

# DRAFT

## Section 6: Projects and Management Actions Groundwater Sustainability Plan Santa Rosa Plain Groundwater Subbasin

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## **6.0 Projects and Management Actions**

This section satisfies Sections 354.42 and 354.44 of the SGMA regulations, which require that GSPs include descriptions of projects and possible management actions that the GSA has determined will help achieve the sustainability goal as well as to respond to changing conditions in the basin over the fifty-year planning horizon. Additionally, the GSP has to include: (1) what measurable objective will benefit from a specific project or management action, (2) criteria and circumstances that would trigger implementation and future termination, and (3) the process by which the GSA will determine a project or management action is necessary to execute. Projects and management actions can be utilized to meet interim milestones, address minimum threshold exceedances and undesirable results that have occurred or are imminent

The management actions and projects included in this chapter outline a framework for achieving sustainability, however many details must be negotiated before many of the projects and management actions can be implemented. Costs for implementing projects and actions are in addition to the agreed-upon funding to sustain the operation of the GSA, and the funding needed for monitoring and reporting. The collection of projects and management actions included in this section demonstrate that sufficient options exist to reach sustainability. Not all projects and actions have to be implemented to attain sustainability, and they have not yet all been sufficiently developed or agreed upon by stakeholders. Therefore, the projects and management actions included here should be considered a list of options that will be refined during GSP implementation.

### **6.1 Identification and Evaluation of Projects and Management Actions**

This section describes the process and procedures used to identify and conduct initial evaluations of projects and management actions considered for the GSP.

#### **6.1.1 Identification of Projects and Management Actions**

The projects and management actions considered for implementation and further planning are informed by historical groundwater management activities conducted within the Subbasin including:

- Availability and use of imported surface water by many municipalities (Sonoma Water's water contractors) in lieu of local groundwater supplies;
- Development and use of recycled water supplies for meeting agricultural and landscape irrigation demands;
- Development and successful implementation of water-use efficiency and conservation programs within the urban water-use sector;
- Studies and implementation of water-use efficiency measures within the agricultural sector; and
- Studies and initial planning for managed aquifer recharge, including:

- Feasibility study and initial planning for aquifer storage and recovery (ASR)
- Studies, data collection and pilot testing for stormwater recharge projects

While some of these initiatives and activities have historically been developed and planned specifically to address groundwater conditions within the Subbasin, many have been developed and implemented to achieve other benefits, objectives and purposes. Inclusion and further assessment of these initiatives and activities during implementation of the GSP will facilitate coordination and optimization of these initiatives and activities to support sustainable groundwater management.

The above projects and management actions were described and considered by the Advisory Committee and GSA Boards. Input received from the Advisory Committee and GSA Boards helped refine and categorize the projects and management actions into those that could be initially evaluated as part of this GSP and those that require further assessment or study prior to implementation. For example, based on limitations and uncertainty related to the potential for future expansion of recycled water supplies, additional expansion of recycled water deliveries for irrigation supplies is not included with the projects evaluated using scenario modeling, described in Section 6.1.2, below. Future opportunities for expansion and/or optimization of recycled water supplies with recycled water purveyors within the Subbasin will be evaluated as a management action during the initial five years of GSP implementation. Additionally, other ideas for projects and actions raised by Advisory Committee members would need to be further developed and planned in order to evaluate with model scenarios, for example recharge net-metering programs, water markets, and zero-net water use requirements for new development. Other management actions the GSA has under its authority, such as mandatory conservation or pumping reductions, will also be studied and considered during the initial five years of GSP implementation, as described in Section 6.3.

