

Salinas Valley: Langley Area Subbasin Groundwater Sustainability Plan

Volume 3

Chapter 9. Projects and Management Actions

Chapter 10. GSP Implementation

Prepared for:

Salinas Valley Basin Groundwater Sustainability Agency

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9 PROJECTS AND MANAGEMENT ACTIONS

9.1 Introduction

This chapter describes PMAs to attain sustainability in accordance with GSP Regulations §354.42 and §354.44. Included in this chapter are potential PMAs and additional discussion on the portfolio of priority projects in Chapter 10. The PMAs in this chapter provide sufficient options and contingency projects for reaching sustainability; however, not all PMAs need to be implemented. In this GSP, projects supporting groundwater sustainability require infrastructure or physical change to the environment. Groundwater sustainability may also be supported through green infrastructure projects that achieve some benefits with minimal infrastructure, such as removal of invasive species and floodplain restoration. Management actions generally refer to activities that support groundwater sustainability without infrastructure.

The PMAs adopted in this GSP are designed to achieve a number of outcomes including:

- Achieving groundwater sustainability by meeting Subbasin-specific SMC by 2042
- Providing incentives to constrain groundwater pumping within the sustainable yield
- Addressing the needs of beneficial uses and users

The PMAs included in this chapter outline a list of PMAs located within the Subbasin or that will help the Subbasin meet and/or maintain sustainability. It is not a determination of the areas that will benefit from a PMA, nor is it a determination of the areas that will help fund a PMA. The PMAs included for this Subbasin may have benefits for or be funded by areas outside of this Subbasin, and PMAs not included may have benefits for or be funded by areas within this Subbasin.

The PMAs in this chapter include potential options for achieving sustainability. However, many details must be developed before any of the PMAs can be implemented. Full implementation of PMAs will require additional and new sources of funding, while SVBGSA's regulatory fee sustains the administration and operational costs of the SVBGSA, including monitoring and reporting.

This GSP is developed as part of an integrated effort by the SVBGSA to achieve groundwater sustainability in all 6 subbasins of the Salinas Valley under its authority. Therefore, the PMAs included in this GSP are part of a larger set of PMAs in the entire Valley. PMAs implemented in other subbasins may have benefits for the 180/400 Subbasin, and PMAs implemented within this Subbasin may have benefits for other subbasins.

The priority PMAs identified in Chapter 10 as the preferred pathway to reach sustainability are the most reliable, implementable, cost effective, and acceptable to stakeholders. Descriptions of the PMAs included in Chapter 9 are not in order of priority. Generalized costs are included for planning purposes. Components of these PMAs, such as facility locations and infrastructure layout, will evolve through further analyses. Therefore, each of the PMAs described in this GSP should be treated as a generalized concept representative of a range of potential configurations or measures.

Some PMAs are based on existing infrastructure, including surface and recycled water facilities. They assume continued operation at current capacity; however, there are known maintenance and repair projects that are needed and that may impact operations during construction or unforeseen circumstances. If current infrastructure is modified or expanded, or if other projects that affect groundwater conditions are implemented, SVBGSA will consider the effect of such changes in meeting sustainability goals and will take steps to help achieve these goals.

Discussions and decisions regarding specific PMAs will continue throughout GSP implementation and will be part of the adaptive management of the Subbasin. PMAs identified in the original GSP provided a starting point for more detailed feasibility analyses and discussions with GSA stakeholders during the first phase of GSP implementation. As GSP and PMA implementation activities continue to progress, additional details for each PMA will need to be agreed upon in future phases.

To be able to relatively compare projects, this chapter estimates the cost per AF of water based on feasibility studies or the best available information. The cost per AF is an amortized cost of the project divided by the annual yield. This is not the cost of water for irrigation or the domestic cost of drinking water for households on water systems. Cost analyses and future benefit analyses will continue to be refined during the next phases of PMA development and GSP implementation. Final costs will depend on further design, environmental review, and permitting. The potential costs for local groundwater users will depend on the type of PMA and beneficiaries of the PMA, as well as availability of external or other sources of funding.

The specific design of PMAs will provide landowners and public entities flexibility in how they manage water and how the Subbasin achieves groundwater sustainability. SVBGSA will collaborate with 180/400 Subbasin stakeholders to prioritize PMAs necessary to achieve sustainability and will adjust through adaptive management if conditions change.

9.2 General Process for Developing Projects and Management Actions

9.2.1 Process for Developing Projects and Management Actions

9.2.1.1 Original 180/400 Subbasin GSP

The general process for developing the PMAs in the original GSP include reviewing publicly available information, gathering feedback during public meetings, conducting hydrogeologic analysis, consulting with SVBGSA staff, and meeting with the Advisory Committee and Board members.

The initial list of PMAs in the original 180/400 Subbasin GSP was developed with the intention of being Valley-wide. The process included stakeholder input, including a brainstorming workshop where stakeholders proposed and discussed their ideas. The resulting list of PMAs was then narrowed down based on feasibility, likelihood of stakeholder acceptance, and ability to address groundwater conditions.

The projects listed in the original 180/400 Subbasin GSP constituted an integrated management program for all 6 subbasins of the Salinas Valley. The larger set of potential PMAs considered are listed in Appendix 9B of the original 180/400 Subbasin GSP.

9.2.1.2 Original Langley Subbasin GSP

With guidance from DWR, SVBGSA shifted to an approach where each subbasin GSP focused on the PMAs most relevant for that subbasin, rather than including all PMAs in the Valley in each GSP. As described further in Chapter 10, these are integrated through the IIS. The original Langley GSP included 8 PMAs for further consideration based on their reliability, implementability, cost effectiveness, and acceptability to stakeholders. Developing the PMAs in the original Langley GSP involved building on, updating, and adding to the PMAs developed for the entire Salinas Valley as part of the original 180/400 Subbasin GSP. The process for developing projects for the original Langley GSP included receiving stakeholder input through the Subbasin Implementation Committee at 3 points: following discussion of the main potential changes, upon receiving the drafted chapter, and after public comment on the chapter was received. The iterative process enabled the Committee to consider the public comments before finalizing the chapter. In addition, the Advisory Committee and Board received and commented on the chapter.

9.2.1.3 GSP Amendment 1

GSP Amendment 1 further refines PMA descriptions and information for PMAs with feasibility studies completed as part of the first phase of GSP implementation. Throughout the preparation of these studies, SVBGSA provided information about the project or management action to the

Subbasin Committees, Advisory Committees, and Board and created opportunities for stakeholder input to inform the development of scenarios or options.

Amendment 1 includes priority, ongoing, and contingency PMAs. The next phase of GSP implementation includes project design, environmental review and permitting, and developing funding mechanisms and cost allocations, which are all necessary pre-construction steps. Given these remaining steps on the priorities (discussed further in Chapter 10), chapter 9 continues to include a range of PMAs as contingencies that may be further developed if a priority project hits roadblocks in the future. Not all PMAs will need to be implemented, but this GSP provides sufficient options to achieve sustainability under SGMA.

9.2.2 Estimation of Project Benefits

GSP regulations require an explanation of the benefits that are expected to be realized from the PMA. A mix of methods were used to estimate project benefits:

Direct project benefits. Use of alternative water supplies can provide a direct project benefit of reduced groundwater extraction by the amount of supply provided. For some projects, the effects on groundwater levels and seawater intrusion were estimated through inputting extraction reductions into a groundwater flow model.

North Salinas Valley (NSV) Groundwater Model. Since the SVOM was not available during the development of the original GSP, a more simplified numerical groundwater flow model was developed for project estimation of benefits of some PMAs. The NSV used MODFLOW 2000 (Harbaugh *et al.*, 2000), a public domain finite-difference model code developed by the USGS.

SVOM. During development of the 2022 GSPs and 180/400 GSP Amendment 1, a provisional version of the SVOM was available to SVBGSA and was used to estimate project benefits for some projects. The SVOM was finalized by the USGS in April 2025 (version 0, or v0) and updated by SVBGSA in October 2025 (version 1, or v1). For those PMAs that were further investigated after that point, project benefits were either estimated by the SVOM v1 or the SWIM.

9.2.3 Cost Assumptions Used in Developing Projects

SVBGSA has completed feasibility studies for several of the PMAs identified in this chapter. During the next pre-construction phases, the size and configuration of each project will be refined and updated based on further project analysis and development. Project designs, and therefore costs, will change as more information is gathered.

