

AGENDA
Santa Rosa Plain Groundwater Sustainability Agency
Advisory Committee Meeting

Date/time: Monday, September 10th | 3:00 – 5:30 p.m.

Meeting Location: Santa Rosa Utilities Field Office, 35 Stony Point Road, Santa Rosa

Contact: Ann DuBay, Interim GSA Administrator

Email: ann.dubay@scwa.ca.gov | Phone: 707.524.8378

Time	Agenda Item	Materials
3:00	<p>Welcome, Introductions and Agenda Review <i>Bob Anderson, Chairman, and facilitator Rich Wilson, Sacramento State University</i> <i>Collaboration and Consensus Program</i></p>	<p>Agenda Previous meeting summary</p>
3:10	<p>General Public Comment Public comment on matters not on the agenda and within the jurisdictions of the Advisory Committee.</p>	
3:20	<p>GSA Staff and Advisory Committee Updates <i>Interim Administrator, Plan Manager, and other Staff</i> <i>Advisory Committee Members</i></p> <ul style="list-style-type: none"> ▪ Update on GSA Board meetings and other topics ▪ Brief overview of draft 2018 – 2019 advisory committee work plan <p><i>Objective: Provide relevant updates that inform Advisory Committee discussions.</i></p>	<p>GSA comments on reprioritization</p>
3:30	<p>Rate and Fee Study Update <i>Interim Administrator and Raftelis Consultants</i></p> <ul style="list-style-type: none"> ▪ Status update of rate and fee study ▪ DWR groundwater use estimates and other data sets ▪ GSP development and next steps for addressing data gaps <p><i>Objective: Provide update on the rate and fee study, review DWR, USGS, and Raftelis data sets and assumptions, and discuss next steps.</i></p>	<p>Map of groundwater use estimates in the Santa Rosa Plain</p>
4:40	<p>Groundwater Sustainability Plan – Chapter Development <i>Marcus Trotta, Sonoma County Water Agency</i></p> <ul style="list-style-type: none"> ▪ Reorientation to GSP development process, including roles and responsibilities ▪ Review draft GSP material: Plan area and basin setting ▪ Discuss chapter content, including tables and figures <p><i>Objective: Reorient committee to the forthcoming GSP development process, discuss roles and responsibilities, and solicit input on draft work plan and GSP sections.</i></p>	<p>Draft GSP work plan and annotated outline</p>
5:30	<p>Meeting Adjourns <i>Next meeting: November 5th, 2018, 3:00 pm</i></p>	

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Santa Rosa Plain Groundwater Sustainability Agency
Advisory Committee Meeting

Accessibility

If you need special assistance to participate in this meeting, please contact Ann DuBay at 707.524.8378 or by email at ann.dubay@scwa.ca.gov. Notification of at least 48 hours prior to the meeting will assist staff in assuring that reasonable arrangements can be made to provide accessibility of the meeting.

Agenda Materials

Agenda materials are available for review at the Sonoma County Water Agency, 404 Aviation Blvd, Santa Rosa, 95403, during normal business hours, and a copy of the agenda packet will be available for public review at the meeting. Any documents provided at the meeting by staff will also be available to the public. Any documents provided to the Advisory Committee during the meeting by the public will be available the next business day following the meeting. The agenda and agenda packet materials are also available at: <http://sonomacountygroundwater.org/srp/>.

Public Comment

Members of the public may attend meetings of the Santa Rosa Plain GSA Advisory Committee and may comment before Advisory Committee consideration of individual agenda items, or during General Public Comment on any matter within the jurisdiction of the Advisory Committee. As needed, time limits may be placed on public comments to ensure the Advisory Committee is reasonably able to address all agenda items during the course of the meeting.

**Santa Rosa Plain Groundwater Sustainability Agency
Board and Advisory Committee Meeting Schedule**

SRPGSA Board	Advisory Committee
2018	
August 9	September 10 Update on Fee/Rate Study GSP Work Plan/Annotated Outline Review – Plan Area & Basin setting
October 11	November 5 Update on Fee/Rate Study Input on Outreach for Rate/Fee Study and Groundwater Conditions Hydrogeologic Conceptual Model & Groundwater Flow Model Current and Historical Groundwater Conditions
December 13	
2019	
February 14	January 14 Water Budget Management Areas – Introduction and Considerations
	March 11 Management Areas Review Plan Area and Basin Setting Sections Sustainable Management Criteria – Introduction and Considerations
April 11	May 13 Sustainability Goal Sustainability Indicators for the Basin Groundwater Levels as a Proxy Sustainable Management Criteria Review of options for setting minimum thresholds and measurable objectives
June 13	

