

PLANNING FOR GROUNDWATER SUSTAINABILITY

To Meter or Not To Meter?

SUMMARY

The 2016-17 Civil Grand Jury recognized that the impending formation of Groundwater Sustainability Agencies (Groundwater Agencies) in Sonoma County is of importance to all residents of the County. In Sonoma County, about 42% of the population is supported, at least in part, by groundwater. Nearly all the population relies on groundwater as its primary or backup source of water. The Civil Grand Jury found that there were concerns about the long term funding mechanism(s) and the politics involved in the formation and operation of these new agencies.

The State of California enacted the Sustainable Groundwater Management Act of 2014 (the Groundwater Act), to provide a framework for the local management of groundwater. Under this legislation, Groundwater Agencies must be formed by June 30, 2017 or the State will take over. These agencies must then develop Groundwater Sustainability Plans (Groundwater Plans) by January 31, 2022. These plans must define how groundwater sustainability will be achieved for high and medium priority basins within 20 years of plan implementation.

Sonoma County has 14 groundwater basins. Three are classified by the State as medium priority, based on sustainability. They are the Petaluma Basin, the Santa Rosa Plain Basin and the Sonoma Valley Basin (Figure 1). To date, formation of the Groundwater Agencies is on schedule to meet the deadline. The Civil Grand Jury found progress and cooperation on the formation of single Groundwater Agencies for the three groundwater basins since the 2014-15 Civil Grand Jury report concerning groundwater sustainability.

The Groundwater Act dictates that a Groundwater Agency governing board be composed of representatives appointed by the participating eligible agencies. The Groundwater Act defines an eligible entity as a local agency that has water supply, water management or land use responsibilities within a groundwater basin. These representatives may be elected officials or appointees. The eligible agencies are working together on organizational agreements called Joint Powers Authorities (JPAs), which establish funding mechanisms and powers of each Groundwater Agency. The draft JPAs became available for public comment in late April 2017.

An advisory panel of five members will be selected on a formal application process and serve a two-year term. The purpose of the advisory panel is to provide input and recommendations to the Groundwater Agency board on development of the Groundwater Plan and implementation of Groundwater Agency policies.

The Groundwater Act does not authorize Groundwater Agencies to meter private groundwater wells that use less than about 1,785 gallons per day (de-minimus users). Public and private well owners that exceed this amount may be required to have their groundwater usage metered and may be assessed additional fees.

BACKGROUND

Enactment of the Sustainable Groundwater Management Act in 2014, California created a process to form hundreds of new locally governed Groundwater Agencies that will develop and implement plans to manage the State's groundwater resources in the future.

This is a self-initiated investigation to monitor progress by the participating eligible agencies in forming Groundwater Agencies by the June 30, 2017 deadline and to learn how those Groundwater Agencies will operate.

METHODOLOGY

The Civil Grand Jury interviewed representatives from eligible agencies (Figure 2) composed of city and County officials from each of the groundwater basins and attended public meetings about the formation of Groundwater Agencies.

Many technical documents were reviewed including the 2014-15 Civil Grand Jury report concerning the Groundwater Act legislation. Guidance documents developed by the California Department of Water Resources (DWR), and academic studies of the formation of Groundwater Agencies in other groundwater basins in California provided additional information on the legislation.