For projects with feasibility studies completed during the first phase of GSP implementation, cost estimates include both project infrastructure components and soft costs. All costs include a 30% construction contingency, Monterey County sales tax of 7.75% applied to 50% of costs, and 0.25% monthly escalation to July 2030 as the estimated midpoint of construction. These project cost estimates were standardized based on the economic lifecycle cost of the projects. This represents the capital, operating and maintenance (O&M), and replacement costs over the lifecycle of the project. Costs are shown as annual values, present value, and on a dollar per acre-foot (\$/AF) basis in inflation-adjusted (real) dollars. A discount rate of 3.25% is applied for the cost standardization. Economic costs are different than project financial costs, which are the fiscal costs of the project (amount actually paid by various users) and includes all borrowing costs.

If a feasibility study has not yet been prepared, the cost estimates are order-of-magnitude estimates from the original Langley GSP developed in 2021. These estimates were made with little to no detailed engineering data. The expected accuracy range for such an estimate is within plus 50% or minus 30%. The cost estimates are based on the conditions at the project location at the time of estimation, reflect professional opinions of costs, and are subject to change as project designs mature.

O&M costs do not include O&M or pumping costs associated with existing infrastructure, such as existing Salinas Valley Reclamation Plant (SVRP, or Reclamation Plant) costs. Cost estimates for PMAs within this GSP Amendment 1 are included in Appendix 9A.

9.3 Overview of Projects and Management Actions

This GSP is part of an integrated plan for managing groundwater in all 6 subbasins of the Salinas Valley, which are managed partially or entirely by the SVBGSA. This GSP focuses on the PMAs that directly help the 180/400 Subbasin reach its sustainability goals and also includes PMAs outside the Subbasin that may benefit the Subbasin.

The PMAs for this GSP are listed in Table 9-1. As of the prioritization completed during drafting of GSP Amendment 1, they are placed into 2 categories: (1) priority PMAs that are part of the preferred IIS portfolio described in Chapter 10 or otherwise important for the Subbasin to manage groundwater sustainability; (2) contingency PMAs that could be pursued if future conditions indicate additional actions are needed. Not all PMAs will need to be implemented. Rather, PMA implementation will be guided by monitoring results, progress toward sustainability, and adaptive management decisions made during GSP implementation.

Table 9-1. Langley Subbasin Projects and Management Actions

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
MA – MANAGEMENT ACTIONS					
MA1	Demand Management and Planning	Proactively determines how extraction should be controlled and planned for and employs demand management measures as needed	Decreases extraction if needed	Range of potential project benefits	Depends on measure(s) selected
MA2	Fallowing, Fallow Bank, Agricultural Land Retirement, and Multi-benefit Land Repurposing	Includes voluntary fallowing, a fallow bank whereby anybody fallowing land could draw against the bank to offset lost profit from fallowing, retirement of agricultural land, and repurposing agricultural land.	Decreased groundwater extraction for irrigated agriculture	Dependent on program participation	\$1,750-\$2,600/AF if land is temporarily fallowed \$645-\$1,010/AF if land is retired plus additional costs of repurposing
MA3	Conservation and Agricultural BMPs	Promote agricultural best management practices and support use of ET data as an irrigation management tool for growers	Better tools assist growers to use water more efficiently; decreased groundwater extraction	Dependent on specific BMPs implemented	Approximately \$100,000/yr
MA4	Rural Residential Demand Management Water Use Efficiencies	Voluntary water use efficiency services and incentives for rural residential users. Potential measures include home water-use assessments, leak detection and repair, direct installation or rebates for efficient fixtures and appliances, outdoor irrigation audits and equipment, turf or high water-use landscape replacement, and technical assistance	Reduced local pumping, lower household water and energy costs, greater drought resilience, and reduced vulnerability of domestic wells to declining groundwater levels	Dependent on program participation	Program development cost \$25,000-\$50,000 Typical \$/AF range for ongoing implementation depends on measure used, from \$100/AF to \$3,500/AF

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
MA5	Rural Residential Well Mitigation	Assist rural residential drinking water users through monitoring network improvements, groundwater level tracking, well registration, dry well reporting and notification systems, demand management planning, groundwater recharge projects, and coordination with agencies and organizations involved in drinking water assistance	Mitigate impacts from declining groundwater levels in rural residential areas	Unable to quantify until program is developed	Not yet determined
P - Projects					
P1	Decentralized Residential In- Lieu Recharge Projects	Small-scale projects initiated by homeowners and business owners, including rooftop rainwater harvesting, rain gardens, and graywater systems	Less domestic groundwater use	If 75 households install 5000-gallon rain barrels, up to 4 AF/yr. rainwater harvested, and 1.6 AF/yr. from graywater systems installed by 75 houses	Cost to GSA (not for homeowner implementation or incentives): \$50,000 for 5 workshops on rainwater harvesting and \$50,000 for 5 workshops on graywater reuse (2022 GSP estimate)
P2	Decentralized Stormwater Recharge	Medium scale bioswales and recharge basins on non-agricultural land	Groundwater recharge, less flooding,	If 1% of the Subbasin is converted from an area of runoff to an area of recharge, 279 AF/yr.	Cost to GSA (not for implementation or incentives): \$150,000 - \$200,000 to encourage projects through outreach, site assessments, and assistance with planning (2022 GSP estimate)

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
P3	Managed Aquifer Recharge with Overland Flow	Construct basins for managed aquifer recharge of overland flow before it reaches streams	Groundwater recharge, less stormwater and erosion, more regular surface temperature	400 AF/yr. in increased recharge.	Capital Cost: \$4,128,000 Unit Cost: \$870/AF (2022 GSP estimate)
P4	Surface Water Diversion from Gabilan Creek	Build a new facility on Gabilan Creek that would be allowed to divert water when streamflow is high.	Collects streamflow that would otherwise be lost to the ocean	On average, 350 AF/yr. of excess streamflow available for recharge.	Capital Cost: \$10,074,000 Unit Cost: \$2,350/AF (2022 GSP estimate)
P5	Brackish Groundwater Restoration Project	Install brackish water extraction wells parallel to the seawater intruded coastline to form a hydraulic barrier and capture seawater as it comes on land, treat and desalt extracted brackish water to develop a new potable water supply for distribution to potential end users and for injection into the 180-Foot and 400-Foot Aquifers on the inland side of the seawater intrusion measurable objective as a secondary barrier	Prevents advancement of seawater intrusion and reduces seawater intruded area, creates new treated water supply for direct delivery or injection	Small scenario new treated water supply 28,000 AF/yr, potential pumping offset of 17,700AF/yr, reduction in chloride mass by 920,000 kg	Small Scenario construction cost estimate: \$709,000,000. Annualized cost estimate with O&M: \$101,000,000, \$3,625/AF for annual yield of 28,000 AF/yr
P6	New Seawater Intrusion Project/ CSIP Expansion	Expand service area of existing CSIP distribution system beyond the current Zone 2B boundary, to provide recycled and diverted river water to additional lands for irrigation and agricultural use, or provide a new, parallel system to deliver alternative irrigation water supplies to additional agricultural areas from a range of sources. Maximum scenario with Permit 11043.	Decreased groundwater extraction in areas experiencing or at risk of seawater intrusion	Benefit to up to 17,600-acre project delivering 5,320 to 25,080 AF/yr of recycled and river water provided for irrigation in-lieu of groundwater extraction	Cost range for 2 NSIP scenarios: \$910,000,000 to \$1,840,000,000; Unit Cost: \$7,434/AF to \$2,957/AF CSIP Expansion scenario total capital cost: \$32,180,000

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
P7	Coastal Injection/Aquifer Storage and Recovery	Divert winter watershed flows using modified Permit 11043 at a new 50 cfs diversion structure upstream of the SRDF, convey diverted water to surface storage, treatment, and injection the 400-Foot Aquifer or into the northern Eastside Subbasin	Raises groundwater levels inland of the seawater intrusion isocontour, increases groundwater in storage	Average injection volume of 5,100 AF/yr (50 cfs diversion) to 9,700 AF/yr (100 cfs diversion)	Total construction cost \$400,000,000 - \$1,017,000,000 Annualized cost range with O&M from \$24,000,000, \$4,622 AF/yr to \$60,000,000, \$6,232 AF/yr

9.4 Management Actions

Management actions are new or revised non-structural programs or policies that are intended to reduce or optimize local groundwater use. Management actions are not listed in priority order. Prioritization will occur during GSP implementation as an ongoing, adaptive process, and is further discussed in Chapter 10.