### **6.1.2 Evaluation of Projects Through Scenario Modeling**

For the purposes of conducting initial evaluation of projects for this GSP, staff assembled conceptual projects and actions that are likely to be initiated within the first five years of implementation into two general categories:

1. Those that have identified potential funding sources or are voluntary or incentive-based and are lower-cost (Group 1 projects). The Group 1 projects represent voluntary, incentive-based water-use efficiency and alternate water source projects focused on rural residential and agricultural groundwater users. Examples include smaller-scale dispersed land-owner projects, such as turf removal, rainwater harvesting, and irrigation efficiency practices. The exact types of these dispersed projects are not distinguished for the purposes of evaluating potential benefits using model scenarios.
2. New or significantly expanded projects/actions that would require further studies and planning for implementation (Group 2 and 3 projects). Both Group 2 and Group 3 projects represent managed aquifer recharge projects that aim to maintain or raise

groundwater levels and improve summer and fall streamflows. The Group 2 projects represent stormwater capture and recharge projects that could specifically benefit streamflows within the Subbasin and help comply with the SMC for depletion of interconnected surface water. Group 3 projects represent aquifer storage and recovery (ASR) projects that can reduce municipal pumping of native groundwater, help address many sustainability indicators, primarily the chronic lowering of groundwater levels, and build drought-resiliency.

These two general categories formed the basis for model scenarios of potential project and management actions. The model scenarios were performed as an initial evaluation of benefits of the Group 1-3 projects and management actions relative to the baseline 50-year projected scenario. The methodology and results of the scenario modeling are described in Appendix 6-A. General findings from the model scenarios indicate the following:

- **Groundwater Levels:** In the baseline scenario, groundwater levels in the shallow and deep aquifers remain above minimum thresholds for the first 20-year period. Groundwater levels generally fall below minimum thresholds in the last 11 years of the 50-year projected baseline water budget, primarily in RMPs in the deeper aquifer, leading to undesirable results. The cumulative projects decrease minimum threshold exceedances from 66 to 18 and remove all occurrences of undesirable results. Implementation of Group 1 results in greatest decline in minimum threshold exceedances and eliminates potential undesirable results that are simulated to occur during the baseline 50-year projection.
- **Groundwater storage:** Groundwater in storage under a baseline scenario without projects is estimated to decline by an average of 200 AFY between 2021-2040 and 1,400 AFY over the entire 50-year projection period that includes a simulated extreme 20-year drought between 2050 and 2070. Cumulative projects are simulated to reduce the average decline by 400 AFY between 2021 -2040 and 300 AFY over the entire 50-year projection.
- **Stream-Aquifer Interaction:** Higher groundwater levels near streams can better support streamflow, particularly in the summer and fall months. The addition of the Group 2 projects increases simulated summer streamflow by 10% in Mark West Creek.

Project scenarios help limit groundwater declines during the latter portion of the projected period (affected by the major drought). Although minimum threshold exceedances are not completely avoided during this more extreme dry period under these scenarios, the exceedances during severe droughts are not representative of undesirable results unless groundwater levels do not recover during subsequent wetter time periods.

Considering current uncertainties due to modeling and project information, these project scenarios show reasonable efforts towards reaching sustainability in the Subbasin to meet GSP requirements. Additional data collection and project conceptualization during early phases of GSP implementation will help refine these scenarios and allow for consideration of additional scenarios.

## **6.2 Project Descriptions**

To prevent potential undesirable results and to achieve measurable objectives, PMAs are planned as part of GSP implementation. As described above, a portfolio of PMAs has been developed and evaluated with the goal of addressing relevant sustainability indicators. The GSA plans to immediately begin implementation of selected PMAs. In some cases, initial implementation steps include performing studies or analyses to refine the concepts into actionable projects. The following sections provide descriptions of the Group 1, 2 and 3 projects, including information required by 354.44.

### **6.2.1 Water-Use Efficiency and Alternate Water Source Projects (Group 1)**

The Group 1 projects represent voluntary, incentive-based water-use efficiency and alternate water source projects focused on rural residential and agricultural groundwater users. Examples include smaller-scale dispersed land-owner projects, such as turf removal, rainwater harvesting, stormwater capture/reuse. As described in Section 2.6, numerous regional and local water conservation programs are operational in the Plan Area including the Sonoma-Marín Saving Water Partnership, the LandSmart Program, and the Sustainable Winegrowing Program. Tools and best management practices (BMPs) from these existing programs would be leveraged and utilized to implement the Group 1 projects. Examples of the tools and BMPs included in these programs are:

- increasing indoor (high efficiency toilets, fixtures, and washers) and outdoor (landscaping assistance, surveys and retrofits)
- conservation rebate programs for high-efficiency appliances and fixtures
- landscape water budgets; landscape and irrigation design; and irrigation scheduling.
- Stormwater management through LID practices
- Rain water harvesting
- Soil moisture monitoring and efficient irrigation scheduling

This project will include an assessment of groundwater use characteristics, existing levels of water-use efficiency, and recommendations on preferred tools and strategies for implementing, including options for incentivizing.