DISCUSSION

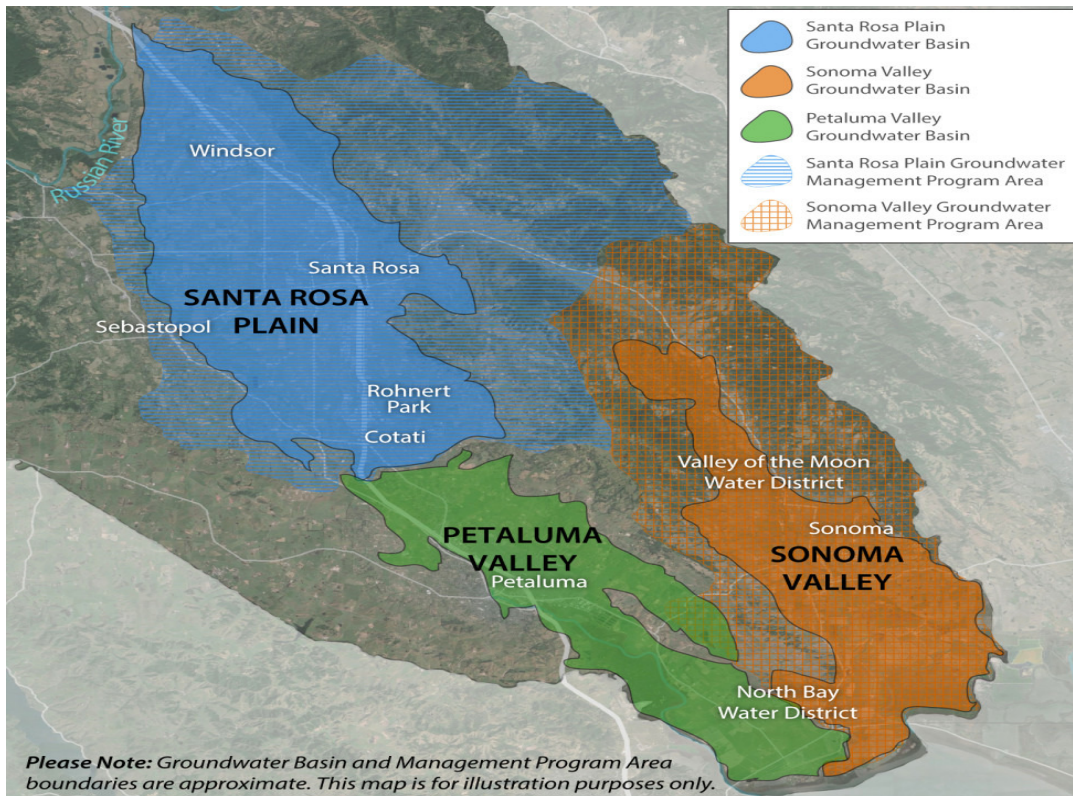


Figure 1. Petaluma, Santa Rosa Plain and Sonoma Valley Groundwater Basins

Current Groundwater Management

Before 2014, California had no legal means to control groundwater use by individual well owners. Groundwater is an unseen resource shared by multiple adjacent properties. Overuse by one landowner may impact others. Groundwater is susceptible to domination by a few users without a balanced system to impose accountability on the many users of an aquifer. Excessive pumping of groundwater will affect an aquifer's sustainability. Groundwater overuse in Sonoma County has not been as severe as in California's Central Valley, but there have been local problems. The Groundwater Act provides the regulatory framework to prevent these problems.

The Groundwater Act was passed by the California legislature and signed into law after the first three years of a five-year drought within the State. The State has experienced drought conditions, and with growing population and increasing weather variability, drought conditions are predicted to become more frequent and severe.

The US Geological Survey (USGS) reported in 2014 that groundwater provided about 40% of the total supply of fresh water for California and up to 60% during drought years. Groundwater supplies about 40% of irrigation water and 45% of the total public water

consumption. Sonoma County has a slightly higher groundwater usage rate than statewide averages.

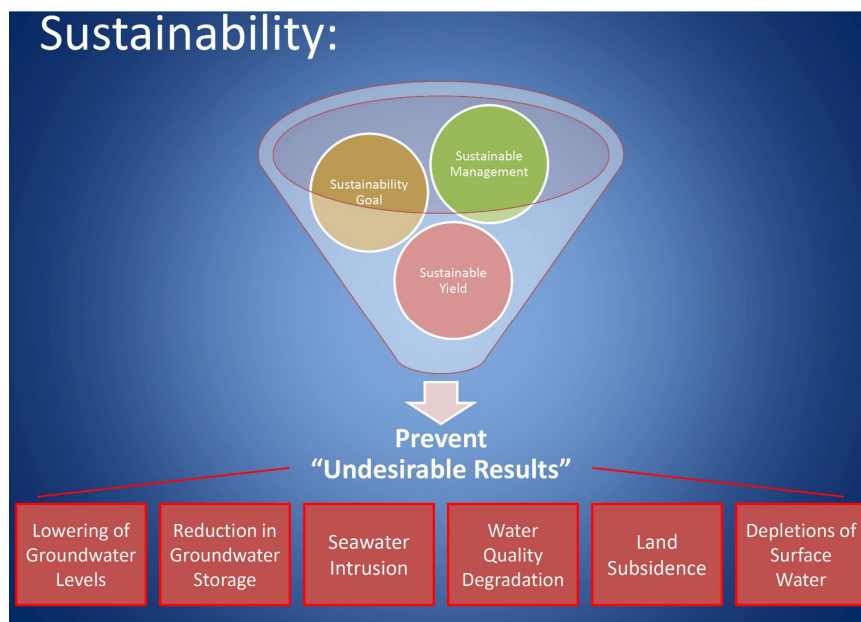
Before enactment of the Groundwater Act, Sonoma County Water Agency (SCWA), the wholesale supplier of safe drinking water in Sonoma County, worked with various parties throughout the County to identify how groundwater basins could be managed.