9.4.1 MA1: Demand Management and Planning

SVBGSA's approach to planning for demand management (DM) extends beyond solely reducing net pumping. DM is also a planning tool to prepare for droughts as well as increasingly uncertain climate conditions that may affect water supplies from year to year. In this context, DM includes evaluating opportunities to manage groundwater demand while encouraging stewardship of ground- and surface water supplies to support local communities, industries, and the environment.

DM can be accomplished through specific measures (actions) that are developed and carried out through policies, programs, or other management approaches. Because groundwater conditions, water use patterns, and management needs vary across the Salinas Valley, DM measures should be tailored to the specific users and hydrologic conditions of the area in which they are applied. MA1: Demand Management and Planning serves as an umbrella management action for the broad range of potential DM measures that may be prioritized, developed, and activated. While MA1 provides the overarching framework for DM, specific DM measures identified for this subbasin are described in more detail as discrete management actions (MA2 through 5) in this chapter.

The original 180/400 GSP proposed a Water Charges Framework for the Salinas Valley, which was intended to create a structure to manage groundwater extraction through promoting voluntary pumping reductions and charging fees for various levels of pumping. The 180/400 GSP Amendment 1 acknowledged that a Water Charges Framework represents only 1 potential DM approach. During the first phase of GSP implementation, SVBGSA instead developed a DM Framework. MA1 in Amendment 1 expanded the concept of DM to include a broader range of planning and management tools, while separating demand management from the funding mechanism. This approach preserves flexibility and does not limit future options to reduce net groundwater pumping.

DM may include voluntary or mandatory measures, ranging from incentivized residential water use efficiency and conservation efforts to pumping allocations or other regulatory mandates. To further evaluate these options, SVBGSA undertook several activities between GSP Amendments 1 and 2.

- Stakeholder Assessment (2022–2023): Assessed how well stakeholders understand and support demand management.
- Legal White Paper (2024): Summarized legal considerations for demand management. The white paper was prepared by Minasian Law in coordination with staff and legal counsel from ASGSA, MCWDGSA, MCWRA, and Monterey County Environmental Health and received by SVBGSA Board on March 13, 2025.
- Community Workshops (2024): SVBGSA held 4 “Our Water Future in the Salinas Valley: Planning for Uncertainty” at locations throughout SVBGSA’s jurisdiction.
- DM Framework (2024–2025): Planning tool that provides a structure for how the SVBGSA can evaluate, prioritize, and implement measures if and when they are needed to meet SGMA requirements.
- Economic and Financial Analyses (2024–2025): Evaluated costs and feasibility of different demand management measures identified in the DM Framework.

The DM Framework is a Valley-wide planning document that establishes stages and triggers that indicate when DM may be needed to avoid undesirable results within a particular subbasin. There are triggers for both long-term declines in groundwater levels and short-term declines associated with droughts. The Framework recognizes that even if DM may not currently be necessary in a particular subbasin, it remains an available management tool that could be employed if groundwater conditions change or indicate the need for it. Based on extensive public input, the DM Framework describes the 6 agricultural and 4 domestic DM measures that were identified as the most appropriate in the Salinas Valley. It outlines DM administrative requirements, funding approaches, technical and economic analysis, measurement methods, and a water accounting system that would need to be developed for a measure to be activated. The DM Framework provides a preliminary assessment of costs to the agency, water users, and the regional economy to help guide further prioritization and decision making. The 10 measures range from voluntary to mandatory demand reductions. Table 9-2 notes if there is a discrete GSP management action to further describe the respective measure planned in this Subbasin.

Table 9-2. DM Measures Identified in DM Framework

	Agricultural	Urban
Voluntary	On-Farm Water Use Efficiency (MA3) Rotational Fallowing/Fallow Bank Agricultural Land Retirement/ Land Repurposing (MA2)	Education and Outreach (MA5) Incentivized Water Use Efficiency (MA5)
Mandatory	DM Fee Pumping Limits/Allocations (MA4) Penalty Charges	Water Pricing Mechanisms Mandatory Efficiency Measures

Voluntary approaches to managing pumping can reduce demand through incentives rather than mandatory requirements or penalties. For example, through a voluntary fallowing program, willing landowners can reduce pumping and receive compensation if that reduction benefits a larger area and the larger area can contribute to the funding mechanism without changing extraction in all locations. Demand planning also encompasses planning for future demand that may occur from changes in land uses, such as bringing new land into irrigated production, changes in crop types, or new housing developments in areas with no existing water use.

DM measures can also be mandatory to provide a regulatory backstop that can be implemented in less time than it takes to implement water infrastructure projects. For example, pumping limits or allocations are a way to regulate groundwater extraction and determine each extractor's pro-rata share of the sustainable yield or pumping limit. This typically divides the sustainable yield among beneficial users. Allocations can be developed based on various criteria, such as acreage, land use, historical pumping, or number of connections, or be a hybrid of multiple criteria.

DM measures can be used to:

- Plan for and/or reduce pumping
- Generate funding for PMAs
- Incentivize water conservation and/or recharge projects
- Show there are options for measures that can be developed if needed, but this management action does not establish pumping allocations or pumping controls.

9.4.1.1 Relevant Measurable Objectives

The main measurable objectives benefiting from demand management and planning include:

- **Groundwater levels measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Reducing pumping will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.
- **ISW measurable objective.** Pumping reductions that occur near locations of ISW may result in higher shallow groundwater levels in ISW monitoring wells.

9.4.1.2 Expected Benefits and Evaluation of Benefits

The primary benefits expected for this management action are to reduce pumping during droughts or on an ongoing basis, to raise groundwater elevations; quantification of the benefits will be assessed as part of evaluation of specific measures.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific DM programs.

9.4.1.3 Circumstances for Implementation

DM and Planning is a priority PMA in the Langley Subbasin. Stages will be assessed on an ongoing basis throughout GSP implementation and measures will be activated as needed. The DM Framework applies to the entire Salinas Valley, but it is structured to account for differences in subbasin and aquifer conditions. The Framework establishes stages and triggers on a subbasin-scale since SGMA compliance is by subbasin. Stages are used to classify whether subbasin conditions indicate progressively lower groundwater levels relative to the SMC. Stages are defined on a numerical scale from 0 to 4, with 0 representing sustainable conditions that do not warrant DM and 4 representing chronic undesirable results that indicate the need for DM. Triggers also determine in which stage each subbasin is. DM measures may be implemented for larger or smaller areas that do not align with subbasin boundaries if conditions warrant it. The Framework provides an overview of how each DM measure may relate to different stages. Potential DM measures and appropriate areas will be evaluated and recommended to the Board in coordination with partner agencies.

The DM Framework short-term triggers will be evaluated annually, and long-term triggers will be assessed at least every 5 years for subbasins that have not already been determined to be in Stage 3 or Stage 4 based on long-term conditions. If there are planned infrastructure projects to improve groundwater conditions, evaluation of triggers can consider whether a DM measure is necessary. A DM measure may be temporary based on the timeline for project implementation or under drought conditions.

9.4.1.4 Permitting and Regulatory Process

Activation of specific DM measures requires authorization by the SVBGSA Board of Directors. For example, allocations or pumping limits would be developed and activated through an SVBGSA ordinance or regulation. Such regulations could be structured for automatic

implementation when specific criteria are met or require the vote of the Board of Directors to take effect. However, activation of DM measures would not require permits for physical facilities.

9.4.1.4 Implementation Schedule

The Board will determine the DM measures to prioritize and implement. The schedule to develop and activate DM measures will depend on the specific measure prioritized.

9.4.1.5 Legal Authority

Legal authority for MA1 Demand Management and Planning is guided by California Water Code (CWC) Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. The Joint Exercise of Powers Agreement establishing the SVBGSA includes power to establish and administer projects and programs for the benefit of the Basin [Subbasin]. Imposition of pumping allocations and controls requires a supermajority plus vote of the SVBGSA Board of Directors.

9.4.1.6 Estimated Cost

Costs for development and activation of DM measures vary based on the measure.