Santa Rosa Plain GSP Work Plan – Plan Area and Basin Setting

Phase II – Define Plan Area and Basin Setting

The main components of this section include:

- A description of the Plan Area
- Hydro-geologic conceptual model
- A description of current and historical groundwater conditions in the Basin
- Water budget for the Basin
- Determination of the need to develop management areas within the Basin

Primary technical studies and planning activities completed in the Santa Rosa Plain that will inform and contribute to the development of the Plan Area and Basin Setting are summarized below and include:

- Historical groundwater studies performed by the USGS (Cardwell, 1958) and DWR (Herbst et al, 1982; Kadir and McGuire, 1987), provide data on groundwater resources in the Santa Rosa Plain, including groundwater levels and water quality representative of differing patterns of land use, groundwater development, and climate. Such data is integral for evaluating trends and patterns from more recently collected data, contributing to groundwater model calibration, and projecting future trends;
- A study conducted by the USGS (Nishikawa et al, 2013 and Wolfenden and Nishikawa, 2014) in collaboration with the Sonoma County Water Agency (Water Agency), the Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, the Town of Windsor, the County of Sonoma, and the California American Water Company, which updated the hydro-geologic characterization of the Basin and provided an assessment of hydrologic conditions, including a description of historical groundwater levels and water quality changes. As part of this study, the USGS developed an innovative computer model utilizing the model code GSFLOW that fully integrates surface water and groundwater to better understand and manage the Santa Rosa Plain's water resources. Simulations performed using the model indicate that surface water and groundwater are strongly connected within the Basin, with an estimated 53% of the total groundwater pumped derived from a reduction in total streamflow.
- Development and implementation of the voluntary SRP-GMP between 2011 and 2017 (Santa Rosa Plain Basin Advisory Panel, 2014), which has included stakeholder engagement, local agency coordination, evaluation of monitoring networks, and reporting. Annual Reports for the SRP- GMP were completed for Water Years 2015 and 2016. These reports described the hydrologic conditions for the preceding water year for the area covered by the voluntary SRP-GMP, which encompasses the entire Santa Rosa Plain sub-basin defined in Bulletin 118. For each year surface water conditions were assessed by stream-gage hydrographs within the Laguna Creek watershed

and compared with climatic data. The records were used to quantify water budget information that will be utilized in the development of the GSP. Data gap assessments were also developed to evaluate the groundwater level monitoring network. Groundwater level contours were derived from the dataset for wells perforated in shallow and deep parts of the Basin and were used to make observations about groundwater flow dynamics such as flow paths, recharge areas, and groundwater level trends. Groundwater level trends were computed for all wells with sufficient observation coverage to determine the recent 5- or 10-year trends in groundwater levels.

While these studies and activities provide a strong framework for development of the Phase II components, significant additional information and evaluation will be needed to comply with SGMA. The following table summarizes the current availability of information related to each Phase II component and identifies new informational needs required by the GSP regulations:

GSP Component	Information available from existing SRP-GMP or studies	Additional GSP Requirements
Description of Plan Area - 354.8	Description of existing water resource management programs, jurisdictional boundaries, land use elements from general plans.	Well density maps, discussion of relationship between land use plans and GSP and how existing plans may affect ability to achieve sustainable groundwater management over 50-year planning horizon, description of how existing programs may limit operational flexibility in the Basin, summary of the well permitting process.
Hydro-geologic Conceptual Model - 354.14	Summary of Hydro-geologic Conceptual Model, description of principal aquifers and aquitards, general water quality, principal uses of each aquifer, 2 scaled cross-sections.	Description and assessment of boundaries, data gaps and uncertainty analysis, delineation of recharge and discharge areas
Groundwater Conditions - 354.16	Description of groundwater elevation trends over time, groundwater elevation hydrographs and contour maps, groundwater quality data.	Annual and cumulative change in groundwater storage based on groundwater-level changes, description and map of known groundwater contamination sites and plumes, rates and map of land subsidence, as applicable, identification of interconnected surface waters and groundwater dependent ecosystems and estimates on timing and quantity of stream depletions.
Water Budget - 354.18	Summary of historical and current Water Budget from GSFLOW model for Santa Rosa Plain Watershed.	Processing of output from existing model to define current, historical and projected groundwater budgets for Bulletin 118 Basin. Estimate of sustainable yield (based on development of Sustainable Management Criteria). Conduct Uncertainty Analysis. Future simulations incorporating 50 years of historical climate data, population projections, and climate change. Quantitative evaluation of availability or reliability of historical surface water supplies by source and water year type.
Management Areas - 354.20	Consider use of sub-areas defined in existing SRP- GMP	Describe reason for creation of management areas (if any), rationale for selecting different thresholds and objectives and how they will not impact sustainability of entire Basin

