700 acre-feet as of March 1
114,500 acre-feet as of April 1
145,600 acre-feet as of May 1
160,000 acre-feet as of June 1

(2) Critical water supply conditions exist when cumulative inflow to Lake Pillsbury beginning on October 1 of each year is less than:

4,000 acre-feet as of January 1
20,000 acre-feet as of February 1
45,000 acre-feet as of March 1
50,000 acre-feet as of April 1
70,000 acre-feet as of May 1
75,000 acre-feet as of June 1

(3) Normal water supply conditions exist in the absence of defined dry or critical water supply conditions.

(4) The water supply condition designation for the months of July through December shall be the same as the designation for the previous June. Water supply conditions for January through June shall be predetermined monthly.

(5) Cumulative inflow to Lake Pillsbury is the calculated algebraic sum of releases from Lake Pillsbury, increases in storage in Lake Pillsbury, and evaporation from Lake Pillsbury.

(6) Estimated water supply storage space is the calculated reservoir volume below elevation 1,828.3 feet in Lake Pillsbury and below elevation 749.0 feet in Lake Mendocino. Both elevations refer to the National Geodetic Vertical Datum of 1929. The calculation shall use the most recent two reservoir volume surveys made by the U. S. Geological Survey, U. S. Army Corps of Engineers, or other responsible agency to determine the rate of sedimentation to be assumed from the date of the most recent reservoir volume survey.

Term 15 of both Permit 12949 and Permit 12950 require SCWA to allow sufficient water to bypass the points of diversion at the Wohler and Mirabel Park intakes on the Russian River to maintain the following minimum flows to the Pacific Ocean:

(1)	During normal water supply conditions	125 cfs
(2)	During dry water supply conditions	85 cfs
(3)	During critical water supply conditions	35 cfs

Term 13 of Permit 16596 sets forth the following minimum flows for Dry Creek and the Russian River:

(A) The following minimum flows in Dry Creek between Warm Springs Dam and its confluence with the Russian River:

(1) During normal water supply conditions:

75 cfs from January 1 through April 30
80 cfs from May 1 through October 31
105 cfs from November 1 through December 30

(2) During dry or critical water supply conditions:

25 cfs from April 1 through October 31
75 cfs from November 1 through March 31

(B) The following minimum flows in the Russian River between its confluence with Dry Creek and the Pacific Ocean, unless the water level in Lake Sonoma is below elevation 292.0 feet with reference to the National Geodetic Vertical Datum of 1929, or unless prohibited by the United States Government:

(1)	During normal water supply conditions	125 cfs
(2)	During dry water supply conditions	85 cfs
(3)	During critical water supply conditions	35 cfs

Permits 12949, 12950, and 16596 use the same water-year classification definitions as those listed in Permit 12947A. The water year classifications (Normal, Dry or Critically Dry) were established in State Water Board Decision 1610 (1986) and are based on cumulative inflow into Lake Pillsbury beginning October 1. Although Lake Mendocino storage is unusually low, cumulative inflow into Lake Pillsbury during this water year has been sufficiently high that, under Decision 1610, 2009 is currently classified as a normal year and will likely retain this classification for the remainder of 2009.

4.0 DIVISION OF WATER RIGHTS ISSUANCE OF ORDER WR 2009-0027-DWR APPROVING SCWA'S TEMPORARY URGENCY CHANGE PETITION AND PUBLIC NOTICE

Pursuant to Water Code section 1438, subdivision (a), the Division issued a temporary change order, Order WR 2009-0027-DWR, conditionally approving the Temporary Urgency Change petition.

The State Water Board issued and delivered to SCWA on April 10, 2009, a notice of the proposed change. Pursuant to Water Code section 1438, subdivision (b)(1), SCWA was required to publish the notice in a newspaper having a general circulation that is published within the counties where the points of diversion lie. The Notice was published in the Ukiah Daily Journal on April 14, 2009 and Santa Rosa's Press Democrat on April 17, 2009. The State Water Board mailed and emailed the Notice to the interested persons who had requested notice of proposed temporary urgency changes and to other known interested persons.

The State Water Board also provided notice of a public workshop scheduled for May 6, 2009, to receive comments regarding SCWA's Temporary Urgency Change Petition and Order WR 2009-0027 DWR. The State Water Board posted on its website (1) the notice of Order

WR 2009-0027-DWR, (2) the notice of the May 6, 2009 public workshop, (3) a copy of SCWA's petition for temporary urgency change, and (4) Order WR 2009-0027-DWR.

5.0 PUBLIC COMMENTS ON THE PETITION

The State Water Board received approximately 105 written comments on the petition and Order WR 2009-0027-DWR, including comments from the North Coast Regional Water Quality Control Board (North Coast Regional Water Board), the California Department Fish and Game (DFG), the National Marine Fisheries Service (NMFS), SCWA water contractors (i.e., SCWA customers), municipalities, local business owners, the California Landscape Contractors Association, the Association of California Water Agencies, environmental groups, and private citizens. The SCWA contractors expressed opposition to inclusion of a term in the order requiring a 25 percent reduction in Russian River diversions to the SCWA service area. The SCWA contractors, local business owners, and the California Landscape Contractors Association, also opposed inclusion of a term prohibiting irrigation of commercial turf grass within the SCWA service area during the term of the order. Additionally, these commenters requested that definitions be provided for commercial turf grass and residential water wasting devices, as referenced in Order WR 2009-0027-DWR.

DFG, environmental groups, and private citizens expressed concerns regarding impacts to water quality, community water systems, and fisheries as result of reduced Russian River flows. The North Coast Regional Water Board, environmental groups, and private citizens expressed support for the prohibition against irrigating commercial turf grass. These entities also called for increased water quality monitoring, public access to water quality data, and adaptive management of Russian River flow based on monitoring results. NMFS, environmental groups, and private citizens expressed support for the 25 percent mandatory reduction in Russian River diversions to the SCWA service area. Environmental groups and private citizens also requested that additional flow gages be established on the Russian River and that authorized and unauthorized water diversion be better accounted for to ensure compliance with flow objectives. Tourism and recreation based business owners commented that reduced summertime flows in the Russian River would hurt the local economy. The City of Ukiah commented that water conservation would reduce the City's revenue and its ability to deliver water to its customers.

6.0 PUBLIC WORKSHOP ON THE PETITION

The State Water Board held a public workshop on May 6, 2009, to receive comments regarding SCWA's Temporary Urgency Change Petition and Order WR 2009-0027 DWR. During the workshop the State Water Board heard comments from approximately 25 attendees, including representatives from SCWA, the SCWA Water Advisory Committee, Russian Riverkeeper, the County of Mendocino, the City of Petaluma, the City of Santa Rosa, the Association of California Water Agencies, Marin Municipal Water Distinct, Mendocino County Russian River Flood Control and Water Conservation Improvement District, the City of Ukiah, DFG, Friends of the Eel River, private business owners and private citizens. The oral comments were similar to those expressed in writing. In general, most of commenters recognized the need for conserving water in Lake Mendocino. Similar to the written comments, some expressed concerns that reduced flows would result in impacts to recreation and water quality in the lower Russian River and requested implementation of mandatory water conservation requirements along with improved flow and water quality monitoring. Other commenters objected to the prohibition against irrigating commercial turf grass and imposition of mandatory reductions in SCWA Russian River diversions.

At the State Water Board's public workshop, Division of Water Rights staff presented background information regarding the conditions leading up to approval of the temporary urgency change order and issuance of Order WR 2009-0027-DWR. Staff also presented a Russian River Flow Analysis prepared by SCWA at staff's request, which evaluated flow conditions in the lower Russian River under the reduced instream flow conditions specified in the temporary urgency change petition and Order WR 2009-0027-DWR. The staff presentation and the Russian River Flow Analysis demonstrated that a reduction in diversion at SCWA's Wohler/Mirabel pumping facilities is needed to achieve downstream minimum flows and a safe operating buffer, given the constraints on releases from Warm Spring Dam and anticipated inflows from the Upper Russian River. Based on the information contained in the SCWA Russian River Flow Analysis a 25 percent reduction in diversion at the Wohler/Mirabel pumping facilities will result in average flows of approximately 45 cfs at the Hacienda Bridge. This is 10 cfs more than the 35 cfs minimum flow requirement specified Order WR 2009-0027-DWR, but the analysis does not account for depletion (due to evapotranspiration and diversions) between the Hacienda Bridge and the Russian River Estuary or an operating buffer. Additionally, imposition of a 25 percent reduction in SCWA diversions will benefit water quality, recreation,

and fisheries, to the extent that such a reduction would provide flows in excess of the 35 cfs minimum requirement in the lower river.

During the workshop, Division of Water Rights staff also recommended the following modifications to Order WR 2009-0027-DWR that were intended to address some of the written comments received:

a. Clarify the terms of the Order by explicitly setting 2004 as the baseline year for purposes of measuring mandatory water diversion reduction and water conservation goals and providing definitions for commercial turf and residential water wasting devices;

b. Modify the water conservation measurement period to provide more time for water users to respond to the call for water conservation;

c. Extend the date on which critically dry year minimum instream flows could take effect until after the Fourth of July weekend to reduce impacts to recreation and water quality;

d. As requested by DFG, base the trigger for critically dry year flows on Lake Mendocino Storage, rather than inflows to Lake Mendocino;

e. Delete term 3 to allow releases from Warm Springs Dam for the purpose of providing increased flow in the lower river as requested by the NMFS;

f. Revise water quality monitoring requirements to consider comments from DFG and the North Coast Regional Water Board and define contingency actions;

g. Require a plan to monitor fish habitat and fish health conditions;

h. Revise ramping rates based on input from DFG and NMFS;

i. As requested by DFG, direct SCWA to request renewal of the Temporary Urgency Change Petition if increasing flow would otherwise impair the fishery; and

j. Require SCWA to develop a water right accounting procedure and a method for determining when the Russian River is being supplemented by project water.

7.0 COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT

The State Water Board has determined that the petition qualifies for an exemption under CEQA. A Class 7 exemption "consists of actions taken by regulatory agencies as authorized by state law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment." (Cal. Code Regs, tit. 14, § 15307.) The proposed action will assure the maintenance of a

natural resource, i.e., the instream resources of the Russian River. A Class 8 exemption "consists of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment." (Id., § 15308.) The proposed action will assure the maintenance of the environment, i.e., the instream environment of the Russian River.

On February 27, 2009, Governor Schwarzenegger declared a drought related state of emergency. Additionally, On March 23, 2009 the Mendocino County Board of Supervisors declared a local emergency and imminent threat of disaster due to drought conditions. Storage in Lake Mendocino is extremely low. Information provided by SCWA demonstrates that continued releases of water under normal year operating rules would prematurely drain remaining storage. If storage in Lake Mendocino is depleted, water will not be available to support threatened and endangered species, agriculture, and domestic/municipal water service. Approval of the Temporary Urgency Change Petition is therefore necessary to prevent and mitigate damage to the environment, fishery resources, property, public health, and essential public services. Accordingly the project is statutorily exempt from CEQA because it is necessary to prevent or mitigate an emergency. (Pub. Resources Code, §§ 21080, subd. (b)(4), 21172.)

8.0 LAW GOVERNING TEMPORARY URGENCY CHANGE PETITIONS

Water Code section 1435 provides that a permittee or licensee who has an urgent need to change the point of diversion, place of use, or purpose of use from that specified in the permit or license may petition the State Water Board for a conditional temporary change. The State Water Board's regulations set forth the filing and other procedural requirements applicable to petitions for temporary urgency changes. (Cal. Code Regs., tit. 23, §§ 805, 806.) The Board's regulations also clarify that a petition for a temporary urgency change in a permit or license other than a change in point of diversion, place of use, or purpose of use may be filed, subject to the same filing and procedural requirements that apply to changes in point of diversion, place of use, or purpose of use. (*Id.*, § 791, subd. (e).)

Before approving a temporary urgency change, the Board must make the following findings:

1. The permittee or licensee has an urgent need to make the proposed change;
2. The proposed change may be made without injury to any other lawful user of water;
3. The proposed change may be made without unreasonable effect upon fish, wildlife, or other instream beneficial uses; and
4. The proposed change is in the public interest.

(Wat. Code, § 1435, subd. (b)(1-4).)

8.1 Urgency of the Proposed Change

Under Water Code section 1435, subdivision (c), an urgent need to make a proposed change exists when the State Water Board concludes that the proposed temporary change is necessary to further the constitutional policy that the water resources of the State be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented. However, the State Water Board shall not find the need urgent if it concludes that the petitioner has failed to exercise due diligence in petitioning for a change pursuant to other appropriate provisions of the Water Code.

In this case, an urgent need exists for the proposed change because SCWA predicts full depletion of storage in Lake Mendocino in September 2009 unless the requested temporary urgency change is approved. Water supplies sufficient to support survival of listed Russian River salmonid fisheries, agricultural and municipal use, and recreation are threatened. Without the proposed change, SCWA would need to release additional stored water from Lake Mendocino, resulting in a reduction and likely elimination of water supplies for water users in Mendocino County, particularly in the Redwood Valley area, causing potential impacts to human health and welfare, in addition to a reduction of resources needed for fishery protection and more stable flows in the upper Russian River during the fall, when state and federally listed fish species are most sensitive to flows and temperatures. Further, if Water Year 2010 is a dry or critically dry year, as appears likely, extra storage in Lake Mendocino will be crucial for the continued survival of the Russian River fishery and for water supply reliability during 2010.

Water Code section 106 establishes that the use of water for domestic purposes is the highest use of water. SCWA predicts that without the proposed change Lake Mendocino would be drawn down to levels that jeopardize SCWA's ability to release water to the Russian River. In this event, water supplies for domestic and municipal uses of Russian River water would be severely impaired. Moreover, SCWA permits include terms requiring a 50 percent reduction in

deliveries to the Redwood Valley County Water District when Lake Mendocino storage drops below 30,000 acre feet in order to preserve Lake Mendocino Water Supply reliability. The purpose of this order is, in part, to prevent Lake Mendocino storage from dropping below 30,000 acre feet, which would otherwise occur in the absence of this order, based on information available to the State Water Board. SCWA forecasts indicate that Lake Mendocino Storage would drop below 30,000 acre-feet during June of 2009 unless the Temporary Urgency Change Petition is approved and conservation measures are implemented.

For the reasons stated above, an urgent need for the proposed change exists. The trigger for changing from dry-year to critically dry-year criteria should be based, however, on storage in Lake Mendocino, rather than inflow to Lake Mendocino, as proposed by SCWA. According to the California Data Exchange Center website (http://cdec.water.ca.gov/river/rivcond.html), Lake Mendocino storage as of July 1 has never dropped below 63,534 af for the period between June 1, 2004 and December 31, 2008 (i.e, Lake Mendocino Storage was 63,534 af on July 1, 2007).[1] The data also show that the maximum drawdown that occurred after July 1, 2007 was 35,630 af, which brought Lake Mendocino storage down to 27,904 acre feet on December 17, 2007. The State Water Board approved a temporary urgency change petition to preserve storage in Lake Mendocino during 2007, but minimum instream flows were never reduced below dry year criteria. Based on drawdown data from 2007, Lake Mendocino storage could fall below 30,000 acre feet this year if storage is less than 65,630 af on July 1, 2009. If Lake Mendocino storage exceeds 65,630 af on July 1, 2009, it is unlikely that storage would fall below 30,000 af, obviating the need to further reduce instream flows to critically dry year criteria. Therefore, the terms of Order WR 2009-0027-DWR will be modified to specify that critically dry year instream flow requirements may be implemented only if Lake Mendocino Storage is less than 65,630 af on July 1, 2009.

To ensure that the water resources of the State are put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented, Order 2009-0027-DWR added terms requiring SCWA to (1) temporarily reduce diversions from the Russian River by 25 percent; (2) prohibit irrigation of commercial turf grass within the SCWA service; (3) submit a

[1] We take official notice of recorded storage levels for Lake Mendocino during the period from June 1, 2004 through December 31, 2008. Official notice is taken pursuant to California Code of Regulations, title 23, section 648.2 (authorizing the State Water Board to take official notice of matters that may be judicially noticed), and pursuant to Evidence Code section 452, subdivision (h) (authorizing judicial notice of facts and propositions that are not reasonably subject to dispute and are capable of immediate and accurate determination by resort to sources of reasonably indisputable accuracy).

plan detailing the actions that will be taken to work with Russian River water users to reach an overall water conservation goal of 25 percent in Sonoma County and 50 percent in Mendocino County during the period from April 6, 2009 to the expiration of this order, and (4) submit a report within one year identifying actions SCWA will take to maximize water conservation in its service area. Similar terms will be included as conditions of this approval, subject to several modifications based on comments received from interested persons, as described below. Including these terms as conditions of approval supports the determination that the proposed change will maximize the beneficial use of water resources and prevent the waste of water, and therefore an urgent need for the change exists, as defined by Water Code section 1435, subdivision (c).

Implementation of the diversion reduction requirement described above should be delayed due to unexpected rainfall in early May, which marginally improved hydrologic conditions in the Russian River watershed since issuance of Order WR 2009-0027-DWR. As a result of the rainfall, mean daily flow at the United States Geological Survey (USGS) Guerneville gage (USGS # 11467000) has remained above the normal year minimum instream flow requirement of 125 cfs for the lower Russian River. As of May 27, 2009, the USGS reported flows of 239 cfs at the Guerneville gage.[2] Recent data indicate that flow is steadily decreasing, but the data suggest that flow should remain above normal year minimum instream flow criteria until about June 15, 2009. As a result, the need to curtail diversion from the lower Russian River has been delayed and accordingly the period during which mandatory reduction in Russian River diversion to the SCWA service area may also be delayed. Order WR 2009-0027-DWR will be modified to change the start date for mandatory reduction in Russian River diversion to June 15, 2009 rather than April 6, 2009. The terms of this order also will be modified to clarify that 2004 should be used as the baseline for purposes of measuring the requirement that SCWA reduce its diversions by 25 percent.

The term prohibiting the irrigation of commercial turf grass should be modified to define "commercial turf" and to allow the irrigation of commercial turf in accordance with a water budget that meets certain criteria. Article X, section 2 of the California Constitution requires that "water resources of the State be put to beneficial use to the fullest extent to which they are capable, and that waste or unreasonable use or unreasonable method of use of water be

[2] We take official notice of reported daily average flow at the USGS Guerneville gage (USGS # 11467000) during May of this year pursuant to California Code of Regulations, title 23, section 648.2 and Evidence Code section 452, subdivision (h).

prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." The 2005 California Water Plan includes recommendations from the Landscape Task Force convened pursuant to Assembly Bill 2717 and signed into law in 2004. The Landscape Task Force recommendations include, in part, the following recommendations: (1) reduce the evapotranspiration (ET) Adjustment Factor in the Landscape Model Ordinance and review the ET Adjustment Factor every ten years for possible further reduction, (2) require dedicated landscape meters, (3) promote the use of recycled water in urban landscapes, and (4) increase the public's awareness of the importance of landscape water use efficiency.

The condition regarding commercial turf irrigation imposed in order WR 2009-0027-DWR, as modified herein, is necessary to comply with article X, section 2 of the California Constitution and Water Code section 1435, subdivision (c), taking into consideration (1) the competing demands for water in the Russian River watershed and the limited supply that exists, in part as a result of reduced inflow to the watershed due to operational changes at PG&E's Potter Valley Hydroelectric Project, which diverts water from the Eel River and discharges it to the East Fork of the Russian River, which is expected to continue to occur, (2) the presence of listed species who depend on instream flows in the Russian River for their continued survival, (3) the benefit to the economy of the state that results from the winegrape industry in the Sonoma and Mendocino areas, which depend on the waters of the Russian River, and (4) the benefits of reducing urban landscaping water use, consistent with the recommendations of the Landscape Task Force.

8.2 No Injury to Any Other Lawful User of Water

The SCWA is required to maintain specific flows in the Russian River from its most upstream point of diversion to the river's confluence with the ocean. Therefore, it is anticipated that all of the SCWA water contractors and other legal users of water will receive the water to which they are entitled during the reduced flows specified in this Order. Moreover, failure to implement the reduced instream flows could result in depletion of Lake Mendocino, which in turn could give rise to serious impacts to users of water downstream of Lake Mendocino later in the year.

According to the California Data Exchange Center website (http://cdec.water.ca.gov/cgi-progs/stages/FLOWOUT), as of May 11, 2009, the California Department of Water Resources estimated the unimpaired flow of the Russian River to be at 37 percent of average unimpaired

flow for the water year.[3] Although the water year ends September 30, most precipitation in the watershed falls between October and May. SCWA's reservoir release locations are located many miles upstream of the locations at which compliance with the instream flow requirements imposed by this order is determined. Considering the demand for water in the watershed and the short supply, there is a likelihood that other water users who do not have the legal right divert water, either because they have no water right or other legal entitlement that allows them to divert water from the Russian River or its tributaries, or because the right that they have is not of sufficiently high priority to allow them to divert and use water this year, will divert water released by SCWA and prevent it from being used for its intended purpose. The SCWA has informed the State Water Board that SCWA intends to submit additional change petitions in the future seeking revisions in instream flow conditions required by its water right permits. In order to better account for water diversion from the Russian River and ensure minimum instream flows are achieved in the future, a term will be added to the Order requiring SCWA to develop a water right accounting procedure and a method for determining when the Russian River is being supplemented by project water.

8.3 No Unreasonable Effect upon Fish, Wildlife, or Other Instream Beneficial Uses

Although flows downstream from Coyote Dam will be decreased upon approval of SCWA's petition, conservation of water in Lake Mendocino will allow enhanced management of the flows in early fall for the benefit of fish migration. Reduced flows in the Russian River may impair instream beneficial uses, including recreation. The potential for impairment to instream beneficial uses, however, is not unreasonable considering the potential impacts to fisheries, water supply, and recreation in Lake Mendocino that could occur if the petition is not approved.

As recommended during the May 6, 2009 public workshop, the date on which minimum instream flows could be reduced to critically dry year flows will be delayed until July 6, 2009 to reduce potential impacts to fish, wildlife, recreation, and water quality during the Fourth of July holiday. Based on comments received from the North Coast Regional Water Board and numerous members of the public, the water quality monitoring plan submitted by SCWA pursuant to WR 2009-0027-DWR has been updated. The revised water quality monitoring plan includes additional monitoring sites, increased frequency of monitoring, and provisions for public access to the data. In response to comments from NMFS, term 3 in Order WR 2009-0027-

[3] We take official notice of the California Department of Water Resources runoff data for water year 2009 pursuant to California Code of Regulations, title 23, section 648.2 and Evidence Code section 452, subdivision (h).

DWR will be deleted to provide SCWA with the flexibility to release water from Warm Springs Dam for the purpose of augmenting flows in the lower Russian River. As requested by DFG, SCWA has developed a fisheries monitoring plan in consultation with the DFG and NMFS. Accordingly, a term will be added to the Order requiring SCWA to implement the fisheries monitoring plan and consult with DFG on a weekly basis. Additionally, a term will be added directing SCWA to request renewal of the Temporary Urgency Change Petition no later than September 15, 2009, if DFG or NMFS determines that increasing flows on October 2, 2009 would adversely affect the Russian River fishery. Finally, the ramping rates specified in Order WR 2009-0027-DWR will be revised at the request of DFG.

8.4 The Proposed Change is in the Public Interest

The proposed change will help conserve water in Lake Mendocino so that it can be released for listed Russian River salmonid fisheries present in the Russian River during the fall Chinook salmon migration season. It is in the public interest to preserve water supplies for these beneficial uses when hydrologic circumstances cause severe reductions to water supplies.

Approval of SCWA's petition will help SCWA maintain the level in Lake Mendocino for a longer period of time. SCWA estimated in its Hydrologic Analysis that if the normal-year instream flow requirements remained in effect, Lake Mendocino would reach minimum pool by late August 2009 and would be completely drained by September. However, SCWA forecasted that Lake Mendocino storage would not drop below 22,000 af during the remainder of Water Year 2009 if the Temporary Urgency Change Petition is approved and 20 percent cumulative conservation is achieved.

On February 27, 2009, Governor Schwarzenegger proclaimed a state of emergency and ordered immediate action to manage the drought crisis. The Governor's proclamation requested that all urban water users immediately increase their water conservation activities in an effort to reduce their individual water use by 20 percent.

On September 27, 2006, Governor Schwarzenegger signed Assembly Bill 32, the Global Warming Solutions Act of 2006 (Nuñez, Chapter 488, Statutes of 2006). Pursuant to AB 32, the California Air Resources Board adopted a scoping plan on December 12, 2008, outlining the State's strategy to achieve greenhouse gas (GHG) emissions limits. The scoping plan recommended implementation of six greenhouse gas reduction measures targeted at the water

sector, largely to develop additional supply reliability to meet water demand. These measures include increased water use efficiency, and water recycling, and urban runoff re-use. In addition to reducing GHG emissions, these measures can have many co-benefits, including enhancing water supply reliability.

Given the severity of water supply conditions in the Russian River Watershed and the Governor's directives to implement water conservation measures, this order adds terms requiring immediate mandatory water conservation, and longer-term water conservation planning and reporting, including a plan to reduce the use of residential water wasting devices in the SCWA service area.

Approval of the petition, as conditioned, will be in the public interest and consistent with the overall goals of the Governor's drought emergency proclamation and AB 32.

9.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the evaluation required by Water Code section 1435.

I conclude that, based on the available evidence:

1. The permittee has an urgent need to make the proposed change;
2. The petitioned change will not operate to the injury of any other lawful user of water;
3. The petitioned change will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses; and,
4. The petitioned change is in the public interest.

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ORDER

NOW, THEREFORE, IT IS ORDERED THAT: the petition filed by Sonoma County Water Agency for temporary change in Permits 12947A, 12949, 12950, and 16596 is approved, subject to the conditions set forth below.