Direct costs to the administering agency (e.g., SVBGSA or another agency) and water users, as well as regional economic implications for the broader Monterey County region were assessed qualitatively in the Framework. Some relative quantitative estimates are provided but could change based on how a measure is implemented.

Table 9-3 summarizes relative costs for each DM measure. Costs are classified as high, moderate, or low, corresponding to agency level of effort (e.g., staff time, resources, and measurement) and direct costs to water users (e.g., capital costs, O&M, other fees, and impacts to farming operations or households). Regional economic impacts (community costs) are described as positive, negative, or mixed, corresponding to the effect of the measure on regional employment, communities, and economic activity (gross domestic product, or GDP).

Table 9-3. Summary of DM Measure Costs

AGRICULTURAL MEASURES						
Cost Category	On-Farm Efficiency	Land Repurposing	Fallow Bank	Pumping Limits	DM Fee	Penalty Charges
Agency Costs						
Development	<i>low</i>	<i>high</i>	<i>moderate</i>	<i>high</i>	<i>low</i>	<i>low</i>
Administration	<i>low</i>	<i>moderate</i>	<i>moderate</i>	<i>high</i>	<i>low</i>	<i>low</i>
Measurement	<i>low</i>	<i>low</i>	<i>moderate</i>	<i>moderate</i>	<i>moderate</i>	<i>low</i>
Incentive Payments	<i>none</i>	<i>moderate</i>	<i>moderate</i>	<i>none</i>	<i>none</i>	<i>none</i>
Water User Costs						
Capital and O&M	<i>moderate</i>	<i>moderate</i>	<i>low</i>	<i>low</i>	<i>low</i>	<i>low</i>
Rates/Fees	<i>low</i>	<i>moderate</i>	<i>moderate</i>	<i>low</i>	<i>N/A</i>	<i>N/A</i>
Farm/Household Impacts	<i>low</i>	<i>low</i>	<i>moderate</i>	<i>moderate</i>	<i>moderate</i>	<i>low</i>
Community Costs						
GDP	<i>mixed</i>	<i>mixed</i>	<i>negative</i>	<i>negative</i>	<i>negative</i>	<i>N/A</i>
Employment	<i>mixed</i>	<i>mixed</i>	<i>negative</i>	<i>negative</i>	<i>negative</i>	<i>N/A</i>
Community Costs	<i>none</i>	<i>mixed</i>	<i>negative</i>	<i>negative</i>	<i>negative</i>	<i>N/A</i>
Stages Assessment	<i>low</i>	<i>moderate</i>	<i>moderate</i>	<i>high</i>	<i>moderate</i>	<i>moderate</i>
DOMESTIC MEASURES						
Cost Category	Education and Outreach	Incentivized Efficiency	Mandatory Efficiency		Pricing Mechanisms	
Agency Costs						
Development	<i>low</i>	<i>moderate</i>	<i>moderate</i>		<i>low</i>	
Administration	<i>low</i>	<i>moderate</i>	<i>moderate</i>		<i>low</i>	
Measurement	<i>moderate</i>	<i>low</i>	<i>low</i>		<i>low</i>	
Direct Payments	<i>moderate</i>	<i>high</i>	<i>N/A</i>		<i>none</i>	
Water User Costs						
Capital and O&M	<i>low</i>	<i>low</i>	<i>moderate</i>		<i>low</i>	
Rates/Fees	<i>low</i>	<i>low</i>	<i>low</i>		<i>N/A</i>	
Farm/Household Impacts	<i>low</i>	<i>low</i>	<i>moderate</i>		<i>moderate</i>	
Community Costs						
GDP	<i>N/A</i>	<i>positive</i>	<i>positive</i>		<i>negative</i>	
Employment	<i>N/A</i>	<i>positive</i>	<i>positive</i>		<i>negative</i>	
Community Costs	<i>N/A</i>	<i>positive</i>	<i>positive</i>		<i>negative</i>	
Stages Assessment	<i>low</i>	<i>low</i>	<i>high</i>		<i>moderate</i>	

9.4.1.7 Public Noticing

As part of the approval of DM measures in the Subbasin, a public notice process will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on it. Development of DM measures will occur at public meetings of the SVBGSA Board and committees, and public noticing will be conducted in accordance with the Brown Act. SVBGSA will share information about the project and opportunities to comment on its website and in newsletters.

The general steps in the public notice process will include GSA staff bringing an assessment of the need for DM to the SVBGSA Board in a publicly noticed meeting. This assessment will include:

- A description of the undesirable result(s) that may occur if action is not taken
- A description of potential DM measures
- For the development of any specific DM measure, GSA staff will bring to the SVBGSA Board in a publicly noticed meeting:
 - An estimated cost and schedule for the proposed management action
 - Any alternatives to the proposed management action
- The SVBGSA Board will notify stakeholders in the subbasin or area of the proposed DM measure and allow at least 30 days for public input to the SVBGSA Board.
- After the 30-day public review period, the SVBGSA Board will vote whether to approve the implementation of the management action and notify the public if approved via an announcement on the SVBGSA website and mailing lists.

Mandatory measures in the form of an ordinance or regulation, such as the imposition of pumping allocations and controls, may also require CEQA review and this process will follow public noticing requirements.

9.4.2 MA2: Fallowing, Fallow Bank, Agricultural Land Retirement, and Multi-Benefit Land Repurposing

This management action is a revised version of the Agricultural Land and Pumping Allowance Retirement Management Action in the original GSP to clarify that this action may be undertaken with or without pumping allocations. To reduce groundwater extraction temporarily or permanently, this management action includes 4 actions that could be implemented on an as-needed basis to reduce irrigated land. These actions provide options for voluntary fallowing, land retirement or land repurposing that can be targeted to specific locations that have declining

groundwater elevations or recharge potential, such as floodplains. Water quality and access to drinking water wells will also be considered when deciding where to incentivize these actions.

The following could be included under an overarching program, and could be implemented independently:

- **Rotational fallowing:** Participating growers/landowners fallow some percentage of land or fallow on a rotating basis. This could be modified to include partial fallowing, such as growing fewer crops per year instead of completely fallowing land.
- **Fallow bank:** Landowners/growers in a specific area contribute to a fallow bank and anybody participating in the program can voluntarily fallow land and draw against the bank to offset the lost income. The specific design of a fallow bank will be developed during GSP implementation, including options such as exempting growers from rotational fallowing if they contribute a certain amount of money to the fallow bank.
- **Agricultural land retirement:** Interested landowners retire agricultural land or receive payments to retire agricultural land, effectively reducing the amount of groundwater used in the Subbasin. The specific design of a payment system will be developed during GSP implementation.
- **Multi-benefit Land Repurposing (MLRP):** Interested landowners retire agricultural land, effectively reducing the amount of groundwater used in the Subbasin and the land is also repurposed to another multi-benefit use. Multi-benefit project types include floodplain restoration, recharge basins, treatments wetlands, parks/open space and others depending on community interest.

This management action could work together with mandatory DM measures. For example, if stakeholders develop pumping allocations into a water market, payments for this management action could be developed as a part of the market.

9.4.2.1 Relevant Measurable Objectives

The main measurable objectives benefiting from fallowing, land retirement, or land repurposing include:

- **Groundwater levels measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.

- **Groundwater storage measurable objective.** Reducing pumping will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.
- **ISW measurable objective.** If pumping reductions occur near locations of ISW, it may result in higher shallow groundwater levels in ISW monitoring wells.

9.4.2.2 Expected Benefits and Evaluation of Benefits

The primary benefits expected for this management action are to reduce pumping and raise groundwater elevations. Quantification of the benefits will be assessed as part of evaluation of specific measures. This management action is costed for saving 1,000 AF/yr; however, it could be scaled to any size. Because it is unknown how many landowners will willingly enter these types of programs, it is difficult to quantify the expected benefits at this time.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific programs.

9.4.2.3 Circumstances for Implementation

Fallowing, agricultural land retirement, and land repurposing – a priority PMA in the Langley Subbasin – relies on willing participants, be it for participation or land sale. The Salinas Valley MLRP is an ongoing action, and other actions are contingency actions to be activated as needed. The Salinas Valley MLRP has been under development during the first phase of GSP implementation with Department of Conservation grant funding and in partnership with the California Marine Sanctuary Foundation, Central Coast Wetlands Group and the Greater Monterey County RMWG. Developing 1 or more of these programs further may be prioritized as a voluntary demand management measure to achieve reductions in groundwater extractions as needed and guided by the DM Framework and assessments of DM stages and triggers.