#### **6.2.1.1 Objectives, Circumstances and Timetable for Implementation**

Objectives for implementing the Group 1 projects are to help achieve measurable objectives and avoid undesirable results for the chronic lowering of groundwater levels sustainability indicator. Achieving measurable objectives and avoiding undesirable results for the chronic lowering of groundwater levels sustainability indicator is also expected to benefit the groundwater storage and land subsidence sustainability indicators. Additionally, depending upon the locations within the Subbasin where Group 1 projects are implemented, benefits to the measurable objectives for the depletion of interconnected surface water sustainability indicator may also be realized.

After a short planning period, it is assumed that Group 1 project implementation will begin in 2023. As described above, initial implementation will include an assessment of the exact types of water-use efficiency tools and alternate water source projects that are expected to be most effective and feasible for Subbasin stakeholders. The assessment will also evaluate specific metrics for evaluating the benefits of Group 1 projects and assess Subbasin conditions that may lead to mandatory implementation of Group 1 projects.

#### **6.2.1.2 Expected Benefits**

Expected benefits from implementation of Group 1 projects are described in Appendix 6-A. Based on the assumptions described in Appendix 6-A, benefits simulated include reduction in the number of potential future minimum threshold exceedances and elimination of potential undesirable results for the chronic lowering of groundwater levels, as well as decreasing the decline in groundwater storage. As described above, the planned initial assessment of Group 1 projects will include recommendations for evaluating specific metrics related to Group 1 implementation.

#### **6.2.1.3 Public Noticing, Permitting and Regulatory Process**

Public noticing will be a critical component to the success of implementing Group 1 projects, as these are initially planned as voluntary actions that will rely on Subbasin stakeholders clearly understanding their importance and benefits. Outreach activities described in Section 7.2.2 will include focused outreach to rural residential and agricultural stakeholders on benefits of participating.

Many of the types of projects and actions planned for inclusion in Group 1 projects do not have any permitting or regulatory requirements. Any projects that may include permit or regulatory requirements, such as graywater systems, would need to comply with local requirements and ordinances.

#### **6.2.1.4 Estimated Costs and Funding Plan**

A total of \$90,000 is included in the initial five-year budget provided in Section 7.2 for: (1) performing the assessment of Group 1 projects; and (2) funding initial roll-out of voluntary measures. In order to continue and/or expand implementation of Group 1 projects, the GSA will seek grant funding. The GSA is also planning to apply for funding of toilet replacement and agricultural BMP implementation through the State's 2021 Drought Relief Program.

#### **6.2.1.5 Legal Authority**

No legal authority is anticipated to be needed to voluntarily implement the Group 1 projects.

### **6.2.2 Stormwater Capture and Recharge (Group 2)**

As described in Section 2.6, planning for stormwater capture and recharge efforts, including site investigations and pilot studies have been initiated by local agencies and growers within the Subbasin. Group 2 projects are intended to cover two general types of stormwater capture activities, which have been identified in the Russian River Regional Storm Water Resource Plan. The first stormwater capture activity involves retaining and recharging onsite runoff. Examples of this type of activity include LID and on-farm recharge of local runoff. The second stormwater

capture activity involves recharge of unallocated storm flows. These actions require temporary diversions of storm flows from streams, and transport of those flows to recharge locations. State programs and grants (e.g., FLOOD-MAR, Proposition 68) and local entities (e.g. Resource Conservation Districts) can be utilized as resources to move forward on stormwater capture and recharge efforts.

