

# PROJECT DESCRIPTION

(ATT#4\_LGA12\_SantaRosa\_ProjD\_1of1)

## Introduction

The City of Santa Rosa (City) is located within the Santa Rosa Plain sub-basin of the Santa Rosa Valley Groundwater Basin, located at the confluence of the Santa Rosa, Bennett, and Rincon Valleys. The Santa Rosa Valley Groundwater Basin is one of the largest groundwater basins in Department of Water Resource's (DWR) North Coast Hydrologic Region and occupies a northwest-trending structural depression in the southern part of the Coast Ranges of Northern California in Sonoma County. This depression divides the Mendocino Range on the west from the Mayacamas and Sonoma Mountains on the east. The Santa Rosa Valley Groundwater Basin has three sub-basins: the Healdsburg Sub-basin, the Santa Rosa Plain Sub-basin, and the Rincon Valley Sub-basin.

The City's Urban Growth Boundary (UGB) overlies portions of two groundwater basins: the Santa Rosa Valley Groundwater Basin (specifically two of its sub-basins: the Santa Rosa Plain Sub-basin and the Rincon Valley Sub-basin) and the Kenwood Valley Groundwater Basin. Although the City's UGB overlies portions of the Rincon Valley Sub-basin and the Kenwood Valley Groundwater Basin, the City's groundwater supply is derived exclusively from the Santa Rosa Plain Sub-basin of the Santa Rosa Valley Groundwater Basin. The City does not derive any groundwater supply from the Rincon Valley Sub-basin or the Kenwood Valley Groundwater Basin. Figure 1 shows the location of the Santa Rosa Plain Sub-basin.



**Figure 1: Santa Rosa Plain Sub-basin**

## Current Groundwater Programs and Studies

The City has on-going groundwater programs and projects and is participating in the development of a number of regional groundwater studies that would benefit tremendously from the installation of additional groundwater monitoring wells. These programs and studies include:

- Development of the Santa Rosa Plain Sub-basin Groundwater Management Plan
- Development of the Santa Rosa Plain Sub-basin Salt and Nutrient Plan
- California Statewide Groundwater Elevation Monitoring (CASGEM) Program
- Development of the City's Groundwater Master Plan

Each of these programs and studies would benefit from the installation of additional monitoring wells in areas where data gaps have been identified. Below is a summary of the development of each of these studies.

### **Development of the Santa Rosa Plain Sub-basin Groundwater Management Plan**

The Sonoma County Water Agency (SCWA) is the City's wholesale water supplier. In May 2011, the SCWA Board or Directors directed SCWA staff to prepare a work plan for the development of a groundwater management plan. SCWA hired Parker Groundwater to develop the work plan. In October 2011, a Cooperative Agreement for funding and support of the development of a groundwater management plan was executed by the County of Sonoma, Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, the Town of Windsor, California-American Water Company and SCWA.

In December 2011, a Basin Advisory Panel (Panel) was formed and began meeting to develop a Groundwater Management Plan for the Plain. The Panel consists 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 development of the Groundwater Management Plan is being funded by the signatories to the Cooperative Agreement as well as a grant from DWR. It is estimated that the Plan will be completed by January 2014.

### **Development of the Santa Rosa Plain Sub-basin Salt and Nutrient Plan**

In response to the State Water Resources Control Board's Recycled Water Policy, the City is leading the development of a Salt and Nutrient Management Plan (SNMP) for the Santa Rosa Plain Sub-basin. The SNMP is being developed through a stakeholder process and it is anticipated that the SNMP will be finalized by the end of 2012. In initial draft of the SNMP has identified the need for up to an additional five monitoring wells in areas where there are data gaps.

### **California Statewide Groundwater Elevation Monitoring (CASGEM) Program**

The CASGEM program was developed by the California Department of Water Resources in response to the passage of Senate Bill x7-6 (2009), which required systematic monitoring of groundwater elevations in all groundwater basins and sub-basins in California. SCWA is leading the compliance effort with the CASGEM program for eight groundwater basins located in Sonoma County, including the Santa Rosa Plain Sub-basin. The CASGEM workplan developed by the Agency identified potential data gaps in the eastern central portions of the sub-basin (vicinity of the City of Santa Rosa) that could be diminished with the installation of additional monitoring wells.