The proposed scope for preparing each Phase II component is described

below. Description of Plan Area

The Plan Area description will address the requirements of Article 4, Sub-article 1, Section 354.8 of the GSP Regulations and will include:

- A summary of jurisdictional areas and other land use features within the Basin
- Maps displaying updated land use designations, identification of water use sector and water source type, and density of wells per square mile
- Description of how existing monitoring networks and management programs will be incorporated into GSP monitoring
- A description of the relevant provisions of local General Plans (including but not limited to Land Use and Water Resource Elements), incorporating a description of how GSP implementation may change water demands, water availability and water supply assumptions in land use decision-making, a summary of the current process for well permitting, and information regarding land use planning outside the basins that may affect the Basin
- Additional GSP elements would include a description of current and historical water supply sources within the Basin, including imported Russian River water, tertiary-treated recycled water, and water-use efficiency programs

Hydro-geologic Conceptual Model

The hydro-geologic conceptual model will address the requirements of GSP 354.14 of the GSP Regulations and will characterize the physical components of the Basin and interaction of the surface water and groundwater systems in the Basin, including a description of the computer model of surface water and groundwater flow developed for the Basin. The hydro-geologic conceptual model will provide narrative descriptions and graphical representations of the regional geologic context of the Basin, Basin geometry, and groundwater flow dynamics. Geologic cross sections that identify major aquifers will be used to visualize the hydrogeology of the Basin, along with maps of aquifer properties, conditions, water quality, soil characteristics, and other data required by GSP 354.14 (d). As an informational tool, the hydro-geologic conceptual model will become the basis for much of the stakeholder understanding of groundwater behavior.

Data used to develop the cross-sections include well drillers' reports, geophysical records and interpretations, surface geology, isotopic analyses, published reports, and other geologic information. Data gaps for the hydro-geologic conceptual model include: a definable bottom of the Basin, identifying the primary water use for each aquifer, and identifying uncertainty. Development of the hydro-geologic conceptual model will rely on information described in the voluntary groundwater management plan and will be supported by a U.S. Geological Survey report that covers the groundwater Basin (Wolfenden and Nishikawa, 2014), and a geologic framework report (Sweetkind et al, 2010).

The numerical groundwater flow model, which uses the USGS GSFLOW model code, will underpin a significant portion of the GSP work. The GSFLOW model developed for the Basin is an integrated surface water and groundwater model incorporating measured and estimated water demands, recycled water deliveries, and surface water diversions (Wolfenden and Nishikawa, 2014). Existing simulation results will satisfy portions of the historical water budget requirements in SGMA, but additional simulations of future conditions, baseline conditions, sustainable yield, and management actions will be needed.

The model contains an array of geologic, climate, and water supply information that, through their synthesis, will provide additional data that can be utilized and tested in the GSP. The model is currently undergoing an update to simulate historical conditions from 1970 to 2016. Future baseline scenario modeling will require forecasts of land use, population growth, and climate change.

Groundwater Conditions

Historical and present day groundwater conditions will be described in relation to undesirable results, including a description as of January 1, 2015. Data gaps and data uncertainty that limit basin understanding or evaluation of GSP performance will be included. The types of data to be presented include: groundwater level hydrographs, groundwater level contours for the major aquifers, streamflow stage and discharge hydrographs, precipitation data, land-use maps and statistics, and water quality measurements. Data will be presented in terms of water year type, identifying drought, wet, and dry years. The following additional information will also be included:

- Available information on potential land subsidence related to groundwater extraction
- Identification of interconnected surface water using a combination of groundwater-level contour maps, LIDAR datasets, streamflow data and the GSFLOW model
- Identification of groundwater dependent ecosystems by comparing statewide mapping being conducted by The Nature Conservancy with local information available from countywide LIDAR-based vegetation mapping and other local data sources

The conditions identified in this section represent the baseline conditions that will be utilized in setting the sustainable management criteria and for assessing the success of management actions.

Water Budget

The water budget for the Basin will provide an accounting and assessment of the total annual volume of surface water and groundwater entering and leaving the Basin, including historical, current and projected conditions, and an estimate of sustainable yield for the Basin. The groundwater budget for the Basin will detail

annual groundwater and surface water fluxes by source type and by water year type. An assessment of current hydrologic conditions will be performed to incorporate the most recent hydrology, water supply, water demand, and land use information. As rural domestic and agricultural groundwater uses represent an estimated 80% of the total groundwater use in the Basin, improving and refining water use estimates for these uses which are not metered or reported has been identified as a primary technical need. Previous water demand estimates for these rural uses will be re-assessed and different methods for estimating rural groundwater demands will be evaluated in consultation with rural groundwater users and agricultural irrigators for reasonableness to better constrain this critical component of the water budget. Examples of methodologies that will be assessed include the use of remote sensing technologies, use of the County's parcel database and aerial imagery, and comparison with water use information reported to the SWRCB by rural landowners in portions of the Basin through the Russian River Tributaries Emergency Regulation.