Prior to implementing long-term stormwater capture and recharge programs, site-specific investigations and assessments will be needed to identify suitable locations. Therefore, early stages of implementing Group 2 projects are anticipated to include site-specific investigations and pilot studies of on-farm and other dispersed recharge opportunities that consider and include the following:

- Water available for recharge
- Areas with permeable near-surface deposits
- Optimal methods and techniques
- Outreach to interested landowners with locations that could help sustain baseflows to streams and support GDEs

#### **6.2.2.1 Objectives, Circumstances and Timetable for Implementation**

Objectives for implementing the Group 2 projects are primarily anticipated to help achieve measurable objectives and avoid undesirable results for the depletion of interconnected surface water sustainability indicator. Depending upon the location of Group 2 projects and hydraulic connection between surficial recharge locations and the shallow aquifer system, benefits to the chronic lowering of groundwater levels, groundwater storage and land subsidence sustainability indicators may also realize benefits.

As described above, Group 2 projects require permitting, environmental analysis and engineering design, which would begin in 2022. Depending upon results of pilot studies, planned to be initiated in 2024, full-scale implementation of Group 2 projects is anticipated to begin in 2028. The timing of projects is based on best estimates and may shift as GSP implementation proceeds based upon the needs at the time.

#### **6.2.2.2 Expected Benefits**

Expected benefits from implementation of Group 2 projects are described in Appendix 6-A. Based on the assumptions described in Appendix 6-A, benefits simulated include increases in summertime streamflows (i.e., a 10% increase in summertime flows along lower Mark West Creek was calculated for the Group 2 model scenario), reduction in the number of potential future minimum threshold exceedances for the chronic lowering of groundwater levels, as well as decreasing the decline in groundwater storage. Benefits from Group 2 projects would primarily be evaluated using changes in measured groundwater levels and surface water flows near and downstream of project locations.

### **6.2.2.3 Public Noticing, Permitting and Regulatory Process**

Public outreach would be conducted to identify landowners interested in participating in stormwater capture and recharge projects. The degree of public noticing will vary depending upon the scale and type of recharge project.

Recharge of stormwater by retaining and recharging onsite runoff does not require permits. Recharge of unallocated storm flows is currently subject to the SWRCB's permit program for groundwater recharge by capturing high flow events. Recharge of unallocated storm flows will be subject to the terms of these five-year permits. Stormwater capture may also be subject to CEQA permitting.

### **6.2.2.4 Estimated Costs and Funding Plan**

A total of \$160,000 is included in the initial five-year budget provided in Section 7.2 for: (1) performing site specific investigations; and (2) funding a pilot study. In order to continue and/or expand implementation of Group 2 projects, the GSA coordinate with other project proponents who may be pursuing multi-benefit projects, consider providing additional funding in future years and will seek opportunities for grant funding.

### **6.2.2.5 Legal Authority**

Other than acquiring required permits and the right to divert stormwater, there are no other legal authorities required to implement stormwater capture and recharge.

## **6.2.3 Aquifer Storage and Recovery (Group 3)**

As described in Section 2.6, regional planning for ASR and well-specific assessments have been performed by local agencies within the Subbasin (GEI, 2013 and West Yost, 2013).

Conceptually, an ASR 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 the deep aquifer system of the Subbasin. 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 Groundwater Banking Feasibility Study (GEI, 2013) provided an evaluation of the regional needs and benefits, source water availability and quality, regional hydrogeologic conditions, and alternatives for groundwater banking. Based on the findings from the study, pilot studies to further assess the technical feasibility of ASR as a method for groundwater banking were recommended and in 2018 a pilot project was completed in the nearby Sonoma Valley Subbasin (GEI, 2020).

Prior to implementing long-term ASR programs in the Santa Rosa Plain Subbasin, pilot studies are recommended to verify location specific feasibility, including aquifer capacity for recharge and recovery operations and geochemical compatibility. Pilot testing involves injecting potable drinking water into the Subbasin's aquifers and recovering it to assess injection and recovery capacities and monitor water quality impacts to native groundwater resources. Information generated by pilot test evaluations will help inform the degree to which ASR is a feasible strategy to improve the reliability water supply, along with helping to evaluate whether or not

an ASR project can be developed and operated in a manner that will achieve both supply reliability and groundwater sustainability benefits. Therefore, early stages of implementing Group 3 projects are anticipated to include both site-specific investigations and pilot studies. Additionally, it is recommended that the 2013 Groundwater Banking Feasibility Study be updated to address: (1) updated source water (Russian River) availability and transmission system capacity assumptions; (2) assessment of locations/operations that specifically benefit GSP implementation; and (3) design and implementation of pilot studies for favorable areas.