9.4.2.4 Permitting and Regulatory Process

While no permitting or regulatory processes are necessary for buying land or securing agreements with landowners for fallowing or land retirement, the SVBGSA will secure and record as appropriate the necessary agreements or deed restrictions to implement the management action. Depending on the type of repurposing project, permits may be required for some restoration activities.

9.4.2.5 Implementation Schedule

In 2022, the Salinas Valley MLRP project partners received a grant to begin the development and implementation of land repurposing. The grant concludes in 2027 and along with several parcels being repurposed, will include a MLRP. The Plan can be refined as the cost, benefits, and Program interest are further assessed.

The DM Framework short-term triggers will be evaluated annually, and long-term stages will be assessed at least every 5 years for subbasins that have not already been determined to be in Stage 3 or Stage 4 based on long-term conditions. Evaluation of triggers can consider whether a DM measure is necessary if other projects are planned to improve groundwater conditions. The DM measure may be temporary based on the timeline for project implementation.

The first implementation step is to determine a feasible, equitable, and verifiable combination of measures that can achieve the target pumping reduction. Program development will begin by defining the baseline pumping period, geographic boundary, participating wells and users, and the accounting metric.

Fallowing and agricultural land use retirement will be implemented as needed.

9.4.2.6 Legal Authority

Legal authority for the GSA to implement PMAs is guided in CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. Authorities related MA2: Fallowing, Fallow Bank, Agricultural Land Retirement, and MLRP are identified in §10725.4, §10726.2 and §10726.4. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

9.4.2.7 Estimated Cost

The cost for voluntary fallowing, land retirement and land repurposing depends on extent, duration, and management such as annual fallow banks or more permanent land retirement. There are regional economic impacts from decreases in farming acreage such as losses in income and jobs. There are also project-level economic impacts where the losses in net returns of farming activities of the growers are directly affected. Table 9-4 summarizes an example of the direct economic cost of annual temporary land fallowing under example 10% and 20% reductions in applied water use. The results represent direct economic costs associated with fallow banking with temporary fallowing and also permanent agricultural land retirement (Table 9-5). These estimates are for the entire Salinas Valley and reflect the changes in returns to

management, risk, and non-cash capital overhead (ERA Economics, 2026a). The cost estimates for permanent fallowing assumes that the land is idle (repurposing cost not included and no applied irrigation water) and that the land is purchased outright. The cost estimates reflect the expected range of costs to compensate the landowner for the market value of the land in irrigated crop production and would ultimately be dependent on the actual property.

Table 9-4. Direct Cost of Temporary Land Fallowing

Subbasin	10% Reduction Range		20% Reduction Range	
180/400	\$1,750	\$2,100	\$2,150	\$2,600
Eastside	\$1,500	\$1,800	\$1,800	\$2,150
Forebay	\$1,500	\$1,750	\$1,800	\$2,050
Upper Valley	\$1,400	\$2,150	\$1,550	\$2,400
Langley	\$1,350	\$1,550	\$1,650	\$1,850

(\$/AF of Applied Water)

Table 9-5. Direct Cost Permanent Land Fallowing

Subbasin	Land Value (\$/acre)		Applied Water (AF)		Direct Cost (\$/AF)	
	Range		Range		Range	
180/400	\$38,000	\$64,000	1.92	2.06	\$645	\$1,010
Eastside	\$43,000	\$55,000	2.08	2.36	\$670	\$760
Forebay	\$36,000	\$55,000	2.36	3.06	\$500	\$585
Upper Valley	\$35,000	\$55,000	2.52	3.6	\$450	\$500

(\$/AF of Applied Water)

9.4.2.8 Public Noticing

As part of the approval of Fallowing, Fallow Bank, Agricultural Land Retirement, and MLRP programs, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment. SVBGSA will share information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the programs. Development of the program will occur at public meetings of the SVBGSA Board and committees, and public notice will be conducted in accordance with the Brown Act.

The general steps in the public notice process for approval of the program will include SVBGSA staff bringing the proposed program to the SVBGSA Board in a publicly noticed meeting. SVBGSA will notify stakeholders in the subbasin or area of the proposed program and allow at least 30 days for public input to the SVBGSA Board. After the 30-day public review period, the SVBGSA Board will vote whether to approve the implementation of the management action and notify the public if approved via announcement on the SVBGSA website and mailing lists.

All appropriate documentation for any agricultural land retirement achieved through a land sale, agreement or deed restriction will be recorded with the County of Monterey Assessor – Clerk – Recorder’s Office. All agricultural land retirement by any means through the GSA will be recorded and publicly accessible.

9.4.3 MA3: Conservation and Agricultural BMPs

MA3 would be a program to incentivize and/or assist with conservation and agricultural BMPs to reduce groundwater pumping. It may also improve groundwater quality. SVBGSA acknowledges that BMPs are being developed as part of Ag Order 4.0 and will work to complement and not replicate those efforts. Potential practices that will be part of a program include:

ET Data. ET data indicate crops’ theoretical water needs as determined by crop type and weather conditions. Some ET datasets are 100% automated, relying on satellite imagery and weather stations to provide affordable data for large areas of land. Other ET datasets are generated automatically but then subject to expert verification, resulting in higher quality data at higher cost. The incorporation of ET data with soil moisture sensors, soil nutrient data, and flow meter data can help inform more efficient irrigation practices. The GSA could support the development and utilization of these tools through securing funding or coordinating with existing local agricultural extension specialists who conduct research and provide technical assistance to growers.

Education and Outreach. SVBGSA will support existing local agricultural extension specialists with their education and outreach on BMPs that would increase water conservation and decrease pumping. Efforts will promote irrigation practices to reduce water use. Efforts could also include supporting practices to increase water retention such as compost application and use of cover crops. These BMPs could also support compliance with Ag Order regulations applicable to groundwater. Effective implementation of BMPs will require buy-in from growers. SVBGSA will work with local agricultural extension specialists and growers to understand preferred BMPs and those that could yield the greatest water savings. SVBGSA could partner with existing organizations or technical assistance providers to help growers identify which BMPs they could pursue and analyze the potential savings from their implementation. Technical workshops and professional referrals can be utilized with partners to accomplish outreach effectively and efficiently with growers.

9.4.3.1 Relevant Measurable Objectives

The main measurable objectives benefiting from outreach and education include:

- **Groundwater levels measurable objective.** Promoting pumping reductions will result in higher groundwater levels than otherwise would occur.

- **Seawater intrusion measurable objective.** Promoting pumping reductions will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Promoting pumping reductions will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.

9.4.3.2 Expected Benefits and Evaluation of Benefits

The primary benefit of implementing this management action is to provide the latest technologies and opportunities to modify agricultural practices that would allow farmers to reduce pumping needs but realize the same crop yields. This program could also be a mechanism for grant opportunities, funded through the SVBGSA to identify pilot programs and other innovative technological advancements that could provide an overall groundwater basin benefit.

Improving ET data allows for improved modeling and sets more accurate expectations for climate change impacts on crops. This in turn is translated into expected water demand for the crops. With more accurate data and information, pumpers can work with the SVBGSA to improve water extractions and potentially keep more water in the ground. This would result in protected groundwater elevations and storage. Furthermore, education and outreach activities can help inform farmers about innovative technology that would help maximize irrigation efficiency. This would also improve groundwater elevations and storage. Benefits cannot be quantified until specific BMPs are identified and promoted.

Quantification of the benefits will be assessed as part of evaluation of specific measures. Because it is unknown how many landowners will willingly enter these types of programs, it is difficult to quantify the expected benefits at this time.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific programs.

9.4.3.3 Circumstances for Implementation

Conservation and Agricultural BMPs is a priority PMA in the Langley Subbasin and will be implemented throughout GSP implementation. The circumstance for implementation is for willing farmers to participate in an education and outreach program and to work with the SVBGSA to identify opportunities. No other triggers are necessary or required.

9.4.3.4 Permitting and Regulatory Process

No permitting or regulatory processes are necessary for an education and outreach program.

9.4.3.5 Implementation Schedule

This management action was initiated during the first phase of GSP implementation through development of an Ag BMP website with other agency partners. This program will be ongoing.