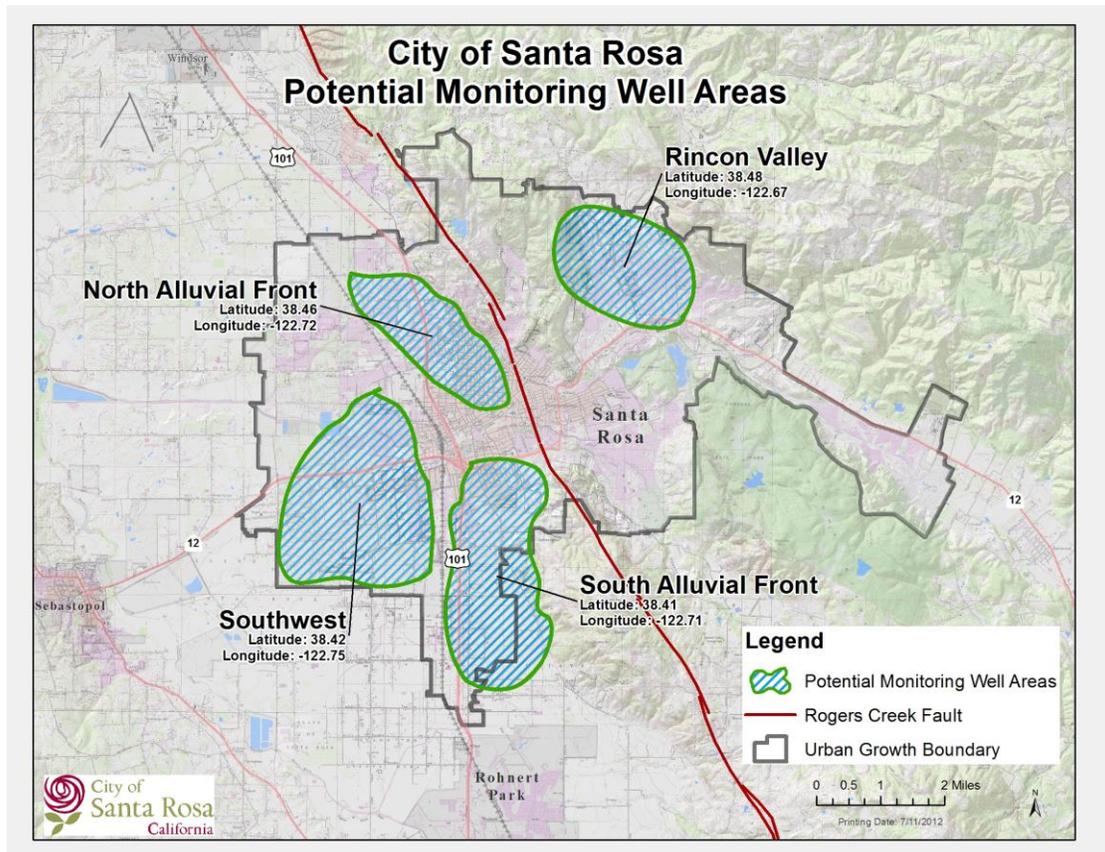
### **Development of the City's Groundwater Master Plan**

In October 2011, the City initiated the development of a Groundwater Master Plan to provide direction and recommended policies on Santa Rosa's use of current and future groundwater resources for both peaking and emergency supply. As the Groundwater Master Plan is being developed, groundwater elevation and quality data gaps have been identified. These data gaps could be diminished with the installation of additional groundwater monitoring wells. As part of the City's development of the Groundwater Master Plan, a key well monitoring network is being developed to help establish and track baseline groundwater conditions (short-term and long-term well hydrographs, determine groundwater gradients and direction of flow, track changes in groundwater storage and potential water quality changes). However, this network needs the addition of specifically designed, constructed and strategically located monitoring wells to further refine the City's understanding of the available groundwater resources.

## **Project Goals**

The City has a serious need for additional groundwater monitoring wells to provide water level and water quality data for the above programs and studies. This lack of site specific data is hampering the City's establishment of baseline hydrologic conditions, and will make it more difficult to identify any potential

impacts from the various water resource management plans under consideration for implementation in the groundwater basin. The goal of this project is to increase the number of site specific and depth specific monitoring wells within the City's UGB to provide the City with additional information related to the groundwater basin and its response and reaction to both naturally occurring and man-created events. To achieve this goal, this project proposes to install 3 monitoring well sets (nested upper and mid-level monitoring wells can be installed) at three strategically located sites in areas of the City where data gaps have been identified. Figure 2 highlights the general areas where data gaps have been identified and where the City is looking to install the additional monitoring wells.



**Figure 2: Potential Monitoring Well Areas**

The hydrogeology of the Santa Rosa Plain Groundwater Basin is such that there are at least two aquifer zones; the upper zone generally occurring in the 100 to 150 foot range below ground surface, and the next lower zone occurring at a depth of approximately 250 feet. There is also the presence of a deeper aquifer, which generally occurs in the 500 to 700 foot depth range. However, due to the need to maximize the number of nested monitoring wells that can be installed with the DWR grant funding, only the upper and mid-level aquifer zones are being targeted in this proposal for the installation of groundwater monitoring wells. Based on the estimated costs for drilling, construction, and development of these nested monitoring wells, it is anticipated that up to 3 monitoring well sets could be installed with grant funding. Each monitoring well will be 4-inches in diameter (to facilitate the insertion of a small diameter submersible pump) and have a screen zone of approximately 20 feet.

## **Project Collaboration with Groundwater Programs and Studies**

The City will continue to collaborate with the Santa Rosa Plain Sub-basin Groundwater Management Plan Basin Advisory Panel, the Santa Rosa Plain Sub-basin Salt and Nutrient Plan team, and the SCWA as the lead agency implementing the CASGEM Program to identify the area's most beneficial to install the groundwater monitoring wells. Using this information, as well as the information and recommendations for the key well monitoring network developed for the City's Groundwater Master Plan, the City will select up to three areas to install the groundwater monitoring wells.

### **Project Implementation**

Based on the estimated costs for drilling, construction, and development of these nested monitoring wells, it is anticipated that up to 3 monitoring well sets (nested upper and mid-level monitoring wells can be installed) at three strategically located sites, as identified on Figure 2. Each monitoring well will be 4-inches in diameter (to facilitate the insertion of a small diameter submersible pump) and have a screen zone of approximately 20 feet. Specific information on project detail and scope of work is detailed in Attachment 5 – Workplan.

Once installed, sampling of the groundwater monitoring wells will be driven by the needs of the on-going programs and studies. In general, groundwater monitoring and sampling will occur twice per year in spring and fall as outlined by the CASGEM workplan. Water quality sampling and parameters will be driven by the needs of the Santa Rosa Plain Sub-basin Salt and Nutrient Plan and the City's Groundwater Master Plan.

Funding for the on-going monitoring and sampling of the monitoring wells will be provided by the City.