

**DRAFT**

**Section 6: Projects and Management Actions**

**Groundwater Sustainability Plan**

**Petaluma Valley Groundwater Basin**

**Table of Contents**

6.0 PROJECTS AND MANAGEMENT ACTIONS ..... 6-1

**6.1 Identification and Evaluation of Projects and Management Actions..... 6-1**

        6.1.1 Identification of Projects and Management Actions ..... 6-1

        6.1.2 Evaluation of Projects Through Scenario Modeling..... 6-2

**6.2 Project Descriptions..... 6-3**

        6.2.1 Water-Use Efficiency and Alternate Water Source Projects (Group 1) ..... 6-3

            6.2.1.1 Objectives, Circumstances and Timetable for Implementation ..... 6-4

            6.2.1.2 Expected Benefits..... 6-4

            6.2.1.3 Public Noticing, Permitting and Regulatory Process ..... 6-4

            6.2.1.4 Estimated Costs and Funding Plan ..... 6-5

            6.2.1.5 Legal Authority ..... 6-5

        6.2.2 Recycled Water Expansion..... 6-5

            6.2.2.1 Objectives, Circumstances and Timetable for Implementation..... 6-6

            6.2.2.2 Expected Benefits ..... 6-6

            6.2.2.3 Public Noticing, Permitting and Regulatory Process ..... 6-6

            6.2.2.4 Estimated Costs and Funding Plan..... 6-7

            6.2.2.5 Legal Authority..... 6-8

        6.2.3 Stormwater Capture and Recharge ..... 6-8

            6.2.3.1 Objectives, Circumstances and Timetable for Implementation ..... 6-8

            6.2.3.2 Expected Benefits..... 6-9

            6.2.3.3 Public Noticing, Permitting and Regulatory Process ..... 6-9

            6.2.3.4 Estimated Costs and Funding Plan ..... 6-9

            6.2.3.5 Legal Authority ..... 6-9

        6.2.4 Aquifer Storage and Recovery ..... 6-9

            6.2.4.1 Objectives, Circumstances and Timetable for Implementation ..... 6-10

            6.2.4.2 Expected Benefits..... 6-11

            6.2.4.3 Public Noticing, Permitting and Regulatory Process ..... 6-11

            6.2.4.4 Estimated Costs and Funding Plan ..... 6-12

            6.2.4.5 Legal Authority ..... 6-12

**6.3 Management Actions and Projects Requiring Additional Assessment ..... 6-12**

        6.3.1 Coordination of Farm Plans with GSP Implementation..... 6-12

        6.3.2 Assessment of Potential Policy Options for GSA Consideration..... 6-13

        6.3.3 Other Potential Management Actions Available Under GSA Authorities..... 6-14

**6.4 References ..... 6-15**

## **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 is required 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 maintaining 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 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 maintain sustainability. Not all projects and actions have to be implemented to maintain 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 Basin that are listed below.

- Availability and use of imported surface water by the City of Petaluma in lieu of local groundwater supplies.
- Development and use of recycled water supplies for meeting agricultural and landscape irrigation demands.
- 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.

- Studies and initial planning for managed aquifer recharge, including 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 Basin, 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 Board. Input received from the Advisory Committee and GSA Board 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. 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 management actions that have identified potential funding sources or are voluntary or incentive-based and are lower-cost (Group 1 projects) and are likely to be initiated within the first five years of implementation. 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. Other new or significantly expanded projects/actions that would require further studies and planning for implementation were not evaluated using the scenario modeling, as the projected baseline scenario does not indicate the need for additional projects and management actions.

The model scenarios were performed as an initial evaluation of benefits of the Group 1 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. Project scenarios help limit groundwater declines during the latter portion of the projected period (affected by the major drought) and improve net groundwater discharge to streams.

Considering current uncertainties due to modeling, data gaps, and project information, these project scenarios show reasonable efforts towards reaching sustainability in the Basin 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, projects and management actions are planned as part of GSP implementation. As described above, while only the Group 1 projects are developed enough for evaluation using model scenarios a portfolio of other projects and management actions (consisting of expanded recycled water deliveries, stormwater capture and recharge and aquifer storage and recovery) which have been discussed and considered by the Advisory Committee and GSA Board are also described in this section, including information required by 354.44. The GSA plans to immediately begin implementation of the voluntary Group 1 projects. For the other projects and management actions described in this section, initial implementation steps include performing studies or analyses to refine the concepts into actionable projects.

### **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, and 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 conservation and water-use efficiency, and recommendations on preferred tools and strategies for implementation, 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 Basin 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 Basin stakeholders. The assessment will also evaluate specific metrics for evaluating the benefits of Group 1 projects and assess Basin conditions that may lead to mandatory implementation of Group 1 projects.