All existing terms and conditions of the subject permits remain in effect, except as temporarily amended by the following provisions:

1. From the date of this Order until October 2, 2009, minimum flows in the Russian River, as specified in Term 20 of Permit 12947A, Term 17 of Permits 12949 and 12950, and Term 13 of Permit 16596, shall be modified as follows:

   Minimum instream flow in the **Russian River from its confluence with the East Fork of the Russian River to its confluence with Dry Creek** shall be as follows:

   a. From April 6, 2009 through July 5, 2009, minimum instream flow shall remain at or above 75 cubic feet per second (cfs).

   b. From July 6 through October 2, 2009, minimum instream flow shall remain at or above 75 cfs, if Lake Mendocino storage is equal to or greater than 65,630 acre feet on July 1, 2009;

   c. From July 6 through October 2, 2009, minimum instream flow shall remain at or above 25 cfs, if Lake Mendocino storage is less than 65,630 acre feet on July 1, 2009;

   Minimum instream flow in the **Russian River from its confluence with Dry Creek to the Pacific Ocean** shall be as follows unless the water level in Lake Sonoma is below 292.0 feet with reference to the National Geodetic Vertical Datum of 1929, or unless prohibited by the United States Government:

   a. From April 6, 2009 through July 5, 2009, 2009, minimum instream flow shall remain at or above 85 cubic feet per second (cfs).

   b. From July 6 through October 2, 2009, minimum instream flow shall remain at or above 85 cfs, if Lake Mendocino storage is equal to or greater than 65,630 acre feet on July 1, 2009;

   c. From July 6 through October 2, 2009, minimum instream flow shall remain at or above 35 cfs, if Lake Mendocino storage is less than 65,630 acre feet on July 1, 2009;

For purposes of compliance with this term, minimum instream flow requirements shall be met on an instantaneous flow basis.

2. SCWA shall immediately consult with the National Marine Fisheries Service (NMFS) and the Department of Fish and Game (DFG) after a cumulative seasonal total of 200 adult Chinook salmon move upstream past the SCWA Mirabel inflatable dam. Upon the written recommendation of NMFS and DFG, instream flow at the USGS gages at both Hopland (No.11462500) and Healdsburg (No. 11464000) on the Russian River shall be increased to 125 cfs after a cumulative seasonal total of 200 adult Chinook salmon move upstream past the SCWA Mirabel inflatable dam. A lag time of three to seven days for the higher flows to reach Healdsburg is appropriate.

3. To protect against stranding of fish when releases from Lake Mendocino are converted from normal-year to dry-year criteria, or from dry-year to critical-year criteria, flow in the East Fork Russian River immediately below Coyote Dam shall not be reduced by more than 15 cfs per hour.

4. SCWA shall monitor and record daily numbers of adult Chinook salmon moving upstream past the Mirabel inflatable dam beginning no later than August 15, 2009, and ending upon expiration of this Order. SCWA shall consult with NMFS and the DFG on a weekly basis regarding the status and findings of the monitoring effort. Chinook salmon monitoring requirements specified in this term may be revised at the direction of NMFS and DFG.

5. If operations pursuant to this Order result in sustained closure of the lagoon at the terminus of the Russian River at the Pacific Ocean, or numbers of adult salmon in the Russian River are determined by NMFS to be very low through September 30, 2009, then SCWA shall immediately consult with NMFS and DFG regarding possible measures to facilitate upstream movement of salmon. SCWA shall immediately implement measures required by NMFS and DFG to facilitate the movement of salmon.

6. SCWA shall implement the Fisheries Monitoring Plan dated May 24, 2009 that was developed in consultation with DFG and NMFS. SCWA shall consult with NMFS and DFG on a weekly basis regarding the status and findings of the monitoring effort.

7. SCWA shall implement the Temperature and Water Quality Monitoring Plan dated May 22, 2009 that was developed for monitoring the effects of the temporary urgency change after consultation with DFG and North Coast Regional Water Board staff.

8. If minimum instream flow requirements are reduced to critically dry year criteria, SCWA shall coordinate once weekly conference calls with Division of Water Rights, NMFS, DFG, and North Coast Regional Water Board staff to discuss the results of ongoing water quality, temperature and fisheries monitoring. Agency personnel may recommend to the Deputy Director for Water Rights actions required to alleviate water quality, public health, or fishery concerns that arise as a result of implementation of this Order.

9. This Order does not authorize any act that results in the taking of a threatened or endangered species, or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized under this Order, the permittee shall obtain authorization for an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency change authorized under this Order.

10. The State Water Board reserves jurisdiction to supervise the temporary urgency change under this Order, and to coordinate or modify terms and conditions, for the protection of vested rights, fish, wildlife, instream beneficial uses and the public interest as future conditions may warrant.

11. The SCWA shall immediately notify the State Water Board if any significant change in storage conditions in Lake Mendocino occurs that warrants reconsideration of this Order.

12. SCWA shall make a 25 percent reduction in diversions from the Russian River to its service area from June 15, 2009 until expiration of this order (October 2, 2009). This reduction shall be calculated based on Permittee's actual diversion from the Russian River from June 15, 2009 through October 2, 2009 as compared to actual diversion from the Russian River from June 15, 2004 through October 2, 2004.

13. As a condition of water delivery to its customers, SCWA shall prohibit irrigation of commercial turf grass within the SCWA service area for the period of June 15, 2009 through October 2, 2009 unless irrigation is managed in conformance with water a budget designed to achieve the following maximum applied water allowance (MAWA):

MAWA = (ETo) (0.75) (LA) (0.62)
where:
MAWA = Maximum applied water allowance (gallons per month)
Eto = Reference Evapotranspiration (inches per month)
0.75 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.62 = conversion factor (to gallons per square foot)

This term shall not apply to commercial turf irrigated exclusively with municipal recycled water.

For the purposes of this Order, commercial turf is defined as turf that is not used regularly by a significant number of people, including commercial and governmental ornamental turf located in median strips along streets, at public and private office buildings, business parks, out-of-bounds areas at golf courses, and unused areas in parks. Commercial turf does not include regularly used turf, such athletic fields, golf courses, and parks and other areas where turf is actually used by substantial numbers of people to walk, play, or sit on (as opposed to turf that is primarily ornamental).

14. On September 1, 2009, SCWA shall submit to the Division of Water Rights, DFG and NMFS, a forecast of storage in Lake Mendocino and an assessment of SCWA's ability to make releases in support of fall run Chinook salmon during the migration and spawning season. SCWA is directed to request in writing renewal of the temporary urgency change petition no later than September 15, 2009 if DFG or NMFS determines that increasing flows on October 2, 2009 will adversely affect the Russian River fishery.

15. By May 6, 2009, SCWA shall submit a plan to the State Water Resources Control Board to obtain the cooperation and participation of agricultural and municipal Russian River water users to reach a water conservation goal of 25 percent in Sonoma County and 50 percent in Mendocino County for the period of April 6, 2009 until the expiration of this order (October 2, 2009). In addition, the plan shall include measures to identify and prevent any waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water. The plan shall include a detailed schedule with planned

completion dates for key events. The plan, including the schedule, is subject to approval by the State Water Board Deputy Director for Water Rights (Deputy Director) in regard to its completeness and inclusion of significant project milestones. SCWA shall submit any additional information or revisions to the schedule requested within the period specified by the Deputy Director. SCWA shall implement the schedule as approved by the Deputy Director. SCWA shall include the following information in the plan:

a. An explanation of SCWA's authority or other ability to impose mandatory water conservation measures and identification of the persons and entities subject to that authority.

b. Identification of Russian River water users who are not subject to SCWA's authority to impose mandatory water conservation measures.

c. Steps that SCWA will take to investigate the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water from the Russian River. SCWA shall submit monthly reports to the State Water Board on its progress.

d. Steps that SCWA will take to gain the cooperation and participation of water users in conserving water and preventing the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water from the Russian River. SCWA shall submit monthly reports to the State Water Board on its progress.

16. SCWA shall prepare a Water Conservation Status Report for SCWA's service area and other areas served by Lake Mendocino. The report shall specify the water conservation measures being implemented in the areas served by Lake Mendocino, and shall specify the water savings resulting from the measures during the term of this temporary urgency change. The report shall be submitted to the Deputy Director by December 31, 2009. The scope and content of the report shall be similar to the report submitted to comply with WR Order 2007-0022.

17. SCWA shall prepare a Water Conservation Plan for SCWA's service area and other areas served by Lake Mendocino. The Water Conservation Plan shall describe and quantify current water conservation efforts and the water conservation measures that can be implemented in the future, including measures to eliminate the use of residential water wasting devices. The Water Conservation Plan shall provide estimates of the quantity of water applied to commercial turf in the SCWA service area and provide recommendations for long-term reductions in water use on commercial turf. The Water Conservation Plan shall include a description of the authority or mechanisms that will be used to implement the identified conservation measures and a schedule for

implementation. The plan shall be submitted to the Deputy Director by April 6, 2010. For the purposes of this Order, residential water wasting devices are defined as indoor residential plumbing fixtures and appliances that use more water than readily available cost effective alternatives, including but not limited to showerheads, toilets, faucets, dishwashers, and clothes washing machines.

18. SCWA shall develop a water right accounting procedure and a method for determining when the Russian River is being supplemented by project water. SCWA shall submit a report to the Deputy Director by December 31, 2009 describing the proposed water right accounting procedure. Beginning December 31, 2009, SCWA shall post on its website notification of periods when the Russian River is being supplemented by project water for purposes of meeting minimum instream flow requirements or to satisfy downstream water demands other than those of SCWA.

Dated: MAY 2 8 2009

Arthur G. Baggett, Jr.
Board Member

Appendix B: Sonoma County Ordinance No. 5872

(Starts on following page)

ORDINANCE NO. 5872

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SONOMA, STATE OF CALIFORNIA, ADDING CHAPTER 7D3 TO THE SONOMA COUNTY CODE TO REGULATE WATER EFFICIENT LANDSCAPE, AND ESTABLISHING A FEE FOR PROCESSING LANDSCAPE PLAN CHECK APPLICATIONS

The Board of Supervisors of the County of Sonoma, State of California, ordains as follows:

SECTION I. Chapter 7D3 is added to the Sonoma County Code, to read:

CHAPTER 7D3
WATER EFFICIENT LANDSCAPE

Sec. 7D3-1. Title and authority.

This chapter is and may be cited as the Sonoma County Water Efficient Landscape Regulations. This chapter is enacted pursuant to the Water Conservation in Landscaping Act (Government Code section 65591 et seq.).

Sec. 7D3-2. Purpose.

This chapter is enacted for the purpose of regulating the design, installation, and maintenance of new and rehabilitated landscapes.

Sec. 7D3-3. Applicability.

A. The provisions of this chapter shall apply to all of the following landscape projects:

1. New and rehabilitated landscapes in multi-family residential, commercial, industrial, agricultural processing, and public agency projects requiring a building or grading permit or design review.

2. New and rehabilitated landscapes that are developer-installed in single-family residential projects requiring a building or grading permit or design review.

3. New and rehabilitated landscapes that are homeowner-provided and/or homeowner-hired in single-family residential projects involving new buildings or additions over 400 square feet and requiring a building or grading permit or design review, except where:

a. The landscape area is less than 5,000 square feet;

b. Turf is limited to no more than 600 square feet; and

c. An irrigation system is installed and operated by a weather-based self-adjusting irrigation controller with a rain sensor.

B. The provisions of this chapter shall not apply to any of the following:

1. Registered local, state, or federal historical sites.

2. Ecological restoration projects that do not require a permanent irrigation system.

3. Mined-land reclamation projects that do not require a permanent irrigation system.

4. Plant collections, as part of botanical gardens and arboretums open to the public.

Sec. 7D3-4. Landscape plan check.

A. A landscape plan check shall be required prior to commencing any construction on a landscape project subject to the provisions of this chapter.

B. A landscape plan check application shall be filed with the department on a county application form. Each landscape plan check application shall include all required fees and/or deposits, and all plans and specifications, and other information, materials, and submittals required by the department.

C. A landscape plan check application may only be filed by the owner or authorized agent of the owner of the subject property, or other person with the written consent of the property owner.

D. A landscape plan check application shall be approved when the director verifies that the proposed landscape project complies with the provisions of this chapter, other applicable provisions of this code, and the conditions of any applicable land use permit or other entitlement.

Sec. 7D3-5. Application fees.

A. The board of supervisors shall establish a schedule of fees for the processing of landscape plan check applications.

B. No landscape plan check application shall be deemed complete, and processing shall not commence on any landscape plan check application until all required fees and/or deposits have been paid.

Sec. 7D3-6. Inspections.

Landscape projects subject to the provisions of this chapter shall be subject to inspection as required by the director to verify compliance with the approved plans. No landscape project applicant shall be deemed to have complied with the provisions of this chapter until a final inspection of the work has been completed by the director. Inspections shall not be construed to approve a violation of the provisions of this chapter or other provisions of this code. Inspections presuming to give authority to violate or cancel the provisions of this chapter or other provisions of this code shall not be valid.

Sec. 7D3-7. Water efficient landscape standards.

All landscape projects subject to the provisions of this chapter shall comply with the following standards.

A. Plants.

1. Selected plants shall not cause the estimated annual applied water use to exceed the maximum applied water allowance.

2. Plants with similar water use needs shall be grouped together in distinct hydrozones and where irrigation is required the distinct hydrozones shall be irrigated with separate valves.

a. Low and moderate water use plants can be mixed, but the entire hydrozone shall be classified as moderate water use for maximum applied water allowance calculations.

b. High water use plants shall not be mixed with low or moderate water use plants.

3. All non-turf plants shall be selected, spaced, and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.

4. Turf shall not be planted in the following conditions:

a. Slopes exceeding 10 percent.

b. Planting areas 8 feet wide or less.

c. Street medians, traffic islands, planter strips, or bulbouts of any size.

5. Invasive plants are prohibited.

B. Soil Amendments, conditioning, and mulching.

1. A minimum of 8 inches of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.

2. Compost or natural fertilizer shall be incorporated into the soil to a minimum depth of 8 inches at a minimum rate of 6 cubic yards per 1000 square feet, or according to specific amendment recommendations from a soils laboratory report.

3. A minimum 3 inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcover, or direct seeding applications.

C. Water features.

1. Recirculating water systems shall be used for all water features.

2. Recycled water shall be used when available on site.

D. Irrigation systems.

1. All irrigation systems shall be designed and installed to meet irrigation efficiency criteria as described in the maximum applied water allowance.

2. A dedicated irrigation meter or sub-meter shall be required.

3. Irrigation systems with meters 1.5 inches or greater shall have a high-flow sensor that can detect high flow conditions and have the capability to shut off the irrigation system automatically.

4. Isolation valves shall be installed at the point of connection and before each valve or valve manifold.

5. Weather-based self-adjusting irrigation controllers with rain sensors shall be required.

6. Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.

7. Irrigation systems shall be designed to prevent runoff or overspray onto non-targeted areas.

8. Point source irrigation is required where plant height at maturity will affect the uniformity of an overhead system.

9. A 24-inch setback of overhead irrigation shall be required where turf is directly adjacent to a continuous hardscape that flows into the curb and gutter.

10. Slopes greater than 15 percent shall be irrigated with point source or other low-volume irrigation technology.

11. Separate valves shall be used to irrigate hydrozones with high water use plants and moderate or low water use plants.

12. Trees shall be placed on separate valves except when planted in turf areas.

13. Sprinkler heads, rotors, and other emission devices on one valve shall have matched precipitation rates.

14. Head to head coverage shall be required unless otherwise directed by the manufacturer's specifications.

15. Swing joints or other riser protection components shall be required on all risers.

16. Check valves shall be installed to prevent low-head drainage.

Sec. 7D3-6. Glossary.

As used in this chapter, the following terms and phrases shall have the meanings ascribed to them in this section, unless the context in which they are used clearly requires otherwise. The definition of a term or phrase applies to any of that term's or phrase's variants.

"Building Permit" means any building permit under Chapter 7 of this code.

"Booster Pump" means a pump used where the normal water system pressure is low and needs to be increased.

"California Invasive Plant Inventory" means the California Invasive Plant Inventory maintained by the California Invasive Plant Council.

"Check Valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

"Compost" means the decayed remains of organic matter that has rotted into a natural fertilizer.

"Department" means the Permit and Resource Management Department.

"Design Review" means any design review under Chapter 26 or 26C of this code.

"Director" means the Director of the Permit and Resource Management Department or his or her authorized representative.

"Ecological Restoration Project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

"ET Adjustment Factor" means, except for special landscape areas, a factor of 0.6, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency. The ET adjustment factor for special landscape areas shall not exceed 1.0.

"Flow Rate" means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

"Grading Permit" means any grading permit under Chapter 11 of this code.

"Hardscape" means any durable material (pervious and non-pervious).

"Head to Head Coverage" means full coverage from one sprinkler head to the next.

"High-Flow Sensor" means a device for sensing the rate of fluid flow.

"High Water Use Plant" mean any plant categorized as high water need by the Water Use Classification of Landscape Species Guide.

"Hydrozone" means a portion of the landscape area having plants with similar water needs that are served by a valve or set of valves with the same schedule.

"Invasive Plant" means any plant listed on the California Invasive Plant Inventory.

"Irrigation Efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this chapter is 0.71.

"Irrigation Meter" means a separate meter that measures the amount of water used for items such as lawns, washing exterior surfaces, washing vehicles, or filling pools.

"Isolation Valve" means a valve used to isolate a portion of the piping system.

"Landscape Area" means the dedicated landscape area on a property. Water features are included in the calculation of the landscape area. Areas dedicated to agricultural cultivation are not included. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other nonirrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

"Land Use Permit" means any ministerial or discretionary permit or approval granted by the county pursuant to Chapter 26 or 26C of this code to use a specific site for a particular purpose.

"Low-Head Drainage" means water that flows out of the system after the valve turns off due to elevation changes within the system.

"Low Water Use Plant" means any plant categorized as low water need by the Water Use Classification of Landscape Species Guide.

"Maximum Applied Water Allowance" means the upper limit of annual applied water for the established landscape area. It is based upon the area's reference evapotranspiration, the ET adjustment factor, and the size of the landscape area. The estimated total water use shall not exceed the maximum applied water allowance

"Mined-Land Reclamation Project" means any surface mining operation with a reclamation plan approved in accordance with Chapter 26A of this code.

"Moderate Water Use Plant" means any plant categorized as moderate water need by the Water Use Classification of Landscape Species Guide.

"Mulch" means any organic material such as leaves, bark, straw, compost or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.

"New Landscape" means any new landscaping project.

"Non-pervious" means any surface or material that does not allow the passage of water through the material and into the underlying soil.

"Overhead Irrigation" means systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

"Overspray" means the irrigation water that is delivered beyond the landscape area, wetting pavements, walks, structures, or other non-landscaped areas.

"Pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

"Plant Factor" means a factor that, when multiplied by reference evapotranspiration, estimates the amount of water used by needed plants. Plant factors cited in this chapter are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

"Precipitation Rate" means the rate of application of water measured in inches per hour.

"Point of Connection" means the point at which an irrigation system taps into the main water supply line.

"Point Source Irrigation" means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

"Pressure Regulation" means a valve that automatically reduces the pressure in a pipe.

"Rain Sensor" means a system component that automatically shuts off and suspends the irrigation system when it rains.

"Recycled Water" means non-potable water that meets California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water. Recycled water is also known as reclaimed water.

"Reference Evapotranspiration" means a standard measurement of environmental parameters that affect the water use of plants, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered.

"Rehabilitated Landscape" means any re-landscaping project.

"Runoff" means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscape area.

"Soils Laboratory Report" means the analysis of a soil sample to determine nutrient content, composition, and other characteristics, including contaminants.

"Special Landscape Area" means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water, and areas dedicated active play such as parks, sports fields, golf courses, where turf provides the playing surface.

"Sprinkler Head" means a device that delivers water through a nozzle.

"Swing Joint" means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

"Valve" means a device used to control the flow of water in the irrigation system.

"Valve Manifold" means a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.

"Water Feature" means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.

"Weather-Based Self-Adjusting Irrigation Controller means a system component that uses local weather and landscape conditions to automatically adjust irrigation schedules to actual conditions on the site or historical weather data.

"Water Use Classification of Landscape Species Guide" means the Water Use Classification of Landscape Species Guide published by the University of California Cooperative Extension, the Department of Water Resources, and the Bureau of Reclamation, as it currently exists or may be amended in the future.

SECTION II. The fee schedule set forth in Exhibit "A" of Ordinance No. 5834 is amended to add the following fee under the Project Review Application Fee Schedule:

Landscape Plan Check	$350.00

SECTION III. The provisions of Section I of this ordinance shall not apply to new or rehabilitated landscape in any single-family or multi-family residential, commercial, industrial, agricultural processing, or public agency project for which an application for a building or grading permit or design review was accepted as complete for filing prior to the effective date of this ordinance.

SECTION IV. The provisions of Section I of this ordinance are intended to supercede and replace Section 26-88-110 of the Sonoma County Code (Low Water Use Landscaping). The Director of the Permit and Resource Management Department is directed to initiate proceedings to repeal Section 26-88-110 of the Sonoma County Code. Until repealed, Section 26-88-110 of the Sonoma County Code shall be inoperative.

SECTION V. The Board of Supervisors finds that the provisions of Section I of this ordinance are at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance adopted by the California Department of Water Resources pursuant to the Water Conservation in Landscaping Act (Government Code section 65591 et seq.). The provisions of Section I of this ordinance protect water supplies through the implementation of a whole systems approach to the design, installation, and maintenance of landscapes, which results in water conserving, climate-appropriate landscapes, improved water quality, and the minimization of natural resource inputs. The Director of the Permit and Resource Management Department is directed to submit a copy of this ordinance and evidence in the record supporting the preceding findings to the California Department of Water Resources.

SECTION VI. The Board of Supervisors finds that this ordinance is exempt from the California Environmental Quality Act ("CEQA") pursuant to Sections 15307 and 15308 of the State CEQA Guidelines as an action taken to assure the maintenance, restoration, enhancement, and protection of natural resources and the environment where the regulatory process involves procedures for protection of the environment, and pursuant to Section 15061(b)(3) of the State CEQA Guidelines because it can be seen with certainty that there is no possibility that this ordinance may have a significant effect on the environment. The basis for this determination is that this ordinance does not in itself approve any construction activities, but instead establishes standards, permit requirements, and other measures that regulate the design, installation, and maintenance of new and rehabilitated landscapes more stringently than existing codes. These standards, permit requirements, and other measures will not result in any direct physical change to the environment on their own, and will instead assure the maintenance, restoration, enhancement, and protection of natural resources and the environment by strengthening existing environmental standards and establishing new limitations. The

Director of the Permit and Resource Management Department is directed to file a notice of exemption in accordance with CEQA and the State CEQA Guidelines.

SECTION VII. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portion of this ordinance. The Board of Supervisors hereby declares that it would have passed this ordinance and every section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional or invalid.

SECTION VIII. This ordinance shall be and the same is hereby declared to be in full force and effect from and after thirty (30) days after the date of its passage and shall be published once before the expiration of fifteen (15) days after said passage, with the names of the Supervisors voting for or against the same, in *The Press Democrat*, a newspaper of general circulation published in the County of Sonoma, State of California.

In regular session of the Board of Supervisors of the County of Sonoma introduced on the 8th day of December, 2009, and finally passed and adopted this15th day of December, 2009, on regular roll call of the members of said Board by the following vote:

SUPERVISORS:

BROWN: Absent KERNS: Aye Zane: Aye Carrillo: Aye Kelley: Absent

AYES 3 NOES 0 ABSTAIN 0 ABSENT 2

WHEREUPON, the Chair declared the above and foregoing ordinance duly adopted and

SO ORDERED.

Efren Carrillo, Chair Pro Tem
Board of Supervisors, County of Sonoma

ATTEST:

Chris Thomas, Acting Clerk of
the Board of Supervisors

Appendix C: Draft Water Conservation Specs for New Construction and Retrofit

(Starts on the following page.)

Draft Water Conservation Specifications for Sonoma County Design & Construction Standards for New Development and Sanitation Facilities (10-28-09)B

4.7 Water Conservation

A. New Construction of Single-Family Homes, Multi-Family Homes, Townhomes, and Apartments:

1. General: See "Triggers."
2. Hot water delivery system:
   a. Install a Structured Plumbing System with demand controlled pumping hot water delivery system in accordance with recommendations of EPA Energy Star for Homes, including the following:
      1) The hot water distribution system shall store no more than 0.6 gallon of water in any piping/manifold between the hot water source and any hot water fixture.
      2) Insulate all hot water pipes to R-4 rating minimum.
      3) Locate all fixtures and appliances within 10 feet of the circulation loop with branch pipes ½-inch in diameter or less.
   b. Energy Star Link for more information and diagrams: http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/Volumetric_Hot_Water_Savings_Guidelines.pdf
3. Showerheads:
   a. EPA WaterSense rated low-flow shower heads with a maximum flow rate of 1.5 gpm at 80 psi when certified in accordance with ASME A112.18.1.
   b. (Plumbing Code Section 418.0 requirement)The total allowable flow rate of potable water from all showerheads flowing at any given time, including rain systems, waterfalls, bodysprays, and jets, shall be limited to 1.5 gpm per shower compartment, where the floor area of the shower compartment is less than 2,600 square inches.
   c. For each increment of 2,600 square inches of floor area thereafter or part thereof, additional showerheads are allowed, provided the total flow rate of potable water from all flowing devices is equal to or less than the 1.5 gpm per shower compartment.
   d. All showerheads shall comply with these criteria or the latest specification for EPA WaterSense labeled high-efficiency showerheads, whichever is the more restrictive related to flow.
4. Bathroom faucet aerators:
   a. High efficiency EPA WaterSense rated at
      1) A maximum flow rate of 1.5 gpm at a pressure of 60 psi when water is flowing, and
      2) A minimum flow rate of 0.8 gpm at a pressure of 20 psi when water is flowing.
5. Kitchen faucet aerators:
   a. High efficiency EPA WaterSense rated at
      1) A maximum flow rate of 2.0 gpm at a pressure of 60 psi when water is flowing, and
6. High Efficiency Toilets:
   a. High-efficiency EPA WaterSense rated toilets
   b. Maximum effective flush volume of 1.1 gpf
   c. Solid waste removal of 350 grams or greater.
   d. EPA WaterSense Link: http://www.epa.gov/watersense/pp/het.htm
7. Dish Washers:
   a. High efficiency Residential Energy Star qualified

1) Using less than or equal to 4.25 gallons per cycle.
2) Energy Star Link:
http://www.energystar.gov/index.cfm?c=dishwash.pr_dishwashers

b. CEE Super Efficient Home Appliance qualified
1) Tier 2
2) Using less than or equal to 4.25 gallons per cycle.
3) CEE Link: http://www.cee1.org/resid/seha/dishw/dishw-main.php3

8. Clothes Washers:
a. Residential Energy Star qualified
1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
3) Energy Star Link:
http://www.energystar.gov/index.cfm?c=clotheswash.pr_clothes_washers

b. CEE Super Efficient Home Appliance qualified
1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
3) Tier 3
4) CEE Link: http://www.cee1.org/resid/seha/rwsh/rwsh-prod.pdf

9. Water Softener Systems:
a. Certified to meet NSF/ANSI Standard 44, including the voluntary efficiency rating standards in Section 7 of NSF/ANSI Standard 44 "Mandatory testing for elective claims for efficiency rated systems," meeting the following requirements::
1) A demand-initiated self-regeneration system using a flow meter or water hardness sensor to initiate self-regeneration. A self-regeneration system displaces calcium and magnesium ions with sodium ions from sodium chloride salt by flushing with a strong sodium chloride brine solution
2) Not using time clock-initiated self-regeneration [fixed time schedule]
3) A rated salt efficiency of not less that 3,350 grains of total hardness exchange per pound of salt, based on sodium chloride (NaCl) equivalency.
4) Not generating more than 5 gallons of water per 1,000 grains of hardness removed during the service cycle.