A minimum 10-year quantitative assessment of recent conditions will be derived for use in developing a 50-year baseline for projections of future budget information and aquifer response to proposed groundwater management activities. Projections of future groundwater conditions will forecast scenarios into the 50-year planning horizon that will incorporate estimates of future groundwater pumping, land use, population, climate change and other drivers of groundwater conditions and use. Future projections of total water delivery volumes will need to assess the reliability of imported surface water deliveries from the Russian River to meet demands of urban water users under various water year types and will partly rely on the Urban Water Management Plan (UWMP; Sonoma County Water Agency, 2016) developed by the Sonoma County Water Agency, which forecasts water supply availability into 2040. Additional assumptions will be required for years after 2040. Known water budget data gaps include delineation of existing and potential recharge areas, and discharge areas, including springs and other wetlands. The groundwater budget will be derived in part from the calibrated groundwater flow model developed for the Basin, but will rely upon additional data and analyses to satisfy requirements of GSP 354.18. Uncertainty analysis will be performed on the groundwater flow model to determine the uncertainty in groundwater budget terms, for example uncertainty in the groundwater recharge flux in areas with little observational data.

A critical portion of the water budget work will be in determining the sustainable yield for the Basin, defined in SGMA as the amount of groundwater that can be withdrawn without causing "undesirable results." Calculation of sustainable yield will be informed by the results presented in the water budget but will also require extensive input from stakeholders, the GSA Advisory Committee and the GSA Board to determine what conditions constitute an "undesirable result" for the Basin. The calculation of sustainable yield will involve considerable groundwater simulations in order to determine the effects of varying pumping on potential undesirable results. Scenario-based modeling will incorporate variations in land use and

population growth forecasts, along with variable groundwater pumping rates, while monitoring for simulated undesirable results. These simulations will be performed over the 50-year planning horizon of the GSP. The presentation of the sustainable yield will also discuss the sustainable management criteria and the interdependency between the two.

Management Areas

An assessment of the need to identify specific management areas within the Basin will be performed. Management areas are distinct geographical areas within the Basin that may have different minimum thresholds, measurable objectives, monitoring, or project and management actions based on unique local conditions for water use, water source, geology, aquifer characteristics, or other factors. The process for determining the need for management areas will include evaluation of previously identified sub-areas of the Basin, those defined by the USGS based on hydro-geologic conditions, as well as an evaluation of geographic patterns for groundwater level trends, water chemistry, water use patterns and other factors.

Public Workshop

It is anticipated that a public workshop will be held at the completion of the initial Phase II draft to review findings and seek public input on the content and present the planned approach for Phase III of the GSP.

Attachment A
Santa Rosa Plain Groundwater Sustainability Agency (SRPGSA)
Groundwater Sustainability Plan (GSP) Annotated Outline Section 1.0 & 2.0

1.0 Administrative Information

1.1 Agency Information

1.1.1 Agency Name

1.1.2 Agency Address

1.1.3 Organization, Management Structure, and Regional Coordination

1.1.4 Plan Manager

1.1.5 Legal Authority

**1.1.6 Estimated Cost for Groundwater Sustainability Plan
Implementation**

1.2 Description of Plan Area (Reg. 354.8 b)

1.2.1 Setting, Jurisdictional Area and Other Features (Reg. 354.8 b)

The Santa Rosa Plain groundwater basin number 1-55.01 as described in DWR Bulletin 118 California's Groundwater is the plan area.

<https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/1-55.01.pdf>

The SRP basin map is available at:

<http://santarosaplaingroundwater.org/wp-content/uploads/Santa-Rosa-Plain-Basin-Geologic-Map-ada.pdf>

Setting should describe the basin and adjacent basin boundaries and potential interconnections.

DWR Guidance on Basin Setting – description of groundwater conditions requires hydrogeologic conceptual model with qualitative and quantitative understanding of basin physical and aquifer and surface water interaction over time (GSP Emergency Regulations Guide p. 13).

http://www.water.ca.gov/groundwater/sgm/pdfs/GSP_Final_Regs_Guidebook.pdf

The 2014 Santa Rosa Plain Watershed Groundwater Management Plan provides detailed physical and geologic setting information for the basin (Section 2.7). There is also a 2016 Annual Report available that includes further information on groundwater in the basin.

http://santarosaplaingroundwater.org/wp-content/uploads/SRP_GMP_12-14.pdf
<http://santarosaplaingroundwater.org/wp-content/uploads/SRPGMP-FINAL-2016-Annual-Report.pdf>

Additionally, two U.S. Geological Survey reports provide additional detailed information on basin physical and geologic setting information.