Additionally, it is recognized that other entities are pursuing initiation of ASR in the Subbasin on a more expedited timeframe in response to the 2020/2021 drought and associated funding opportunities. Specifically, Sonoma Water is developing plans to implement ASR at one of its production wells within the Santa Rosa Plain as part of its Santa Rosa Plain Drought Resiliency Project. The GSA will coordinate and provide support for planning and implementation of ASR projects that may be developed and implemented by Sonoma Water and other project proponents in response to current drought conditions.

#### **6.2.3.1 Objectives, Circumstances and Timetable for Implementation**

Objectives for implementing ASR projects are to help achieve measurable objectives and avoid undesirable results for the chronic lowering of groundwater levels sustainability indicator. Achieving measurable objectives and avoiding undesirable results for the chronic lowering of groundwater levels sustainability indicator is also expected to benefit the groundwater storage and land subsidence sustainability indicators. Additionally, depending upon the locations within the Subbasin where ASR projects are implemented, benefits to the measurable objectives for the depletion of interconnected surface water sustainability indicator may also be realized.

As described above, ASR projects require permitting, environmental analysis and engineering design, which would begin in 2022. Depending upon results of pilot studies, planned to be initiated in 2024, full-scale implementation of ASR projects is anticipated to begin in 2028. The timing of projects is based on best estimates and may shift as GSP implementation proceeds based upon the needs at the time. As noted earlier, this timeframe may be further accelerated in response to the 2021/2022 drought.

#### **6.2.3.2 Expected Benefits**

Expected benefits from implementation of ASR projects include:

- Limiting the potential for chronic lowering of groundwater levels and undesirable results for other associated sustainability indicators.
- 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.

Potential benefits from implementation of ASR projects based on the scenario modeling are described in Appendix 6-A. Based on the assumptions described in Appendix 6-A, benefits simulated include reduction in the number of potential future minimum threshold exceedances for the chronic lowering of groundwater levels, as well as decreasing the decline in groundwater storage. Benefits from ASR projects would primarily be evaluated using changes in measured groundwater levels and improvements to groundwater storage changes.

### **6.2.3.3 Public Noticing, Permitting and Regulatory Process**

Public notice for aspects of the ASR pilot projects will be carried out by the lead agency for each project. For ASR projects where the GSA is not the lead agency, the GSA will provide support for outreach activities to nearby well owners and the local community. For the full-scale ASR project, public noticing is anticipated to occur through compliance with the California Environmental Quality Act (CEQA) for any facilities or plans associated with the project, as part of development of a Groundwater Storage Supplement to permit the storage of water from the Subbasin that is required by the State Water Resources Control Board and through publicly noticed discussions of the proposed project at public meetings.

The State Water Resources Control Board (SWRCB) has recognized that it is in the best interest of the state to develop a comprehensive regulatory approach for ASR projects and has adopted general waste discharge requirements for ASR projects that inject drinking water into groundwater (Order No. 2012-0010-DWQ or ASR General Order). The ASR General Order provides a consistent statewide regulatory framework for authorizing both pilot ASR testing and permanent ASR projects. Pilot tests and any future permanent ASR facility will be permitted under the ASR General Order. Oversight of these regulations is done through the Regional Water Quality Control Boards (RWQCBs) and will require project proponents to comply with the monitoring and reporting requirements of the ASR General Order. Any additional permits required for the construction and operation of an ASR facility will be obtained by the lead agency for each ASR project as needed.

### **6.2.3.4 Estimated Costs and Funding Plan**

Preliminary cost estimates to test, permit and construct project facilities for direct methods of banking is estimated to range from about \$300,000 to \$3,600,000 depending upon the complexity of each project (GEI, 2013). The range of the costs also varies dependent upon whether existing facilities could be retrofitted, or new facilities would need to be constructed. Revised costs will need to be further refined and provided upon completion of site-specific evaluation and pilot testing. The current plan for developing ASR in the Subbasin would utilize to the greatest extent possible existing infrastructure, meaning that new infrastructure would be greatly limited and allowing for earlier onset of both incremental drought supply and groundwater sustainability benefits.