10. Drinking Water Treatment Systems:
a. Certified to meet applicable NSF/ANSI Standards
b. Efficiency rating of not less than 85 percent.

11. Evaporative Air Conditioners:
a. Maximum water usage: 3.5 gallons per ton-hour of cooling when adjusted to maximum water use.
b. Blowdown: Based on time of operation, not to exceed 3 times in a 24-hour period of operating (once every 8 hours).

B. New Construction of Commercial, Industrial, and Institutional developments:

1. General: See "Triggers."
2. Hot water delivery system:
   a. Install a Structured Plumbing System with Demand Controlled Pumping hot water delivery system in accordance with recommendations of EPA Energy Star for Homes, including the following:
      1) The hot water distribution system shall store no more than 0.6 gallon of water in any piping/manifold between the hot water source and any hot water fixture.
      2) Insulate all hot water pipes to R-4 rating minimum.
      3) Locate all fixtures and appliances within 10 feet of the circulation loop with branch pipes ½-inch in diameter or less.
   b. Energy Star Link for more information and diagrams: http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/Volumetric_Hot_Water_Savings_Guidelines.pdf
3. Showerheads:
   a. EPA WaterSense rated low-flow shower heads with a maximum flow rate of 1.5 gpm at 80 psi when certified in accordance with ASME A112.18.1.
   b. The total allowable flow rate of potable water from all showerheads flowing at any given time, including rain systems, waterfalls, bodysprays, and jets, shall be limited to 1.5 gpm per shower compartment, where the floor area of the shower compartment is less than 2,600 square inches.
   c. For each increment of 2,600 square inches of floor area thereafter or part thereof, additional showerheads are allowed, provided the total flow rate of potable water from all flowing devices is equal to or less than the 1.5 gpm per shower compartment.
   d. All showerheads shall comply with these criteria or the latest specification for EPA WaterSense labeled high-efficiency showerheads, whichever is the more restrictive related to flow.
4. Bathroom faucet:
   a. UPC/CPC aerator rated at a maximum flow rate of 0.5 gpm at a pressure of 60 psi when water is flowing
5. Urinals:
   a. Waterless, or
   b. Maximum of 0.125 gpf.

a. Kitchen faucet:
   a. High efficiency EPA WaterSense aerator rated at a maximum flow rate of 2.0 gpm at a pressure of 60 psi when water is flowing
7. Pre-rinse Spray Valve:
   a. Maximum flow rate of 1.0 gpm.
8. High Efficiency Toilets:
   a. High-efficiency EPA WaterSense rated toilets
   b. Maximum effective flush volume of 1.1 gpf
   c. Solid waste removal of 350 grams or greater.

9. Dish Washers:
   a. High efficiency Commercial Energy Star and Commercial CEE qualified
      1) High-temperature – 0.70 gallons per rack per load
      2) High/Low-temperature – 0.60 gallons per rack per load
      3) Low-temperature – 1.0 gallons per rack per load
   b. Energy Star Link: http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_comm_dishwashers
   c. CEE Link: http://www.cee1.org/com/com-kit/com-kit-main.php3
10. Clothes Washers:
   a. Commercial Energy Star qualified
      1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
      2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
      3) Energy Star Link: http://www.energystar.gov/index.cfm?fuseaction=clotheswash.display_commercial_cw
   b. Commercial, Family-Sized CEE qualified
      1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
      2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
      3) Tier 3
      4) CEE Link: http://www.cee1.org/com/cwsh/cwshspec.pdf
11. Water Softener Systems:
   a. Certified to meet NSF/ANSI Standard 44, including the voluntary efficiency rating standards in Section 7 of NSF/ANSI Standard 44 "Mandatory testing for elective claims for efficiency rated systems," meeting the following requirements::
      1) A demand-initiated self-regeneration system using a flow meter or water hardness sensor to initiate self-regeneration. A self-regeneration system displaces calcium and magnesium ions with sodium ions from sodium chloride salt by flushing with a strong sodium chloride brine solution
      2) Not using time clock-initiated self-regeneration [fixed time schedule] systems.
      3) A rated salt efficiency of not less that 3,350 grains of total hardness exchange per pound of salt, based on sodium chloride (NaCl) equivalency.
      4) Not generating more than 5 gallons of water per 1,000 grains of hardness removed during the service cycle.
12. Drinking Water Treatment Systems:
   a. Certified to meet applicable NSF/ANSI Standards
   b. Efficiency rating of not less than 85 percent.
13. Evaporative Air Conditioners:
   a. Maximum water usage: 3.5 gallons per ton-hour of cooling when adjusted to maximum water use.
   b. Blowdown: Based on time of operation, not to exceed 3 times in a 24-hour period of operating (once every 8 hours).
14. Connectionless (Boilerless) Food Steamers
   a. EPA Energy Star qualified
   b. Use of 2 gallons per hour or less per compartment

15. Boiler-based Food Steamers
    a. Only for use in commercial service operations and institutions where production requires
        1) Higher constant steaming power than is available for connectionless steamers, or
        2) Higher speed than is available for connectionless steamers, or
        3) Higher production capacity than is available for connectionless steamers
16. Ice Making Machines
    a. CEE Tier 3
    b. Air-cooled
    c. Flake or nugget machines, no cube machines
    d. Use of 20 gallons or less of water per 100 pounds of ice produced.
17. Freestanding Steam Sterilizers modifications
    a. Install Jacket and Chamber Condensate Cooling modification to reduce condensate cooling water flow by approximately 90%
        1) Products/Manufacturers:
            a) Water Mizer by Continental Equipment Company
            b) Or Approved Equal
    b. Install Ejector Water modification packages to reduce ejector water consumption by approximately 75%
        1) Manufacturers:
            a) Getting-Castle
            b) ARS
            c) Or Approved Equal modifications
18. Cooling Tower Conductivity Controller and pH Controller Systems
    a. Install Conductivity Controller and pH Controller systems at the below indicated locations for monitoring water quality for all cooling tower type water-cooled chilled water systems for building air conditioning and/or industrial process applications.
        1) For Open Loop Cooling Towers:
            a) Cooling Tower Sump, and/or
            b) Water Boxes on top of Cooling Tower, and/or
            c) Piping between the Condenser Water Pump and the Water Boxes on top of the Cooling Tower, and/or
            d) Piping between the Closed Loop Evaporative Cooler Sump and the Condenser/Chiller, and/or
            e) Approved equivalently effective location(s)
        2) For Closed Loop Evaporative Cooling Towers:
            a) Closed Loop Evaporative Cooler Sump, and/or
            b) Piping between the Evaporative Spray Pump and the Spray Nozzles on top of the Closed Loop Evaporative Cooling Tower, and/or
            c) Approved equivalently effective location(s)
    b. Locate pH and conductivity sensors so that readings are not affected by the location of make-up water introduction into the system, in order to:
        1) Minimize blowdown to drain while maintaining water quality
        2) Provide the most effective protection against scale and algae buildup.

C. Retrofitting of Single-Family Homes, Multi-Family Homes, Townhomes, and Apartments:

1. General: See "Triggers."
2. Hot water delivery system:
   a. Install a demand controlled hot water delivery pumping system into the existing potable water system in accordance with recommendations of EPA Energy Star for Homes, including the following:
      1) Insulate all hot water pipes to R-4 rating minimum.
   b. Energy Starr Link for more information and diagrams: http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/Volumetric_Hot_Water_Savings_Guidelines.pdf
3. Showerheads:
   a. EPA WaterSense rated low-flow shower heads with a maximum flow rate of 1.5 gpm at 80 psi when certified in accordance with ASME A112.18.1.
   b. The total allowable flow rate of potable water from all showerheads flowing at any given time, including rain systems, waterfalls, body sprays, and jets, shall be limited to 1.5 gpm per shower compartment, where the floor area of the shower compartment is less than 2,600 square inches.
   c. For each increment of 2,600 square inches of floor area thereafter or part thereof, additional showerheads are allowed, provided the total flow rate of potable water from all flowing devices is equal to or less than the 1.5 gpm per shower compartment.
   d. All showerheads shall comply with these criteria or the latest specification for EPA WaterSense labeled high-efficiency showerheads, whichever is the more restrictive related to flow.
4. Bathroom faucet aerators:
   a. High efficiency EPA WaterSense rated at
      1) A maximum flow rate of 1.5 gpm at a pressure of 60 psi when water is flowing, and
      2) A minimum flow rate of 0.8 gpm at a pressure of 20 psi when water is flowing.
5. Kitchen faucet aerators:
   a. High efficiency EPA WaterSense rated at
      1) A maximum flow rate of 2.0 gpm at a pressure of 60 psi when water is flowing, and
6. High Efficiency Toilets:
   a. High-efficiency EPA WaterSense rated toilets
   b. Maximum effective flush volume of 1.1 gpf
   c. Solid waste removal of 350 grams or greater.
7. Dish Washers
   a. High efficiency Residential Energy Star qualified
      1) Using less than or equal to 4.25 gallons per cycle.
      2) Energy Star Link: http://www.energystar.gov/index.cfm?c=dishwash.pr_dishwashers
   b. CEE Super Efficient Home Appliance qualified
      1) Tier 2
      2) Using less than or equal to 4.25 gallons per cycle.
      3) CEE Link: http://www.cee1.org/resid/seha/dishw/dishw-main.php3

D. Retrofitting of Commercial, Industrial, and Institutional developments

1. General: See "Triggers."
2. Hot water delivery system:
   a. Install a demand controlled hot water delivery pumping system into the existing potable water system in accordance with recommendations of EPA Energy Star for Homes, including the following:
      1) Insulate all hot water pipes to R-4 rating minimum.
   b. Energy Star Link for more information and diagrams: http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/Volumetric_Hot_Water_Savings_Guidelines.pdf
3. Showerheads:
   a. EPA WaterSense rated low-flow shower heads with a maximum flow rate of 1.5 gpm at 80 psi when certified in accordance with ASME A112.18.1.
   b. The total allowable flow rate of potable water from all showerheads flowing at any given time, including rain systems, waterfalls, bodysprays, and jets, shall be limited to 1.5 gpm per shower compartment, where the floor area of the shower compartment is less than 2,600 square inches.
   c. For each increment of 2,600 square inches of floor area thereafter or part thereof, additional showerheads are allowed, provided the total flow rate of potable water from all flowing devices is equal to or less than the 1.5 gpm per shower compartment.
   d. All showerheads shall comply with these criteria or the latest specification for EPA WaterSense labeled high-efficiency showerheads, whichever is the more restrictive related to flow.
4. Bathroom faucets:
   a. UPC/CPC rated at a maximum flow rate of 0.5 gpm at a pressure of 60 psi when water is flowing
5. Urinals:
   a. Waterless or
   b. Maximum of 0.125 gpf.
6. Kitchen faucets:
   a. High efficiency EPA WaterSense aerator rated at a maximum flow rate of 2.0 gpm at a pressure of 60 psi when water is flowing
7. Pre-rinse Spray Valve:
   a. Maximum flow rate of 1.0 gpm.
8. High Efficiency Toilets:
   a. High-efficiency EPA WaterSense rated toilets
   b. Maximum effective flush volume of 1.1 gpf
   c. Solid waste removal of 350 grams or greater.
9. Dish Washers:
   a. High efficiency Commercial Energy Star and Commercial CEE qualified
      1) High-temperature – 0.70 gallons per rack per load
      2) High/Low-temperature – 0.60 gallons per rack per load
      3) Low-temperature – 1.0 gallons per rack per load
   b. Energy Star Link: http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_comm_dishwashers
   c. CEE Link: http://www.cee1.org/com/com-kit/com-kit-main.php3

10. Clothes Washers:
    a. Commercial Energy Star qualified
        1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
        2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
        3) Energy Star Link: http://www.energystar.gov/index.cfm?fuseaction=clotheswash.display_commercial_cw
    b. Commercial, Family-Sized CEE qualified
        1) Excluding washers containing silver ion technology due to possibility of harm to wastewater treatment plants and the environment
        2) Water Factor less than or equal to 4.5 gallons of water per cycle per cubic foot of capacity.
        3) Tier 3
        4) CEE Link: http://www.cee1.org/com/cwsh/cwshspec.pdf
11. Water Softeners:
    a. Certified to meet NSF/ANSI Standard 44, including the voluntary efficiency rating standards in Section 7 of NSF/ANSI Standard 44 "Mandatory testing for elective claims for efficiency rated systems:
        1) A demand-initiated self-regeneration system (i.e. it must use a flow meter or water hardness sensor to initiate self-regeneration) A self-regeneration system displaces calcium and magnesium ions with sodium ions from sodium chloride salt by flushing with a strong sodium chloride brine solution.
        2) Not using time clock-initiated regeneration [fixed time schedule] systems.
        3) A rated salt efficiency of not less than 3,350 grains of total hardness exchange per pound of salt, based on sodium chloride (NaCl) equivalency.
        4) Not generating more than 5 gallons of water per 1,000 grains of hardness removed during the service cycle.
12. Drinking Water Treatment Systems:
    a. Certified to meet applicable NSF/ANSI Standards
    b. Efficiency rating of not less than 85 percent.
13. Evaporative Air Conditioners:
    a. Maximum water usage of 3.5 gallons per ton-hour of cooling when adjusted to maximum water use.
    b. Blowdown based on time of operation, not to exceed 3 times in a 24-hour period of operating (once every 8 hours).
14. Connectionless (Boilerless) Food Steamers
    a. EPA Energy Star qualified
    b. Use of 2 gallons per hour or less per compartment
15. Boiler-based Food Steamers
    a. Only for use in commercial service operations and institutions where production requires
        1) Higher constant steaming power than is available for connectionless steamers, or
        2) Higher speed than is available for connectionless steamers, or
        3) Higher production capacity than is available for connectionless steamers
16. Ice Making Machines
    a. CEE Tier 3
    b. Air-cooled
    c. Flake or nugget machines, no cube machines
    d. Use of 20 gallons or less of water per 100 pounds of ice produced.

17. Freestanding Steam Sterilizers modifications
    a. Install Jacket and Chamber Condensate Cooling modification to reduce condensate cooling water flow by approximately 90%
        1) Products/Manufacturers:
            a) Water Mizer by Continental Equipment Company
            b) Or Approved Equal
    b. Install Ejector Water modification packages to reduce ejector water consumption by approximately 75%
        1) Manufacturers:
            a) Getting-Castle
            b) ARS
    c. Or Approved Equal modifications
18 Cooling Tower Conductivity Controller and pH Controller Systems
    a. Install Conductivity Controller and pH Controller systems at the below indicated locations for monitoring water quality for all cooling tower type water-cooled chilled water systems for building air conditioning and/or industrial process applications.
        1) For Open Loop Cooling Towers:
            a) Cooling Tower Sump, and/or
            b) Water Boxes on top of Cooling Tower, and/or
            c) Piping between the Condenser Water Pump and the Water Boxes on top of the Cooling Tower, and/or
            d) Piping between the Closed Loop Evaporative Cooler Sump and the Condenser/Chiller, and/or
            e) Approved equivalently effective location(s)
        2) For Closed Loop Evaporative Cooling Towers:
            a) Closed Loop Evaporative Cooler Sump, and/or
            b) Piping between the Evaporative Spray Pump and the Spray Nozzles on top of the Closed Loop Evaporative Cooling Tower, and/or
            c) Approved equivalently effective location(s)
    b. Locate pH and conductivity sensors so that readings are not affected by the location of make-up water introduction into the system, in order to:
        1) Minimize blowdown to drain while maintaining water quality
        2) Provide the most effective protection against scale and algae buildup.

Appendix D: Business Park Coalition Letter

Sonoma County Commercial Business Park Coalition
1400 N. Dutton Avenues
Santa Rosa, CA 95401
(707) 522-2293

April 21, 2009

Mr. Charles R. Hoppin
Board Chair
State Water Resources Control Board
1001 I Street
Sacramento, California 95814

Re: Division of Water Rights Order WR 2009-0027-DWR
Condition #14: Prohibition on Irrigation of Commercial Turf Grass Within the Sonoma County Water Agency (SCWA) Service Area for the period of May 1, 2009 through October 2, 2009

Dear Mr. Hoppin:

The Sonoma County Commercial Business Park (Coalition) is a stakeholder group that represents the majority of commercial park ownership in Sonoma County. Coalition goals are specific to addressing the concerns of the State Water Board relative to water conservation in commercial business parks by proposing a program that would replace the need to implement the Board's Water Rights Order (Order) dated April 27th, 2009. We propose that within the next six (6) months to reduce water use in Sonoma County commercial business parks by **35%** (based upon 2004 usage) by implementing the following actions.

1. Work with SCWA and commercial business landscapers to develop a menu of options for water conservation. Such items could include (but, not limited to):
    a) Retrofitting indoor fixtures (toilets, urinals, and faucet hardware);
    b) Installation of SWAT tested smart irrigation controllers;
    c) Conversion of overhead spray to drip irrigation, where appropriate;
    d) Reduce turf grass in low traffic areas, including medians and narrow strips;
    e) Ensure that landscapers attend the *Qualified Water Efficient Landscaper Training* program;
    f) Develop a commercial business park education and outreach program;
    g) Promote and encourage sheet mulching in low traffic areas;
    h) Install match precipitation rate sprinklers so that spray patterns and radius deliver water evenly;

In addition, by April 6, 2010, we will submit a detailed long-term Commercial Business Water Conservation Program. This program will further commit the Coalition to retrofit commercial

landscapes to achieve a water budget based on 60% ET by 2017. The program will include, at a minimum, the following components:

1) A data base that inventories low traffic areas within the commercial parks for the purposes of reducing water consumption by changing planting schemes and/or irrigation methods;
2) A program that targets high water use crops for the purposes of reducing water consumption by changing planting schemes and/or irrigation methods;
3) A long-term and user friendly monitoring and reporting program;
4) A long-term education and outreach program to encourage all members of the community to participate in a comprehensive water conservation program;
5) A delineated, comprehensive menu of conservation measures; and
6) A funding mechanism for assisting Commercial Business Parks in achieving conservation goals.

We too believe that conservation of water resources requires immediate action. This proposal is a great first step in collectively accepting our responsibility in making our business community a leader in conserving water. It is our belief that by working with the Sonoma County Water Agency, the commercial park owners in Sonoma County can achieve the conservation goals of the State Water Board and protect our regional resources and economic viability.
Mr. Hoppin, thank you for consideration of our proposal. We look forward to the Water Board's suggestions on how to improve our proposed program.

Sincerely,

Sonoma County Commercial Business Park Coalition

1. Airport Business Center
2. Sonoma County Office of Education
3. Schellinger Brothers
4. Jackson Family Wines
5. Brunsing Associates, Inc.
6. Huppe Landscape Company
7. Basin Street Properties
8. Schurter, Inc.
9. Pacatte Construction
10. Hydropoint Data Systems, Inc.
11. Pacific Landscapes, Inc.
12. Equity Office Properties
13. Simons & Woodard

Appendix E: Agency's Requests for Information Regarding Turf Water Use Estimates

E.1 List of Contacts

In order to solicit information required for this report, the Agency contacted the following entities from Marin, Sonoma, and Mendocino Counties:

1. Water Advisory Committee/Technical Advisory Committee - Water Conservation Subcommittee. This group is comprised of management staff from the following entities:

City of Santa Rosa
City of Rohnert Park
City of Cotati
City of Petaluma
City of Sonoma
Town of Windsor
Valley of the Moon Water District
North Marin Water District

2. North Coast Water Conservation Coordinators. This group is comprised of management and/or water conservation staff from the entire area served by Lake Mendocino, business and agricultural leaders and other interested parties.

Advanced Viticulture, LLC
CalAm Water Company
Calpella County Water District
City of Cotati
City of Cloverdale
City of Healdsburg
City of Rohnert Park
City of Santa Rosa
City of Sebastopol
City of Sonoma
City of Ukiah
City of Petaluma
Forestville County Water District
Gardenworks, Inc. Landscapers
Geyserville Water Works
Gill Creek Mutual Water Company
Holland Heights Mutual Water Company
Hopland Public Utility District
Marin Municipal Water District
Madrone Mutual Water Company
Mendocino County Water Agency
Millview County Water District
North Marin Water District
Pacific Landscapes
Palomino Lakes Mutual Water Company
Penngrove Water Company
Redwood Valley County Water District
River Bend Resort
Rogina Water Inc
Russian River Flood Control & Water Conservation Improvement District
Russian River County Water District
Sonoma County Business Park Coalition
Sonoma County Winegrape Commission
Sonoma West Holdings, Inc.
South Cloverdale Water District
Sweetwater Springs Water District
Town of Windsor
Valley of the Moon Water District
Willow County Water District

E.2 Meetings, Correspondence, and Requests for Information

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1. January 22, 2010

The first meeting held with the TAC Water Conservation Subcommittee was on Thursday, January 21, 2010. The following email was sent to members on Friday, January 22, 2010 with the Agency's first request for information.

From: Diane Lesko
Sent: Friday, January 22, 2010 10:03 AM
To: 'Chris DeGabriele'; Krishna Kumar; Damien O'Bid; Darrin Jenkins; Ban, Michael; Milenka Bates; Wright, Glen; Burke, Jennifer; Richard Burtt; Paul Helliker; 'morr@ci.petaluma.ca.us'
Cc: Miles Ferris; Tim Anderson
Subject: Minutes/Request from 1/21/10 Subcommittee meeting - Term 17 Report

Based on our meeting yesterday, I've outlined the information that will be included in the Term 17 report, what information **I will provide** and what information I will **need to collect from you.** I am also attaching the most current water conservation program matrix:

1. Current list of water conservation programs and the savings achieved to date.
    a. **Include the Water Conservation Programs Matrix**.
    b. **Include your BMP Coverage Reports and Total Water Savings Reports for 2008/2009. If you have additional measures/savings from programs outside the scope of the BMPs, please send the program information and savings for those as well.**
    c. **Comment on water savings achieved by other means (referenced in 2005 UWMP).**
2. List of future measures and the estimated savings.
    a. **Use 2006 Maddaus reports for all except Petaluma, who will provide me with their more current version.**
    b. **Note that the Maddaus work is being updated and the new information will be included in your respective UWMPs.**
3. Provide estimates of the quantity of water applied to commercial turf in the SCWA service area and provide recommendations for long-term reductions in water use on commercial turf.
    a. **Clearly state that it is not possible to quantify water used to irrigate commercial turf as defined in the Order.**
    b. **Provide total number of dedicated irrigation meter connections, percent of water sales associated with those connections and the percent of irrigation sales in relation to total water sales – all for calendar year 2008.** Clarify that these meters may serve CII, MF, SFR customers and landscapes of all types – no way to separate commercial turf irrigation.
    c. **Provide information from NMWD and Cotati on percentage of commercial irrigation use versus total irrigation use.**

   d. **Describe programs that address reducing irrigation use: i.e. Cash for Grass, Efficient Irrigation Upgrade incentives, Service Split incentives, Water Efficient Landscape Ordinance, SB 7X7.**

4. Include a description of the authority or mechanisms that will be used to implement the identified conservation measures and a schedule for implementation.
   a. **Provide list of water conservation programs (BMPs, CUWCC).**
   b. **Provide information on appropriate legislation.**
   c. **Provide information on local ordinances, building codes, WELO.**

Please provide me with the following information no later than 5:00 p.m. on Monday, February 8th:

- CUWCC BMP Coverage Reports – 2008/2009
- CUWCC Total Water Savings Report – 2008/2009
- Total number of dedicated irrigation meter connections (2008)
- Total water sales (2008)
- Percent of total water sales associated with dedicated irrigation connections (2008)
- NMWD and Cotati: Percentage of Commercial irrigation use in relation to total irrigation use (2008)
- Petaluma: current Maddaus report

TIMELINE:

February 8, 2010 – information requested is due to Diane
February 22, 2010 – Diane will provide a draft of the Term 17 report for your review
February 25, 2010 – 11:00 a.m. tentative TAC WC Subcommittee meeting to discuss draft
March 5, 2010 – revised Draft Report ready for review and comment
March 26, 2010 -- last date for final review and edit before submittal to SWRQB
April 6, 2010 – Final Term 17 Report due to SWRCB

Please let me know if you have any questions.

Regards,
Diane

Diane Lesko, Programs Specialist
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa CA 95403

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2. January 25, 2010

The Agency held a meeting with the North Coast Water Conservation Coordinators on Monday, January 25th to let them know about the Order and the information the Agency would be requesting from them. Below is the information request sent out after the meeting. This group includes all the "other" water utilities/providers in Sonoma County – not just the Water Contractors.