<https://pubs.usgs.gov/sir/2014/5052/>
<https://pubs.er.usgs.gov/publication/sir20135118>

The USGS is updating the groundwater flow model for the basin, scheduled for completion in 2019.

The Santa Rosa Plain groundwater basin number 1-55.01 as described in DWR Bulletin 118 California's Groundwater is the plan area.

<https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/1-55.01.pdf>

The SRP basin map is available at:

<http://santarosaplaingroundwater.org/wp-content/uploads/Santa-Rosa-Plain-Basin-Geologic-Map-ada.pdf>

- *Area covered by GSP*
DWR B-118 provides the basin boundary
- *Adjudicated areas, other Agencies within the basin, and areas covered by an Alternative Plan*
There are no adjudicated areas or alternative plans for the basin. A map showing other agency jurisdictional areas will need to be included.
- *Jurisdictional boundaries of federal and state land*
A map showing jurisdictional boundaries and federal and state land will need to be prepared.
- *Density of wells per square mile*
A map showing the density of wells is available at:
<http://santarosaplaingroundwater.org/wp-content/uploads/SRP-Well-Density-Basin-Map-PDF.pdf>

1.2.2 Topography and Geography

The 2014 Santa Rosa Plain GMP provides information in Section 2.2.1 Physical Setting and Description. Could also include section 2.2.3 Soils here.

1.2.3 Surface Water and Drainage Features

The 2014 Santa Rosa Plain GMP provides information in Section 2.5 Surface Water contains information sufficient to address this section.

1.2.4 Historical, Current, and Projected Climate

The 2014 Santa Rosa Plain GMP provides information in Section 2.2.2 Climate provides a

good summary on current climate and climate change with some inference on historic climate.

1.2.5 Historical, Current, and Projected Land Use

The 2014 Santa Rosa Plain GMP provides information in Section 2.2.4 Land Use History provides a good overview of land use changes over time.

1.2.6 Historical, Current, and Projected Demographics

The 2014 Santa Rosa Plain GMP provides information in Section 2.1.2 Population – covers historical and current – will need to summarize future growth from General Plans and Urban Water Management plans.

1.2.7 Existing Monitoring and Management Programs (Reg. 354.8 c, d, e)

The 2014 Santa Rosa Plain Watershed Groundwater Management Plan provides a description of existing management and planning efforts (Section 3.0), including discussion of the monitoring network (Section 5.2), and a description of conjunctive use programs in the basin. SRPGSA member agencies and other local entities have been actively participating in conjunctive use programs for several decades, and are continuing to assess expanding operations with groundwater banking and storm water capture and recharge assessments.

http://santarosaplainingroundwater.org/wp-content/uploads/SRP_GMP_12-14.pdf

1.2.8 Operational Flexibility – Opportunities and Limitations

1.2.9 Existing Conjunctive Use Programs

1.2.10 General Plan and Related Plan Land Use Categories

California state law requires municipal jurisdictions (counties and cities) to prepare a general plan that includes mandatory land use and housing elements (Gov. Code § 65302 and Gov. § Code 65580). Land use elements must reflect the content of the other general plan elements and must account for “rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and storm water management...” as identified in the conservation element (Gov. Code § 65302(d)(3)). The housing elements must be updated on a five year cycle to correspond with state regional housing needs allocations (Gov. Code § 65584 (b)).

http://opr.ca.gov/docs/OPR_C4_final.pdf

The Santa Rosa Plain Groundwater Basin includes areas covered by general plans of five municipal jurisdictions: the City of Cotati, City of Rohnert Park, City of Santa Rosa, the County of Sonoma, and the Town of Windsor. A narrative description of general plans is provided in Section 3.7 of the Santa Rosa Plain Watershed Groundwater Management Plan. The section on general plans may need to be modified to focus on the basin versus the watershed, and will be expanded to include (from Reg. 354.8 (f) :

(1) A summary of general plans and other land use plans governing the basin.

(2) A general description of how implementation of existing land use plans may change water demands within the basin or affect the ability of the Agency to achieve sustainable

groundwater management over the planning and implementation horizon, and how the Plan addresses those potential effects.

(3) A general description of how implementation of the Plan may affect the water supply assumptions of relevant land use plans over the planning and implementation horizon.

(4) To the extent known, the Agency may include information regarding the Implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management.

