

CF/42-0.19-9 SWRCB ORDER APPROVING TEMPORARY URGENCY
CHANGE IN PERMITS 12947A, 12949, 12950 & 16596 FOR 2011
(ID 3215)

March 27, 2013

Ms. Barbara Evoy
Deputy Director of Water Rights
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812-2000

RE: Reporting Requirements for Provisions 12, 13 and 14 of the State Water Resources Control Board Order Dated May 2, 2012

Dear Ms. Evoy:

Enclosed please find the following Reports:

- Provision 12 – Coordinated Efforts with Agricultural Russian River Water Users;
- Provision 13 – Water Loss and Water Use Efficiency; and
- Provision 14 – Progress of Santa Rosa Plain Groundwater Management Planning Program.

These reports have been prepared to meet the requirements of Provisions 12, 13 and 14 of the State Water Resources Control Board Order dated May 2, 2012. If you have any questions or comments, please do not hesitate to contact me directly.

Sincerely,

A handwritten signature in black ink that reads "Don Seymour".

Don Seymour, P.E.
Water Agency Principal Engineer

c Katherine Lee – State Water Resources Control Board, Division of Water Rights
Pamela Jeane, Jay Jasperse, Todd Schram, Carrie Pollard – Water Agency
Alan Lilly, Bartkiewicz, Kronick & Shanahan

State Water Resources Control Board
Order 05/02/2012

Provision 12 - Coordinated Efforts with
Agricultural Russian River Water Users



March 29, 2013

Prepared by

Sonoma County Water Agency

404 Aviation Blvd

Santa Rosa, CA 95403

1 Introduction

This report has been prepared by the Sonoma County Water Agency (Water Agency) to fulfill the requirements of Provision 12 of the State Water Resources Control Board (State Board) Order dated May 2, 2012 (Order).

Provision 12 of the Order directs the Water Agency to take the following actions:

SCWA shall continue to work with agricultural Russian River water users to pursue opportunities that will result in improved management of the Russian River by better anticipating periods of high water demand. SCEA shall provide a written update to the Deputy Director regarding the progress of these efforts by March 31, 2013.

2 Improved Frost and Heat Event Forecast Project

SCWA continues to work with the National Oceanic and Atmospheric Administration (NOAA) and the Sonoma County WineGrape Commission to improve the spatial and temporal resolution of forecast models for frost and heat events in the Alexander Valley. To date, this demonstration project has resulted in improved forecasting of these events. Improved forecast tools can provide agricultural water managers better information regarding the location and duration of frost events with a goal of more efficient and coordinated water use. Future work includes: (1) continued improvements to the forecast tool, (2) installation of equipment that measures the height of inversion layers so that vineyard managers can better determine whether fans (lower inversion layers) can be used rather than water (higher inversion layers); and (3) working with the WineGrape Commission and other stakeholders to "roll out" the modeling tool should it be determined that it is reliable for operations.

3 Frost Event Coordination with Mendocino County Grape Growers

SCWA continues to work with Mendocino County grape growers, the Mendocino County Russian River Flood Control and Water Conservation Improvement District and the Mendocino WineGrape and Wine Commission on coordinating releases from Coyote Valley Dam in response to forecasted frost events. Coordination efforts include: (1) Mendocino County grape growers providing SCWA operations staff with estimated pumping rates that will likely be applied during an eminent frost event; and (2) developing strategies for refilling off stream ponds following frost events. This ongoing coordination has improved SCWA's ability to manage Russian River flows in response to frost events.

4 Independent Science Review Panel (ISRP)

In 2012 SCWA, California Land Stewardship Institute, Russian River Water Conservation Council, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District funded the Russian River Independent Science Review Panel (ISRP). The purpose of the ISRP is to develop a comprehensive conceptual model of hydrologic and ecologic processes for the upper Russian River (above the confluence with Dry Creek), the Mark West watershed and Green Valley watershed. In addition, the ISRP is tasked with evaluating and prioritizing

data gaps to inform stakeholders where their resources for monitoring and data collection should be prioritized. Panel members were chosen from a pool of applicants by a selection panel comprising a broad range of constituencies in accordance with National Academies conflict of interest protocols. The panel is comprised of nine scientists representing a variety of disciplines from the physical and biological sciences. More information regarding the ISRP can be found at www.russianriverISRP.org.