From: Diane Lesko
Sent: Monday, January 25, 2010 10:23 AM
To: Ali Davidson; Brad Sherwood; Brian Lee; CalAm Water; CalAm Water; CalAm Water; Calpella

County Water District and Willow County W.D., David Redding; Carolyn Wasem; Carrie Pollard; City of Cloverdale; City of Cotati; City of Healdsburg, Jim Flugum; City of Rohnert Park; City of Santa Rosa, Dan Muelrath; City of Sebastopol; City of Sonoma; City of Ukiah; City of Ukiah; City of Ukiah, Alan Jamison; City of Ukiah, Brandy Wood; Dave Iribarne, City of Petaluma; Dave Penry; Diane Lesko; Forestville County Water District; Geyserville Water Works, Harry Bosworth; Gill Creek Mutual Water Company; Heather Bauman; Holland Heights Mutual Water Co.; Hopland Public Utility District, Everett Jacobson; Jay Tripathi; Madrone Mutual Water Co., Christopher Brooks; Mark Greenspan; Mendocino County Water Agency, Joe Scriven; Mendocino County Water Agency, Roland Sanford; Millview County Water District, Tim Bradley; MMWD; Nick Frey; NMWD, Ryan Grisso; Palomino Lakes Mutual Water Co.; Penngrove Water Co.; Redwood Valley County Water District, William L. Koehler; River Bend Resort; Rogina Water Inc.; RRFC & WCID, Barbara Spazek; Russian River County Water District, Hall Wood; Sonoma West Holdings, Inc.; South Cloverdale Water District, Dennis Jensen; Sweetwater Springs Water District, Steve Mack; Town of Windsor; Town of Windsor; VOMWD

Subject: Meeting minutes -- information request

Based on our meeting today, I've outlined the information that will be included in the Term 17 report, what information I will provide and what information I will need to collect from you. I am also attaching the most current water conservation program matrix:

1. Current list of water conservation programs and the savings achieved to date.
    a. Include the Water Conservation Programs Matrix.
    b. If you have additional measures/savings from programs outside the scope of the BMPs and/or attached matrix, please send the program information and savings for those as well.
    c. Comment on water savings achieved by other means (referenced in 2005 UWMP).
2. List of future measures and the estimated savings.
    a. Use 2006 Maddaus reports for Agency contractors except Petaluma, who will provide me with their more current version. I will note that the Maddaus work is being updated and the new information will be included in your respective UWMPs.
    b. Provide me a list and description of any future water conservation measures and associated estimated savings that you will be implementing that have not already been addressed.
3. Provide estimates of the quantity of water applied to commercial turf in the SCWA service area and provide recommendations for long-term reductions in water use on commercial turf.
    a. Clearly state that it is not possible to quantify water used to irrigate commercial turf as defined in the Order.
    b. Provide total number of dedicated irrigation meter connections, water sales associated with those connections and the percent of irrigation sales in relation to total water sales – all for calendar year 2008. Clarify that these meters may serve CII, MF, SFR customers and landscapes of all types – no way to separate commercial turf irrigation.
    c. Describe programs that address reducing irrigation use: i.e. Cash for Grass, Efficient Irrigation Upgrade incentives, Service Split incentives, Water Efficient Landscape Ordinance, SB 7X7.
4. Include a description of the authority or mechanisms that will be used to implement the identified conservation measures and a schedule for implementation.
    a. Provide list of water conservation programs (BMPs, CUWCC).
    b. Provide information on appropriate legislation.
    c. Provide information on local ordinances, building codes, WELO.

Please provide me with the following information no later than 5:00 p.m. on Monday, February 8th:

- Total number of dedicated irrigation meter connections (2008)
- Total water sales (2008)
- Percent of total water sales associated with dedicated irrigation connections (2008)

TIMELINE:
February 8, 2010 – information requested is due to Diane
February 22, 2010 – Diane will provide a draft of the Term 17 report for your review
February 24, 2010 – 10:30 a.m. tentative North Coast WC meeting to discuss draft
March 5, 2010 – revised Draft Report ready for review and comment
March 26, 2010 -- last date for final review and edit before submittal to SWRQB
April 6, 2010 – Final Term 17 Report due to SWRCB
Please let me know if you have any questions.

Diane
Diane Lesko, Programs Specialist
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa CA 95403

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3. February 3, 2010

The Agency sent the following message to Chris DeGabriele, chair of the TAC, on Feb. 3, 2010 to ask that it be provided ahead of time as an Agenda for the Feb. 25, 2010 meeting

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From: Diane Lesko
Sent: Wednesday, February 03, 2010 2:08 PM
To: 'Chris DeGabriele'
Subject: SWRCB meeting and Agenda for 2/25/10 TAC WC meeting
Chris,
We are all set to hold the next TAC Water Conservation Subcommittee meeting here:
SCWA
Thursday, February 25th 11:00 a.m.
Sequoia Conference Room

I have two items for the agenda:

- discuss the outcome of the meeting SCWA staff had with Vicky Whitney at the SWRCB office
- request for additional information

I've included a recap of the meeting and the request for additional information below. If you would forward this on to the members, it will give them a chance to review the information before the meeting on the 25th:

Pam Jeane, Jay Jasperse I met with Vicky Whitney at the SWRCB office on Monday, February 1st to discuss the Term 17 report. My hope was to get clarification on a few things and get the buy-in on how we propose to move forward with the report. Here is a recap of the results of that meeting.

1. List of future measures and estimated savings: We will not be referencing the 2006 Maddaus supply and demand estimates as they are out-dated. Instead, we will give a synopsis of the Maddaus

modeling from 2004, how the DSS modeling works and some examples of the Tier 2 and New Development measures and estimated savings. Ms. Whitney agreed that this would be all that is required for now and when the UWMP process is complete, we will provide the Board with the full modeling report.

2. Commercial Turf: Ms. Whitney made it very clear that the Board wants us to report the estimated square feet of irrigated commercial turf in our service area. I will need to get that information from each of you.

Additional information requested:

a. What percent of ETo did you use initially to develop your water budgets for dedicated irrigation meters?
b. The Water Efficient Landscape Policy, which covers new and revised landscapes, has been adopted at .70 of ETo or less. Have you already, or do you plan to adjust the water budgets for existing landscapes to a lower ETo? If so, to what percent of ETo?
c. If your water budgets are not tied to rates, what measures, if any, do you take with customers who consistently exceed their water budget?
d. What on-going monitoring of water budget vs. actual use do you have in place, or plan to put into place?
e. Regarding SB 7x-7: What is your GPCD and how was that number derived (which option was used)?

Regards,
Diane

Diane Lesko, Programs Specialist
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa CA 95403

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4. February 25, 2010

On February 25, 2010 2nd meeting with the TAC Water Conservation Subcommittee was held. Below is the request for information following that meeting.

Sent: Friday, February 26, 2010 11:34 AM
To: Krishna Kumar; Damien O'Bid; Darrin Jenkins; Ban, Michael; Richard Burtt; Milenka Bates
Cc: morr@ci.petaluma.ca.us; Wright, Glen; Jennifer Burke; Paul Helliker; cscott@Townofwindsor.com; CristinaGoulart@W-and-K.com; Diane Lesko
Subject: FW: Revised TOTAL WATER SAVINGS chart and COMBINED PROGRAM MATRIX

At yesterday's WC Subcommittee meeting Diane Lesko requested the below information be submitted to her by close of business on March 4th to prepare the Water Conservation Plan for the SWRCB. Additionally please provide an estimate of applied water to the commercial turf area

estimate; an estimate of future Recycled water which will offset potable supply now used for landscape irrigation and review the programs matrix attached to this email (2.26.10 NEW Combined Programs sheet.xls).
Again please provide to Diane by March 4th.
We should see the first draft of the report early in the week of March 8th.

Chris

2. Commercial Turf: Ms. Whitney made it very clear that the Board wants us to report the estimated square feet of irrigated commercial turf in our service area. I will need to get that information from each of you.

Additional information requested:

a. What percent of ETo did you use initially to develop your water budgets for dedicated irrigation meters?
b. The Water Efficient Landscape Policy, which covers new and revised landscapes, has been adopted at .70 of ETo or less. Have you already, or do you plan to adjust the water budgets for existing landscapes to a lower ETo? If so, to what percent of ETo?
c. If your water budgets are not tied to rates, what measures, if any, do you take with customers who consistently exceed their water budget?
d. What on-going monitoring of water budget vs. actual use do you have in place, or plan to put into place?
e. Regarding SB 7x-7: What is your GPCD and how was that number derived (which option was used)?

Regards,
Diane

Diane Lesko, Programs Specialist
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa CA 95403

From: Diane Lesko [mailto:Diane.Lesko@scwa.ca.gov]
Sent: Friday, February 26, 2010 9:50 AM
To: Chris DeGabriele
Subject: Revised TOTAL WATER SAVINGS chart and COMBINED PROGRAM MATRIX

Chris,
As promised, here are the updated chart and matrix. Please distribute to the TAC WC Subcommittee. We will be referencing the SCWA QWEL and SQWEL programs in the report, but won't add them to the Matrix for now.
Thanks!
Diane

Diane Lesko, Programs Specialist
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa CA 95403

Appendix F: Restructured Agreement for Water Supply (2006)

(Starts on following page)

RESTRUCTURED AGREEMENT FOR WATER SUPPLY

by and between

SONOMA COUNTY WATER AGENCY
CITY OF COTATI
CITY OF PETALUMA
CITY OF ROHNERT PARK
CITY OF SANTA ROSA
CITY OF SONOMA
FORESTVILLE WATER DISTRICT
NORTH MARIN WATER DISTRICT
VALLEY OF THE MOON WATER DISTRICT
TOWN OF WINDSOR

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RESTRUCTURED AGREEMENT FOR WATER SUPPLY

THIS AGREEMENT is made on _____ by and between the following public entities:

SONOMA COUNTY WATER AGENCY, herein called "Agency",
CITY OF COTATI, herein called "Cotati",
CITY OF PETALUMA, herein called "Petaluma",
CITY OF ROHNERT PARK, herein called "Rohnert Park",
CITY OF SANTA ROSA, herein called "Santa Rosa",
CITY OF SONOMA, herein called "Sonoma",
FORESTVILLE WATER DISTRICT, herein called "Forestville",
NORTH MARIN WATER DISTRICT, herein called "North Marin",
VALLEY OF THE MOON WATER DISTRICT, herein called "Valley of the Moon", and
TOWN OF WINDSOR, herein called "Windsor",

The parties hereto hereby mutually covenant and agree as follows:

PART 1 - GENERAL

1.1 Recital of Purposes

Among the purposes of this Agreement are to provide a water supply or a supplemental water supply for each of the Water Contractors, to encourage water conservation and recycled water use that reduces potable water use, to provide environmental improvements and enhancements to allow for sustainable and continued use of Russian River Project water, to encourage the development of local supply projects to offset potable water use, and to provide for payment to the Agency for water delivered hereunder sufficient to enable it to pay the capital costs of major replacements and additions to the Transmission System and to meet its Revenue Bond Obligations and its expenses of operating and maintaining the Transmission System.

1.2 Definitions

When used herein, unless otherwise distinctly expressed or manifestly incompatible with the intent of this Agreement, the terms:

(a) "Acre feet" and "AF" mean one acre-foot or 325,850 gallons of water.

(b) "Additional Facilities" means the additional facilities that must be constructed or acquired after the completion of the Russian River-Cotati Intertie in order for the Agency to be able to make the deliveries authorized by Sections 3.1 and 3.2, including, but not limited to: an aqueduct generally paralleling the Intertie Aqueduct; an aqueduct generally paralleling the south part of the Petaluma Aqueduct from the Intertie Aqueduct to Kastania Reservoir; an aqueduct generally paralleling the Sonoma Aqueduct; an aqueduct connecting the Kawana Springs and Ralphine reservoirs; the transmission line pumping plants necessary to regulate flows to Storage Facilities; 55.5 million gallons of reservoir storage; 56.9 mgd of Russian River water production capacity; water-treatment facilities; and Emergency Wells.

(c) "Aqueduct Facilities" means the pipelines of the Intertie, Petaluma, Santa Rosa and Sonoma Aqueducts, an additional pipeline to be constructed generally paralleling the Intertie Aqueduct, a pipeline to be constructed generally paralleling the south part of the Petaluma Aqueduct from the Intertie Aqueduct to Kastania Reservoir, and a pipeline to be constructed or acquired generally paralleling the Sonoma Aqueduct.

(d) "Capital Cost" means the total funds expended for capital improvements, major replacements, or portions thereof, as context requires, including, but not limited to, planning, engineering, environmental impact analysis, right of way, financial and legal fees, interest during construction, and materials, construction, and replacement costs.

(e) "Common Facilities" means all Transmission System facilities except Storage Facilities and Aqueduct Facilities, but including additional facility aqueduct capacity constructed specifically to make the deliveries that have been authorized by Section 3.12, and including the Potter Valley Project or portion thereof if acquired pursuant to Section 2.4.

(f) "Corporate Territory" means the boundary from time to time existent of a city, agency, district or other governmental entity with powers to accept and distribute water.

(g) "Customer" means any of the following customers of the Agency:

(1) "Water Contractor" means a party signatory to this Agreement except the Agency and Forestville.

(2) "Other Agency Customer" means the Agency, the County of Sonoma, California-American Water Company (with respect to the Larkfield Water District), Forestville Water District, Lawndale Mutual Water Company, Kenwood Village Water Company, Penngrove Water Company, the City of Sebastopol, the State of California, and Santa Rosa Junior College.

(3) "Marin Municipal" means the Marin Municipal Water District.

(4) "Russian River Customer" means any Agency customer within Sonoma County who has or in the future will have contracts with the Agency to divert or redivert water directly from the Russian River or Dry Creek without the use of the Transmission System.

(5) "Regular Customer" means the any of the Water Contractors or the Other Agency Customers.

(h) "Emergency Wells" means auxiliary groundwater production wells that may be utilized to provide additional delivery capacity when necessary due to drought, equipment failure, or other transmission capacity impairment, inability to divert Russian River Project water (for water quality reasons or otherwise), or any other reason beyond the control of the Agency.

(i) "Entitlement" means the quantity of water a Regular Customer shall from time to time require at such rates of flow as are necessary to meet its peak day's demand, subject to the delivery limitations set forth in Sections 2.2, 3.1, 3.2, and 3.5.

(j) "Entitlement Limits" means the maximum amounts of water the Agency is obligated to deliver to any Regular Customer from the Transmission System, as specified in Sections 3.1(a), 3.2(a), 3.2(c), and 3.2(d).

(k) "Fiscal Year" (abbreviated FY) means the period from July 1 through the following June 30.

(l) "Forestville Aqueduct" means the existing pipeline from the Santa Rosa Aqueduct to Forestville, the existing booster pumping plant, the existing 300,000-gallon reservoir, and all other facilities financed with the proceeds of the sale of Series E of the Agency's 1955 Bonds.

(m) "Intertie Aqueduct" means the existing 48-inch inside diameter pipeline extending from the Mirabel Park intake facilities on the Russian River to the Petaluma Aqueduct in the vicinity of Cotati with appurtenances thereto including turnouts to serve Forestville, Santa Rosa, Cotati and Rohnert Park. The Intertie Aqueduct consists of three reaches: "Reach 1" from the Mirabel intake facilities to Forestville, "Reach 2" from Forestville to the extension of Hall Road and "Reach 3" from the extension of Hall Road to the junction with the Petaluma Aqueduct at Cotati. Reach 3 is further divided into "Reach 3a" from the extension of Hall Road to Occidental Road, "Reach 3b" from Occidental Road to the Cotati reservoirs and "Reach 3c" from the Cotati reservoirs to the Petaluma Aqueduct.

(n) "Kawana Pipeline" means the pipeline connecting the Reach 3a of the Intertie Aqueduct with Kawana Springs Reservoirs.

(o) "Local Supply Project" means a water supply project undertaken by one or more Water Contractors, which reduces demand on the Transmission System during the months of June, July, August, or September.

(p) "Marin Municipal" means the Marin Municipal Water District.

(q) "mgd" means a million gallons of water per day.

(r) "Oakmont Pipeline" means that certain pipeline and appurtenances generally parallelling the Sonoma Aqueduct that were constructed by the Agency pursuant to an agreement between the City of Santa Rosa and Agency dated April 29, 1986.

(s) "Operation and Maintenance Costs" means the Agency's costs of operating the Transmission System including its power costs, costs of maintaining the Transmission System in a good state of repair, payments made to the owner of the Potter Valley Project to insure the continued operation of the Potter Valley Project provided they are annually approved by the Water Advisory Committee, regardless of whether or not such payments result in the ultimate transfer of title to all or part of the Potter Valley Project to the Agency, and costs of administering the Transmission System and furnishing the water supplies pursuant to this Agreement; provided, however, that costs relating to the use of Transmission System facilities for public recreation purposes, except (1) costs to permit limited passive public recreation on Transmission System lands not in conflict with operational or water quality requirements, or (2) necessary

costs associated with land ownership, shall not constitute "Operation and Maintenance Costs."

(t) "Ordinance No. 1" means Ordinance No. 1 of the Agency adopted on December 28, 1970, providing for the issuance of the Revenue Bonds, together with any other ordinances of the Agency supplemental thereto or amendatory thereof.

(u) "Other Agency Customer" means the Agency, the County of Sonoma, California-American Water Company (with respect to the Larkfield Water District), Forestville Water District, Lawndale Mutual Water Company, Kenwood Village Water Company, Penngrove Water Company, the City of Sebastopol, the State of California, and Santa Rosa Junior College.

(v) "Petaluma Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the Santa Rosa Aqueduct to Petaluma. The "south part" of the Petaluma Aqueduct means the portion thereof south of the junction thereof with the Intertie Aqueduct and the "north part" means the portion north of said junction to Scenic Avenue.

(w) "Potter Valley Project" means Federal Energy Regulatory Commission Project No. 77.

(x) "Recycled Water" means wastewater treated to applicable standards set forth in Title 22 of the California Code of Regulations, Division 4 Environmental Health, as may be amended from time to time.

(y) "Recycled Water and Local Supply Sub-Charge" and "Recycled Water and Local Supply Fund" mean the sub-charge and fund established by the Agency under Section 4.15.

(z) "Recycled Water Project" means any programs, projects, or facilities that produce or deliver recycled water, provided that the recycled water produced or delivered by such projects or facilities (1) results in a reduction in use of potable water from the Transmission System, (2) reduces the amount of water diverted from the Russian River or its tributaries, (3) provides an environmental benefit which increases or avoids reduction to the water supply or Transmission System capacity available to the Water Contractors, or reduces the cost of providing such supply or capacity, or (4) assists the Agency to comply with the federal or state Endangered Species Act or any other environmental law or regulation, which compliance is required for the Agency to

provide the water supply or Transmission System capacity to the Water Contractors as provided in this Agreement.

(aa) "Regular Customer" means the any of the Water Contractors or the Other Agency Customers.

(bb) "Remaining Facilities" means those portions of the Russian River-Cotati Intertie authorized to be constructed or acquired by the Tenth Amended Agreement For Water Supply and Construction of the Russian River-Cotati Intertie Project, dated November 14, 1997, which have not been constructed or acquired on the effective date of this Agreement, including, but not limited to, 20 mgd of standby pump and collector capacity; the Wohler-Forestville pipeline; the Eldridge-Madrone pipeline; Collector No. 6, and the Oakmont Pipeline.

(cc) "Revenue Bond Obligations" means the payment of principal of and interest on the Revenue Bonds and all other obligations and covenants of the Agency with respect to the Revenue Bonds, including specifically any covenant to establish and maintain rates and charges to provide revenue coverage in excess of a specified amount.

(dd) "Revenue Bonds" means any of the following if issued or entered into for sole purpose of financing the Capital Cost of Transmission System facilities or other facilities authorized to be constructed, acquired, or funded under this Agreement: (1) all series or issues of revenue bonds issued pursuant to ordinances and resolutions of the Agency or of any joint powers authority of which the Agency is a member or (2) any loan agreement, grant agreement, lease-purchase agreement, certificate of participation agreement, note, commercial paper, or other debt or financing agreement entered into by the Agency or by any joint powers authority of which the Agency is a member. As used in this Agreement, the term "issue Revenue Bonds" includes entering into any of the agreements set forth in clause (2) of the preceding sentence, and the term "holders of Revenue Bonds" includes any holders of or counterparties to any such agreements.

(ee) "Russian River Conservation Charge" means the charge established in Subsection (a) of Section 4.18 of this Agreement.

(ff) "Russian River-Cotati Intertie" means the Intertie Aqueduct and associated intake facilities on the Russian River, including the diversion dam, intake works, infiltration ponds, collectors, water treatment facilities, groundwater wells having a minimum production capacity of 7 mgd, a Russian River water quality monitoring system,

pumps, telemetry equipment and related buildings and appurtenances, and associated storage facilities.

(gg) "Russian River Customer" means any Agency customer within Sonoma County who has or in the future will have contracts with the Agency to divert or redivert water directly from the Russian River or Dry Creek without the use of the Transmission System.

(hh) "Russian River Project" means Coyote Valley Dam/Lake Mendocino on the Russian River, Warm Springs Dam/Lake Sonoma on Dry Creek, and related works as contemplated by House Document Number 585, 81st Congress, 2nd Session, House Document Number 547, Eighty-Seventh Congress, Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No. DR68485 adopted December 23, 1980, or any agreement between the Agency and the United States related to Coyote Valley Dam or Warm Springs Dam.

(ii) "Russian River Projects Charge" means the charge established in Subsection (b) of Section 4.18.

(jj) "Russian River Projects Fund" means the fund established by the Agency to pay or partially pay for: (1) carrying out the Agency's Coyote Valley Dam Project and Warm Springs Dam Project channel-stabilization works obligations to the United States Government and the State of California under Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No. DR68485 adopted December 23, 1980; (2) securing and defending appropriative water rights which are necessary for the realization of the full benefits of the Coyote Valley Dam and Warm Springs Dam Projects; (3) the Agency's share of the United States Government's investment, operation and maintenance, and major replacement costs associated with the Coyote Valley Dam and Warm Springs Dam Projects; (4) the acquisition of all or part of the Potter Valley Project or contributions made to the Project owner to insure the continued operation of all or part of the Project; and (5) fishery mitigation and enhancement projects undertaken by the Agency in the Russian River and Eel River and their tributaries.

(kk) "Santa Rosa Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the collector wells at Wohler to the Ralphine Tank farm on the east extension, and to Scenic Avenue on the south extension.

(ll) "Sonoma Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the Ralphine reservoirs to Sonoma. The Sonoma Aqueduct consists of two reaches: "Reach 1" from the Ralphine reservoirs to Pythian Road and "Reach 2" from Pythian Road to the Sonoma reservoirs.

(mm) "Storage Facilities" means all reservoirs on the Transmission System, the pipeline connecting the Kawana Springs Reservoirs with the Intertie Aqueduct; the pipeline connecting the Kawana Springs and Ralphine reservoirs; the Oakmont Pipeline; the pipeline connecting the Kastania reservoir with the Petaluma Aqueduct; the existing booster pumping plant and the existing 300,000-gallon reservoir components of the Forestville Aqueduct; and transmission line pumping plants necessary to regulate flows to storage facilities.

(nn) "Surplus Customer" means any person or entity who, as of the date of this agreement, was being served Surplus Water by the Agency.

(oo) "Surplus Water" has the meaning defined in subsection (a) of Section 3.4 of this Agreement.

(pp) "Transmission System" means the Agency's water production, storage, treatment and transmission facilities, including but not limited to the Santa Rosa, Petaluma, and Sonoma Aqueducts, the Russian River-Cotati Intertie, Emergency Wells, the Warm Springs Hydroelectric Project, future water production, storage, treatment and transmission facilities to be constructed as set forth in Sections 2.2 and 2.3, and the Potter Valley Project, if acquired by the Agency pursuant to Section 2.4.

(qq) "Trustee" means the Trustee or Trustees for the Agency (or for any joint powers authority of which the Agency is a member) and the holders of the Revenue Bonds appointed pursuant to ordinances or resolutions of the Agency relating to Revenue Bonds, or any successor(s) or assignee(s) thereof.

(rr) "Warm Springs Dam Project" means that certain project authorized for the Russian River, Dry Creek, California, by the Flood Control Act of 1961, enacted October 23, 1962 (Public Law 874, 87th Congress).

(ss) "Warm Springs Hydroelectric Project" means Federal Energy Regulatory Commission Project No. 3351.

(tt) "Water Advisory Committee" means the advisory committee established in Part 5 of this Agreement.

(uu) "Water Conservation Project" means (1) any program, project, or activity that will reduce potable water use within a Regular Customer's service area (including, but not limited to, activities undertaken pursuant to Section 1.12 of this Agreement, but excluding Recycled Water Projects or Local Supply Projects approved after the date of this Agreement), or (2) any materials, supplies, Agency staff time, or contractor services provided by the Agency in support of any Regular Customer's Water Conservation Project.

(vv) "Water Contractor" means a party signatory to this Agreement except the Agency and Forestville.

1.3 Term of Agreement

This Agreement shall become effective upon its execution by all the parties hereto and shall remain in effect until June 30, 2040, or, if any Revenue Bonds are outstanding on June 30, 2040, until such date as all Revenue Bonds shall have been paid in full and all obligations and covenants of the Agency with respect to any Revenue Bonds shall have been discharged. The Agency shall enter into renewal agreements for periods not to exceed forty years each with any or all of the Water Contractors requesting the same for water supplies within the delivery capabilities of the Agency's Transmission System, at a cost no greater than the Agency's Operation and Maintenance Costs and unreimbursed Capital Costs allocated on a proportionate use basis, it being understood that such renewal agreements shall provide for Entitlements and Entitlement Limits for each customer as set forth herein.

1.4 Previous Agreements Terminated or Modified

(a) The Eleventh Amended Agreement for Water Supply, dated January 26, 2001, between the Agency and the Water Contractors is terminated as of the effective date of this Agreement and superseded by this Agreement.

(b) Existing agreements between the Agency and Windsor are terminated and amended as follows, effective as of the effective date of this Agreement:

(1) All prior agreements between the Agency and Windsor for water deliveries from the Transmission System are terminated as of the effective date of this

Agreement, including the Application for Water Service, dated April 1, 1987. All water deliveries to Windsor from the Transmission System shall be made in accordance with this Agreement.

(2) The Agreement for the Sale of Water between the Sonoma County Water Agency and the Windsor Water District, dated June 8, 1991, is amended as follows:

(i) By deleting the text of Section 4 ("Shortage of Water and Apportionment") thereof and replacing it with the following: "In the event of a shortage in the quantity of water available to its customers, including the Town of Windsor, the Agency shall apportion water as provided in the Restructured Agreement for Water Supply, dated _____. In such event, (1) the Town of Windsor shall limit its total diversions and rediversions of water from the Russian River, including both diversion and rediversions pursuant to this agreement and all of its other diversions and rediversions, to the amounts of water that the Agency allocates to the Town of Windsor, and (2) in determining the amount of water available for allocation, the Agency shall include the amount of water available for diversion or rediversion by the Town of Windsor under its water rights in addition to the amount available to the Agency under its own water rights."