9.4.3.6 Legal Authority

Legal authority for GSA to implement PMAs is guided in CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

9.4.3.7 Estimated Cost

The Conservation and Agricultural BMP activities would be conducted as an ongoing program funded annually. This would cost approximately \$100,000 to promote opportunities for education seminars, grant writing tasks, demonstration projects, and other activities focused on BMPs in the agricultural industry.

9.4.3.8 Public Noticing

Public noticing about Conservation and Agricultural BMP programs will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the program development. Development of the program will occur at public meetings of the SVBGSA Board and committees, and public noticing will be conducted in accordance with the Brown Act. SVBGSA will share information about the programs and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project. The SVBGSA will endeavor to have the broadest possible public educational and outreach to inform stakeholders, interested parties, landowners, and agricultural interests of conservation and agricultural BMPs.

9.4.4 MA4: Rural Residential Demand Management Water Use Efficiencies

SVBGSA recognizes that DM should include opportunities for all groundwater user groups to improve water use efficiency. Rural residential users, many of whom rely on individual domestic wells or small water systems, often do not have access to the services and incentives offered by

urban water suppliers. Although this sector represents a relatively small share of total groundwater pumping, targeted efficiency measures can reduce localized demand, lower household costs, and improve resilience to drought and groundwater level declines. Building on SVBGSA's Water Efficiency Pilot Program conducted during the first phase of GSP implementation, this management action establishes an ongoing, voluntary, and incentive-based program focused on rural residential users.

This management action will provide a near-term, equitable, and relatively low-cost complement to the other priority PMAs by expanding voluntary water use efficiency services and incentives for these users. The initial program will build on lessons from SVBGSA's Water Efficiency Pilot Program and existing regional water efficiency programs. It will focus on rural households and small systems that are not otherwise well served and supported.

Potential measures include home water-use assessments, leak detection and repair, direct installation or rebates for efficient fixtures and appliances, outdoor irrigation audits and equipment, turf or high-water-use landscape replacement, and technical assistance. Program design will prioritize measures with verifiable savings and will address barriers faced by low-income households, renters, non-English-speaking residents.

Because many private wells and small systems do not have readily available customer-level use records, SVBGSA will consider a tiered measurement approach. Participation and installation will be documented for all measures; standardized or deemed savings may be used for well-established devices; and pre- and post-installation metering or monitoring could be used for higher-cost measures.

9.4.4.1 Relevant Measurable Objectives

The main measurable objectives benefiting from rural residential DM include:

- **Groundwater levels measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Reducing pumping will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.

9.4.4.2 Expected Benefits and Evaluation of Benefits

No uniform mandatory household reduction or fixed percentage target is proposed at this stage. A quantifiable program target will be established after a user inventory, baseline, and pilot evaluation are completed. Expected benefits include reduced local pumping, lower household water and energy costs, greater drought resilience, and reduced vulnerability of domestic wells to declining groundwater levels.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific programs. Quantification of the benefits will be assessed as part of evaluation of the rural residential DM programs.

9.4.4.3 Circumstances for Implementation

During the first phase of GSP implementation, SVBGSA conducted a water use efficiency pilot program for rural residents. Rural Residential DM Water Use Efficiencies is a priority PMA in the Langley Subbasin. Further water savings will depend on the willingness of rural residents to participate in the program. It will be evaluated annually and adjusted by changing outreach methods, eligible measures, incentive levels, and priority areas.

9.4.4.4 Permitting and Regulatory Process

No permitting or regulatory processes are necessary to develop a rural residential demand management water use efficiency program.

9.4.4.5 Implementation Schedule

Building on the initial pilot phase, continued development of the program is planned over approximately 3 years, and implementation will be ongoing thereafter.

9.4.4.6 Legal Authority

Legal authority for GSA to implement PMAs is guided by CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. The Joint Exercise of Powers Agreement establishing the SVBGSA

includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

9.4.4.7 Estimated Cost

Rural residential demand management and water use efficiency activities will be conducted as an ongoing Valley-wide program funded annually. Program costs will range from year to year, with a range for implementation in all rural residential areas within SVBGSA's jurisdiction. An estimated range of \$25,000 to \$50,000 will be needed for program development, outreach, and initial implementation. Additional funding may be needed for ongoing implementation and rebates depending on the scale at which the program is implemented.

Presenting costs on a \$/AF basis allows direct comparison across very different types of conservation investments, ranging from fixture retrofits to more capital-intensive outdoor landscape conversions. Table 9-6 summarizes typical unit costs for domestic water use efficiency measures (ERA Economics, 2026a). The values are planning-level ranges compiled from published California conservation studies and are intended to illustrate relative costs, not define program-specific costs for any 1 agency or service area. Actual costs will vary depending on local program design, rebate levels, customer participation rates, baseline water use, and other factors.

Table 9-6. Domestic Water Conservation Cost Summary

Conservation Practice	Typical \$/AF Range
Leak detection and repairs	\$100 - \$500
Faucet aerators / showerheads	\$200 - \$700
High-efficiency toilets	\$300 - \$800
High-efficiency clothes washers	\$400 - \$1,000
Smart metering / billing improvements	\$500 - \$1,500
Public outreach and education	\$300 - \$1,500
Smart irrigation controllers	\$800 - \$1,800
Irrigation system upgrades (drip, etc.)	\$1,000 - \$2,500
Turf replacement / landscape conversion	\$1,500 - \$3,500+

9.4.4.8 Public Noticing

Public noticing about Conservation and Agricultural BMP programs will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the program development. Development of the program will occur at public meetings of the SVBGSA Board and committees, and public notice will be conducted in accordance with the Brown Act. SVBGSA will notify the public about the program at public meetings and on

SVBGSA website and mailing lists. The SVBGSA will endeavor to have the broadest possible public educational and outreach through ongoing communications and engagement activities targeting rural residents.

9.4.5 MA5: Rural Residential Well Mitigation Program

The Well Mitigation Program is a management action intended to assist rural residential drinking water users if the PMAs implemented under this GSP are not able to maintain access to reliable domestic water supplies. The program is not intended to replace or substitute for the implementation of groundwater sustainability PMAs. Rather, it provides a framework for responding to localized impacts that may occur despite broader efforts to improve groundwater conditions.

The primary objective of the Rural Residential Well Mitigation Program is to ensure that these domestic users continue to have access to safe and reliable drinking water while SVBGSA works toward achieving and maintaining groundwater sustainability. It is not intended to solve existing water quality exceedances that are unrelated to groundwater management but could help document the need for mitigation for those instances. The program builds upon implementation activities already identified in this GSP, including monitoring network improvements, groundwater level tracking, well registration, dry well reporting and notification systems, demand management planning, groundwater recharge projects, and coordination with agencies and organizations involved in drinking water assistance.

This MA focuses on rural residential users that rely on domestic wells for individual households, small local or small state water systems (2-15 connections) and may have limited ability to respond to declining groundwater levels. Mitigation measures may include short-term emergency assistance, intermediate-term solutions, and permanent measures, depending on the nature and severity of the groundwater conditions. It will be developed to complement existing support programs, such as the SWRCB SAFER program and County of Monterey Drought Resilience Plan, and avoid SMC undesirable results.

Potential mitigation measures may include:

- Providing temporary water supplies, such as bottled water or water storage tanks.
- Facilitating water hauling services.
- Lowering well pumps, where appropriate.
- Assessing opportunities to connect affected users to a nearby public water system or consolidate with other water systems, where feasible.
- Installing point-of-entry or point-of-use treatment systems if needed to address water quality concerns associated with groundwater conditions.

- Coordinating with local, state, federal, and nonprofit assistance programs that provide drinking water support.
- Providing technical assistance to affected well owners, including support for deepening, modifying, repairing, or replacing existing domestic wells, where no alternative supplies are available and these types of well improvements are determined to be necessary appropriate.

SVBGSA will coordinate with the County of Monterey, water system operators, nonprofit organizations, and other partners to leverage existing programs and funding sources whenever possible before developing new mitigation mechanisms.