State Water Resources Control Board
Order 05/02/2012

Provision 13 - Water Loss and Water Use
Efficiency



March 29, 2013

Prepared by

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

1 Introduction

This report has been prepared by the Sonoma County Water Agency (Water Agency) to fulfill the requirements of Provision 13 of the State Water Resources Control Board (State Board) Order dated May 2, 2012 (Order).

Provision 13 of the Order directs the Water Agency to take the following actions:

SCWA shall provide a written update to the Deputy Director by March 31, 2013 regarding activities and programs being implemented by SCWA and its Water Contractors to assess and reduce water loss and promote increasing water use efficiency.

2 Water Loss and Water Use Efficiency

The Water Agency has been working on two new pilot projects, funded through the California Water Foundation, with the intent of increasing water use efficiency and reducing water loss. The California Water Foundation (Foundation) supports innovative projects and policies that address water challenges today, while bringing together experts, stakeholders, and the public to achieve long-term, science-based solutions for the future. The Foundation's goal is to create a sustainable water management system that can capitalize on increased supply in wet years to meet water needs in dry years. The Foundation does this by:

- Providing incentives and tools to better manage water resources
- Supporting critical innovative demonstration projects, technologies, and research
- Engaging broad-based coalitions in decisions about the state's water future and support for effective policies

The Foundation has provided funding to the Water Agency for the Residential Unaccounted for Water Leak Detection Project and the AquaJust Demand Response Pilot Project. Each project is briefly described below:

Residential Unaccounted Water Leak Detection Program (Leak Detection Program): The Leak Detection Program seeks to address the problem of water that has been produced by a water utility and is subsequently lost to leaks that are undetected by current meter technology. The Leak Detection Program will purchase and install approximately 100 devices on residential accounts within the Water Agency's service area. The devices allow low linear flows that would normally go undetected through the meter to be registered by the meter. The Water Agency will collect and analyze data for one year to determine if low flows are in fact moving through meters and contributing to unaccounted for water.

AquaJust Demand Response: The Water Agency is partnering with SmartMarkets, Inc. to test an innovative program called AquaJust. The AquaJust Program will test the theory that water awareness combined with direct customer benefits will increase water efficiency. It will

establish customer baselines for each account. Users below that threshold will be awarded efficiency credits, or “EcoShares”; those exceeding it may choose to pay as per usual, or purchase EcoShares from their more efficient neighbors. The City of Sonoma is interested in participating in this pilot to reduce demand and meet their statewide goal of 20% reduction by 2020, which current projections show may not be achieved.

3 Sonoma-Marín Saving Water Partnership Annual Report

The Cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor and North Marin, Marin Municipal and Valley of the Moon Water Districts and the Water Agency formed the Sonoma-Marín Saving Water Partnership in 2010. The purpose of the Sonoma-Marín Saving Water Partnership is to establish the financial obligation for the eight local water utilities, Marin Municipal Water District and Sonoma County Water Agency, identify and recommend implementation of water conservation projects and to maximize the cost-effective projects for the Partnership.

The Partners are committed to remain as members in good standing of the California Urban Water Conservation Council (CUWCC) and implement the Best Management Practices (BMPs) for water conservation. The Partners will implement or use best efforts to secure the implementation of any water conservation requirements and will publish an Annual Report to track progress. The Annual Report will track program implementation, highlight program milestones, and reinforce the importance of protecting and preserving water resources for future generations. The 2011/2012 Annual Report for the Partnership is attached in Appendix A.

Appendix A

**2011/2012 Annual Report for the
Sonoma-Marín Saving Water Partnership**

(begins on the following page)



(ANNUAL REPORT)
FISCAL YEAR 2011/2012



A Team Effort

Every day we wake up and turn on the tap to draw water and begin our daily routine. It's a marvel that fresh water appears instantly and this marvel is a testament to the men and women of the Sonoma County Water Agency and area retail water providers working together to ensure a safe, reliable water supply is available for residents of Sonoma and Marin counties. Whether the water is naturally filtered from the Russian River, local groundwater sources or treated surface water from local lakes, the coordinated effort to extract, treat and deliver water to area residents is often taken for granted. Conservation of precious water resources is critical as we strive to make water available for our communities while preserving our natural resources.