Maps (Reg. 354.8 a)

- *Existing land use designations*

A map showing existing land use designations is provided at:

<http://santarosaplainingroundwater.org/wp-content/uploads/SRP-Land-Use-and-Crop-Type-Map-PDF.pdf>

Related Land Use Plan categories (Urban Water Management Plans and Agricultural Water Management Plans) should be included in the discussion in this section. For each city and county general plan and for the UWMPs and AWMPs, there should be a narrative discussion provided to address items (1), (2), and (3) above.

1.2.11 Well Permitting Policies and Procedures

Sonoma County permits water wells within the Santa Rosa Plain Groundwater Basin. Well construction standards are found in the County Code, Chapter 25B. A description of Sonoma County well permitting is in the 2014 SRP GMP Section 3.6, and will need to be updated to incorporate recent changes in the code.

The purpose of the County's well construction policies is to provide for the location, construction, repair, and reconstruction of all wells to protect the groundwater resource of the County, as contamination may cause serious public health, safety or economic problems.

A link to Sonoma County municipal code's water well requirements is found here:

https://library.municode.com/ca/sonoma_county/codes/code_of_ordinances?nodeId=CH25BWAWECCOST

Additional GSP Elements (Reg. 354.8 (g))

The following additional GSP elements listed in the regulations may be included in the GSP if desirable, as follows:

- a) Control of saline water intrusion – not applicable to the SRP.

Wellhead protection areas and recharge areas.

Wellhead protection areas were mapped by water suppliers as part of the EPA Source water Protection Program in the 1990's. This should be considered for re-evaluation as part of the GSP preparation process.

Recharge areas were previously mapped by USGS using the numerical groundwater flow model, and by Todd Engineers using GIS and multiple layers of information (Section 5.3.4 of the 2014 Santa Rosa Plain Groundwater Management Plan). Additional recommendations for groundwater recharge area protection are provided in the GMP.

Migration of contaminated groundwater

Section 5.3.5 of the 2014 Santa Rosa Plain Groundwater Management Plan provides recommendations for tracking the status of groundwater contamination and coordination with state regulatory agencies responsible for cleanups. Additionally, the City of Santa Rosa has been coordinating with other local agencies and the Regional Water Quality Control Board to develop a groundwater quality monitoring program to comply with Salt and Nutrient Management Planning requirements.

A well abandonment and well destruction program.

Section 5.3.3 of the 2014 Santa Rosa Plain Groundwater Management Plan provides recommendations to help identify abandoned wells, and implement an abandoned well destruction program.

Replenishment of groundwater extractions.

Section 5.5 of the 2014 Santa Rosa Plain Groundwater Management Plan provides recommendations for increasing groundwater recharge in the basin.

Activities implementing, opportunities for, and removing impediments to, conjunctive use or underground storage.

The 2014 Santa Rosa Plain GMP includes information on current basin management strategies implemented to improve groundwater reliability in the Santa Rosa Plain groundwater basin. The status of Basin Management Objectives (BMOs) and Basin Management Elements (Elements) to address this category are outlined in Sections 4 and 5.

Well construction policies.

Section 5.3.3 Well construction, Maintenance, Protection, Abandonment and Destruction of the 2014 Santa Rosa Plain Groundwater Management Plan provides a summary of existing policies for well permitting being implemented, and recommendations for additional measures to ensure groundwater protection.

Measures addressing groundwater contamination cleanup, groundwater recharge, in-lieu use, diversions to storage, conservation, water recycling, conveyance, and extraction projects.

The 2014 Santa Rosa Plain GMP includes information on current basin management strategies implemented to improve groundwater reliability in the Santa Rosa Plain groundwater basin. The status of Basin Management Objectives (BMOs) and Basin Management Elements (Elements) to address this category are outlined in Sections 4 and 5.

The State Water Resources Control Board's (SWRCB) Geotracker is an online data management system for sites that impact, or have the potential to impact water quality in California, with an emphasis on groundwater. Geotracker can be used to identify contamination sites under regulatory action. <https://geotracker.waterboards.ca.gov/>

Efficient water management practices, as defined in Section 10902, for the delivery of water and water conservation methods to improve the efficiency of water use.

Section 5.4 Increase Conservation and Efficiency of the 2014 Santa Rosa Plain Groundwater Management Plan provides a summary of existing BMPS for water conservation being implemented, and recommendations for additional measures to increase conservation and water use efficiency.

Efforts to develop relationships with state and federal regulatory agencies.

Section 5.1.4 Partnerships & Coordination of the 2014 Santa Rosa Plain Groundwater Management Plan provides recommendations for facilitation partnerships and coordination of local, state and federal agencies.

Processes to review land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity.