### 6.2.1.2 Expected Benefits

The Group 1 project scenarios are described in detail in Appendix 6-A. General findings from the model scenarios indicate the following:

- **Groundwater Levels:** Changes in groundwater elevation with Group 1 implementation are slight and impact small areas of the Basin, with less than 5 feet of increase from baseline expected by 2040, and less than 10 feet expected by 2070. These simulation results indicate that the benefit from Group 1 projects in terms of increasing groundwater levels will be most significant during drought conditions, and least significant during wet periods when the water table is relatively shallow and there is minimal (unsaturated) storage capacity.
- **Stream-Aquifer Interaction:** Results show that with Group 1, there is a projected increase in the magnitude of net groundwater discharge to surface water. This is due to diminished rates of stream leakage into the groundwater system rather than increased groundwater discharge to streams.

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 and outreach communications 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 Basin 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 \$60,000 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 Recycled Water Expansion**

Recycled water is water that goes into the wastewater system from within the service area of the City of Petaluma and is treated to tertiary standards at the Ellis Creek Wastewater Treatment Plant. Recycled water has been and will continue to be an important source of irrigation water to offset the use of local groundwater and potable water supplies in Petaluma Valley. Recycled water can be used in applications where potable water is often used (such as the irrigation of public parks and golf courses and for agriculture). In addition to allowing for potable water offsets, recycled water use can facilitate “in lieu groundwater recharge.” For example, if a farm that has historically used well water for crop irrigation begins using recycled water instead, the groundwater aquifer beneath will “recover” through reduced pumping and natural recharge. Recycled water is a sustainable water source and allows potable supplies to be reserved for the best and highest use. Additionally, utilizing recycled water for irrigation also means a decrease in discharge of treated wastewater to local water bodies such as the San Pablo Bay.

The ECWRF opened in July 2009 and provides advanced secondary treatment, anaerobic digestion, and tertiary treatment of wastewater. The treatment facility treats domestic, commercial, and industrial wastewater generated in the City and in unincorporated Penngrove. The facility treats on average 4.6 million gallons of wastewater each day and 1,900 million gallons annually (West Yost, 2021).

Tertiary-treated recycled water, distributed through a system of pump stations and pipelines, provides irrigation for agriculture, golf courses, school yards, parks and other landscaped areas. Urban use of recycled water saves potable water and supplements the City's water supply. Agricultural use of recycled water reduces the amount of groundwater pumping for local farming, including dairies and vineyards.

Recent production and deliveries of recycled water from the ECWRF are approximately 650 AFY within the City's service area and 1,115 AFY outside of the City's service area (primarily to agricultural customers). The City is planning an expansion of the urban recycled water system to deliver recycled water to more parks and schools throughout the service area. The City is also planning an expansion to deliver recycled water to more agricultural customers outside of the City's service area (West Yost, 2021).

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

Objectives for expanding recycled water deliveries 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, seawater intrusion and land subsidence sustainability indicators. Additionally, depending upon the locations within the Subbasin where recycled water projects are expanded, benefits to the measurable objectives for the depletion of interconnected surface water sustainability indicator may also be realized.

As described above, recycled water projects require permitting, environmental analysis and engineering design. The City of Petaluma's planned recycled water projects have been included in the Final EIR developed for the Phase 2 North Bay Water Reuse Program (NBWRP). Initiation of design is dependent upon securing funding for the project. The timing of projects is based on availability and securing of funding and may shift as GSP implementation proceeds based upon the needs at the time.

#### **6.2.2.2 Expected Benefits**

Potential benefits from implementation of recycled water projects is anticipated to include a reduction in groundwater pumping and localized increases in groundwater levels. Benefits from recycled water projects would primarily be evaluated using changes in measured groundwater levels and improvements to groundwater storage changes.

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

Public notice for aspects of the recycled water projects will be carried out by the lead agency, which is anticipated to be the City of Petaluma. For recycled water 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. As noted above, compliance with the California Environmental

Quality Act (CEQA) is incorporated into the existing EIR for the Phase 2 North Bay Water Reuse Project. Any additional recycled water projects would be included in future CEQA analysis, as-needed.

Existing wastewater treatment and recycled water production occur at the SVCSD WWTP in compliance with Order No. R2-2016-0014 (NPDES Permit No. CA0037810) issued by the San Francisco Bay RWQCB. It is anticipated that future expansion of recycled water deliveries would also occur under this or future revised or amended orders.

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

The City is a member of North Bay Water Reuse Authority (NBWRA), a regional water recycling and management initiative which covers areas north of the San Francisco Bay. The NBWRP is comprised of member agency recycled water projects, including City of Petaluma projects. Through NBWRA, the City continuously pursues funding opportunities for its projects included in NBWRP Phase 2. The planned expansion of the recycled water system is separated into three parts.