The Sonoma-Marin Saving Water Partnership (Partnership) was formed in late 2010. The Partnership recognizes that establishing common regional water conservation projects may cost effectively conserve more water than would otherwise be conserved by individual agencies. This regional approach is based on meeting water conservation regulatory requirements by offering financial incentives to conserve and by educating water users about where drinking water comes from and how to use it most efficiently. The Partnership, through its many water efficiency programs, educational seminars and outreach campaigns, is working every day of the year to educate our communities about the importance of conserving water resources and curbing water-wasting behaviors.

The time and energy invested in the Partnership is paying off. The 2011/2012 winter and spring saw limited rainfall and dry year conditions in our service area. Nevertheless, water use in the Sonoma-Marin region remained at significantly reduced levels compared to prior years resulting in no need for extreme water use restrictions. The Partnership will continue to offer educational resources, programs and incentives to aid our communities in meeting water use efficiency requirements in the future, responding to variable water year conditions and maintaining supplies for beneficial use and instream needs.

Sincerely,

Susan Gorin, Chair
Water Advisory Committee
Council Member
City of Santa Rosa

Efren Carrillo
Board of Directors
Sonoma County Water Agency

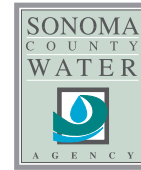
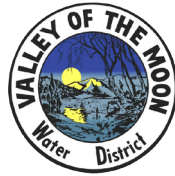
About the Partnership

The Sonoma-Marín Saving Water Partnership (Partnership) represents 10 water utilities in Sonoma and Marin counties who have joined together to provide regional solutions for water-use efficiency.

The utilities include the Cities of Santa Rosa, Rohnert Park, Petaluma, Sonoma, Cotati; North Marin, Valley of the Moon and Marin Municipal Water Districts; Town of Windsor and Sonoma County Water Agency (Partners). Each of the Partners have water conservation programs that can assist you in reducing your water use.

The Partnership was formed to identify and recommend implementation of water-use efficiency projects, and maximize the cost-effectiveness of water use efficiency programs in our region.

The Partners are committed to remain members in good standing of the California Urban Water Conservation Council (CUWCC) and implement the Best Management Practices (BMPs) for water conservation.



Our Service Area

More than 600,000 residents in Sonoma and Marin counties rely on the water delivered from the Russian River by the Sonoma County Water Agency (Water Agency) to the nine cities and districts in the Partnership. Supplementing the water provided by the Water Agency are local supplies including recycled water, groundwater from underground aquifers and surface water reservoirs.

Wildlife, including threatened and endangered species, such as steelhead, coho salmon and Chinook salmon, recreational interests, and agricultural crops, also rely on these same natural resources in order to thrive.

Realizing the importance of protecting and preserving water resources for future generations, the members of the Partnership have taken a proactive role in helping fund, maintain and implement an array of water supply, water use efficiency and fishery recovery programs.

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Partnership Achievements by the Numbers

Fiscal Year 2011/2012

57 graywater systems were installed.

37 students graduated from the Qualified Water Efficient Landscaper (QWEL) and Spanish QWEL programs.

332 parents volunteered to chaperone their child's class during their field study visit to the Water Agency's Russian River Field Study Site near Forestville. The parents participated along with the students allowing the Field Study Program to reach adults as well as children.

23,696,000 gallons of water per year are being saved by local businesses through sustained reduction programs where rebates are provided for implementing process changes and equipment upgrades resulting in measurable water use efficiencies.

5,801 students received direct instruction, 2,426 in the classroom only program and 3,375 in the classroom and Field Study program.

1,757 rebates were issued to residents for replacing their old, inefficient toilets with new, EPA WaterSense labeled high-efficiency toilets that flush at 1.28 gallons per flush or less.

23,050 gallons of rainwater storage capacity have been rebated through rainwater harvesting rebate programs.