Section 5.7.1 Groundwater Management and Land Use Planning of the 2014 Santa Rosa Plain Groundwater Management Plan provides recommendations for coordinating land use planning with water resources management.

1.3 Notice and Communication

Public Engagement Plan

In addition to its board meetings, the SRPGSA has a Community Engagement Plan (link below) that lays out the plan purpose, addresses SGMA requirements through basin milestones, goals, interested parties and other stakeholders and outreach roles for the SRPGSA Board and Advisory Committee. The Community Engagement Plan provides specific details on communication forums and tools to meet SGMA mandates for stakeholder engagement and beyond, including maintaining the interested parties list and website, meeting and forums, informational materials and periodic updates.

<http://santarosaplaingroundwater.org/wp-content/uploads/Community-Engagement-Plan.pdf>

Description of Beneficial Use and Beneficial Users

Section 2.3 Water Use of the 2014 Santa Rosa Plain Watershed Groundwater Management Plan provides details on the beneficial use and users in the watershed. This section will need to be modified to focus on the basin and include more information on groundwater dependent ecosystems and riparian habitat.

The SRPGSA Board welcomes public comments at its meetings. Public comment time is provided at the beginning of each board meeting for general public comments and during agenda items that require a decision by the SRPGSA board. General comments allow community members to raise any groundwater related issue that is not on the agenda and often results in new items being added to future SRPGSA agendas. Public comments during scheduled agenda items allows the board to incorporate public comment opinion into its decision making process.

Summary of Public Meetings and Outreach during Plan Preparation

To be prepared during plan preparation and during adoption process

Summary of Public Comments and Responses

To be prepared during plan adoption process

1.4 Basin Setting: Regional Geology and Stratigraphy

Section 2.4.1 of the 2014 Santa Rosa Plain Watershed GMP contains an adequate section on Regional geology that includes stratigraphy.

1.5 Hydrogeologic Conceptual Model (Reg. 354.14)

Section 2.4.2 of the 2014 Santa Rosa Plain Watershed GMP contains an adequate section introducing the hydrogeology section.

1.5.1 Basin Geology and Structure

The 2014 Santa Rosa Plain Watershed GMP contains subsections 2.4.2.1-2.4.2.6 which covers the geology description.

1.5.2 Basin Boundaries

Section 2.7.1 of the 2014 Santa Rosa Plain Watershed GMP contains a description of the boundary conditions for the watershed and basins - it will need to be modified for this section.

1.5.3 Basin Bottom

This is a new, brief section to write – extract in part from GMP Section 2.7.1.

1.5.4 Principal Aquifers and Aquitards

This will be a new section to write – describe the shallow and deep aquifer systems.

1.5.5 Faults and Groundwater Movement

Section 2.4.4 of the 2014 Santa Rosa Plain Watershed GMP contains a description of faults and groundwater movement in the basin –may need some modification from the current watershed description.

1.5.6 Hydrogeologic Conceptual Model Summary

Section 2.7.5 of the 2014 Santa Rosa Plain Watershed GMP contains a summary description of the HCM

1.5.7 Data Gaps and Uncertainty

Section 2.9 of the 2014 Santa Rosa Plain Watershed GMP contains a start on data gaps for this section.

1.6 Current and Historical Groundwater Conditions (Reg. 354.16)

1.6.1 Groundwater Elevations

The 2014 Santa Rosa Plain Watershed GMP Section 2.4.3 Groundwater Leveled Trends and Movement provides information for this section.

1.6.2 Estimated Groundwater in Storage

Will need to obtain from updated groundwater flow model.

1.6.3 Groundwater Quality

Section 2.4.8 through 2.4.8.2 of the 2014 Santa Rosa Plain Watershed GMP contain a description of the groundwater quality of the basin, adequate for the GSP.

1.6.4 Groundwater Extraction Related Land Subsidence

Section 2.4.7 Land subsidence the 2014 Santa Rosa Plain Watershed GMP contains an adequate description of potential land subsidence related to groundwater extraction.

1.6.5 Groundwater-Surface Water Connectivity

Section 2.4.5 of the 2014 Santa Rosa Plain Watershed GMP contains a description of the groundwater-surface water interaction.

1.6.6 Groundwater Dependent Ecosystems

Identification of Groundwater Dependent Ecosystems and interconnected surface and groundwater within the Santa Rosa Plain groundwater basin will need to be developed using County and Water Agency GIS mapping of streams, wetlands and riparian woodlands.