(ii) By adding at the end of Section 10 ("Payment") the following: "The Town of Windsor shall also pay any charges required by the Restructured Agreement for Water Supply, dated _____, including the charges required by Section 4.17(b) of that agreement."

1.5 Enforcement

The failure of any Water Contractor to perform its obligations hereunder shall not excuse the remaining Water Contractors from performing their obligations hereunder nor excuse the Agency from performing its obligations hereunder to said remaining Water Contractors. Each and all of the provisions of this Agreement shall be enforceable by action brought by any party hereto for specific performance or any other appropriate action at law for damages or in equity for other appropriate relief to the end that no party hereto shall suffer from the default of any other party. Nothing in this Agreement shall preclude any Water Contractor from seeking unilateral redress under the law from the Agency, or any other party, Customer, or entity. Any owner or holder

of Revenue Bonds may also enforce any provision of this Agreement inuring to the benefit of the holders of the Revenue Bonds.

1.6 Amendments

(a) Except as hereafter provided, this Agreement may be amended only with the consent of all the parties hereto.

(b) Any annual delivery limit contained in Section 3.1 may be modified by written Agreement between the Agency and the Water Contractor to which such annual delivery limit applies without the consent of the other parties to this Agreement for the purpose of conforming such annual delivery limits to a general plan which is applicable to the service area of such Water Contractor. Copies of any such written agreements shall be provided to all the parties to this Agreement.

(c) As of the effective date of this Agreement, Forestville is no longer a Water Contractor, and this Agreement may be amended without the consent of Forestville, provided, however, that Forestville's consent shall only be required for any amendment that impairs or affects any then-existing obligation of the Agency to supply water to Forestville from the Transmission System.

(d) If any amendment to this Agreement reduces the revenues to be received by the Agency or otherwise impairs the ability of the Agency to meet its Revenue Bond Obligations, then such amendment shall be effective only with the consent of the Trustee. The Trustee shall give such consent if the Trustee determines that, following such amendment, the Water Contractors will be obligated under this Agreement to make payments to the Agency sufficient to enable the Agency to pay principal of and interest on the Revenue Bonds and to meet all its other Revenue Bond Obligations. In making such determination, the Trustee may rely upon such certificates or opinions from qualified attorneys, engineers or accountants as the Trustee may deem necessary and obtain from the Agency.

1.7 Pledge of Revenues

Each party hereto acknowledges that anything herein to the contrary notwithstanding, all sums paid to the Agency pursuant to this Agreement are "Revenues of the Transmission System" of the Agency as defined in Ordinance No. 1, except (a) the payments and credits set forth in Section 4.4, (b) the payments of the Russian River Conservation Charge and the Russian River Projects Charge made

pursuant to Section 4.11 and 4.18, (c) the payments of the Water Management Planning Sub-Charge made pursuant to Section 4.13, (d) the payments of the Watershed Planning and Restoration Sub-Charge made pursuant to Section 4.14, (e) the payments of the Recycled Water and Local Supply Sub-Charge made pursuant to Section 4.15, and (f) the payments of the Water Conservation Sub-Charge made pursuant to Section 4.16, and are pledged to the payment of the Agency's Transmission System Revenue Bond Obligations. All said sums shall be received, allocated and paid out pursuant to and consistent with Ordinance No. 1 and other obligations and covenants of the Agency with respect to Revenue Bonds. All references in this Agreement to the accounting for, allocating, paying, and crediting of monies are subject to the priority established by Ordinance No. 1 on all such revenues.

The parties hereto recognize that the Revenue Bonds are to be paid from revenues, as provided herein, and that it is the intention of the parties that the charges set forth herein will be sufficient to pay the Revenue Bonds and to meet the Revenue Bond Obligations not met from other sources of funds. The Water Contractors, therefore, agree to pay promptly such charges notwithstanding any deficiency in the quantity or quality of water to which they or any of them would be entitled pursuant to this Agreement. The provisions of this Agreement are made for the benefit of the owners and holders from time to time of the Revenue Bonds and may be enforced by or on behalf of any such owner or holder.

1.8 Books, Records and Accounts

The Agency shall keep or cause to be kept, proper books, records and accounts in which complete and accurate entries shall be made of all monies received from all entities, including the Agency's Regular Customers, and of the basis for and application of said money, including detailed sub accounts showing expenditures made from Operation and Maintenance Charge revenues for Water Conservation Projects, Recycled Water Projects, Local Supply Projects, water management planning, and watershed planning and restoration. Said books, records and accounts will be available during normal business hours for inspection by the Water Contractors or their authorized representatives. The Agency will transmit to the Water Contractors two reports each year of the receipts and expenditures of the Transmission System. The first report will be issued no later than February 1 and shall be accompanied by a preliminary budget for the following Fiscal Year, and will show expenditures for the first half of the Fiscal Year together with estimated year-end expenditures and estimated expenditures for the following Fiscal Year. The second report will be issued after the end of each Fiscal Year and will contain a budgetary accounting of Transmission System expenditures,

revenues and balances for the Fiscal Year. Each month the Agency shall supply each Water Contractor with a summary showing the amount of water delivered during the preceding month to each Regular Customer and Surplus Customer.

1.9 Water Contractors' Duty to Provide Funds

Each Water Contractor shall use any and all means legally available to it (including, without limitation, the enactment and maintenance in effect of legislation establishing fees, tolls, rates and charges pertaining to the operation of its water distribution system) so as to produce monies sufficient in amount to meet the monetary obligations incurred by it pursuant to this Agreement and to enable it to maintain its water distribution system in good working order.

1.10 Severability

If any one or more sections, provisions, promises, or conditions of this Agreement is declared void or voidable for any reason by a final judgment or order of a court of competent jurisdiction, it is hereby declared to be the intention of each party and agreed that each and all of the other sections, provisions, promises and conditions of this Agreement shall be and remain in full force and effect.

1.11 Third Party Beneficiaries

Except for the holders of the Revenue Bonds, no third party beneficiaries are intended or established by this Agreement.

1.12 Water Conservation Requirements

(a) The Regular Customers of the Agency, and the Agency, shall (1) become members of the California Urban Water Conservation Council ("CUWCC") within six months of the effective date of this Agreement and remain as members in good standing; (2) sign the "Memorandum of Understanding Regarding Urban Water Conservation in California" ("MOU") maintained by the CUWCC and implement the Best Management Practices ("BMPs") of water conservation as are promulgated by CUWCC from time to time, or implement alternative water conservation measures that secure at least the same level of water savings, and shall complete and file the annual CUWCC report form; and (3) implement or use their best efforts to secure the implementation of any water conservation requirements that may be added as terms or conditions of the Agency's appropriative water rights permits or licenses, or with which the Agency must

comply under compulsion of regulation or law. In addition to and notwithstanding the foregoing, all Regular Customers of the Agency shall require metered billing of all customer accounts they serve.

(b) Should the Water Advisory Committee determine and so notify any Water Contractor that its efforts to achieve compliance with the water conservation practices required by this Section 1.12 are unsatisfactory, then such Water Contractor shall bring its water conservation program into compliance within six months after such notice, or within such additional time as may be granted by the Water Advisory Committee. Should such Water Contractor's noncompliance as determined by the Water Advisory Committee continue for six months after such notice of noncompliance, or beyond such additional time as may be granted by the Water Advisory Committee, then the Water Contractor shall thereafter pay a surcharge on all water delivered by the Agency pursuant to this Agreement equal to ten percent of the Operation and Maintenance Charge until the Water Advisory Committee determines that such Water Contractor is in compliance. The proceeds of any surcharge paid pursuant to this section shall be deposited and paid out in the same manner as the proceeds of the Water Conservation Fund.

(c) The Agency shall use its best efforts to modify its rules and regulations and existing contracts with Other Agency Customers to implement the water conservation requirements set forth in Section 1.12(a) and the default provisions set forth in Section 1.12(b). With respect to Russian River Customers, the Agency shall use its best efforts to encourage and, where and when possible, require said customers to sign the "MOU" maintained by the CUWCC and implement the "BMPs" of water conservation as are promulgated by CUWCC from time to time.

(d) Nothing in this section shall limit Regular Customers to implementing only those Water Conservation Projects contemplated by the CUWCC BMPs. Regular Customers are encouraged to implement Water Conservation Projects that go beyond the CUWCC BMPs.

1.13 Recycled Water and Local Supply Project Requirements

Within ten (10) years from the effective date of this Agreement, the Water Contractors shall use their best efforts to carry out or participate in Recycled Water or Local Supply Projects capable of delivering Recycled Water or potable water sufficient to reduce the Water Contractors' collective deliveries from the Transmission System (including, in the case of Windsor, reductions in withdrawals from Windsor's Russian

River wells), by at least 7,500 acre-feet per year, with approximately 50% of such reduction resulting from Recycled Water Projects.

1.14 Transitional Provisions Applicable to Forestville

As of the effective date of this Agreement, the Agency's right, title, and interest in facilities comprising the Forestville Aqueduct shall be transferred as follows:

(a) The existing Forestville pipeline from the Santa Rosa Aqueduct to Forestville and the storage building at the existing booster pumping plant shall be transferred to Forestville.

(b) The existing booster pumping plant and the existing 300,000-gallon reservoir shall become Storage Facilities.

(c) Subject to the limitation in subsection (d) of this section, the Agency shall provide funding to Forestville for the Capital Costs of an 8" pipeline to be constructed by Forestville from the Intertie Aqueduct at the extension of Templeman Road, west on Templeman Road to State Highway 116, then north on State Highway 116 West to Kay Lane. The pipeline shall be funded as a common facility. Forestville shall commence construction on the pipeline within five years of the effective date of this Agreement; provided, however, that if the commencement of construction is delayed due to the application to Forestville of any circumstance specified in the second paragraph of Section 2.2 of this Agreement, then the Agency's General Manager/Chief Engineer may authorize an extension of the commencement date.

(d) The Agency's funding obligation under this section shall be limited to $690,000, increased by the change in the ENR Construction Cost Index between the effective date of this Agreement and the date of commencement of construction of the pipeline.

1.15 Local Production Capacity Goal

In order to mitigate against drought, earthquakes, spills, temporary impairments, and other events impacting the quantity or quality of water available from the Transmission System, and other emergencies that can befall an urban water supply system, it is highly desirable that each Water Contractor achieve and maintain local water production capacity capable of satisfying approximately forty percent (40%) of the Water Contractor's average day of the maximum month demand.

PART 2 - PLANNING, FINANCING, ACQUISITION, CONSTRUCTION, OPERATION AND MAINTENANCE

2.1 Financing Additions to the Existing Transmission System

The Agency will, subject to all applicable limitations specified in this Agreement and all applicable legal and regulatory limitations, finance additions to the Transmission System with cash available pursuant to Sections 3.6, 4.2, 4.6, 4.7, 4.8, 4.12, payments made by Marin Municipal pursuant to Section 4.11, payments made by North Marin pursuant to Section 4.4 and 4.9, any state, federal, or other grants or loans which may become available, and, if the Agency decides to issue new series or issues of Revenue Bonds, proceeds from the sale of Revenue Bonds.

2.2 Scheduling of Additions and Replacements to the Existing Transmission System

Subject to the availability of sufficient cash or proceeds from the sale of Revenue Bonds (if the Agency decides to issue new series or issues of Revenue Bonds) and any state, federal, or other grants or loans which may become available, and subject to all applicable limitations specified in this Agreement, the Agency will (1) construct or acquire additions to the existing Transmission System sufficient to meet the delivery Entitlements set forth in Section 3.1 and 3.2 at such times as may be necessary to enable it to reliably deliver to each of the Water Contractors such Entitlements at the time that each contractor shall require the same and to make the deliveries authorized pursuant to Section 3.12; (2) construct additional Russian River water production facilities (up to a total capacity of 168.9 mgd) so that the total water production capacity available at all times is not less than the average daily delivery to the Regular Customers and Marin Municipal (excluding Surplus Water and water in excess of Entitlement Limits) during the month of highest historical use plus 20 mgd; (3) construct, acquire, or lease Emergency Wells with capacities which are from time to time determined by the Water Advisory Committee; (4) construct Additional Facilities (up to a total capacity of 174.3 million gallons) to the extent necessary to maintain a quantity of water in storage equal to 1.5 times the average daily delivery to the Regular Customers except North Marin during the month of highest historical use; and (5) replace existing facilities and construct Additional Facilities, related buildings and appurtenances as necessary to insure the reliable and efficient operation of the Transmission System and to insure that the quality of the water delivered complies with all applicable state and federal water quality requirements.

The time within which the Agency shall be obligated to construct such additions and replacements to the existing Transmission System shall be extended, however, as a result of any delays caused by fire, earthquake, other acts of God, acts of the public enemy, riots, insurrections, governmental regulations on the sale or transportation of materials or supplies, strikes affecting such construction or transportation of materials or supplies in connection therewith, any State or Federal environmental regulations or restrictions, shortages and/or delay in the obtaining of materials, shortages of or allocations of fuel and other sources of energy, litigation resulting in court orders restraining the construction of such additions and replacements, inability of Agency for any reason to deliver the Revenue Bonds or any series thereof, or any other causes beyond the control of Agency or any contractor constructing any part of such additions and replacements.

2.3 Further Modifications to Transmission System

(a) With the approval of the Water Advisory Committee and subject to the availability of sufficient funds, the Agency may undertake studies, and prepare technical reports, financial plans, and environmental documents for Transmission System facilities in addition to those authorized to be constructed by this Agreement. If such activities are undertaken pursuant to this paragraph, the cost thereof shall be considered to be costs of Common Facilities and shall be paid from funds available pursuant to subsection (c) of Section 4.2, or from the proceeds of Revenue Bonds and payments made by North Marin pursuant to Section 4.4. If the cost is paid from the proceeds of Revenue Bonds and payments made by North Marin, the cost shall be allocated as provided in subsection (b), paragraph 9 of Section 4.3 and Section 4.9.

(b) Except for the facilities described in Section 2.2, the Agency will not construct or acquire additions to the Transmission System that would increase the charges payable by, or diminish or impair the water available to, any of the Water Contractors except on such terms and conditions as may be agreed upon in writing by the Agency and each Water Contractor who would be required to make any additional payment by reason of such construction or whose water supply might be diminished or impaired by such construction. If such addition is a booster pump or any other device, method, or system that would enlarge or increase the capacity of any one customer to the detriment of other users, then such addition or alteration shall not be made by Agency except by amendment to this Agreement. If a question arises as to whether an addition or alteration to the Transmission System requires an amendment of this Agreement pursuant to this section, then such question shall be submitted to the Water Advisory Committee and its decision shall be conclusive.

2.4 Potter Valley Project

(a) All or part of the Potter Valley Project may be acquired upon a determination by the Board of Directors of the Agency that such acquisition is necessary to insure the Agency's continued ability to make the water deliveries authorized by this Agreement and maintain fisheries and other incidental benefits to the Russian River basin, provided, however, that no part nor all of the Potter Valley Project shall be acquired without the affirmative vote of at least six (6) representatives of the Water Contractors on the Water Advisory Committee representing at least two-thirds of the total weighted votes as calculated pursuant to Section 5.3(a). The Agency shall not be liable to any of its Customers for any damage resulting from any Agency decision regarding the acquisition or non-acquisition of any part or all of the Potter Valley Project.

(b) The Agency shall commence a process upon the effective date of this Agreement to evaluate the water supply and fisheries benefits provided by the Potter Valley Project within the Russian River watershed, the economic and operational feasibility of acquiring the Potter Valley Project, and whether alternative actions could reduce the need for the Agency to acquire the Potter Valley Project. Alternative actions to be evaluated may include the increased use of recycled water to reduce agricultural and other diversions from the Russian River and its tributaries; the modification of instream flow requirements in the Russian River; and the completion of state and/or federal recovery plans for salmonid species listed as threatened or endangered in the Russian River watershed. The cost of such evaluations shall be paid from Watershed Planning and Restoration Sub-Charge funds available pursuant to subsection 4.14; however, the Agency shall use its best efforts to obtain the agreement of other interested parties who divert water from the Russian River or its tributaries (including municipal and agricultural diverters) to pay for a portion of such costs and to participate in the implementation of such alternative actions. Before acquiring the Potter Valley Project, the Agency shall conduct an environmental analysis of the acquisition pursuant to CEQA, which analysis may include an evaluation of alternative flow regimes from the Potter Valley Project into the Russian River and the Eel River.

(c) Upon determination by Agency that alternative actions could reduce the need for the Agency to acquire the Potter Valley Project, the Agency and the Water Contractors shall engage in a cooperative process to implement said other actions.

2.5 Water Conservation Projects

Subject to the restrictions set forth in Section 4.16, the Agency may undertake or fund any cost-effective Water Conservation Project that has been approved by the Water Advisory Committee.

2.6 Recycled Water and Local Supply Projects

Subject to the approval of the Water Advisory Committee, the Agency may (a) construct, fund, or partially fund studies or investigations or the Capital Cost of local Recycled Water Projects and Local Supply Projects, or (b) enter into agreements for the acquisition and sale of Recycled Water (or the rights to Recycled Water). The Agency and the Water Contractors shall seek financial contributions for local Recycled Water and Local Supply Projects funded under this section from benefitted wastewater treatment plant owners, sanitation districts, and other benefitted parties. Projects constructed, funded, or partially funded by the Agency under this section shall not be part of the Transmission System, and the operation and maintenance cost of such projects shall be the responsibility of the Water Contractors or other parties carrying out, sponsoring, or participating in such projects. The benefits from any Recycled Water Project shall be apportioned equitably based upon the respective financial contributions to the Recycled Water Project by the parties funding such project. The Capital Costs (including Revenue Bond Obligations, if any) of Local Supply Projects or Recycled Water Projects or of acquiring Recycled Water or the rights thereto shall be paid or partially paid from the Recycled Water and Local Supply Fund.

2.7 Water Management Planning

The Agency shall periodically prepare a draft regional Urban Water Management Plan pursuant to the Water Code for consideration by the Water Contractors. Each Water Contractor shall provide the Agency with all information and data the Agency reasonably determines to be necessary to allow the Agency to prepare the draft regional Urban Water Management Plan. The Agency shall use its best efforts to prepare a draft regional Urban Water Management Plan that meets the requirements of the Water Code. Each Water Contractor shall either adopt the draft regional Urban Water Management Plan prepared by the Agency as its Urban Water Management Plan, or prepare and adopt its own Urban Water Management Plan pursuant to the Water Code. Before adopting the Urban Water Management Plan prepared by the Agency, a Water Contractor shall evaluate the Plan, and adoption of the Plan by a Water

Contractor shall constitute a determination by that Water Contractor that the Plan meets the requirements of the Water Code as to that Water Contractor.

2.8 Watershed Planning and Restoration

(a) The Agency may undertake any action, study, or project approved by the Water Advisory Committee related to (1) the development or implementation of watershed restoration and maintenance plans and projects (including, but not limited to, stream restoration projects, water quality monitoring studies and projects, public education and outreach activities, and funding of third-party studies and projects) or (2) groundwater studies and investigations. Before undertaking any such action, study or project: (1) the Agency shall consider suggestions received from the public, Water Contractors, and interested parties and organizations such as the Russian River Watershed Association as to the actions, studies, and projects to be undertaken by the Agency hereunder; and (2) the Agency and the Water Contractors shall identify and use their best efforts to obtain funding contributions from other parties that would benefit from the actions, studies, or projects authorized hereunder, including but not limited to federal and state loans and grants, municipalities (including Russian River Customers, county and special district governments), and urban and industrial development, gravel mining, agriculture, forest harvesting, recreation, and sport and commercial fishing interests.

(b) The authority granted to the Agency under this Section 2.8 is permissive and not mandatory, and that nothing in this Section 2.8 shall (1) require the Agency to undertake any action or project unless such action or project is approved by the Agency, (2) impair or affect the Agency's right to undertake any action or project not funded under this Agreement, or (3) require the Agency to engage in any regulatory activity.

(c) The Agency may carry out projects and activities within the scope of subsection (a) above that primarily or exclusively benefit one or more Water Contractors, provided (1) each such project and activity is approved by the Water Advisory Committee and the benefitted Water Contractors, and (2) some or all benefitted Water Contractors enter into an agreement with the Agency for such project or activity and agree to pay supplemental charges as approved by the Agency and the Water Advisory Committee to defray all or a portion of the cost of the project or activities.

2.9 Planning Coordination

(a) The parties to this Agreement shall consult with agencies that have planning and zoning powers within their water service territories in the manner set forth in California Government Code Section 65352.5 in order to promote close coordination and consultation between water supply agencies and land use approval agencies to ensure that proper water supply planning occurs in order to accommodate projects that will result in increased demands on water supplies.

(b) The parties to this Agreement shall consult with agencies that have building regulatory powers pursuant to the Government Code and Health and Safety Code to promote use of water conservation equipment, fixtures, appliances, devices and techniques.

2.10 Operation and Maintenance

The Agency shall operate and maintain the Transmission System in a good state of repair.

PART 3 - WATER SUPPLY

3.1 Delivery Entitlements of Water Contractors

Subject to Section 3.5, the Agency shall deliver to each Water Contractor at the points of delivery hereinafter set forth such quantities of water as the Water Contractor shall from time to time require at such rates of flow as are necessary to meet its peak day's demand, subject to the following:

(a) The Agency shall not be obligated to deliver water in excess of the following:

Water Contractor/Aqueduct	Average Daily Rate of Flow During Any Month	Annual Amount During Fiscal Year (excluding Surplus Water)
Santa Rosa		
From Reach 1, 2, and 3a of the Intertie Aqueduct	40.0 mgd	
From the Santa Rosa Aqueduct	40.0 mgd	
From the Sonoma Aqueduct	4.0 mgd	
Maximum combined total from all aqueducts	56.6 mgd	29,100 AF
North Marin		
From Petaluma Aqueduct	19.9 mgd	14,100 AF
Petaluma		
From Petaluma Aqueduct	21.8 mgd	13,400 AF
Rohnert Park		
From Petaluma Aqueduct or Reach 3 of Intertie Aqueduct	15.0 mgd	7,500 AF

Valley of the Moon		
From Sonoma Aqueduct	8.5 mgd	3,200 AF
Sonoma		
From Sonoma Aqueduct	6.3 mgd	3,000 AF
Cotati		
From Petaluma Aqueduct or Reach 3 of Intertie Aqueduct	3.8 mgd	1,520 AF
Windsor		
From Santa Rosa Aqueduct	1.5 mgd	900 AF
From Russian River Diversions	7.2 mgd	4,725 AF

The delivery limits for Windsor include both water delivered by the Agency through the Transmission System and water diverted by Windsor through facilities owned by Windsor under its own water rights and under the Agency's water rights pursuant to the agreement between the Agency and Windsor dated January 8, 1991. Windsor shall not divert any water under the Agency's water rights through its own facilities except and to the extent that water is unavailable for diversion under any of Windsor's available water rights, as such rights currently exist or may exist in the future. Windsor shall act with diligence to take all actions necessary to obtain and retain any water rights to which Windsor may be entitled. For purposes of allocations pursuant to Section 3.5(a), (1) Windsor shall be considered to be a "Russian River Customer" with respect to its direct Russian River diversions, and (2) in determining the amount of water available for allocation under Section 3.5(a), the Agency shall include the amount of water available for diversion by Windsor under Windsor's water rights in addition to the amount available to the Agency under its own water rights. For purposes of allocations pursuant to Section 3.5(b), Windsor's average daily rate of flow during any month Entitlement Limit shall be 1.5 mgd.

(b) North Marin shall not take delivery of water at an instantaneous delivery rate greater than its average delivery rate for such day, if such instantaneous delivery rate would increase the Agency's cost of electrical energy. North Marin shall not take delivery of water at a rate of more than 19.9 mgd during more than 14 days of any month, nor at a rate of more than 20.9 mgd during any day of any month. Irrespective of its delivery Entitlement, North Marin shall nevertheless have the right to a flow rate of 14.8 mgd in the Petaluma Aqueduct.

(c) No Water Contractor shall take delivery of water at an average rate during any month that is greater than 2.0 times the average rate of delivery to that contractor during the preceding 12 months. The Agency also shall adopt this requirement as a service rule applicable to Other Agency Customers. However, if any Regular Customer was during the preceding 12 months subject to a curtailment in deliveries pursuant to Section 3.5, then the limit prescribed by this subsection shall be 2.0 times the average rate of delivery that such customer would have received in the absence of such curtailment. This rule shall not apply to Water Contractors who utilize local sources of supply to reduce demand on the Transmission System during the peak summer period of June 1 through September 30, and whose average production rate for said period from all of the contractor's local sources is equal to at least 2.0 times the average production rate of all of that contractor's local sources during the eight months immediately preceding the peak summer period.

(d) No Water Contractor shall take delivery of water during any month at an average rate that is greater than 1.3 times the average rate of delivery to that contractor during the peak month of the prior three calendar years without the written consent of the Agency. The Agency also shall adopt this requirement as a service rule applicable to Other Agency Customers. Such consent shall be given by the Agency if and only if sufficient transmission capacity exists to make such increased deliveries and the deliveries to the other Water Contractors required to be made pursuant to this section. However, if any Water Contractor was during the preceding three calendar years subject to a curtailment in deliveries pursuant to Section 3.5, then the limit prescribed by this subsection shall be 1.3 times the average rate of delivery that such contractor would have received during the peak month of the prior three calendar years in the absence of such curtailment.

(e) For purposes of determining Santa Rosa's average daily rate of flow during any month Entitlement Limit under this subsection, all water delivered to Santa Rosa from the Kawana Pipeline or from the pipeline connecting the Kawana Springs and Ralphine reservoirs shall be deemed delivered from Reach 3a of the Intertie Aqueduct.

3.2 Conditions on Other Agency Customer Deliveries

The Agency may furnish water from the Transmission System to Other Agency Customers subject, however, to the following conditions:

(a) The total quantity of water delivered to all the Other Agency Customers shall not exceed an average of 2.7 million gallons per day during any month.

(b) The Agency shall not enter into contracts to furnish water to any Other Agency Customer except itself or the County of Sonoma for use on land within two miles of the Corporate Territory of a Water Contractor or Forestville except with the prior written consent of such Water Contractor or Forestville, which consent will be subject to the condition that the Agency shall cease delivering water to such customer whenever a Water Contractor or Forestville is willing and able to furnish water to such customer. Water delivered by the Agency from the Transmission System to the Agency or the County of Sonoma shall not be used for residential, commercial, or private industrial purposes.