340,607 square feet of lawn were removed through turf conversion programs — enough to cover nearly six professional football fields.

3,375 students participated in the Field Study Program where the 5th grade students performed water related experiments along the banks of the Russian River and learned about the riparian ecosystem.



10,104 students experienced "The Musical Watershed" performed by the ZunZun performing arts group in 35 shows at 25 different elementary schools.

317 rebates were issued to businesses for installing high-efficiency toilets.



2,155 high-efficiency clothes washer rebates were issued. These EPA EnergyStar rated clothes washers use 40 to 60% less water than older, top loading models and they save energy from heating less water and wringing out more water before the clothes go into the dryer.

3,031 Water Smart Home evaluations were performed. These in-home water efficiency assessments are performed by trained technicians to find opportunities for improvements, identify leaks, and inform homeowners about their indoor and outdoor water use.

511 businesses participated in our water use survey programs.



202 landscapes were upgraded through our rebate programs.

444 high school students went on technical tours of the Water Agency's Mirabel and Wohler water transmission facilities. Students learned about the water system and explored career opportunities in the field of water.



Partnership Highlights

680 guests visited the 18 gardens that participated in the First Annual Eco Friendly Garden Tour.

19,722 students in 911 different classrooms received curriculum materials provided by the Water Education Program.

ANNUAL MULTI-MEDIA PUBLIC EDUCATION CAMPAIGN

The annual public education campaign continued this year to increase awareness about water efficiency rebates available through the Partnership. The campaign featured local residents from throughout the North Bay region who have participated in rebate programs.

Advertisements were placed in local and regional newspapers, in local movie theaters, on various media websites and a radio campaign was also developed.

PROGRAM EXPENDITURES

Partners have pledged to fund water use efficiency programs. The baseline funding is established in the MOU and is based on historic water deliveries through the Water Agency's water transmission system, ensuring that programs will always be available to help residents use our water resources efficiently.

Minimum funding levels are presented in the orange bar in the table below. Current expenditures and those of the previous two fiscal years are included.

For the Town of Windsor, additional required funding paid through a direct diversion water conservation sub-charge is not included with their MOU minimum.

These additional funds are designated for the Town's water use efficiency programs and is included in their annual program expenditures.

The Water Agency's Water Use Efficiency Program is funded by the water contractors through the Water Conservation Sub-Charge as part of the Water Agency wholesale water rates. The amount of money deposited in the fund is calculated based on the estimate of the total costs for all regional Water Conservation Projects for each fiscal year.

The Sonoma-Marin Saving Water Partnership does not specify a minimum amount that should be utilized for regional programs.

Program Expenditures (in thousands of dollars)

	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	Sonoma County Water Agency	Regional Total
FY 09-10	\$74	\$2,500	\$479	\$528	\$13	\$1,883	\$168	\$239	\$235	\$1,583	\$7,701
FY 10-11	\$107	\$1,900	\$383	\$657	\$17	\$1,221	\$137	\$120	\$158	\$1,573	\$6,220
FY 11-12	\$115	\$1,900	\$270	\$638	\$21	\$909	\$117	\$75	\$243	\$1,505	\$5,794
Minimum	\$25	\$177	\$241	\$242	\$120	\$557	\$55	\$72	\$10	NA	\$1,500

2011 TEMPORARY URGENCY CHANGE PETITION

On April 18, 2011, the Water Agency submitted a Temporary Urgency Change Petition to the State Water Resources Control Board (SWRCB) requesting to modify the minimum in-stream flow requirements for the Russian River and preserve water in Lake Mendocino for late release to benefit returning Chinook salmon.

On June 1, 2011 the SWRCB responded with an Order approving the request. The Order contained two terms that pertained to water use efficiency: the SBx7-7 targets and 2011 gallons per capita per day (GPCD) status for each Partner (Provision 12) and assigned water budgets to dedicated irrigation customers designed to achieve a Maximum Applied Water Allowance (MAWA) of 60% reference evapotranspiration (ETo) (Provision 13).