A total of \$150,000 is included in the initial five-year budget provided in Section 7.2 for: (1) contributing to an updated regional ASR feasibility study; and (2) site-specific investigations of favorable areas. In order to continue and/or expand implementation of ASR projects, the GSA coordinate with other project proponents who may be pursuing ASR projects, consider providing additional funding in future years and will seek opportunities for grant funding.

#### **6.2.3.5 Legal Authority**

Local water supply agencies and the GSA have the authority to develop water supply projects, such as ASR for both water supply benefits and to provide groundwater sustainability benefits.

### **6.3 Management Actions and Projects Requiring Additional Assessment**

In addition to initiating the projects described above, the GSA will further assess the following management actions and potential future projects that require additional assessment and planning:

- Coordination of Farm Plans with GSP implementation
- Assessment of additional recycled water opportunities
- Study of potential policy options

Additionally, as provided by SGMA, should the above-described projects and management actions not be sufficient to eliminate undesirable results during implementation of the GSP, the GSA has authorities to limit groundwater pumping. Section 6.3.4, below further describes these authorities and potential situations where they may be considered.

#### **6.3.1 Coordination of Farm Plans with GSP Implementation**

Farm Plans are voluntary plans developed by third party organizations in collaboration with individual landowners that identify best management practices and provide site-specific actions to mitigate issues like sediment run-off or to improve water quality. In some areas of California, regulatory fees are reduced for landowners with Farm Plans that are certified by agreed-upon third parties. Currently, most Farm Plans do not include aspects of groundwater management that would directly support the GSA's efforts to comply with the requirements of the SGMA.

**Description of conceptual management action:** This project involves a collaboration between the three Sonoma County GSA's and interested members of the agricultural community to evaluate the feasibility of developing a program that coordinates Farm Plans, developed at individual farm sites, with implementation of the basin-wide Groundwater Sustainability Plan. This effort will identify areas of mutual interest (e.g., improved water use efficiency, increased groundwater recharge, increased monitoring and data collection, coordinated information sharing, and reporting) in addition to challenges that need to be addressed (e.g., data confidentiality, data quality requirements, verification of Farm Plan performance). This project will: (1) identify requirements or standards that need to be met to demonstrate that the implementation of the Farm Plan contributes to compliance with SGMA; (2) develop metrics

that will be measured and verified during implementation of the Farm Plan; and (3) consider options for Farm Plan sites to receive a form of credit for the contributions of the subject farm to the compliance with SGMA. Within one year of funding approval, staff would submit a report to the GSA Board with recommendations on the viability of such a program and next steps, as appropriate.

A total of \$40,000 is included in the initial five-year budget provided in Section 7.2 for: (1) developing and beginning implementation of the work plan. It is assumed that costs for portions of the study will be shared with the Petaluma Valley and Sonoma Valley GSAs.

### **6.3.2 Assessment of Additional Recycled Water Opportunities**

The use of recycled water for agricultural and landscape irrigation within the Subbasin has provided substantial benefits to groundwater conditions. During the current water budget period, it is estimated that approximately 10,000 AFY of recycled water is delivered within the Subbasin for agricultural and landscape irrigation, significantly reducing the need for use of groundwater and other potable water supplies. As described in Section 6.1, above, based on limitations and uncertainty related to the potential for future expansion of recycled water supplies, additional expansion of recycled water deliveries for irrigation supplies was not included with the projects evaluated using scenario modeling.

**Description of conceptual management action:** This project involves a collaboration between the GSA and City of Santa Rosa and participating cities for the Santa Rosa Water Reuse System, Town of Windsor, and Sonoma Water for the Airport/Larkfield/Wikiup Sanitation Zone to perform an assessment of additional recycled water opportunities. It is anticipated that the assessment will include:

- Evaluation of existing and future availability, delivery commitments and constraints
- Assessment of options for optimization of existing and projected future available supplies
- Preliminary cost/benefit analysis for future options

A total of \$30,000 is included in the initial five-year budget provided in Section 7.2 for the GSA to coordinate with recycled water purveyors in performing the above-described assessment.