(c) The Agency shall not deliver more than an average of 0.5 million gallons per day during any month from the south part of the Petaluma Aqueduct to Other Agency Customers.

(d) The Agency shall not deliver more than an average of 1.5 million gallons per day during any month from Reach 1 of the Intertie Aqueduct to Forestville.

(e) The Agency shall not sell water from the Transmission System except as expressly authorized by this Agreement.

3.3 Deliveries in Excess of Entitlement Limits

(a) No Regular Customer may take delivery of water in excess of its average daily rate of flow during any month Entitlement Limit as set forth in Sections 3.1 or 3.2, except upon the following conditions:

first, that such excess delivery does not impair or delay the delivery to any other Regular Customer of its Entitlements; and

second, that the Regular Customer taking the excess delivery is then proceeding in good faith, with plans and funding to develop a reliable water supply, sufficient to supply its needs in excess of its Entitlement Limits; and

third, that either

(1) all the Water Contractors approve such excess delivery; or

(2) such excess delivery is made during a period when deliveries to another Water Contractor are less than its Entitlement Limits, such excess delivery does not exceed the unused amounts of said contractor's Entitlement Limits, and said contractor has notified the Agency in writing of its consent to said delivery.

(b) Any Water Contractor may transfer any portion of its annual amount during any fiscal year Entitlement Limit to any other Water Contractor for such periods of time and pursuant to such terms as agreed to by the transferor Water Contractor and the transferee Water Contractor, subject to the following:

(1) Such transfer shall not impair or delay the delivery to any other Regular Customer of its Entitlements.

(2) Notice of a proposed transfer, including adequate information to identify any impacts to deliveries of water to other Water Contractors, shall be provided to all the other Water Contractors individually, to the Water Advisory Committee, and to the Agency. Upon request of any other Water Contractor, the transferor and transferee Water Contractors shall promptly meet to identify and resolve any potential impacts of the proposed transfer. If any Water Contractor determines that the proposed transfer will impair or delay the delivery of its Entitlements, such Water Contractor may file a written objection to the proposed transfer with the Water Advisory Committee, with a copy to the Agency. Such objection must be filed no later than 45 days after the Water Contractor receives notice of the proposed transfer. Thereafter, the Water Advisory Committee shall determine whether the proposed transfer will impair or delay the delivery of the objecting Water Contractor's Entitlements, and whether there are measures that will eliminate such impairment or delay. In the absence of an objection to a proposed transfer by any Water Contractor, the approval of the Water Advisory Committee is not required.

(3) The average daily rate of flow during any month Entitlement Limit of the transferee Water Contractor as set forth in Sections 3.1 or 3.2 and the other delivery limitations applicable to the transferee Water Contractor shall not be affected by, and shall remain applicable notwithstanding, any transfer under this subsection.

(4) Payments to the Agency for delivery of the transferred water to the transferee Water Contractor shall be based upon the Aqueduct rate applicable to the transferee Water Contractor pursuant to this Agreement.

(5) The transferor and transferee Water Contractors shall be responsible for all regulatory compliance relating to the transfer, including compliance with the provisions of the California Environmental Quality Act. To the greatest extent permitted by law, the transferor and transferee Water Contractors shall indemnify and defend each of the other Water Contractors and the Agency from any claims, damages, or judicial or administrative proceedings arising out of any actions related to this Subsection 3.3(b), whether or not there is concurrent negligence on the part of the other Water Contractors or the Agency or each of them, but excluding liability due to the sole active negligence or willful misconduct of any of the other Water Contractors, the Agency, or each of them. The latter exclusion shall operate only as to the particular Water Contractor or Agency whose sole active negligence or willful misconduct caused the exclusion.

3.4 Surplus Water

(a) Surplus Water is water that from time to time may be available for delivery from the Transmission System in excess of the amounts required to meet the Agency's contractual obligations and the requirements of all the Agency's Regular Customers for uses other than those described in subdivision (b) of this section.

(b) Surplus Water may be used only for the following purposes:

(1) replenishment of surface water supply reservoirs or recreational lakes, including but not limited to Ralphine, Spring, and Stafford Lakes, or

(2) replenishment of groundwater basins;

provided, however, that Surplus Water also may be provided for use for irrigation of land used for commercial production of food or fiber if such provision of water is required by any agreement in existence on the effective date of this Agreement.

(c) The Agency shall deliver Surplus Water only from separate metered turnouts on the Transmission System or the North Marin Aqueduct.

(d) The Water Contractors shall have first priority on deliveries of Surplus Water.

(e) The Agency desires to transfer all of its Surplus Customers to the Water Contractors. The parties to this Agreement shall cooperate in the voluntary permanent transfer of Surplus Customers from the Agency to the party whose corporate territory encompasses the site of a given Surplus Customer or whose corporate territory boundary is within two miles of the turnout(s) serving said customer. Should a given Surplus Customer lie within two miles of more than one party, the parties shall meet and confer with the Agency and by mutual agreement determine who is best suited to take over said Surplus Customer. Nothing in this subsection shall require a Water Contractor to take over service of any Agency Surplus Customer. Should a given party opt not to take over Surplus Customers who lie within their corporate territory or within two miles of the boundary of same, then any other party to this Agreement whose corporate territory lies within Sonoma County may apply to the Agency to take over said Surplus Customers. Parties who agree to take on such service shall be known as Surplus Water providers.

(f) Surplus Water providers agree to interrupt delivery of Surplus Water upon notification by Agency if Agency determines, in its sole discretion, that there exists an immediate or pending problem involving loss of Transmission System storage, inadequate pumping capacity, a valid complaint from any Regular Customer that they are not receiving their appropriate Entitlement as a result of Surplus Water deliveries, or any other problem impacting the delivery capability of the Transmission System. Surplus Water providers shall notify their customers of Agency's right to require such delivery interruptions. Notwithstanding the right of the Agency to notify and cause the interruption of delivery of Surplus Water, a Surplus Water provider may also interrupt delivery of Surplus Water at any time it determines it is necessary or prudent to do so in order to satisfy the demands of its non-Surplus Customers; or for water system maintenance, repair, or planned or unplanned outage of any nature whatsoever, including but not limited to a perceived, threatened or actual water shortage. Deliveries of Surplus Water shall not be deemed to be included as part of any Regular Customer's Entitlement or Entitlement Limit.

3.5 Shortage of Water and Apportionment

(a) (1) The Agency shall use its best efforts to obtain, perfect, and maintain appropriative water rights in amounts sufficient to be able to make the water deliveries provided for in this Agreement. In its operation of the Russian River Project, the Agency shall use all reasonable means to prevent a deficiency in the

quantity of water that is available to the Agency for diversion and rediversion under the Agency's water rights. However, nothing in the preceding two sentences shall be construed to limit the Agency's discretion to take appropriate actions in good faith to resolve any issue that may arise under the federal Endangered Species Act or any other federal or state law affecting the Agency's water rights or operation of the Russian River Project.

(2) If by reason of drought, environmental laws or regulations, other causes beyond the control of the Agency, or any change in the amounts of water imported by the Potter Valley Project into the Russian River watershed (whether or not such change is caused by any action or inaction of the Agency) a deficiency does occur, the Agency shall not be liable to any of its customers for any damage arising therefrom.

(3) In the event of a deficiency pursuant to subsection 3.5(a)(2), the Agency first shall cease all deliveries of Surplus Water to other than the Water Contractors; second, shall cease deliveries of all Surplus Water; third, shall cease deliveries to Regular Customers in excess of their respective annual Entitlement Limits; and fourth, shall apportion the available supply of water as follows:

> (i) first, deliver to each of its Regular Customers, not in excess of their respective Entitlement Limits, authorize Agency's Russian River Customers to divert or redivert not in excess of the amounts for which those customers have contracted to purchase from the Agency, and deliver to Marin Municipal not in excess of the amounts, if any, that are required to be delivered pursuant to the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee, the quantities of water required by each such customer for human consumption, sanitation, and fire protection as determined by the Agency after taking into consideration all other sources of potable water then available to said customer, including, for Russian River Customers, water available under their own water rights;

(ii) second, to the extent additional water is available to the Agency, allocate that water proportionately as follows: deliver such water to Agency's Regular Customers based upon their respective average daily rate of flow during any month Entitlement Limits, authorize the Agency's Russian River Customers to divert or redivert such water based upon the delivery limits set forth in the agreements between the Agency and its Russian River Customers, and deliver such water to Marin Municipal pursuant to and to the extent required by the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, the Amended Agreement for the sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee;

(iii) provided, however, that no Customer shall receive under subsections 3.5(a)(3)(i) and 3.5 (a)(3)(ii) a total quantity of water in excess of its reasonable requirements or its said Entitlement Limits or contracted amount, whichever is less.

(b) (1) In the event of a temporary impairment of the capacity of the Transmission System by reason of natural disaster, sabotage or other causes beyond the control of the Agency, the Agency shall not be liable to any of its customers for any damage arising therefrom.

(2) In the event of a Section 3.5(b)(1) impairment, the Agency shall:

(i) first, deliver to each of its Regular Customers the quantity of water, not in excess of the respective average daily rate of flow during any month Entitlement Limit, required by it for human consumption, sanitation, and fire protection as determined by the Agency after taking into consideration all other sources of potable water then available to said customer;

(ii) second, to the extent additional Transmission System capacity is available to the Agency, deliver a quantity of water to the Regular Customers in proportion to their respective average daily rate of flow during any month Entitlement Limits, provided, however, that no Regular

Customer shall receive under subsections 3.5 (b)(2)(i) and (b)(2)(ii) a total quantity of water in excess of its reasonable requirements or its average daily rate of flow Entitlement Limit, whichever is less;

(iii) third, to the extent additional Transmission System capacity is available, deliver water to Regular Customers in excess of their average daily rate of flow Entitlement Limits pursuant to Section 3.3;

(iv) fourth, to the extent additional Transmission System capacity is available, deliver water to Marin Municipal not in excess of the delivery limitations in Section 3.12;

(v) fifth, to the extent additional Transmission System capacity is available, deliver Surplus Water to the Water Contractors;

(vi) sixth, to the extent additional Transmission System capacity is available, deliver Surplus Water to other than the Water Contractors.

(3) However, deliveries to Marin Municipal shall not be reduced or curtailed under this Section 3.5(b) because of inadequate capacity in the new aqueduct to be constructed generally paralleling the portion of the Petaluma Aqueduct that extends from the Ely Pumping Plant to Kastania Reservoir, if such new aqueduct is paid for and dedicated to the Agency pursuant to Section 13 of the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996.

(c) (1) In determining "human consumption, sanitation, and fire protection" amounts pursuant to this Section 3.5, the Agency shall take into account the level of water conservation achieved by the Customer and the resulting decrease in end user ability to reduce water use (the hardening of demand) resulting from such conservation. The allocations pursuant to subsection 3.5(a)(3)(i) shall be determined using a methodology which rewards and encourages water conservation; avoids cutbacks based upon a percentage of historic consumption, and, among other things, bases the amounts necessary for "human consumption, sanitation, and fire protection" upon no greater than average indoor per capita water use determined from recent retail billing records for winter water use by all of the Water Contractors; and, if necessary or appropriate for equitable purposes, considers commercial, industrial and institutional water uses separately and determines that element of the subsection 3.5(a)(3)(i) allocation

based on winter water use from recent retail billing records for commercial, industrial, and institutional uses.

(2) The fundamental purpose of the "reasonable requirements" limitation is to ensure that no Customer receives more water during a shortage than that Customer reasonably needs. In determining "reasonable requirements" pursuant to this Section 3.5, the Agency may take into account the hardening of demand resulting from the level of conservation achieved by the Customer; the extent to which the Customer has developed Recycled Water Projects and Local Supply Projects; and the extent to which the Customer has implemented water conservation programs (including conservation required pursuant to the provisions of Section 1.12 of this Agreement). It is the intention of the parties to this Agreement that the Agency make its "reasonable requirements" determinations so as to encourage Customers to implement water conservation, Recycled Water, and Local Supply Projects.

(d) The Agency shall at all times have an adopted water shortage allocation methodology sufficient to inform each Customer of the water that would be available to it pursuant to Section 3.5(a) in the event of reasonably anticipated shortages, which methodology shall be consistent with this Section 3.5 and shall be included in the Urban Water Management Plan prepared pursuant to Section 2.7.

(e) The parties agree that it is extremely difficult and impractical to determine the damage caused to the Agency or other Customers as a result of the taking of water by any Customers in excess of the limitations contained in this Section 3.5. If any Customer takes delivery of water from the Transmission System or otherwise from the Russian River system in violation of this Section 3.5, then it shall pay the Agency, in addition to all other applicable charges, liquidated damages in an amount equal to 50 percent of the applicable Operation and Maintenance Charge (including all sub-charges) times the amount of water taken in violation of the provisions of this Section 3.5. The Agency shall use its best efforts to incorporate this liquidated damages provision into its agreements with Other Agency Customers, Russian River Customers, Marin Municipal Water District, and into the Agency's rules and regulations for the provision of water service, and impose liquidated damages pursuant to this Section 3.5(e). The existence of this liquidated damage provision shall not limit or restrict the Agency from physically limiting the quantity of water taken to the amounts authorized by this Section 3.5 or from pursuing all other available legal and equitable remedies applicable to such violations. By affirmative vote, the Water Advisory Committee may request that the Agency physically limit the quantity of water taken by a Regular

Customer to the amounts authorized by this Section 3.5 or that the Agency pursue all other available legal and equitable remedies applicable to such violations. The proceeds of any liquidated damages assessed pursuant to this subsection shall be deposited and paid out in the same manner as the proceeds of the Operation and Maintenance Charge.

(f) Notwithstanding subsections (a) and (b) above, as an alternative method for allocation under this Section 3.5 during a period of water deficiency or temporary Transmission System impairment, the Water Advisory Committee (or, in the event of a Transmission System temporary impairment affecting fewer than all of the Water Contractors, the Water Advisory Committee representatives of the Water Contractors affected by the temporary impairment) may, by unanimous vote, determine how water shall be allocated among the affected Water Contractors. The Agency shall provide a calculation methodology or other information adequate to enable the determination, in a manner consistent with this Section 3.5, of the volume of water to which (i) the Water Contractors as a group, and (ii) all other Customers would be respectively entitled. Any alternative method for allocation determined by the Water Advisory Committee pursuant to this subsection shall apply only to the volume of water to which the Water Contractors are entitled as a group.

(g) In the event that Transmission System capacity is expanded by the construction of facilities other than those authorized by this Agreement, then notwithstanding anything in this Section 3.5 to the contrary, any allocations made pursuant to this section to Forestville that are based upon the average daily rate of flow during any month Entitlement Limits shall not use a denominator greater than 133.4 mgd.

3.6 Fire Fighting Service

Anything herein to the contrary notwithstanding, the Agency may furnish water for fire fighting from hydrants or standpipes on the Transmission System, provided, however, that such service within two miles of the Corporate Territory of a Water Contractor may be furnished only if and during the period of time said Water Contractor consents thereto in writing. The Agency shall set fees sufficient to recover the full cost of installing and maintaining and supplying water to fire hydrants. All revenue from such fees shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. Agency shall adopt service rules limiting hydrant water usage to fire suppression, fire training and limited temporary uses such as providing metered construction water.

3.7 Quality of Water

(a) The Agency warrants that it will use its best efforts to insure that all water delivered hereunder shall be of such purity and quality required to meet minimum standards for human domestic consumption from time to time established by the state and federal governments. The Agency shall not be liable to any of its Customers for any damage arising from the quality of water that it delivers under this Agreement, except for damages based on any breach of the warranty described in the preceding sentence.

(b) The payment obligations of the Water Contractors set forth in Part 4 shall not be affected in any manner by the quality of the water delivered by the Agency hereunder.

3.8 Points of Delivery

All water furnished to each Water Contractor hereunder shall be delivered at the discharge flange of meters at turnouts owned and maintained by the Agency. Turnouts in addition to those now existing shall be constructed from time to time at such locations as shall be agreed upon by the Agency and the Water Contractors involved. Water delivered to Petaluma and North Marin at the McNear meter station shall be delivered at a hydraulic gradient of not less than 175 feet mean sea level. Turnouts installed for Regular Customers shall be not less than 8 inches in diameter. Turnout installation charges shall be determined from time to time by resolution of the Board of Directors of the Agency and shall be payable by the Customer prior to turnout installation by Agency.

3.9 Risk of Loss and Responsibility

Title and risk of loss with respect to all water delivered hereunder shall pass from the Agency to the Water Contractor at the point of delivery thereof as set forth in Section 3.8. The Agency shall not be responsible for the control, transmission, distribution, handling or use of water beyond the point of delivery thereof. Each Water Contractor shall be responsible for installing and maintaining any device it deems necessary to reduce or regulate the pressure under which the water may be delivered hereunder.

3.10 Place of Use of Water Delivered to North Marin

(a) North Marin may exchange water delivered under this Agreement for an equal amount of water delivered to it by Marin Municipal.

(b) Except as provided in subdivision (a) of this section, North Marin shall not permit any water delivered under this Agreement to be used outside of its own distribution system service areas.

3.11 Measurement

All water delivered by the Agency from the Transmission System shall be measured by meters installed and maintained by the Agency. The Agency shall test the accuracy of each meter not less frequently than annually and provide each Water Contractor with a report of such test. Each Water Contractor shall have the right at any time and at its expense to make additional tests of any meter. If a meter is found to be reading 2 percent or more fast or slow, it shall immediately be repaired to bring it within 2 percent accuracy or be replaced by the Agency.

3.12 Marin Municipal Water Deliveries

The Agency, pursuant to the Third Amended Offpeak Water Supply Agreement dated January 25, 1996 and the Amended Agreement For The Sale Of Water Between The Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee, may deliver water to Marin Municipal when and to the extent that the Transmission System has capacity in excess of that required by Agency to supply its Regular Customers the Entitlements set forth in Sections 3.1 and 3.2. However, deliveries to Marin Municipal shall not be reduced or curtailed because of inadequate capacity in the new aqueduct to be constructed generally paralleling the portion of the Petaluma Aqueduct that extends from the Ely Pumping Plant to Kastania Reservoir, if such new aqueduct is paid for by Marin Municipal and dedicated to the Agency pursuant to Section 13 of the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996.

The maximum delivery rate to Marin Municipal between May 1 and October 31 shall not exceed 12.8 mgd. The total quantity of water delivered to Marin Municipal in any Fiscal Year shall not exceed 14,300 Acre Feet. Deliveries of water to Marin Municipal shall be made either through a separately metered turnout or through North Marin's metered turnout(s). If water is delivered through North Marin's metered turnout(s), then North Marin shall maintain in good repair and calibration metered turnouts at points of delivery from its system into Marin Municipal's system and shall

read such meters on or about the end of each month and provide to Agency an accounting of water delivered during the preceding month to Marin Municipal. In making such accounting, North Marin shall deduct from the total of water delivered to Marin Municipal any exchange water as provided in Section 3.10 of this Agreement and any water produced by North Marin and delivered to Marin Municipal.

3.13 Damages for Peaking on the Transmission System or Taking Water in Excess of Average Daily Rate of Flow Entitlement Limits in Violation of Section 3.3

The parties to this Agreement recognize that the Agency will have increased costs, in amounts that will be difficult to determine, if any Regular Customer takes water in violation of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.3. Accordingly, if any Regular Customer takes delivery of water from the Transmission System in violation of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.3, then it shall pay the Agency, in addition to all other applicable charges, liquidated damages in an amount equal to twenty-five percent (25%) of the applicable Operation and Maintenance Charge (including all sub-charges) times the amount of water taken in violation of these provisions. The assessment of liquidated damages pursuant to this section for a violation by a Regular Customer of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.1 may be waived by the Agency upon a showing by the contractor that the taking of delivery of water in violation thereof resulted from an act of God or other unforeseeable circumstances over which the Regular Customer had no control. The existence of this liquidated-damage provision shall not limit or restrict the Agency from physically limiting the quantity of water taken to the amounts authorized by this Agreement or from pursuing all other available legal and equitable remedies applicable to such violations. The proceeds of any liquidated damages assessed pursuant to this subsection shall be deposited and paid out in the same manner as the proceeds of the Operation and Maintenance Charge.

PART 4 - CHARGES AND PAYMENTS

4.1 Separate Charges and Funds

(a) On or before April 30 preceding each Fiscal Year during which any of the following charges are payable, the Agency will establish the amount of the following charges for the ensuing Fiscal Year:

(1) the Operation and Maintenance Charge, including
    (a) the Water Management Planning Sub-Charge,
    (b) the Watershed Planning and Restoration Sub-Charge,
    (c) the Recycled Water and Local Supply Sub-Charge,
    (d) the Water Conservation Sub-Charge,
(2) the Aqueduct Facilities Capital Charges, including
    (a) the Santa Rosa Aqueduct Capital Sub-Charge,
    (b) the Sonoma Aqueduct Capital Sub-Charge,
    (c) the Petaluma Aqueduct Capital Sub-Charge,
(3) the Storage Facilities Capital Charge,
(4) the Common Facilities Capital Charge, and
(5) the North Marin Capital Charge.

In determining the amount of these charges, the Agency shall include a reasonable allowance for usual contingencies and errors in estimation, and to maintain a prudent reserve in an amount determined from time to time by the Water Advisory Committee.

(b) All monies received in payment of said charges shall be received, allocated, and paid out consistent with the obligations and covenants of the Agency with respect to Revenue Bonds.

(c) In establishing each of said charges, the Agency shall assume that the quantity of water (other than Surplus Water) to be delivered from each aqueduct of the Transmission System shall be the same as the amount of water delivered from said aqueduct during the twelve months preceding such establishment, or the average annual amount of water delivered during the preceding 36 months, whichever is less.

If because of drought or other water-supply reduction, state or federal order, or other similar condition, the Agency anticipates that any such quantities will not be predictive of future usage, the Agency may use a different amount with the prior approval of the Water Advisory Committee.

4.2 Operation and Maintenance Charge

(a) The Operation and Maintenance Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers for all water delivered from the Transmission System.

(b) The aggregate amount of money to be received by the Agency from the Operation and Maintenance Charge for each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's estimate of its Operation and Maintenance Costs for such Fiscal Year, to produce water sale revenues as required by Sections 4.13, 4.14, 4.15, and 4.16, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Common Facilities and Storage Facilities pursuant to subdivision (c) of this section.

(c) All money received by the Agency in payment of the Operation and Maintenance Charge shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments required by Section 1.7, remaining money received from the Operation and Maintenance Charge may be used to pay the Agency's operation and maintenance expenses, to make the deposits required by Sections 4.13, 4.14(g), 4.15, and 4.16(a), and to fund a prudent reserve for those expenses. Money received from the Operation and Maintenance Charge in excess of that necessary for operation and maintenance expenses, to make the deposits required by Sections 4.13, 4.14(g), 4.15, and 4.16(a), and to maintain a prudent reserve may from time to time be disbursed as provided in Section 4.5 to pay Capital Costs of Common Facilities and Storage Facilities. If money received from the Operation and Maintenance Charge is appropriated for expenditure for Storage Facilities, the funds shall be transferred to the Storage Facilities capital fund referred to in subsection (c) of Section 4.7. At the time of the transfer, an amount shall also be transferred to North Marin's account established pursuant to subsection (c) of Section 4.4, which amount shall bear the same proportion to the amount transferred to the Storage Facilities capital fund that the total amount payable by North Marin for the Operation and Maintenance Charge, exclusive of sub-charges, in the prior Fiscal Year bears to the total operation and maintenance revenue, exclusive of revenue from sub-charges, received by the Agency from sources other than North Marin during the prior Fiscal Year.

4.3 Allocation of Capital Costs to North Marin

(a) The Capital Costs of Remaining Facilities shall be allocated to North Marin in proportion to the following ratios:

	Facility	Ratio
1.	Storage Facilities	-0-
2.	Common Facilities	11.2/90.4

(b) The portions of the Capital Costs of the Additional Facilities, replacement facilities, and the Potter Valley Project, or the portion thereof that is to be acquired pursuant to Section 2.4 hereof, shall be allocated to North Marin are as follows:

Facility	Ratio
1. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 1	8.7/55.8
2. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 2	8.7/55.8
3. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 3a	8.7/55.8
4. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 3b and 3c	8.7/42.4
5. 2nd pipeline, generally paralleling Petaluma Aqueduct from its junction with Intertie Aqueduct to Kastania Reservoir	5.1/38.8
6. 2nd pipeline, generally paralleling Sonoma Aqueduct	-0-
7. Storage Facilities	-0-
8. Russian River Water Production Facilities	8.7/55.8

9. All Common Facilities except Russian River Water Production Facilities, but including the Potter Valley Project 19.9/146.2

4.4 Remaining Facility, Additional Facility and Replacement Facility Capital Cost Payments by North Marin

The portion of the Capital Costs of the facilities allocated to North Marin pursuant to Section 4.3 shall be recovered by the Agency as follows:

(a) Each time the Agency decides to issue further series or issues of Revenue Bonds to finance the Capital Costs of constructing or acquiring any Remaining Facilities, Additional Facilities, or replacement facilities, or acquiring all or part of the Potter Valley Project, the Agency shall, prior to initiating the procedures for the issuance of such Revenue Bonds, notify North Marin of the Agency's estimate of the total cost of the Remaining Facilities, replacement facilities, Additional Facilities, or Potter Valley Project acquisition proposed to be financed by said series or issues of Revenue Bonds and of North Marin's portion of the cost allocated in accordance with Section 4.3. North Marin shall have the right, at its election, to pay North Marin's portion, or any part or parts thereof, of the cost of such Remaining Facilities, replacement facilities, Additional Facilities, or Potter Valley Project acquisition in cash, provided, however, that North Marin shall make its election on or before such date as the Agency shall specify, which date will give the Agency sufficient time to determine the amount of Revenue Bonds to be sold, but shall not be earlier than 30 days after said notification. If North Marin elects to make a cash payment, it shall do so on the date the Revenue Bonds are sold or on such later date as the Agency may agree upon and which will nevertheless enable the Agency to meet its obligations for said construction or acquisition. If North Marin elects to make a cash payment, the amount payable shall exclude interest during construction and financing charges.