The purpose of the SBx7-7 report was to update the SWRCB on the long term per capita water use goals for our region and document the 2011 measurement. The report detailed GPCD for each of the Partners and as a region, which is identical to the chart on Page 7. This report was submitted to the SWRCB on March 28, 2012.

The MAWA provision required each Partner to develop and notify their dedicated irrigation customers of a site specific water budget. This site specific water budget was then compared to the site's actual water use to determine if the site adhered to the water budget. The average MAWA achieved by the Partners from May to November 2011 was 53% ETo. This Report was submitted to the SWRCB on March 28, 2012.

20 x 2020 GOALS

In 2009, SBx7-7 established a statewide goal, known as 20 x 2020, to reduce per capita water use 20% by the year 2020 with an interim goal of a 10% reduction by 2015.

The chart below displays 2011 per capita water use in each Partner service area and the region as a whole. The 2015 and 2020 goals are indicated by the green and red lines, respectively.

While the chart shows that all Partners are currently meeting the 2020 targets, we recognize that water use efficiency

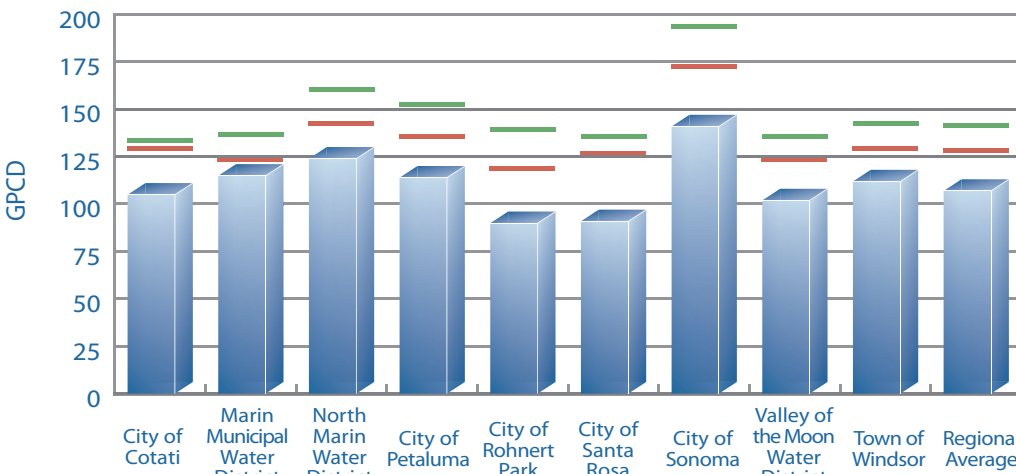
must continue. Many factors can affect water use patterns as has been seen in recent years. This downward trend is a result of many factors including the California drought, slow economy, changes in weather conditions, and active water conservation programs.

It is important to continue the work on water use efficiency to maintain the savings already achieved and make sure the region captures all the benefits of future water savings.

2,304 actions were inspired by the 350 Home & Garden Challenge.

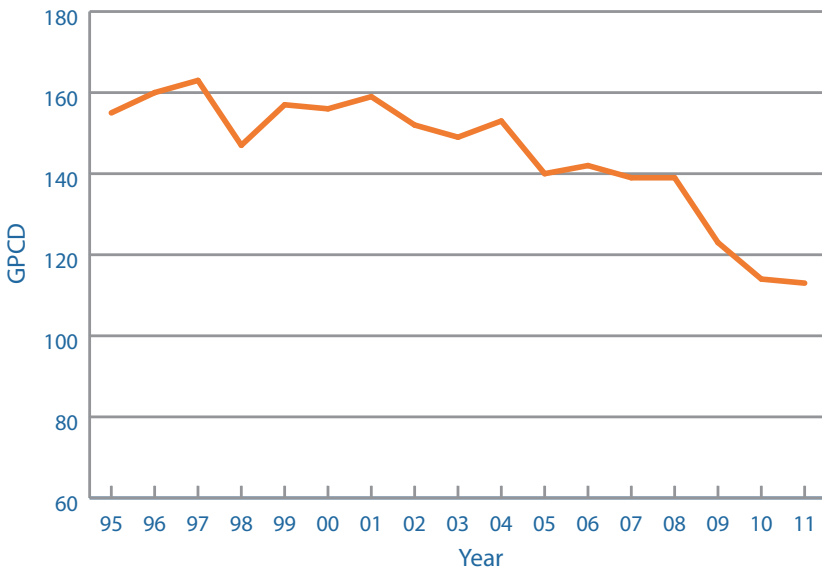
211 people attended Rainwater Harvesting classes.