Over the past 10 years, voluntary groundwater management plans have been developed for Santa Rosa Plain and Sonoma Valley groundwater basins. These two groundwater basins have the benefit of in-depth studies conducted by the US Geological Survey (USGS) in cooperation with SCWA. The USGS investigations reported on geologic conditions and groundwater quality. Computer models were developed to simulate pumpage and water level changes over time.

These scientific investigations provided a greater understanding of the hydrologic setting in each basin and allowed the development of groundwater management plans. These voluntary, non-regulatory plans were an excellent first step and will advance the ability of these two basins to form their respective Groundwater Agencies. The USGS is also scheduled to complete a similar investigation of the Petaluma Valley Basin during the fall of 2017.

The purpose of sustainable groundwater management is to prevent “significant and unreasonable” levels of six undesirable results as shown in Figure 2:

Figure 2. Prevention of Six Undesirable Results



Groundwater Wells in Sonoma County

Sonoma County Permit & Resource Management Department (PRMD) estimates that there may be as many as 40,000 wells in Sonoma County. PRMD has few records for wells drilled before 1972 because permits were not required at that time. The number of permitted wells on record with the PRMD (Table 1) is 1,438 for the Sonoma Valley Groundwater Basin, 527 for the Petaluma Valley Groundwater Basin, and 2,284 for the Santa Rosa Plain Groundwater Basin. The number of wells for each basin is likely much higher, as many wells were drilled before 1972.

Formation of the three Groundwater Agencies will affect well owners in each of the designated groundwater basins whether permitted or not.

Table 1
Permitted Wells 1972 to 2016
Sonoma County Medium Priority Basins
Petaluma Valley Basin, Santa Rosa Plain Basin and Sonoma Valley Basin

Basin	Irrigation/ Agriculture	Domestic	Public	Industrial	Not Specified	Total
-		-	-	-	-	-
Petaluma Valley						
1972 to 1990	21	154	6	3	0	184
1991 to 2016	70	188	19	2	64	343
Total	91	342	25	5	64	527
Santa Rosa Plain						
1972 to 1990	75	686	35	9	0	805
1991 to 2016	209	944	36	19	271	1,479
Total	284	1,630	71	28	271	2,284
Sonoma Valley						
1972 to 1990	112	981	24	10	0	1,015
1991 to 2016	123	317	14	3	89	423
Total	235	1,298	38	13	89	1,438

Eligible Groundwater Agencies

The Groundwater Act defines agencies that are eligible to be included on Groundwater Agency boards, as those agencies that have water supply powers, land-use powers, or both. The participating eligible agencies for the three groundwater basins in Sonoma County are shown in Table 2.

Table 2. Sonoma County Participating Eligible Groundwater Agencies

	Santa Rosa Plain Basin	Petaluma Valley Basin	Sonoma Valley Basin
1	City of Cotati	City of Petaluma	City of Sonoma
2	City of Rohnert Park	North Bay Water District	North Bay Water District
3	Sonoma County	Sonoma County	Sonoma County
4	Sonoma County Water Agency	Sonoma County Water Agency	Sonoma County Water Agency
5	Sonoma Resource Conservation District	Sonoma Resource Conservation District	Sonoma Resource Conservation District
6	City of Santa Rosa		Valley of the Moon Water District
7	Town of Windsor		
8	Gold Ridge Resource Conservation District		
9	Mutual / PUC		

The majority of eligible Groundwater Agencies represent urban water users, while the majority of groundwater use occurs in the rural unincorporated areas of the County. Actions taken by the Groundwater Agency boards could affect the rural portions of the County more than the urban areas. Having decisions made by representatives of urban water agencies may be a source of concern for groundwater users in the rural portions of each basin. The City of Sebastopol declined to be an eligible agency in the Santa Rosa Plain Groundwater Basin.