### **6.3.3 Assessment of Potential Policy Options for GSA Consideration**

The use of recycled water for agricultural and landscape irrigation within the Subbasin has provided substantial benefits to groundwater conditions. During the current water budget period, it is estimated that approximately 10,000 AFY of recycled water is delivered within the Subbasin for agricultural and landscape irrigation, significantly reducing the need for use of groundwater and other potable water supplies. As described in Section 6.1, above, based on limitations and uncertainty related to the potential for future expansion of recycled water supplies, additional expansion of recycled water deliveries for irrigation supplies was not included with the projects evaluated using scenario modeling.

**Description of conceptual management action:** This project involves a collaboration between the GSA Board, local land use agencies, GSA member agencies, and stakeholders to assess future policy options that may be appropriate for the GSA to consider adopting or recommending for adoption by other agencies. Based on input from the Advisory Committee and GSA Board, the following initial list of policy options has been developed for potential inclusion in the assessment:

- Water conservation plan requirements for new development
- Discretionary review of well permits for any special areas identified in GSP
- Expand low impact development or water efficient landscape plan requirements
- Well construction and permitting recommendations (e.g., water quality sampling/reporting for COCs, requirement for water-level measurement access, procedures for preventing cross-screening of multiple aquifers)
- Metering program
- Study of water markets
- Permitting and accounting of water hauling

A total of \$75,000 is included in the initial five-year budget provided in Section 7.2 for the GSA to perform the assessment and initiate implementing recommendations.

#### **6.3.4 Other Potential Management Actions Available Under GSA Authorities**

In many of the groundwater basins subject to SGMA throughout the State, pumping restrictions are one of the key components of the GSP. The GSA believes that the current level of Subbasin pumping can be continued with the effective implementation of the projects and management actions described above. However, California Water Code §10726.4 (a)(2) provides GSAs the authorities to control groundwater extractions by regulating, limiting, or suspending extractions from individual groundwater wells or extractions from groundwater wells in the aggregate.

For the GSP, pumping restrictions are defined as reductions or limitations in the amount of water a current or future groundwater user can pump from the Subbasin. This could be applied in the case of a situation where planned projects and management actions are insufficient to reach and/or maintain sustainability and undesirable results are occurring and are not projected to be eliminated by 2040 using other available projects and management actions.

Under a curtailment scenario, the GSA would need to determine the amount of water that affected pumpers could take sustainably, and the pumpers would be required to reduce their groundwater extraction to that allocation. Under such a scenario, all pumpers subject to allocations and restriction would be required to be metered. In the event of a need to restrict pumping, pumping restrictions could also be placed on new wells. Restrictions on permits for new groundwater wells would be considered if there was high demand for wells that, if constructed, could lead to the basin water extractions exceeding the sustainable yield for the

basin. Alternatively, restrictions on permits in specific areas could be considered if additional localized pumping could drive one or more sustainability indicators below the minimum threshold. Limits could also be placed on which aquifers could be drawn from if there was a potential adverse impact in a particular zone that might affect certain sustainability indicators. Pumping restrictions on new uses would need to be applied equitably and in a similar proportion to restrictions on existing users.

Considerably more work and discussion would need to be done to define the policies and procedures for pumping restrictions in the event that pumping restrictions are determined necessary to attain and maintain sustainability. For the purposes of this GSP, funding is not included for assessing or developing pumping restrictions beyond the initial assessment of policy options described in Section 6.3, above.

#### **6.4 References**

GEI Consultants, Inc. Pueblo Water Resources and Parker Groundwater (GEI et. al.) 2013. Santa Rosa Plain/Sonoma Valley Groundwater Banking Feasibility Study.

GEI Consultants, Inc. Pueblo Water Resources and Sonoma Water (GEI et. al.) 2020. Technical Addendum: ASR Pilot Testing at TW-6A. March

West Yost, 2013. City of Santa Rosa Groundwater Master Plan, Final report. September