2011 GPCD and 20 x 2020 Goals



2011 Actual	111	121	130	120	96	97	147	108	118	113
2015 Target	134	137	161	153	140	136	194	136	143	142
2020 Target	130	124	143	136	119	127	173	124	130	129

Regional Gallons per Capita per Day (GPCD) Usage



WATER USE EFFICIENCY HELPS MEET FEDERAL MANDATE

The National Marine Fisheries Service Biological Opinion (BO) determined that the summertime flows in the Russian River established under State Water Board regulations are too high for young coho and steelhead. The BO requires that the Water Agency reduce minimum water flow rates in the Russian River and Dry Creek during the summer months. Water use efficiency programs will help ensure the Agency meets these reduced flow requirements while continuing to provide reliable drinking water supplies.



City of Santa Rosa
(707) 543-3985
www.srcity.org/wue



City of Rohnert Park
(707) 588-3300
www.rpcity.org

City of Cotati
(707) 665-3631
www.ci.cotati.ca.us



North Marin
Water District
(415) 897-4133 x8412
www.nmwd.com



Town of Windsor
(707) 838-1004
townofwindsor.com

Valley of the Moon
Water District
(707) 996-1037
www.vomwd.com

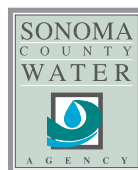


City of Petaluma
(707) 778-4507
cityofpetaluma.net/wrcd

Marin Municipal
Water District
(415) 945-1520
www.marinwater.org



City of Sonoma
(707) 933-2237
www.sonomacity.org

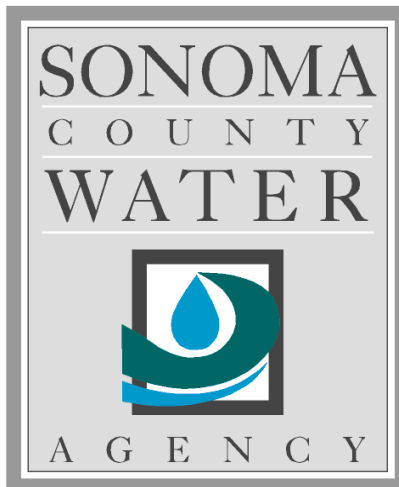


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SONOMA-MARIN **SAVING WATER** PARTNERSHIP
www.savingwaterpartnership.org

State Water Resources Control Board
Order 05/02/2012

Provision 14 - Progress of Santa Rosa Plain
Groundwater Management Planning
Program



March 29, 2013

Prepared by

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

1 Introduction

This report has been prepared by the Sonoma County Water Agency (Water Agency) to fulfill the requirements of Provision 14 of the State Water Resources Control Board (State Board) Order dated May 2, 2012 (Order).

Provision 14 of the Order directs the Water Agency to take the following actions:

SCWA shall provide a written update to the Deputy Director regarding the progress of the Santa Rosa Plain Groundwater Management Planning Program by March 31, 2013. The update shall include a discussion of: (1) progress being made towards implementation of groundwater recharge in the Santa Rosa basin; and (2) efforts by SCWA and its Water Contractors to conjunctively manage surface water and groundwater resources within SCWA's service area. Such management should emphasize the conservation and replenishment of groundwater resources and utilization of available surface water supplies to the extent feasible.

2 Santa Rosa Plain Groundwater Management Planning

In October 2011, the Water Agency's Board of Directors approved a workplan and a Cooperative Agreement with the Sonoma County Water Agency, County of Sonoma, City of Santa Rosa, City of Rohnert Park, City of Sebastopol, City of Cotati, Town of Windsor, and California-American Water Company to fund the preparation of a non-regulatory, voluntary groundwater management plan for the Santa Rosa Plain.