(b) Upon completion of the construction or acquisition referred to in subdivision (a) of this section, any deficiency in the amount theretofore paid or credited and the actual amount of North Marin's portion thereof shall be paid by North Marin to the Agency.

(c) All payments made by North Marin pursuant to subdivisions (a) and (b) of this section shall be deposited in a separate account from which the Agency will make disbursements only to make payments that otherwise must be made by revenues received from the North Marin Capital Charge, or for the Agency's expenses in constructing the Remaining Facilities, Additional Facilities, and replacement facilities or

in acquiring all or part of the Potter Valley Project, up to the proportionate amounts allocated to North Marin utilizing the ratios contained in Section 4.3. The balance of the account shall earn interest at the Sonoma County Treasurer's pooled investment fund rate, which interest income shall be credited to the account on June 30 of each year. Any surplus funds in the account shall be paid to North Marin within 30 days of receipt of a written request therefor.

(d) If the Agency decides to levy one or more Aqueduct Capital Charges to produce revenue to fund, without issuing Revenue Bonds, (a) major replacements of portions or all of any aqueduct facility pursuant to Section 4.6(e) of this Agreement or (b) capital improvements to existing Aqueduct Facilities, then North Marin shall pay its portion of the Capital Costs of such replacements or improvements to the Agency in cash at the time such Capital Costs are incurred by the Agency. The Capital Costs of major replacements to the facilities specified in Subsection 4.3(b) shall be allocated to North Marin based upon the ratios set forth in Subsections 4.3(b). The Capital Costs of major replacements to the Intertie Aqueduct shall be allocated to North Marin based on the following cost distribution ratios:

Intertie Aqueduct Reach 1	11.2/70.4
Intertie Aqueduct Reach 2	11.2/68.9
Intertie Aqueduct Reach 3	11.2/58.9

4.5 Payment of Remaining Facilities, Additional Facilities, Replacement Facilities, and Potter Valley Project Capital Costs

(a) The Capital Costs of Remaining Facilities, Additional Facilities, replacement facilities and Potter Valley Project, except the portions thereof paid by North Marin pursuant to Section 4.4, shall be paid by the Agency with cash available pursuant to Sections 4.2, 4.6, 4.7 and 4.8, subdivision (b) of Section 4.11, and, if the Board of Directors of the Agency decides to issue Revenue Bonds, with the proceeds from the sale of Revenue Bonds. The Agency may sell Revenue Bonds to the extent necessary to pay for said Capital Costs, to establish bond reserves and to pay all expenses incurred in the issuance of such bonds.

(b) From time to time the Agency shall determine the percentage of the Revenue Bonds that are attributable to Aqueduct Facilities, Storage Facilities, Common Facilities, and North Marin's Capital Costs. In making these calculations, the Agency shall not include in the portions of the Revenue Bonds that are attributable to Aqueduct Facilities, Storage Facilities and Common Facilities, the portions of the Revenue Bonds, if any, that

are attributable to North Marin's Capital Costs. The Agency shall not include in these calculations any Capital Costs for which North Marin paid cash pursuant to Section 4.4, or the costs of any major replacement facilities financed by the imposition of Aqueduct Facilities Capital Charges without the issuance of Revenue Bonds pursuant to subdivision (e) of Section 4.6.

4.6 Aqueduct Facilities Capital Charges

(a) Aqueduct Facilities Capital Charges consist of the Santa Rosa Aqueduct Capital Sub-Charge, the Sonoma Aqueduct Capital Sub-Charge, and the Petaluma Aqueduct Capital Sub-Charge. The Aqueduct Facilities Capital Charges shall be annual charges per acre foot set for each aqueduct as provided in subdivision (b) of this section and shall be paid by all Regular Customers of the Agency except North Marin for all water delivered from the Transmission System except Surplus Water. All water delivered to Santa Rosa and Windsor shall be deemed to be delivered from the Santa Rosa Aqueduct, all water delivered to Rohnert Park, Cotati, and Petaluma shall be deemed to be delivered from the Petaluma Aqueduct, and all water delivered to Sonoma and Valley of the Moon shall be deemed to be delivered from the Sonoma Aqueduct.

(b) The aggregate amount to be received by the Agency from the various Aqueduct Facilities Capital Charges for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) for such Fiscal Year times the percentage for Aqueduct Facilities determined pursuant to subdivision (b) of Section 4.5, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Aqueduct Facilities pursuant to subdivision (c) of this section. The aggregate amount shall be allocated to the respective aqueducts based on the following cost distribution ratios applied to the estimated, or when known, actual Capital Costs for the various Aqueduct Facilities:

Facility	Ratio
2nd pipeline, generally paralleling Intertie Aqueduct, Reach 1, Reach 2 and Reach 3a	
Santa Rosa Aqueduct	6.6/55.8
Petaluma Aqueduct	20.9/55.8
Sonoma Aqueduct	6.8/55.8

2nd pipeline, generally paralleling Intertie Aqueduct, Reach 3b and 3c

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	20.9/42.4
Sonoma Aqueduct	-0-

2nd pipeline, generally paralleling Petaluma Aqueduct from its junction with the Intertie Aqueduct to Kastania Reservoir

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	20.9/38.8
Sonoma Aqueduct	-0-

2nd pipeline, generally paralleling Sonoma Aqueduct

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	-0-
Sonoma Aqueduct	6.8/6.8

(These ratios are determined with the allocations in Sections 4.3 and 4.4 of Capital Costs to North Marin, and with the following allocations to Common Facilities:

2nd pipeline generally paralleling Reaches 1, 2 and 3a of the Intertie Aqueduct: 12.8/55.8

2nd pipeline generally paralleling Reach 3b and 3c of the Intertie Aqueduct: 12.8/42.4

2nd pipeline generally paralleling the Petaluma Aqueduct from its junction with the Intertie Aqueduct to Kastania Reservoir: 12.8/38.8)

(c) All money received by the Agency in payment of Aqueduct Facilities Capital Charges shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making the payments required to satisfy the Agency obligations and covenants with respect to the Revenue Bonds used to finance the Capital Cost of the Aqueduct Facilities, remaining money received from the Aqueduct Facilities Capital

Charges may be disbursed from time to time to pay pursuant to subdivision (a) of Section 4.5 the portions of the Capital Costs of the Remaining Facilities and Additional Facilities which are also Aqueduct Facilities that are not allocated to North Marin in Section 4.3.

(d) If at the end of any Fiscal Year the balance in the Aqueduct Facilities Capital Charge fund is insufficient to meet said Revenue Bond Obligations for the ensuing Fiscal Year attributed to the Aqueduct Facilities, Agency will determine the deficits in the payment received by it for deliveries from the Santa Rosa, Petaluma, and Sonoma Aqueducts respectively. Before August 1 of the following Fiscal Year:

(1) Additional charges for water delivered in amounts equal to the deficits with respect to the Santa Rosa Aqueduct shall be paid by Santa Rosa and Windsor in the following manner: The share of such additional charge to be paid by each of said Water Contractors shall be proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying the said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Santa Rosa Aqueduct.

(2) Additional charges for water delivered in an amount equal to the deficit with respect to the Sonoma Aqueduct shall be paid by Sonoma and Valley of the Moon in the following manner: The share of such additional charge to be paid by each of said Water Contractors shall be proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying the said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Sonoma Aqueduct.

(3) Additional charges for water delivered in an amount equal to the deficit with respect to the Petaluma Aqueduct shall be paid by Rohnert Park, Cotati and Petaluma in the following manner excluding North Marin and Marin Municipal: The share of such additional charge to be paid by each of said Water Contractors shall be

proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of all said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Petaluma Aqueduct.

(e) If the Agency decides to issue a new series or issue of Revenue Bonds to finance major replacements of portions or all of any aqueduct facility or if, with the approval of the Water Advisory Committee, the Agency decides to levy one or more Aqueduct Facilities Capital Charges to produce revenue to finance major replacements of portions or all of any aqueduct facility, then the aggregate amount to be received by the Agency from the respective Aqueduct Facilities Capital Charges for each Fiscal Year shall be sufficient to produce water sales revenues, in addition to those required by subdivision (b) of this section, in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of such major replacements. The Capital Costs of major replacements to the facilities specified in Subsection 4.6(b) above shall be allocated based upon the ratios set forth in Subsection 4.6(b). The Capital Costs of major replacements to the Intertie Aqueduct shall be allocated to the respective aqueducts based on the following cost distribution ratios:

Intertie Aqueduct Reach 1:

Santa Rosa Aqueduct	31.5/70.4
Petaluma Aqueduct	19.7/70.4
Sonoma Aqueduct	8.0/70.4

Intertie Aqueduct Reach 2:

Santa Rosa Aqueduct	30.0/68.9
Petaluma Aqueduct	19.7/68.9
Sonoma Aqueduct	8.0/68.9

Intertie Aqueduct Reach 3:

Santa Rosa Aqueduct	20.0/58.9
Petaluma Aqueduct	19.7/58.9
Sonoma Aqueduct	8.0/58.9

4.7 Storage Facilities Capital Charge

(a) The Storage Facilities Capital Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers of the Agency for all water delivered from the Transmission System except Surplus Water, provided however, that North Marin shall not be obligated to pay any Storage Facilities Capital Charge if North Marin maintains potable storage reservoirs within its system with a total capacity equal to or greater than one and one-half times the average daily volume of water delivered by the Agency to North Marin during the previous July with the highest water delivery to North Marin.

(b) The aggregate amount to be received by the Agency from the Storage Facilities Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for Storage Facilities determined pursuant to subdivision (b) of Section 4.5, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Storage Facilities pursuant to subdivision (c) of this section.

(c) All money received by the Agency in payment of the Storage Facilities Capital Charge shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments from the Storage Facilities capital fund required by Section 1.7, remaining money in said fund may be disbursed from time to time to pay Capital Costs of Remaining Facilities, Additional Facilities and replacement facilities that also are Storage Facilities, pursuant to Section 4.5.

(d) If at the end of any Fiscal Year the balance in the Storage Facilities capital fund is insufficient to meet said Revenue Bond Obligations for such Fiscal Year attributed to the Storage Facilities, each Water Contractor except North Marin will, before August 1, pay to the Agency an additional charge per acre foot for all water delivered to it during the Fiscal Year which additional charge when multiplied by all Acre Feet sold to Regular Customers except North Marin shall be equal to said deficit.

4.8 Common Facilities Capital Charge

(a) The Common Facilities Capital Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers of the Agency except North Marin for all water delivered from the Transmission System except Surplus Water.

(b) The aggregate amount to be received by the Agency from the Common Facilities Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for Common Facilities determined pursuant to subdivision (b) of Section 4.5.

(c) All money received by the Agency in payment of the Common Facilities Capital Charge shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making the payments required by Section 1.7, additional money received from the Common Facilities Capital Charge may be disbursed from time to time pursuant to subdivision (a) of Section 4.5 to pay the portions of the Capital Costs of Remaining Facilities, Additional Facilities, replacement facilities and the Potter Valley Project that also are Common Facilities and that are not allocated to North Marin in Section 4.3, and to satisfy the requirements of Section 6.04 of Ordinance No. 1 if the amount of money received from the charge established by Section 4.2 is insufficient in any Fiscal Year.

(d) If at the end of any Fiscal Year the balance in the Common Facilities capital fund is insufficient to meet the Agency's Revenue Bond Obligations for such Fiscal Year on the Revenue Bonds attributed to Common Facilities, each Water Contractor except North Marin shall, before August 1, pay to the Agency an additional charge per acre foot for water delivered to it during the Fiscal Year, which additional charge when multiplied by all Acre Feet sold to the Water Contractors shall be equal to said deficit.

4.9 North Marin Capital Charge

(a) The North Marin Capital Charge shall be a uniform annual charge per acre foot and shall be paid by North Marin for all water delivered to it from the Transmission System except Surplus Water.

(b) The aggregate amount to be received by the Agency from the North Marin Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected

payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for North Marin's Capital Costs determined pursuant to subdivision (b) of Section 4.5.

(c) All money received by the Agency in payment of North Marin Capital Charge shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making any payments required by Section 1.7, additional money received from the North Marin Capital Charge shall be deposited in the separate account described in subdivision (c) of Section 4.4.

(d) If at the end of any Fiscal Year the balance in the separate fund described in subdivision (c) of Section 4.4 is insufficient to meet the portion of the Agency's Revenue Bond Obligations for such Fiscal Year on the Revenue Bonds attributed to North Marin's Capital Costs, North Marin will, before August 1, pay to the Agency an additional charge per acre foot for water delivered to it during the Fiscal Year, which additional charge when multiplied by all Acre Feet sold to North Marin shall be equal to said deficit.

(e) If any money received pursuant to the Common Facilities Capital Charge is used pursuant to subdivision (c) of Section 4.8 to satisfy the requirements of Section 6.04 of Ordinance No. 1, then the North Marin Capital Charge shall be increased by the appropriate amount so that North Marin pays its appropriate share of such requirements.

(f) If North Marin has not maintained storage reservoirs within its system with at least the capacity required by subdivision (a) of Section 4.7, and if, as a result, the Agency constructs additional storage, then the North Marin Capital Charge shall be increased by an amount sufficient to pay for the Capital Costs or Revenue Bonds costs of such additional storage.

4.10 Power; Revenues

All power from the Warm Springs Hydroelectric Project and the Potter Valley Project shall be applied to the operation of the Transmission System or shall be sold, as the Agency shall from time to time determine. All revenues arising from the operation of these projects shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1.

4.11 Payment for Surplus Water and Water Sold To Marin Municipal

(a) The Agency will sell Surplus Water at a price per acre foot of not less than 120% of the then current Operation and Maintenance Charge. All revenue from the sale of Surplus Water shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1.

(b) Water delivered to Marin Municipal shall be sold at a per acre foot price that shall not be less than the sum of the Operation and Maintenance Charge determined pursuant to Section 4.2, the Russian River Conservation and Russian River Projects Charges determined pursuant to Section 4.18, and a capital charge. For the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, or any amendment to that agreement that has been approved by the Water Advisory Committee, the capital charge shall be the total of all charges paid to Agency by Marin Municipal minus the sum of the Operation and Maintenance Charge and the Russian River Conservation and Russian River Projects Charges. For the Amended Agreement For The Sale of Water Between the Sonoma County Water Agency and Marin Municipal Water District dated January 25, 1996, or any amendment to that agreement that has been approved by the Water Advisory Committee, the capital charge shall be the charge established by paragraph b. of Section 10 of that agreement. Any subsequent agreement between the Agency and Marin Municipal for the sale of water to be transported through the Transmission System pursuant to Section 3.12 shall specify the capital charge that applies to this section of this Agreement. All money received by the Agency from the Operation and Maintenance Charge on water sold to Marin Municipal shall be credited to the operation and maintenance fund. All money received by the Agency from the Russian River Conservation and Russian River Projects Charges on water sold to Marin Municipal shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2. The balance of the money received by the Agency from water sold to Marin Municipal shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments required by Section 1.7 and Ordinance No. 1, additional money received may be disbursed from time to time to pay the Capital Costs of Storage Facilities or Common Facilities authorized to be constructed in Section 2.2, provided, however, that only the money received from $31.50 per acre foot of the capital charge (which rate is based on the Agency's past and projected future capital investment in Storage Facilities) may be used to pay the Capital Costs of new Storage Facilities.

4.12 Minimum Payments by Other Agency Customers

Anything herein to the contrary notwithstanding, the Agency will not sell any water to be delivered through the Transmission System (other than Surplus Water) to any Other Agency Customer at a total price per acre foot that is less than 120% of the highest price per acre foot then currently being paid by any Water Contractor; provided, however, that this limitation shall not apply to water sold to Forestville. The respective components of said price shall be credited to the appropriate fund referred to in subdivision (a) of Section 4.1 and the excess shall be credited to the aqueduct capital fund for the aqueduct from which service is taken. Forestville's charge shall be the same as the total charge for Water Contractors for water delivered from the Santa Rosa Aqueduct, except that during the first ten (10) full Fiscal Years following execution of this Agreement, Forestville shall not pay the Santa Rosa Aqueduct Capital Sub-Charge.

4.13 Operations and Maintenance Charge – Water Management Planning

The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Water Management Planning Sub-Charge. The aggregate amount of money to be received by the Agency from the Water Management Planning Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's reasonable estimate of its costs for such Fiscal Year to carry out the provisions of Section 2.7. All money received by the Agency in payment of the Water Management Planning Sub-Charge shall be deposited by the Agency into a Water Management Planning Fund and used to pay the Agency's costs in carrying out the provisions of Section 2.7.

4.14 Operations and Maintenance Charge – Watershed Planning and Restoration

(a) The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Watershed Planning and Restoration Sub-Charge.

(b) The aggregate amount of money to be received by the Agency from the Watershed Planning and Restoration Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's reasonable estimate of costs for such Fiscal Year (net of funding provided by other sources, including the Russian River Projects Fund and the Agency's General Fund) of carrying out: (1) fishery mitigation, enhancement, and environmental compliance activities and projects undertaken by the Agency, including the Agency's costs of complying with the Endangered Species Act or any other applicable federal, state, or local environmental statute or regulation, if such

activities, projects, and costs are reasonably necessary, to enable the Agency to provide water to Regular Customers under this Agreement; (2) the evaluations undertaken pursuant to Section 2.4(b); and (3) actions, studies or projects authorized pursuant to Section 2.8 of this Agreement that are not covered by other funding sources and contributions. The Agency shall not use proceeds from the Watershed Planning and Restoration Sub-Charge to pay for the capital cost or operation and maintenance cost of recreation facilities.

(c) Notwithstanding Subsection 4.14(b) above, during the first five full Fiscal Years following the effective date of this Agreement, the Watershed Planning and Restoration Sub-Charge shall not exceed $35.00 per acre-foot.

(d) To assist in determining the appropriate share of fishery mitigation, enhancement, and environmental compliance activities and projects undertaken by the Agency to be paid by the Water Contractors under the Watershed Planning and Restoration Sub-Charge, the Agency shall, from time to time as reasonably necessary, prepare an analysis that (1) identifies planned fishery mitigation, enhancement, and environmental compliance activities and projects, (2) identifies the costs and beneficiaries of such activities and projects, (3) proposes an allocation of costs among all benefitted parties, and (4) recommends sources of funding for such activities and projects.

(e) The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to pay the Watershed Planning and Restoration Sub-Charge or fund or implement watershed planning and restoration projects at a level equivalent to that funded by the Agency under this Agreement.

(f) In addition to the Watershed Planning and Restoration Sub-Charge, the Agency may assess against the Water Contractors such supplemental charges as are authorized and agreed to under Section 2.8(c). Supplemental charges under this subsection shall not be included in determining the minimum payments by Other Agency Customers pursuant to Section 4.12 or by Windsor pursuant to Section 4.17.

(g) All money received by the Agency in payment of the Watershed Planning and Restoration Sub-Charge shall be deposited by the Agency into a Watershed Planning and Restoration Fund and used for the purposes set forth in Section 4.14(b). All money received by the Agency in payment of any supplemental charges pursuant to Section 4.14(d) shall be deposited into separate account(s) and used to pay the costs of projects authorized and agreed to pursuant to Section 2.8(c).

4.15 Operations and Maintenance Charge – Recycled Water and Local Supply

The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Recycled Water and Local Supply Sub-Charge. The Recycled Water and Local Supply Sub-Charge shall be a uniform charge per acre-foot and shall be paid by all Regular Customers and Russian River Customers for all water taken from the Transmission System or under the Agency's water rights. The aggregate amount of money to be received by the Agency from the Recycled Water and Local Supply Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's estimate of its costs for such Fiscal Year to carry out the provisions of Section 2.6; provided, however, that during the first five full Fiscal Years following the effective date of this Agreement, the Recycled Water and Local Supply Sub-Charge shall not exceed $35.00 per acre-foot. The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to pay the Recycled Water and Local Supply Sub-Charge. Monies collected from the Recycled Water and Local Supply Sub-Charge shall be deposited in a Recycled Water and Local Supply Fund created by the Agency. The Recycled Water and Local Supply Fund shall be used only to pay or partially pay for the costs of Recycled Water Projects or the acquisition of Recycled Water or the rights thereto pursuant to Section 2.6 of this Agreement. Notwithstanding the foregoing sentence, revenue from the Recycled Water and Local Supply Sub-Charge collected by the Agency from Windsor pursuant to Section 4.17(b) shall be placed in a separate account and made available to Windsor for funding Windsor's local or regional Recycled Water Projects.

4.16 Operations and Maintenance Charge – Water Conservation

(a) The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Water Conservation Sub-Charge. Monies collected from the Water Conservation Sub-Charge shall be deposited in a Water Conservation Fund created by the Agency. The Water Conservation Fund shall be used only to pay or partially pay for the cost of Water Conservation Projects. The aggregate amount of money to be received by the Agency from the Water Conservation Sub-Charge for each Fiscal Year shall be sufficient to cover the Agency's estimate of the total cost of all Water Conservation Projects for such Fiscal Year. From and after July 1, 1998, a total of fifteen million dollars ($15,000,000) shall be expended to implement Water Conservation Projects pursuant to the Water Conservation Plan dated June 29, 1998. The $15,000,000 shall be allocated as follows: Cotati 2.10%, Petaluma 18.53%, Rohnert Park 10.37%, Santa Rosa 40.25%, Sonoma 4.15%, Forestville 0.66%, North Marin 19.50%, Valley of the Moon 4.43%. Until the total of $15,000,000 has been expended as set forth above, the

Agency shall not fund Water Conservation Projects for or on behalf of Windsor. The Water Conservation Projects for which said $15,000,000 is to be expended, have been approved by the Water Advisory Committee.

(b) The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to fund or implement Water Conservation Projects at a level equivalent to that funded by the Agency under this Agreement. Notwithstanding the penultimate sentence in Section 4.16(a), revenue from the Water Conservation Sub-Charge collected by the Agency from Windsor pursuant to Section 4.17(b) shall be placed in a separate account and made available to Windsor for funding Windsor's Water Conservation Projects.

4.17 Payments by Town of Windsor

(a) Notwithstanding anything in this Agreement to the contrary, for the first fifteen (15) full Fiscal Years following execution of this Agreement, the amount payable by Windsor for water delivered by the Agency through the Transmission System shall be 120% of the highest price per acre foot then currently being paid by any Water Contractor receiving water from the Santa Rosa Aqueduct. The respective components of said price shall be credited to the appropriate fund referred to in subdivision (a) of Section 4.1 and the excess shall be credited to the aqueduct capital fund for the aqueduct from which service is taken. Beginning with the sixteenth (16th) full Fiscal Year following execution of this Agreement and thereafter, all water delivered to Windsor by Agency through the Transmission System will be deemed delivered from the Santa Rosa Aqueduct and the amount payable by Windsor for said water determined accordingly.

(b) For all water diverted directly by Windsor from the Russian River using its own facilities, whether under the Agency's water rights or Windsor's water rights, Windsor shall pay only the charges set forth in the Agreement for Sale of Water between the Agency and Windsor dated January 8, 1991, as amended, including the sub-charges set forth in Sections 4.13, 4.14, 4.15, and 4.16.

4.18 Payment of Russian River Conservation Charge and Russian River Projects Charge by North Marin

In addition to the other charges provided for in this Part, North Marin shall pay the following additional per-acre-foot charges:

(a) A Russian River Conservation Charge shall be paid in lieu of the property taxes levied by the Agency on property in Sonoma County, to pay the capital, Operation and Maintenance Costs associated with the Warm Springs Dam Project. The Russian River Conservation Charge shall be a charge per acre foot of water delivered to North Marin hereunder, except Surplus Water. The charge shall be determined annually on or before April 30 preceding each Fiscal Year and shall be payable by North Marin during the ensuing Fiscal Year. The Russian River Conservation Charge shall be determined by multiplying the tax rate levied by the Agency in the then current Fiscal Year to pay the costs associated with the Warm Springs Dam Project times the assessed value of secured and unsecured property situated within Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon and dividing the product by the total number of Acre Feet of water delivered to Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon pursuant to Section 3.1 and 3.3 during the twelve month period ending on March 31. All money received by the Agency from the Russian River Conservation Charge on water sold to North Marin shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2.

(b) A Russian River Projects Charge shall be paid in lieu of the property taxes levied on property in Sonoma County and other Agency general fund monies which are transferred to the Agency's Russian River Projects Fund and expended for the purposes enumerated in subsection (jj) of Section 1.2. The Russian River Projects Charge shall be effective on the first day of the first month following the effective date of this Agreement and shall thereafter be determined annually on or before April 30 preceding each Fiscal Year and shall be payable by North Marin during the ensuing Fiscal Year. The Russian River Projects Charge shall be determined by dividing the total amount of Agency monies expended from the Agency's Russian River Projects Fund in the preceding ten Fiscal Years, exclusive of the funds contributed to the Fund by North Marin and Marin Municipal Water District, and interest earnings attributable to funds contributed by North Marin and Marin Municipal Water District, by the sum of the total acre-feet of water delivered by the Agency to Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon pursuant to Sections 3.1 and 3.3 of this Agreement during the preceding ten Fiscal Years and multiplying the quotient by the ratio that the assessed value of secured and unsecured property situated within Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon bears to the assessed value of all secured and unsecured property within Sonoma County, provided, however, in no event shall the Russian River Projects Charge exceed $20.00 per acre-foot. The Agency shall keep proper books, records and accounts in which complete and accurate entries shall be made of all Agency general fund monies

transferred to the Agency's Russian River Projects Fund and all expenditures made from the fund for the purposes set forth in subsection (jj) of Section 1.2. The Agency shall maintain a separate account within the Russian River Projects Fund for Russian River Projects Charges paid by North Marin and Marin Municipal Water District. Monies expended from the Russian River Projects Fund shall be deemed to have been expended from the North Marin and Marin Municipal Water District account in the proportion that the balance of that account bears to the total Russian River Projects Fund balance at the end of the Fiscal Year quarter preceding the expenditure. All money received by the Agency from the Russian River Projects Charge on water sold to North Marin shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2.

4.19 Billing and Time of Payment

Except as otherwise expressly provided herein, all charges payable to the Agency shall be billed each month and paid within 30 days after receipt of bill. Notwithstanding any dispute between the Agency and a Water Contractor, such Water Contractor will pay all its bills when due and shall not withhold all or any part of any payment pending the final resolution of such dispute. If the resolution of the dispute results in a refund to the Water Contractor, the Agency shall make such refund plus any interest earned by investment of the disputed funds as promptly as it is able to do so, consistent with its meeting its Revenue Bond Obligations.