De-minimus Users: those who use less than 1,785 gallons per day

The Groundwater Act gives the Groundwater Agencies broad authority to manage groundwater, implement capital projects to increase recharge, and regulate groundwater extraction. One frequent question from private well owners within the County has been, “when will I be required to put a meter on my well?” The Groundwater Act does not authorize Groundwater Agencies to meter domestic groundwater wells that are de-minimus, or ones that use less than about 1,785 gallons per day (see table 3 Below). Owners of wells that exceed this amount may be required to meter their groundwater usage and may be assessed additional fees.



Table 3. Water Facts

Water Usage Per Day	
De-minimus Groundwater User	1,785 gallons
Santa Rosa Family Daily	270 gallons
Estimated Water Usage Required to Produce:	
One 8 ounce glass of milk	48-50 gallons
One egg	53-63 gallons
One 6 oz. glass of wine	33-40 gallons
One 12 oz. glass of beer	27-28 gallons

Groundwater Agency Framework and Structure

The Groundwater Act dictates that a Groundwater Agency governing board will be composed of representatives appointed by the participating eligible agencies. These representatives may be elected officials or appointees. The eligible agencies have drafted organizational agreements called Joint Powers Authority (JPA). The JPA establishes funding mechanisms and powers of the Groundwater Agency. Once formed, the Groundwater Agencies will coordinate with each other (Figure 3).

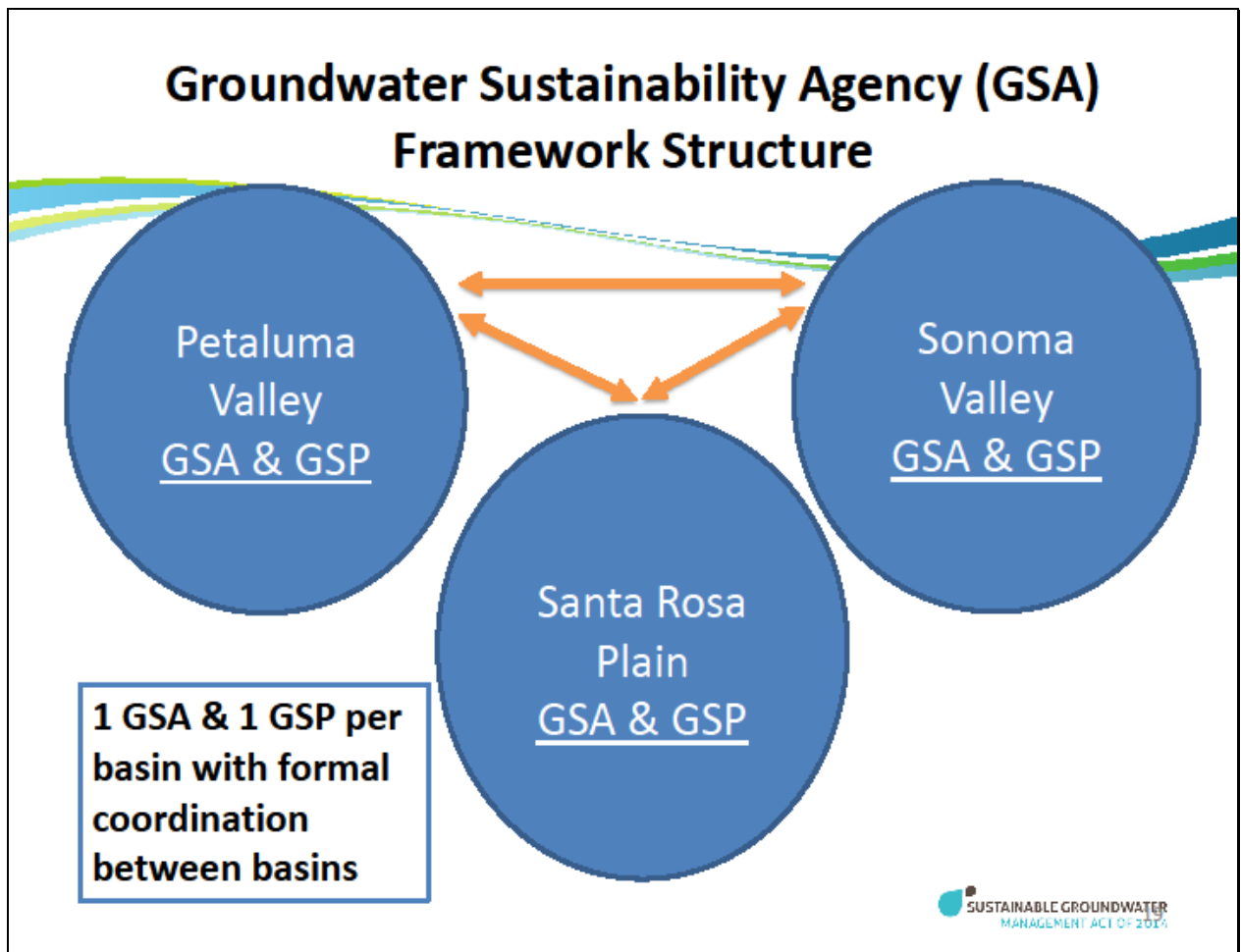
Interviews conducted by the Civil Grand Jury of the eligible agencies and comments received during public workshops signaled a need for each board member to reside within the boundary of the groundwater basin they represent.