A Basin Advisory Panel (Panel) was convened in December 2011 and will guide the development and implementation of the groundwater management plan. The Panel is comprised of 30 members representing key groundwater interests: Agriculture (Dairies, Farmers & Grape Growers and Wineries); Business / Developers; Environmental; Government (Tribal, State, County, and Cities); Public Health; Rural Residential Well Owners; and Water Supply & Groundwater Technical Expertise. The Panel has met 10 times between December 2011 and February 2013 and has undertaken several actions including development of a charter, governance proposal, and draft basin management objectives and formation of a Technical Advisory Committee. In addition, the Panel has received presentations on different topics including groundwater basin conditions by United States Geological Survey scientists, regional and local water resource management strategies, and enhanced recharge studies and programs. The Panel selected the Water Agency as the lead agency for developing the groundwater management plan and the Water Agency's Board of Directors, following a public hearing on October 23, 2012, adopted a Resolution of Intention to Prepare a Groundwater Management Plan for the Santa Rosa Plain of Sonoma County (attached).

The Panel and Technical Advisory Committee will continue to meet on an approximate monthly basis to develop elements of the groundwater management plan and integrate the results and findings of a forthcoming scientific study of the Santa Rosa Plain being developed by the U.S. Geological Survey. The elements to be developed for the plan include groundwater management components, such as

groundwater recharge initiatives, a monitoring program and public outreach elements. Panel members will continue briefing their constituencies and other interested organizations on the groundwater management plan development. Further information regarding the Santa Rosa Plain Groundwater Management Planning Program can be found on the program website www.scwa.ca.gov/srgroundwater/.

3 Groundwater Recharge and Conjunctive Management Efforts

Among other strategies, the Water Agency and its local partners, including many of its Water Contractors, are evaluating opportunities to enhance the existing conjunctive use of the region's surface water and groundwater resources. The Water Agency's Water Supply Strategies Action Plan identifies enhancing groundwater recharge through groundwater banking and stormwater recharge as primary strategies that emphasize the conservation and replenishment of groundwater resources and utilization of available surface water supplies to the extent feasible. Updates on the status of two studies the Water Agency and its local partners are conducting to pursue these strategies are summarized below:

Groundwater Banking Feasibility Study: To improve the reliability of future water supplies (both surface water and groundwater), the Water Agency partnered with the Cities of Cotati, Rohnert Park and Sonoma, the Town of Windsor and the Valley of the Moon Water District to conduct a feasibility study for a regional groundwater banking program. The feasibility study is investigating the viability of enhancing the conjunctive management of surface water and groundwater resources. Conceptually, the groundwater banking program would involve the diversion and transmission of surplus Russian River water produced at existing drinking water production facilities during wet weather conditions (i.e., the winter and spring seasons) for storage in aquifers beneath the Santa Rosa Plain and/or Sonoma Valley. The stored water would then be available for subsequent recovery and use during dry weather conditions (i.e., the summer and fall seasons) or emergency situations. The Water Agency and the study participants are exploring groundwater banking in a systematic and phased approach utilizing information obtained from completed and ongoing scientific studies and groundwater management activities sponsored by the Water Agency and its partners.

A draft regional feasibility study report has been prepared and will be finalized in Spring 2013. The following primary findings from the study will provide a framework for developing a groundwater banking program:

- The groundwater banking program would provide enhanced reliability of the regional water supply during droughts, natural hazard events (e.g., earthquakes), and periods of peak seasonal water demands.
- Additional potential benefits include improved habitat conditions by enhancing tributary base flows by reducing groundwater pumping, or in the case of Dry Creek, reducing summer releases

from Warm Springs Dam (due to reduced peak demands) thus improving flow conditions for ESA-listed salmonids.