The Nature Conservancy has developed guidance and a website mapping tool responsive to the Sustainable Groundwater Management Act (SGMA) mandate that may be useful:

<https://www.scienceforconservation.org/assets/downloads/GDEsUnderSGMA.pdf>

<http://www.groundwatercalifornia.org/>

1.7 Water Budget (Reg. 354.18)

Section 2.5. of the 2014 Santa Rosa Plain Watershed GMP contains a description stream flow; Section 2.4.6 groundwater recharge and discharge; Sections 2.8.2 & 2.8.3 discusses the model simulated water budget see Tables 2-6 & 2-7. Much of the information will be determined with the groundwater flow model.

1.7.1 Current and Historical Water Budget

(c) Each Plan shall quantify the current, historical, and projected water budget for the basin as follows:

(1) Current water budget information shall quantify current inflows and outflows for the basin using the most recent hydrology, water supply, water demand, and land use information.

(2) Historical water budget information shall be used to evaluate availability or reliability of past surface water supply deliveries and aquifer response to water supply and demand trends relative to water year type. The historical water budget shall include the following:

(A) A quantitative evaluation of the availability or reliability of historical surface water supply deliveries as a function of the historical planned versus actual annual surface water deliveries, by surface water source and water year type, and based on the most recent ten years of surface water supply information.

(B) A quantitative assessment of the historical water budget, starting with the most recently available information and extending back a minimum of 10 years, or as is sufficient to calibrate and reduce the uncertainty of the tools and methods used to estimate and project future water budget information and future aquifer response to proposed sustainable groundwater management practices over the planning and implementation horizon.

(C) A description of how historical conditions concerning hydrology, water demand, and surface water supply availability or reliability have impacted the ability of the Agency to operate the basin within sustainable yield. Basin hydrology may be characterized and evaluated using water year type.

1.7.1.1 Surface Water Inflows and Outflows

1.7.1.2 Surface Water Diversions

1.7.1.3 Groundwater Inflows and Outflows

1.7.1.4 Imported and Exported Water

1.7.1.5 Recycled Water

1.7.1.6 Annual Changes in Groundwater Storage

(b) (4) The change in the annual volume of groundwater in storage between seasonal high conditions.

(b) (5) If overdraft conditions occur, as defined in Bulletin 118, the water budget shall include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions.

1.7.1.7 Water Year Types

(b) (6) The water year type associated with the annual supply, demand, and change in groundwater stored.

1.7.1.8 Estimate of Sustainable Yield

(b) (7) An estimate of sustainable yield for the basin.

While the regs say use 50 years of hydrologic information as the baseline for estimating future conditions, equally important will be selecting the appropriate hydrologic base period(s) for use in assessing sustainable yield of the basin. The base period should include a mixture of wet and dry periods, representing one or more climatic cycles. A climatic cycle is generally considered as extending from one maximum high to another maximum high on a cumulative departure curve, with a dry period intervening.

1.7.2 Projected Water Budget

(3) Projected water budgets shall be used to estimate future baseline conditions of supply, demand, and aquifer response to Plan implementation, and to identify the uncertainties of these projected water budget components. The projected water budget shall utilize the following methodologies and assumptions to estimate future baseline conditions concerning hydrology, water demand and surface water supply availability or reliability over the planning and implementation horizon:

(A) Projected hydrology shall utilize 50 years of historical precipitation, evapotranspiration, and streamflow information as the baseline condition for estimating future hydrology. The projected hydrology information shall also be applied as the baseline condition used to evaluate future scenarios of hydrologic uncertainty associated with projections of climate change and sea level rise.

(B) Projected water demand shall utilize the most recent land use, evapotranspiration, and crop coefficient information as the baseline condition for estimating future water demand. The projected water demand information shall also be applied as the baseline condition used to evaluate future scenarios of water demand uncertainty associated with projected changes in local land use planning, population growth, and climate.

(C) Projected surface water supply shall utilize the most recent water supply information as the baseline condition for estimating future surface water supply. The projected surface water supply shall also be applied as the baseline condition used to evaluate future scenarios of surface water supply availability and reliability as a function of the historical surface water supply identified in Section 354.18(c)

(2) (A), and the projected changes in local land use planning, population growth, and climate.

1.7.3 Water Budget Uncertainties and Data Gaps

(e) Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow.

1.8 Management Areas (Reg. 354.20)

The 2014 Santa Rosa Plain Watershed GMP has been developed to identify productive aquifers within the basin, and contains information that will help in discussing and deciding if and what management areas may be useful to more effectively manage the basin. Model subareas could be used as a starting point for management areas discussion. The following needs to be addressed in the Regs:

- Reason for creation of each management area
- Level of monitoring and analysis
- Description of management areas
- Explanation of how management of management areas will not cause undesirable results outside the management area

The 2014 Santa Rosa Plain Watershed GMP Section 2.4.2.7 Hydrogeologic Subareas provides a basis for beginning discussions on possible management areas of the Basin.