The draft JPA’s stipulate that each board member have one vote of equal weight, with no single agency having veto power. The Board of Supervisors will control two votes on each groundwater agency board, because they are also the governing Board for the Sonoma County Water Agency.

The Agencies formed for each basin will have authority to:

- 1) Conduct investigations and inspect property
- 2) Mandate well registration
- 3) Install flow meters, monitor groundwater levels and require annual pumpage to be reported
- 4) Mandate well spacing and, when required, limit by regulating or prohibiting pumpage from wells
- 5) Assess fees for the development of a groundwater management plan and future capital projects

Figure 3. Groundwater Sustainability Agency Framework Structure



Sharing Resources

For Sonoma County's three Groundwater Agencies, the economies of scale and proximity to each other provide an opportunity to share resources and staff. Coordination will allow them to share in meeting reporting requirements and developing technical documents.

Each Groundwater Agency needs personnel with the technical skills and expertise to perform its functions. Ideally, the combined resources of the three basins would have technical experts capable of understanding groundwater resources, computer modeling, legal and policy staff to develop resource management plans, communication staff to facilitate effective communication with groundwater users and have the physical and financial infrastructure to adequately do their jobs.

Oversight

Achieving groundwater sustainability requires economically and politically difficult decisions. Groundwater Agencies need substantial independence, which may be achieved by:

- Being independent agencies, rather than subdivisions of existing governmental entities
- Having independent funding mechanisms and staff, so they may not be threatened with funding cuts
- Being subject to the Brown Act to guarantee transparency
- Having rules to eliminate conflicts of interest
- Having Groundwater Agency board members appointed to lengthy fixed terms (four years) with staggered end dates to provide some insulation from the political pressures of actions taken
- Having one board member representing each eligible agency.

An advisory committee will review and/or provide recommendations to the Groundwater Agency board on development of the groundwater plan and related issues. Each eligible agency will appoint a representative from their staff or the community to the advisory committee. The agency board will select interest-based members by a formal application process. The advisory panel meetings will be subject to the Brown Act.

The five panel members must reside within the basin, serve a two-year term and each will represent one of the following interest groups:

- 1) Environmental groups
- 2) Rural residential well owners
- 3) Business community
- 4) Agricultural interest
- 5) An at-large community representative

Funding

Proposition 1, approved by California voters in 2014, allocated \$100 million for the Sustainable Groundwater Planning Grant Program. This grant will provide funding to achieve groundwater management. Some of these funds (\$250,000) have been provided to Sonoma County to be used to support Groundwater Agency formation. The Department of Water Resources (DWR) anticipates that additional grant funding will be released to support the Groundwater Agency activities that will begin during the summer of 2017.

Operational cost for the first year 2017-18 is estimated to be \$470,000 per basin. As stated in the draft JPAs, initially this expense will be paid by the participating eligible agencies. These agencies will recoup their costs if grants are received. Long-term funding mechanisms will be established by 2018-19, after a rate study is conducted to ensure that any fee is appropriate for the cost of service delivered or the benefit received.

