State Water Resources Control Board
Order 05/02/2012

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

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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.