PART 5 - Water Advisory Committee/Technical Advisory Committee

5.1 Purpose

(a) There is hereby created the Water Advisory Committee and the Technical Advisory Committee.

(b) The purpose of the Water Advisory Committee is to perform the functions specified herein and to review all proposals set forth by the Agency which involve a significant capital outlay for the Transmission System or any other project which would significantly change the level of service or add significantly to the operations and maintenance expense of the Transmission System or other expense to be borne by the Water Contractors. The purpose of the Technical Advisory Committee is to advise the Water Advisory Committee.

5.2 Powers

Except as provided herein to the contrary, the power of the Water Advisory Committee is limited to that of collective spokesperson for the Water Contractors and shall be advisory only in nature. Nothing shall preclude a Water Contractor from setting forth a view contrary to that of the majority of the Committee. No action of the Committee limits or impairs any right or power of any Water Contractor. The Technical Advisory Committee shall have no powers other than the power to make recommendations to the Water Advisory Committee.

5.3 Composition and Voting

(a) The Water Advisory Committee shall be composed of one representative and one alternate who shall serve in absence of the representative, to be selected by each Water Contractor. The representative and alternate shall be elected members of and appointed by the governing board of the Water Contractor. The Water Advisory Committee shall generally meet quarterly as it determines necessary, which shall include at least one meeting per calendar year with a liaison from the Board of Directors of the Agency who is a member of and appointed by said Board. Each Water Contractor's representative will be allocated a weighted vote proportional to the average daily rate of flow during any month Entitlement Limit from the Transmission System applicable to such Water Contractor. An affirmative vote of said Committee shall be recorded and require both of the following: (1) the affirmative vote of more than fifty percent (50%) of the total weighted votes as defined above; and (2) the

affirmative vote of at least five (5) representatives. If the Water Advisory Committee does not affirmatively vote to approve any matter before it for a decision, then the matter shall be deemed not approved. A representative or alternate appointed by the Board of Directors of the Marin Municipal Water District, each of which must be members of said board, may attend and participate, debate, express opinions and present information at meetings of the Water Advisory Committee but shall not have a vote. If the approval, determination, or consent of the Water Advisory Committee is authorized or required on any non-advisory matter pursuant to this Agreement, the vote of the Water Advisory Committee on such matter shall be evidenced by a writing, executed by the chairperson or secretary, evidencing (a) the vote of each member, (b) whether the vote of the Committee was in the affirmative, and (c) if the vote was in the affirmative, a description of the approval, determination, or consent given by the Committee.

(b) The Technical Advisory Committee shall be composed of one non-elected representative selected by each Water Contractor. The Technical Advisory Committee shall generally meet monthly as it determines necessary. Each Water Contractor's representative will be allocated the same weighted vote applicable to that Water Contractor under Section 5.3(a). An affirmative vote of said Committee shall require both of the following: (1) the affirmative vote of more than fifty percent (50%) of the total weighted votes as defined above; and (2) the affirmative vote of at least five (5) representatives. A representative or alternate appointed by the Marin Municipal Water District Board of Directors may attend and participate, debate, express opinions and present information at meetings of the Water Advisory Committee but shall not have a vote. The Water Advisory Committee may require the Technical Advisory Committee to create subcommittees and ad hoc committees. Persons serving on such committees shall be elected officials, staff or contract staff of the Water Contractor they represent.

(c) The Technical Advisory Committee shall create a standing Water Conservation Subcommittee. The Water Conservation Subcommittee shall make recommendations to the Technical Advisory Committee with respect to any determination of the Water Advisory Committee contemplated under Section 1.12 of this Agreement, and shall perform other such duties with respect to Water Conservation Projects as may be requested by the Technical Advisory Committee.

(d) Once every two years, on a date selected by the Water Advisory Committee, the Water Advisory Committee shall elect from among its members two officers: a chairperson and vice chairperson. Officers shall serve for the ensuing two Fiscal Years. An officer may serve a second or subsequent consecutive two-year terms only if each

such term is approved by a unanimous vote of the Water Contractors. Furthermore, an officer can be removed and replaced at any meeting called by five Water Advisory Committee members provided all Water Advisory Committee members are notified in writing a minimum of five working days prior to the meeting. In the event an officer either: (1) loses his/her status as a duly elected local official serving on the governing board of the Water Contractor they represent or (2) loses his/her appointment as representative of the Water Contractor on the Water Advisory Committee, the officer position held shall be vacated. The Water Advisory Committee shall elect a new officer who shall fill out the balance of the vacated term. Voting for officers shall be as provided in subsection (a) of this section.

(e) By November of each year, subject to the limitations in Section 4.16(a), the Water Advisory Committee shall review proposed Water Conservation Projects, Recycled Water Projects, and Local Supply Projects and approve and report to the Agency those projects that are to receive funding in the next or later fiscal years. It is the intent of the parties to this Agreement that over the term of the Agreement, Regular Customers shall receive funding support for Water Conservation Projects, Recycled Water Projects, and Local Supply Projects in proportion to the amounts paid by Regular Customers under Sections 4.15 and 4.16.

(f) Commencing with the first Fiscal Year following the effective date of this Agreement, the Agency shall include in its operating budget the amount of $30,000 which the Agency shall expend as the Water Advisory Committee directs for purposes associated with the orderly implementation and operation of the provisions of this Agreement and other associated purposes deemed appropriate by the Committee. The annual amount may be fixed at a higher or lower amount in subsequent Fiscal Years as determined by vote of the Committee pursuant to subsection (a) of this section. The Water Advisory Committee shall decide which, if any, consultant or consultants, firm or firms shall be hired to carry out this work.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first above written.

SONOMA COUNTY WATER AGENCY

By: Paul L. Kelley Date: 6/23/06

ATTEST:

Eve T. Lewis

CITY OF COTATI

By: Janet Orchard Date: 5.9.06
Mayor

ATTEST:

Terry L. Hobbs Date: 5-10-06
City Clerk

CITY OF PETALUMA

By: David A. Glass Date: 5-15-06
Mayor

ATTEST:

Katie Crump
Deputy City Clerk

CITY OF ROHNERT PARK

By: Date: 6/06-05-06
Tim Smith Mayor

ATTEST:

Judy Hauff
City Clerk

CITY OF SANTA ROSA

By: Jane Bender Date: 5/31/06
Mayor

ATTEST:

Deputy City Clerk

CITY OF SONOMA

By: Date: 4-19-06
Mayor

ATTEST:

Gay Rainsbarger
City Clerk

FORESTVILLE COUNTY WATER DISTRICT Date: 5/12/06

By:
President

ATTEST:

Secretary

NORTH MARIN WATER DISTRICT

Date: 5/22/06

By: _____
President

ATTEST:

_____
Acting Secretary

TOWN OF WINDSOR

Date: 5-17-06

_____
Mayor

ATTEST:

_____
Deputy Town Clerk

VALLEY OF THE MOON WATER DISTRICT

Date: 5-25-06

By: _____
President

ATTEST:

_____
Deputy Secretary

Appendix G: List of Public Water Systems

	System Number	System Name
1	2300507	River Estates Mutual Water Company
2	2300605	Lake View Mutual Water Co.
3	2300606	Ridgewood Water System
4	2300708	City of 10,000 Buddhas
5	2300731	Potter Valley School District
6	2300755	Yokayo Water System
7	2300837	Retech Water
8	2300838	Mariposa Institute
9	2300840	Fetzer Vineyards
10	2300852	U.S. Army Corps-Lake Mendo (Bushay Site)
11	2300853	U.S. Army Corps-Lake Mendo (Kyen Cmpgrd)
12	2300854	U.S. Army Corps-Lake Mendo(Marina Site)
13	2300855	U.S. Army Corps-Lake Mendo(Pomo Site)
14	2300856	Black Oak Facility
15	2300858	Rogina Water Company Inc.
16	2310002	Ukiah, City of
17	2310003	Willow County Water District
18	2310005	Millview County Water District
19	2310006	Redwood Valley County Water District
20	2310008	Hopland Public Utility District
21	2310010	Washoe House
22	4900033	Alexander Valley Store & Bar
23	4900107	Cazadero Water Company
24	4900508	South Cloverdale Water Company
25	4900510	Happy Acres Mutual Benefit Water System
26	4900512	Madrone Mutual Water Company
27	4900513	Rancho Del Paradiso-Cal Water Svc (PUC)
28	4900514	Gill Creek Mutual Water Company
29	4900521	Sonoma County CSA 41-Jenner
30	4900532	Occidental Community Services District
31	4900536	Branger Mutual Water Company, Inc.
32	4900545	Hawkins Water Co-Cal Water Service (PUC)
33	4900546	End-O-Valley Mutual Water Company
34	4900547	Holland Heights Mutual Water Company
35	4900548	Melita Heights Mutual Water Company
36	4900551	Michele Mutual Water Company
37	4900552	Park Royal Mutual Water
38	4900553	Belmont Terrace Mutual Water Company
39	4900558	Fircrest Mutual Water Company
40	4900559	Kelly Mutual Water Company
41	4900560	Willowside Mutual Water Company
42	4900561	Palomino Lakes Mutual Water Co.
43	4900570	Wilshire Heights Mutual Water Company

	System Number	System Name
44	4900573	Rio Lindo Adventist Academy
45	4900577	Sonoma Mountain County Water District
46	4900580	Bennett Ridge Mutual Water Company
47	4900585	Bennett Ridge Mutual Water Company
48	4900587	Brand Water Company
49	4900599	Randal's Ranchette Mutual Water Co.
50	4900600	Rincon Valley Mobile Estates
51	4900603	Riebli Mutual Water Company
52	4900604	Twin Hills Mutual Water Company
53	4900605	Twin Hills Mutual Water Company
54	4900608	Mark West Acres MWC
55	4900611	Six Acres Water Company
56	4900612	Rains Creek Water District
57	4900618	Heights Mutual Water Company
58	4900620	Rural Canyon Mutual Water Company
59	4900629	Austin Acres Mutual Water Company
60	4900630	East Austin Creek Mutual Water Company
61	4900634	Austin Creek Mutual (Springhill)
62	4900637	Huckleberry Mutual Water Company
63	4900639	Magic Mountain Mutual Water Company
64	4900640	Redwood Heights Mutual Water Company
65	4900641	Sonoma County Mutual Water Company
66	4900643	Sunrise Mountain Mutual Water Company
67	4900644	Mount Weske Estates Mutual Water Company
68	4900646	Bridgehaven Park
69	4900653	Alexander Valley Acres Water Company
70	4900660	Lone Pine Mutual Water Company
71	4900665	Yulupa Mutual Water Company
72	4900669	Russian River Mutual Water Co.
73	4900673	Wendell Water Company (PUC)
74	4900674	Athena Terrace Mutual Water Company
75	4900675	Pine Hill Terrace Mobile Home Park
76	4900676	Roseland Mobile Home Park
77	4900677	Village Park Mobile Home Park
78	4900684	Sequoia Gardens Mobile Home Park
79	4900686	#N/A
80	4900687	Cafe Saint Rose
81	4900688	KOA - Cloverdale
82	4900693	Brookwood Mobile Home Park
83	4900694	Journey's End Mobile Home Park
84	4900695	Bellevue Union Sch Dist-Bellevue School
85	4900699	Wright Elementary School
86	4900700	Piner Elementary School
87	4900702	Olivet Elementary School
88	4900703	Nonesuch Farm School
89	4900704	Pacific Christian Academy
90	4900705	Oak Grove School

	System Number	System Name
91	4900707	Alexander Valley Union School District
92	4900708	Geyserville Educational Park
93	4900710	Twin Hills School Dist-Twin Hills School
94	4900711	Gravenstein School District-Gravenstein
95	4900719	Twin Hills School Dist-Apple Blossom Sch
96	4900720	Gravenstein School District-Hillcrest
97	4900721	West Side Union School District
98	4900722	Mobile Home Estates
99	4900723	Shamrock Mobile Home Park
100	4900728	Colonial Park
101	4900736	URJ Camp Newman
102	4900743	Shamrock Mobile Home Park
103	4900745	Evergreen Mobile Estates
104	4900748	Clear Creek Water Company
105	4900774	La Cantera Racquet Club
106	4900784	River Bend Resort
107	4900785	Casini Ranch Campground
108	4900786	Cloverleaf Ranch Summer Camp
109	4900787	Windsor Mobile Country Club
110	4900788	Noel Heights-Cal Water Service (PUC)
111	4900789	Rancho Santa Rosa MHP
112	4900791	Plaza Mobile Home Park
113	4900792	El Crystal Mobile Home Park
114	4900793	Blue Spruce Mobile Home Park
115	4900794	Western Mobile Home Park
116	4900795	Wayside Gardens Mobile Home Park
117	4900796	Vinehill Vista Mutual Water Company
118	4900797	Sunset Trailer Park
119	4900798	Stonegate Mobile Home Park
120	4900799	Santa Rosa Mobile Estates
121	4900800	North Star Mobile Home Park
122	4900801	Mountain View Mobile Estates, LLC
123	4900812	El Portal Mobile Estates
124	4900813	Mark West Estates
125	4900815	Shady Lane Mobile Home Park
126	4900817	Friedman Brothers Hardware
127	4900820	Midgley's Country Flea Market
128	4900822	Days Inn
129	4900832	Casa Del Mar
130	4900844	Monte Vista Motel
131	4900846	Mount Taylor Mobile Home Park
132	4900847	Leisure Mobile Home Park
133	4900855	Francis Coppola Winery
134	4900859	Rolling Oaks Road Association
135	4900873	Richardson Water System
136	4900878	Duncans Mills Trading Company
137	4900883	Lancelot Mobile Home Park

	System Number	System Name
138	4900890	Sonoma West Holdings North Plant
139	4900893	Richardson Water System
140	4900897	Santa Rosa Golf & Country Club
141	4900898	Windsorland Mobile Home Park
142	4900904	Redwood Adventist Academy
143	4900905	West Water Company (PUC)
144	4900907	Rodney Strong Vineyards
145	4900913	Hilton Park Family Campground
146	4900916	J Vineyards & Winery
147	4900934	Mark West Meadows Mutual Water
148	4900935	Summerfield Waldorf School
149	4900936	Robin Way Water System
150	4900943	Mill Creek Vineyards
151	4900946	Restaurant Eloise
152	4900949	Geyser Peak Winery
153	4900956	Country Inn
154	4900962	Union Hotel
155	4900968	Alliance Redwoods Conference Grounds
156	4900974	Trentadue Winery
157	4900975	Saints Peter & Paul Russian Church
158	4900981	#N/A
159	4900982	CazSonoma Inn
160	4900994	Field Stone Winery
161	4900998	Russian River Vineyards & Restaurant
162	4900999	Vimark - Trione Winery
163	4901001	Pedroncelli Winery
164	4901004	Foppiano Vineyards
165	4901005	Westside Winery
166	4901008	Hessel Church
167	4901016	De Loach Winery
168	4901017	Korbel Brothers Winery
169	4901024	Wine Country RV Park
170	4901025	Calpine (West Field Office)
171	4901030	Todd Road Mutual Water Company
172	4901038	Hessel Church
173	4901042	Sequoia Water Company
174	4901044	Naco West - Russian River Preserve
175	4901060	Dry Creek Store
176	4901063	Johnson's Beach Resort
177	4901068	Calpine (Geysers Administration Center)
178	4901073	Passalacqua Winery
179	4901082	Michel Schlumberger Fine Wine Estate
180	4901084	Triple S Ranch
181	4901086	Duncan Mills Camping Club
182	4901090	Campobello
183	4901093	Alderbrook Winery
184	4901095	Za Zu's

System Number		System Name
185	4901098	Mazzocco Winery
186	4901101	Jordan Vineyard & Winery
187	4901105	Kendall-Jackson Wine Center
188	4901107	Preston Winery
189	4901110	Martinelli Ranch
190	4901111	Westminster Woods Camp
191	4901112	Thunderbird Ranch
192	4901113	Mount Gilead Bible Conference
193	4901115	Camp Royaneh-Boy Scouts of America
194	4901118	Cazadero Performing Arts Camp
195	4901119	Camp Cazadero
196	4901122	Bellevue Union Sch Dist-Kawana School
197	4901130	Lake Sonoma Marina
198	4901135	Mom s Apple Pie
199	4901141	Russian River Winery
200	4901147	Andy s Produce Market, Inc.
201	4901150	Dry Creek Vineyard
202	4901152	Sonoma Wine Company
203	4901153	Gravenstein Business Park
204	4901156	Hoot Owl Creek/Alex. Valley Vineyards JV
205	4901161	Occidental Arts & Ecology Center
206	4901162	Traditional Medicinals, Inc.
207	4901164	Alphabet Soup Preschool & Day Care
208	4901165	Clos du Bois Winery
209	4901170	Jimtown Store
210	4901172	College Avenue Building
211	4901175	Willowside Hall
212	4901179	Willowside School
213	4901181	Vino Farms, Inc. - Wasson Ranch
214	4901189	Quivira Vineyards
215	4901190	Woods Resort, The (Guerneville)
216	4901191	Jehovah s Witnesses Hall
217	4901195	New Directions Adolescent Services
218	4901197	#N/A
219	4901200	Willowside Hall
220	4901201	Redwood Empire Sawmill
221	4901202	Hanna Vineyards
222	4901203	Azure Acres CD Recovery Center
223	4901205	Lieto Water System (Sunridge School)
224	4901206	Paradise Ridge Winery
225	4901208	Moorland Avenue Apartments
226	4901212	Silver Oak Wine Cellars L.P.
227	4901213	Dimensions/Perler
228	4901215	Vinwood Cellars
229	4901220	Ferrari-Carano Winery
230	4901221	Fosters Wine Estates-Asti Winery
231	4901222	U.S. Army Corps-Liberty Glen Campground

	System Number	System Name
232	4901232	Armida Winery
233	4901236	Valley of the Moon Plaza Shopping Center
234	4901244	Sonoma County Pub Works-Central Landfill
235	4901245	Lytton Adult Rehabilitation Center
236	4901246	Plumfield Academy (Occidental Rd.)
237	4901248	Lytton Springs Winery
238	4901250	Graton Mutual (Green Valley HOA)
239	4901251	Sonoma County Parks-Vet. Memorial Beach
240	4901252	La Crema Winery
241	4901253	Vino Farms, Inc. - Preston Ranch
242	4901257	Humane Society of Sonoma County
243	4901259	Ledson Winery and Vineyards
244	4901261	Downtown Graton Mutual Water System
245	4901263	Matanzas Creek Winery
246	4901265	Sonoma West Holdings Industrial Park
247	4901266	Safari West
248	4901267	E & J Gallo Winery-Sonoma
249	4901269	C. Donatiello Winery
250	4901272	Capital Lumber Company
251	4901277	Stonestreet Winery
252	4901282	Stryker Sonoma Winery & Vineyards
253	4901283	Matrix Winery
254	4901284	Fairfield Osborn Preserve
255	4901287	Seghesio Farms
256	4901291	True to Life
257	4901298	United Rentals
258	4901299	Wildwood Retreat
259	4901301	Bucher Water Company
260	4901305	Manzana Products Company, Inc.
261	4901307	Fritz Winery and Vineyard
262	4901309	Mauritson Family Winery
263	4901311	Rochioli Winery
264	4901312	Verite Winery
265	4901313	Lynmar Winery
266	4901316	Petrified Forest
267	4901317	Moshin Vineyards
268	4901321	Truett & Hurst Winery
269	4901323	Sonoma County Golf Park
270	4901324	Hilton Mutual Water Company
271	4901330	Mark West Neighborhood Church
272	4901331	Balletto Vineyards
273	4901333	Sebastopol Vineyards
274	4901334	Rued Vineyards
275	4901335	Zichichi Winery
276	4901337	Sunce Winery
277	4901338	Fulton Processors, Inc.
278	4901343	Fritsch Industrial Park

System Number		System Name
279	4901344	Madrona Manor
280	4901346	Hawkes Winery
281	4901348	Forestville Veterinary Hospital
282	4901356	Amista Winery
283	4901359	Williams Selyem Winery
284	4910002	Alexander Valley RV Park & Campground
285	4910004	Wilson Winery
286	4910005	Stuhlmuller Vineyards
287	4910008	Giorgio s Restaurant
288	4910009	Delores Lane Water System
289	4910010	Hop Kiln Winery
290	4910011	Gary Farrell Winery
291	4910012	River s Edge Kayak & Canoe Trips
292	4910014	Cloverdale, City of
293	4910016	Sweetwater Springs CWD - Guerneville
294	4910017	Healdsburg, City of
295	4910018	Russian River County Water District
296	4910019	Santa Rosa, City of
297	4910020	Sonoma County CSA 41-Fitch Mountain
298	4910022	Sebastopol, City of
299	4910023	Sonoma, City of
300	4910024	Rohnert Park, City of
301	4910026	Cotati, City of
302	4910027	Windsor, Town of
303	4910028	Armstrong Valley-Cal Water Service (PUC)
304	4910029	Forestville County Water District
305	4910306	Sonoma County Water Agency
306	4910307	Canon Manor Water System
307	4910313	California-American Larkfield (PUC)
308	4910702	Geyserville Water Works (PUC)

Appendix H: Sonoma County Winegrowers Best Management Practices

Post Harvest Water Conservation Best Management Practices

Growers need to continue conserving water in the fall. Dr. Mark Greenspan, Advanced Viticulture, suggests the following Best Management Practices for water conservation as harvest approaches.

- Refrain from using overhead sprinklers for irrigation of vines after harvest (no need to "rinse off" the vines).
- Use drip irrigation for post-harvest fertigation and irrigation of the vines.
- Don't irrigate longer than your normal irrigation. Irrigate as you were before harvest.
- Vine irrigation is not beneficial if vines are already in senescence. Irrigate only if leaves are green following harvest. Some fertilizers (e.g. potassium and micronutrients) may be applied if vines are not active, but do not apply nitrogen if vines are senescing.
- Use overhead sprinkler irrigation for cover crop seed germination. This may be especially valuable where there is a greater risk for erosion near streams.
- Use permanent (self re-seeding or perennial) cover crops to avoid re-seeding every fall.

Frost Protection Best Management Practices

It is important to minimize the use of overhead sprinklers for frost protection in the spring to preserve public and private reserves for late-season irrigation. Dr. Mark Greenspan, Advanced Viticulture, suggests the following Best Management Practices for frost protection.

- Keep cover crops and other vegetation closely mowed to the ground. Moderate or tall vegetation lowers vineyard temperatures at night and increases frost risk.
- Double-pruning or late pruning will retard budbreak. Conduct the final pruning after the more apical buds have pushed.
- Apply copper to reduce ice-nucleating bacteria.
- Use your own thermometer. Frost is very site-specific, so don't rely on a remote weather station or your neighbor's thermometer. Measure well away from your neighbor's vineyard if it has sprinklers in operation.
- Better yet, use a bulb-type, aspirated psychrometer (wet and dry bulbs), like a Psychro-Dyne, available online ($165) at www.forestry-suppliers.com. The wet bulb is very useful. Portable electronic types are available, but are less accurate at low dew points than are bulb-types. Sling psychrometers may also be used.

- Use dew point values to determine your threshold for sprinkler start-up. Use a psychrometer and associated look-up tables, if possible. If not, using publicly-available dew point information within your region is better than using nothing.
- Guidelines[1]:
    - Dew point greater than 35°F: - Little chance of frost damage[2]
    - Dew point of 24°F or higher: - Turn on sprinklers at 34°F air temp.
    - Dew point between 20 and 23°F: - Turn on sprinklers at 35°F air temp.
    - Dew point of 19°F or lower: - Turn on sprinklers at 36°F air temp.
    - These apply only when frost is predicted. Turn off sprinklers when air temperatures rise back to 34°F, ice is melted, or wet bulb temperature exceeds 32°F.
- If using a wet-bulb device, frost control must be active for wet bulb temperatures of 32°F or lower.
- Wet soil surfaces conduct and store heat better than dry ones. If soil dries out by late spring and frost is forecast, brief irrigations (1-2 gallons per vine) periodically may help.
- Use wind machines to assist in frost control, where available and applicable.

California North Coast Irrigation Initiation Guidelines

Dr. Mark Greenspan, Advanced Viticulture, suggests the following guidelines for irrigation initiation.

This year, recent rainfall has alleviated the need for early irrigation initiation. Avoid the temptation to begin irrigation, as vines will become accustomed to the easily-extracted irrigation water once it becomes available. Let them use stored water reserves in the soil for as long as possible before initiating the irrigation "season". Premature irrigation initiation can result in cane lengths that need hedging and lateral shoot initiation that increases the costs of canopy and disease management.

- Keep an eye on cover crops (if they exist). Deeply-rooted perennial grasses (e.g. Blue Wild Rye, California Brome) will dry up and go dormant when soil water reserves become low. Don't be concerned, however, when annual grasses and legumes and less drought-tolerant perennial grasses get brown.
- Monitor soil moisture, if you have devices installed. Soil moisture measurements are very site-specific, so develop a history of soil moisture and use it to determine when the best time is to pull the irrigation trigger.
- Monitor shoot tips.

[1] Snyder, R. (2000) Principles of Frost Protection. University of California Regents

[2] Glen McGourty, Oral presentation. UC Cooperative Extension

  - As long as shoots are actively growing, there is no need to irrigate, unless shoots are stunted.
  - Irrigation may be necessary when shoots are slowing down and need to gain more length before stopping.
  - Irrigation may be initiated when shoot growth ceases.
- The pressure chamber apparatus may be used as an adjunct to shoot tip evaluation. Generally, shoots stop growing when midday leaf water potential reaches -10 to -11 bars on a mild weather day.
- Some parts of any vineyard will show signs of irrigation need sooner than the rest. If possible, irrigate those vines with separate, dedicated, drip hoses, before initiating irrigation for the rest of the block.
- A short irrigation for fertilizer application does not necessitate continued irrigation cycles.
- Once irrigation is started, apply only the amount of water required to wet the effective root zone. In our climate, we cannot truly "drive" the roots down deeper with drip irrigation. In most north coast vineyards, application of more than 3 or 4 gallons per vine per irrigation pushes water below the root zone. Shorter irrigations can conserve water.