Groundwater Agencies could be self-funded through fees linked to groundwater extraction, and the documented impact on observed undesirable results. This funding would be fair, because users would pay in proportion to their contribution to undesirable impacts. During public meetings held in March and April 2017, representatives of eligible agencies suggested that \$2 to \$3 per month per parcel may be required to cover operating costs. However, if capital expenditures are needed, the rate may increase

The legal agreements setting up the JPA's will be presented to each eligible agency board during April and May 2017 for approval. These agreements establish the funding authority for each Groundwater agency. The JPA agreements will be available for public review three days prior to the individual board meetings. It is anticipated that the JPAs will be in place by the June 30, 2017 deadline.

Development of Groundwater Sustainability Plans (Groundwater Plans) by 2022

After the Groundwater Agencies have been formed, the work will begin to develop a basin wide groundwater sustainability plan. Each plan, estimated to cost between \$750,000 and \$1.25 million, must be completed by January 31, 2022.

The DWR has recently completed a Best Management Practices (BMPs) document. The BMPs are intended to provide clarification, guidance, and practical examples for Groundwater Agencies to follow in the development of the essential elements of a Groundwater Plan. BMP refers to a practice, or a combination of practices designed to achieve sustainable groundwater management and determined to be technologically and economically effective, practicable, and based on best available science.

The BMPs include the following:

- Groundwater monitoring protocols
- Establishment of monitoring networks and identification of data gaps
- Development of a conceptual hydrogeologic model
- Development of a water budget
- Groundwater modeling

Implementation of the BMPs will allow each Groundwater Agency to understand the groundwater resources in its particular basin for the development of the groundwater sustainability plan. Once the Groundwater Plan is approved, the Groundwater Agencies will have up to 20 years (2042) to reach groundwater sustainability within individual basins.

FINDINGS

- F1. As recommended by the 2014-15 Civil Grand Jury, the eligible agencies have assigned a high priority to implementing The Sustainable Ground Management Water Act and forming Groundwater Agencies.
- F2. The JPAs are still being finalized and all eligible agencies must work diligently to approve them before the June 30, 2017 deadline.
- F3. Wells that pump less than approximately 1,785 gallons per day will be exempt from metering.
- F4. A rate study will be conducted in each basin to ensure that any use fee is appropriate for the cost of service delivered or the benefit received.
- F5. The BOS, because they control the SCWA, will have two votes on the board of each groundwater agency.
- F6. The Petaluma Basin Groundwater agency only has five members. Both the City of Petaluma and the County need to vote in the affirmative for any super majority (2/3) vote to pass.
- F7. Each of the three GSA's in Sonoma County will require similar technical and managerial expertise to prepare their respective Groundwater Sustainability Plans.
- F8. Many operational issues will be defined after the June 30, 2017 deadline. Residents of Sonoma County will be able to comment on proposed funding mechanisms before they are finalized. Each Basin's JPA will be revisited after a rate study is completed and every 10 years after.
- F9. In order for Groundwater Agency boards to function properly, they will need to focus on representing all users.

F10. Influence by groundwater users, both large and small, may impede the goal of developing an accountability system on an aquifer's many users, therefore groundwater agencies will need to have substantial independence and maintain transparency when implementing their authority.

RECOMMENDATIONS

The Civil Grand Jury recommends that the Board of Supervisors, Sonoma County Water Agency, City of Cotati, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Town of Windsor, Sonoma Resource Conservation District, Gold Ridge Resource Conservation District, North Bay Water District, Valley of the Moon Water District should:

- R1. Continue to work cooperatively in order to finalize and approve the JPA's by the State mandated June 30, 2017 deadline. [F1, F2]
- R2. Specifically instruct, through their JPA agreements that the three Groundwater Agencies pool technical resources and staff in order to avoid costly duplication. [F7]

REQUIRED RESPONSES

Pursuant to Penal Code section 933.05, the Civil Grand Jury requires responses as follows:

- R1 and R2 Sonoma County Board of Supervisors, Sonoma County Water Agency, City of Cotati, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Town of Windsor, Sonoma Resource Conservation District, Gold Ridge Resource Conservation District, North Bay Water District, Valley of the Moon Water District.

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda, and open meeting requirements of the Brown Act.

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"Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Civil Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury."

GLOSSARY

DWR - Department of Water Resource
GSA - Groundwater Sustainability Agency

GSP – Groundwater Sustainability Plan
JPA – Joint Powers Authority
PRMD – Permit Resource Management Department
SCWA – Sonoma County Water Agency
SGMA – Sustainable Groundwater Management Act
SWRCB – State Water Resources Control Board
SRCD – Sonoma Resource Conservation District
USGS -- United States Geological Survey