- Tertiary Treatment Expansion – This project will increase ECWRF tertiary treatment capacity by 2.12 MGD, providing a yield of 712 AFY. Existing capacity is 4.68 MGD for Title 22 disinfected tertiary. This project will allow the City to meeting increasing urban and agricultural irrigation demands. The Tertiary Upgrades Project is currently under design, and recently received \$3.6 million in DWR IRWM grant funding through NBWRP Phase 2. Overall project costs are projected to be \$12,080,00.
- Urban Pipeline Expansion – Expand urban distribution pipeline to provide 173 AFY of potable water offset for irrigation. Costs are projected to be \$14,000,000 and are anticipated to be funded through a combination of grant funding and cost share from project proponents.
- Ag Pipeline Expansion – Expand agricultural distribution pipeline to provide 1,343 AFY of recycled water for irrigation. Costs are projected to be \$10,200,000 and are anticipated to be funded through a combination of grant funding and cost share from project proponents.

A total of \$25,000 is included in the GSA's initial five-year budget provided in Section 7.2 for the GSA to coordinate with the City of Petaluma to assess 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 prioritizing options

### **6.2.2.5 Legal Authority**

As described above, the SVCS D has the legal authority to treat wastewater and deliver recycled water for irrigation uses.

### **6.2.3 Stormwater Capture and Recharge**

As described in Section 2.6, planning for stormwater capture and recharge efforts, including site investigations have been initiated by local agencies and growers within the Basin. Stormwater capture and recharge projects are intended to cover two general types of stormwater capture activities that have been identified in the Southern Sonoma Storm Water Resource Plan. The first stormwater capture activity involves retaining and recharging onsite runoff. Examples of this type of activity include low-impact development (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 conveyance 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 field investigations and assessments will be needed to identify suitable locations. Therefore, early stages of implementation 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 soils
- Optimal methods and techniques
- Outreach to interested landowners with locations that could help sustain baseflows to streams and support GDEs

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

Objectives for implementing the stormwater capture and recharge 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 the 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, stormwater capture and recharge 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) and identified needs for projects, full-scale implementation of stormwater capture and recharge 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 and resources available.

#### **6.2.3.2 Expected Benefits**

Expected benefits from implementation of stormwater capture and recharge projects are anticipated to raise localized groundwater levels within the shallow portions of the aquifer system and increase baseflows to streams located near the projects. Benefits from stormwater capture and recharge projects would primarily be evaluated using changes in measured groundwater levels and surface water flows near and downstream of project locations.

#### **6.2.3.3 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.

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

A total of \$135,000 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 stormwater capture and recharge projects, the GSA will coordinate with other project proponents who may be pursuing multi-benefit projects, consider providing additional funding in future years, and seek opportunities for grant funding.

#### **6.2.3.5 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.

### **6.2.4 Aquifer Storage and Recovery**

As described in Section 2.6, regional planning for ASR and well-specific assessments have been performed by local agencies in neighboring Subbasins (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 Basin. 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. Prior to implementing long-term ASR programs, 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 Basin's aquifers and recovering it to assess injection and recovery capacities and monitor potential 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. In 2018 a successful pilot study project was completed in the nearby Sonoma Valley Subbasin which provides information that can inform future ASR planning within the Basin (GEI, 2020).

While current conditions and existing assumptions for future projections do not indicate the occurrence of undesirable results, the GSA will initiate planning for ASR in the Basin to help address uncertainty related to future conditions and the potential for future severe droughts. Early planning for ASR consist of participating with the Santa Rosa Plain and Sonoma Valley GSAs, along with Sonoma Water and other interested municipal water purveyors in updating the 2013 Groundwater Banking Feasibility Study to address: (1) current 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 water purveyors are pursuing initiation of ASR in the Basin on a more expedited timeframe in response to the 2020/2021 drought and associated funding opportunities. 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.

#### **6.2.4.1 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 Basin 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 could begin following completion and recommendations from the update to the regional groundwater banking feasibility study (planned for completion in 2023). 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.

#### **6.2.4.2 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.

Benefits from ASR projects would primarily be evaluated using changes in measured groundwater levels and improvements to groundwater storage changes.

#### **6.2.4.3 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. This includes the development of an Underground Storage Supplement to permit the storage of water in the Basin 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 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.

#### **6.2.4.4 Estimated Costs and Funding Plan**

Preliminary cost estimates to test, permit and construct project facilities for ASR 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. Preliminary 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 Basin 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 \$30,000 is included in the initial five-year budget provided in Section 7.2 for contributing to an updated regional ASR feasibility study. In order to continue and/or expand implementation of ASR projects, the GSA will 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.

#### **6.2.4.5 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
- 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 6.4.3 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 the implementation of the basin-wide GSP. 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 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 Potential Policy Options for GSA Consideration**

SGMA provides a number of authorities to GSAs which can be utilized to achieve groundwater sustainability and requires coordination between GSAs and land use agencies.

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).
- Well metering program.
- Study of water markets.

- Permitting and accounting of water hauling.

A total of \$30,000 is included in the initial five-year budget provided in Section 7.2 for the GSA to perform the assessment and initiate implementing recommendations.

### **6.3.3 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 Basin 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 purpose of 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 Basin. 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 drives one or more sustainability indicators below the minimum threshold. Limits could also be placed on which aquifers could be extracted 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 potential 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, 2021. City of Petaluma Urban Water Management Plan, Final report. June.