- Facilities owned and operated by the study participants, including drinking water production facilities along the Russian River and groundwater supply-wells within the two groundwater basins, are well-suited for further testing and developing a groundwater banking program in an incremental and phased manner.
- There appears to be adequate wintertime Russian River water supplies, transmission system capacity, and aquifer storage space to meet preliminary conceptual storage targets through a combination of in-lieu and direct groundwater recharge.
- The quality of drinking water from the Water Agency and Town of Windsor's drinking water facilities and conveyance piping indicate that the potential source water represents an excellent candidate for direct recharge and Aquifer Storage and Recovery (ASR) operations.
- Evaluation of regional hydrogeologic and geochemical conditions has identified 14 potential groundwater banking alternatives in the Santa Rosa Plain and Sonoma Valley, which include a combination of indirect (in lieu) and direct (surface spreading and ASR) recharge methods. Of the two direct recharge methods, ASR is deemed to be the most practical to implement in the near term based on: (1) the ability to incrementally establish an ASR program; (2) the ability to pilot test ASR alternatives in a phased manner; (3) the relatively lower costs associated with ASR; and (4) uncertainties related to the ability of surface spreading alternatives to convey water to aquifers suitable for storage and subsequent recovery.

Based on the above summary of findings, several recommended next steps for establishing a groundwater banking program have been identified and initiated:

- Suitable locations for performing pilot-scale ASR demonstration testing consisting of existing active and inactive municipal supply wells are being evaluated.
- Site-specific groundwater quality data from existing wells deemed suitable for pilot-scale ASR testing have been collected and analyzed. The results of the groundwater quality testing are being incorporated into a geochemical model, along with the source water quality data, to assess the potential interaction between the source water and native groundwaters.
- Work plans for performing pilot-scale demonstration testing are being developed for each of the study participants. The work plans will incorporate site-specific hydrogeologic, engineering, and water quality information and form the basis for designing and permitting a pilot-scale ASR demonstration test.
- Briefing of local stakeholders has been accomplished through sharing information on this study at regular Sonoma Valley and Santa Rosa Plain Basin Advisory Panel meetings.

- Briefings and discussions with representatives of the San Francisco Bay and North Coast Regional Water Quality Control Boards (RWQCBs) have occurred to frame likely permitting requirements for pilot-scale ASR demonstration testing.
- Identifying funding sources for performing pilot-scale demonstration testing. Potential funding sources include grants through the California Department of Water Resources Integrated Regional Water Management program.

Along with completion of the above activities, additional recommended next steps include:

- Obtaining necessary permits/approval for performing the pilot-scale ASR testing from applicable regulatory entities, including Regional Water Quality Control Boards, the State Water Resources Control Board and the California Department of Public Health; and
- Evaluating results from pilot-scale demonstration testing to design and develop full-scale groundwater banking programs and facilities.

Stormwater Management & Groundwater Recharge Scoping Studies: In three of its flood zones, the Sonoma County Water Agency is identifying opportunities to alleviate flooding, while recharging groundwater aquifers and providing other benefits. The “Stormwater Management-Groundwater Recharge” studies are currently assessing the feasibility of projects in Laguna-Mark West watershed, the Sonoma Valley watershed and the Upper Petaluma River watershed.

The goal of the initial scoping studies (one in each watershed) is to establish the project objectives, identify potential project concepts, and determine, at a preliminary level, the technical and practical feasibility of projects that would reduce flooding while providing additional community benefits. These benefits could include groundwater recharge, water quality improvements, water supply improvements, improved ecosystem functions, preservation of agricultural land use, preservation or enhancement of open spaces, system sustainability or benefits like recreation, public access or education.

To accomplish this goal, consultants in each watershed are collecting and assessing technical data and information about the watersheds, and have met with active stakeholders to discuss project objectives and goals and to solicit ideas on potential projects. The second phase of the studies is to identify possible project opportunities and evaluate at a more detailed level the feasibility of implementing those projects, as indicated by the following process timeline.

- **Phase 1** – Initiated in December 2010. Draft studies were submitted in Spring 2011. Stakeholder input was provided in Spring-Summer 2011.
- **Phase 2** – Based on comments received in Phase 1, consultant teams are drafting studies identifying possible project areas. Meetings were held in fall and winter 2011-2012 to discuss findings with stakeholders and community members.
- **Phase 3** – For those projects where partners and potential partners express interest, the Water Agency will move forward with engineering and other supporting studies. The goal is to be positioned to take advantage of potential grant and other funding sources.