9.4.5.1 Relevant Measurable Objectives

The main measurable objectives benefiting from the Rural Residential Well Mitigation Program include:

- **Groundwater level measurable objective.** The program provides a mechanism to address impacts to rural residential users if groundwater level declines are affecting domestic well reliability. It is not intended to raise groundwater levels to measurable objectives, but rather to mitigate the effects of low groundwater levels.
- **Seawater intrusion measurable objective.** The program provides a mechanism to address impacts to rural residential users if seawater intrusion is affecting domestic well reliability. It is not intended to alter groundwater conditions, but rather to mitigate the effects of seawater intrusion.
- **Groundwater quality measurable objective.** The program provides a mechanism to address drinking water quality concerns if groundwater quality undesirable results affect domestic well water quality. It is not intended to improve groundwater quality, but rather to help mitigate negative effects on rural residential users.

9.4.5.2 Expected Benefits and Evaluation of Benefits

The primary benefit of this management action is maintaining access to drinking water for rural residential users while longer-term groundwater sustainability PMAs are implemented.

This management action does not directly improve groundwater elevations, seawater intrusion, groundwater quality, or land subsidence. Instead, it mitigates impacts that may occur if groundwater conditions affect domestic water supplies before sustainability goals are achieved.

Program effectiveness will be evaluated through:

- GMP tracking of reported dry or impaired domestic wells.

- Monitoring the number and type of mitigation actions implemented.
- Evaluating response times for addressing reported impacts.
- Reviewing trends in domestic well impacts relative to groundwater conditions.

Monitoring information described in Chapter 7, together with information collected through the Dry Well Notification System and outreach to well owners, will be used to evaluate program performance.

9.4.5.3 Circumstances for Implementation

Rural Residential Well Mitigation is a contingency PMA. SVBGSA will consider implementing it if monitoring, reporting, and/or investigation indicate that groundwater conditions associated with failing to avoid undesirable results are affecting rural drinking water users. Initial program development steps will be undertaken in this next phase of GSP development, and prioritized for implementation when and where conditions warrant it.

Indicators for the need for mitigation may include:

- Documented loss of domestic well production.
- Significant reduction in domestic well yield that affects household water access
- Water quality degradation that is directly attributable to extraction or a GSA action that limits the usability of a domestic well
- Other impacts identified through monitoring, reporting, or site-specific investigation

Before implementing mitigation measures, SVBGSA will evaluate available information to determine whether the impact is reasonably related to groundwater conditions that the GSP is intended to address and has occurred post-2015.

9.4.5.4 Permitting and Regulatory Process

Development of the Well Mitigation Program does not require permits. Individual mitigation actions may require permits or approvals depending on the measure selected. For example, domestic well replacement or modification may require Monterey County well permits. Connections to existing water systems would be subject to the requirements of the receiving water system and applicable regulatory agencies.

9.4.5.5 Implementation Schedule

Development of the Rural Residential Well Mitigation Program will take 2 to 3 years. Key steps include:

- Conducting initial feasibility and a high-level cost estimate.
- Establishing coordination protocols with partner agencies and organizations.
- Developing program criteria and response procedures.
- Identifying available funding sources and assistance programs.
- Developing procedures for evaluating reported impacts.
- Implementing mitigation measures as needed.

The Program will be refined as needed throughout GSP implementation.

9.4.5.6 Legal Authority

Legal authority for GSA to implement PMAs is guided by California Water Code (CWC) Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

The Well Mitigation Program will be implemented in coordination with agencies and organizations that have additional authorities and responsibilities related to drinking water supplies and domestic wells. Actions involving well construction, repair, or replacement will be performed in accordance with applicable state and local requirements.

9.4.5.7 Estimated Cost

Costs will depend on the number and severity of domestic well impacts and the mitigation measures implemented.

Initial program development costs are anticipated to be relatively low and primarily associated with program administration, coordination, outreach, planning and evaluation. Costs will vary substantially depending on whether assistance involves temporary water supplies, technical assistance, water system connections, or other measures.

Funding strategies will be evaluated during program development and may include coordination with existing local, state, federal, or third-party funding sources.

9.4.5.8 Public Noticing

As part of the approval of the Rural Residential Well Mitigation program, a public notice process will be necessary to ensure that all groundwater users and other stakeholders have the

opportunity to comment. Development of the Rural Residential Well Mitigation program will occur at public meetings of the SVBGSA Board and committees, and public noticing will be conducted in accordance with the Brown Act. SVBGSA will share information about the project and opportunities to comment on its website and in newsletters. Stakeholder engagement will occur throughout the process and will include public workshops, Advisory Committee or subbasin committee meetings, meetings with affected water systems, agricultural representatives, and other interested parties.

The general steps in the public notice process will include GSA staff bringing the proposed program to the SVBGSA Board in a publicly noticed meeting. This will include an estimated cost and schedule for implementation. The SVBGSA Board will notify stakeholders in the subbasin or area of the proposed program and allow at least 30 days for public input to the SVBGSA Board. After the 30-day public review period, the SVBGSA Board will vote whether to approve the implementation of the management action and notify the public if approved via announcement on the SVBGSA website and mailing lists.

Once developed, SVBGSA will conduct ongoing outreach regarding the Rural Residential Well Mitigation Program through its website, mailing lists, stakeholder meetings, and coordination with local agencies and community organizations. Information on program eligibility, reporting procedures, available assistance, and program updates will be made publicly available. Annual reporting on program implementation will be incorporated into GSP implementation and adaptive management activities, as appropriate.

9.5 Projects

9.5.1 P1: Decentralized Residential In-Lieu Recharge Projects

This project is a set of initiatives that incentivize homeowners to install decentralized in lieu recharge projects, such as rainwater harvesting, graywater reuse, and recharge features on their properties. Harvested rainwater can be used for residential landscaping and domestic animal water purposes and reduce groundwater pumping, thereby functioning as in-lieu recharge. The 2 main types of in-lieu recharge are rooftop rainwater harvesting and graywater reuse. Decentralized rainwater projects capture at the residential scale, or graywater use from a laundry-to-landscape system, can assist property owners with outdoor landscaping watering needs, which is typically a significant portion of an individual household's water use. By substituting rainwater or graywater for outdoor irrigation, less groundwater will be pumped and the Subbasin benefits from in-lieu recharge. Water used for landscaping is mostly lost to ET and not available to be returned to the groundwater system. Alternatively, rain gardens designed to capture rainwater can use rainwater instead of pumped groundwater.

This project will engage property owners through outreach, help identify opportunities for residential-scale rainwater harvesting or graywater reuse systems. This project primarily includes workshops to do outreach and education for homeowners but could also help install or incentivize them. For example, it could also include the development of a fund to provide financial incentives to help bring down individual costs associated with rainwater harvesting or graywater systems. This could also be expanded to include other residential-scale conservation efforts, such as xeriscaping or lawn buy-back efforts. This project could be a part of the Water Efficiency Program (WEP).

Rain barrels and cisterns

Residential rainwater harvesting in rain barrels or cisterns can provide water for outdoor irrigation, and offset the pumping, treatment of, and delivery of groundwater. Appropriately sized cisterns for 1,500-square foot rooftops range from approximately 600 gallons up to 5,000 gallons. Since more of the rain falls in the winter months, having enough storage to last over the summer months is an important factor in sizing cisterns for outdoor irrigation purposes. Use of rainwater for landscaping typically does not require pumping, treatment, or complex delivery systems. Rainwater harvesting at the residential level could be further enhanced with drip-irrigation systems and timers included with the cistern installations.

Rain Gardens

Rainwater could be captured in small, residential rain gardens to enhance use of rainwater to irrigate landscapes rather than groundwater. Rain gardens are vegetated basins installed at residences to capture and detain rainfall runoff while providing an aesthetic landscaping benefit to landowners. The rain garden temporarily holds water, thereby allowing it to infiltrate in the soil and provide moisture for plant roots. Rain gardens include grassed swales, rock lined swales (dry creek beds), and bioswales. Bioswales are typically sized for larger catchments than residential scale. Grassed and rock-lined swales, which are shallow channels designed to convey, filter, and infiltrate runoff, are more often used at the residential scale.

Rain gardens are installed at natural low points on the property and are typically planted with native, water tolerant plants that are able to thrive in saturated soil conditions. They can be installed in a variety of soils, from clays to sands, but are best suited for soils with high infiltration capacities.

Graywater Systems

Graywater reuse systems can provide additional residential in-lieu water use. These systems direct gently used water from showers or laundry onto landscapes to water plants instead of extracted groundwater. For example, Laundry to Landscape systems are often installed with dual drainage plumbing that enables the water to be directed to either the landscape or wastewater

system. Monterey County has developed and approved its own set of graywater guidelines for discharging graywater onto landscapes.

9.5.1.1 Relevant Measurable Objectives

Relevant measurable objectives benefiting from this project include:

- **Groundwater levels measurable objective.** Rainwater harvesting, rain gardens, and graywater reuse will increase rainwater used for irrigation in lieu of pumped groundwater, thereby decreasing groundwater extraction. Reducing pumping will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Reducing pumping will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.

9.5.1.2 Expected Benefits and Evaluation of Benefits

The primary benefit from this project is increased use of rainwater in lieu of groundwater. The Langley Subbasin is generally characterized by low density or rural density development. The Subbasin covers an area of approximately 17,600 acres. A very simplified calculation of potential benefits is applied to the number of dwellings based on a parcel analysis: there are roughly 1,500 square feet per rooftop and 19 inches of rain per year, which yields approximately 62,200,000 gallons or 190 AF/yr of water potentially available for capture and use. If 75 households implemented rooftop rainwater harvesting, this would yield approximately 4 AF/yr of in-lieu recharge. However, this quantity may be less if rain barrels fill up only once per year in the rainy season. Expected benefits resulting from rain garden installations would be in addition to those described above for rooftop rainwater harvesting. More detailed analyses of land cover and runoff generation are required for refining the evaluation of both rooftop rainwater harvesting systems and rain gardens. During the implementation period, these numbers will be refined that will demonstrate the variation between dry, wet, and normal years. Additionally, these numbers will be refined as more residents implement rainwater capture infrastructure over time.

Increased capture of rainwater will potentially increase groundwater storage and groundwater elevations by reducing the amount of residential demand for water for outdoor irrigation. This in-lieu use will yield dividends over a longer period as more residents install rainwater harvesting features, and subsequently use less groundwater for landscaping purposes.

Implementing a laundry-to-landscape program has an expected annual benefit of 0.94 AF/yr if 75 households in this Subbasin installed systems. This is based on an expected water availability of approximately 4,100 gallons per household per April through October season. These values come from assuming a 4-person household, a high efficiency washer producing 15 gallons per load, and that laundry to landscape water replaces all irrigation water used. Since water for outdoor irrigation takes up a large portion of a household's water use, this would present a significant in-lieu water savings during the hottest and driest months. If the laundry to landscape system was used year-round, the benefits would be higher.

Benefits will be measured using the monitoring networks described in Chapter 7. Groundwater levels will be measured with a network of wells that is monitored by MCWRA. A direct correlation between groundwater recharge and changes in groundwater levels is unlikely to be observed unless many individual projects are implemented in the same area; however, the program will ask workshop participants about the projects they have implemented and will use that information to estimate reduced extraction.

9.5.1.3 Circumstances for Implementation

Decentralized residential in-lieu recharge projects is a contingency PMA. It could be considered as an additional set of activities under the WEP. Agencies and organizations in the region are already engaged in efforts to promote rainwater harvesting, rain gardens, and graywater reuse systems, and their efforts could be leveraged to expand these projects throughout the Subbasin.

9.5.1.4 Permitting and Regulatory Process

Individuals implementing residential recharge projects are responsible for any required permitting. Due to the small-scale and decentralized nature of these projects, it is not anticipated that these projects are of a magnitude capable of having a demonstrable impact on the environment that would require a California Environmental Quality Assurance (CEQA) review process; however, an applicable permit process will make that determination. Local permits will be required.

9.5.1.5 Implementation Schedule

If this project is selected, it is anticipated to take 1-2 years for initial program development. A more refined schedule will be developed if selected.

9.5.1.6 Legal Authority

No legal authority is needed to promote decentralized residential in-lieu recharge projects.

9.5.1.7 Estimated Cost

The cost for this project was estimated for the 2022 GSP. The success of this project depends on homeowner participation. An important first step is education and outreach. This project includes the GSA hosting 5 workshops on rainwater harvesting and 5 workshops on graywater reuse for a total cost of \$50,000.

Construction costs will be the responsibility of the homeowners with possible incentives from the GSA. A complete rainwater harvesting system for a typical single-family home will generally cost between \$4,000 and \$10,000, with the largest cost being the storage tank (WAC, 2021). Many of the other costs are the gutters, downspouts, and irrigation distribution systems. At \$10,000 for a 5,000-gallon tank and respective system, that equates to an annual cost of \$800 and a unit cost of \$15,000/AF.

For laundry-to-landscape systems, the costs include dual drainage plumbing, labor, materials, and the irrigation distribution system. These costs are shown in Table 9-7. If each household system costs \$2,100 and yields 4,100 gallons from April to October, this equates to an annual cost of \$200 and a unit cost of \$9,180/AF.

Table 9-7. Costs of a Laundry to Landscape System for 1 Household

Item	Cost
Dual drainage plumbing	\$500
2-3 hours of labor	\$400
Materials	\$200
Irrigation distribution system	\$1,000
Total	\$2,100

9.5.1.8 Public Noticing

If this contingency project is prioritized for further development, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will maintain information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.5.2 P2: Decentralized Stormwater Recharge

This project entails promoting the installation stormwater collection and recharge features in neighborhood locations downstream of typical flooding spots for the purposes of groundwater recharge. These projects are typically larger than the household-scale projects and have greater potential for the water to reach the local principal aquifer because as more water is captured, it is better able to harness the power of gravity to saturate the subsurface all the way to the aquifer. Secondary benefits are potentially improving surface water quality and flood hazard mitigation.

Anticipated climate change may bring more frequent and extreme precipitation events to this subbasin. When rainfall is concentrated in a short time period rather than spread out, more stormwater runs off rather than infiltrates, which reduces recharge to the principal aquifer. Runoff flows out of the Subbasin, but recharge features can capture and recharge a portion of the stormwater. By using proactive stormwater diversion, collection, and infiltration management techniques, groundwater conditions can improve in this Subbasin.

For this project, SVBGSA will engage in outreach, identify opportunities for neighborhood-scale stormwater routing and collection features, and potentially establish a fund to provide financial incentives to encourage their installation in residential areas. For new urban developments, Monterey County has adopted Post-Construction Requirements that require projects to implement low impact development techniques to better enable water infiltration before it becomes runoff. SVBGSA's efforts could be done in conjunction with other rainwater and floodwater efforts scaled to and applied at different locations for a variety of benefits and recharge impacts.

These decentralized stormwater recharge projects include a range of types of applications, such as bioswales, small surface recharge basins, drywells, or to other specific capture structures for enhanced infiltration and recharge purposes. Site selection for any such application will partly depend on soil quality, subsurface stratigraphy, and surrounding groundwater quality. Subsurface lithology is an important factor in the Subbasin due to the presence of discontinuous and relatively impermeable hardpan intervals that likely prevent infiltrated stormwater from reaching the aquifer in localized areas, thus potentially reducing the overall benefit of a recharge project. Runoff can also be captured and used for irrigation in lieu of groundwater. Projects may require additional infrastructure and/or maintenance costs.

Bioswales

The routed stormwater could be collected in a series of swales, or into a small recharge basin, or a combination of both depending on land availability and permissions from landowners and neighborhood groups. The 3 primary types of swales are grassed swales, rock lined swales (dry creek beds), and bioswales. Vegetation in the swales slows stormwater, allows sediments to filter out, and can help remove nutrients. Bioswales are vegetated swales that use engineered media beneath the swale to reduce runoff volume and peak runoff rates. Bioswales have a greater capacity for water retention nutrient removal and pollutant removal.

Small Surface Recharge Basins

Stormwater could be diverted and captured in small, surface retention basins where it can infiltrate and provide decentralized, indirect recharge opportunities. These small basins can help reduce peak flooding on streets and prevent erosion or damage to the roadways from storms.

Soil analyses greatly influence the extent of groundwater recharge and where recharge projects would be most beneficial. Infiltration of precipitation into the subsurface is dependent on a number of factors such as texture, organic content, slope, root zone depth, and salinity. High slopes through much of the Subbasin increase run-off and decrease infiltration; however, the soils generally have high infiltration capacity, except in the southern part of the Subbasin where infiltration capacity of the soil is highly variable. Once infiltrated, precipitation water percolates downward to the aquifer. Subsurface percolation could be hindered by the presence of relatively impermeable hard pan intervals.

Dry Wells

Recharge basins can be coupled with dry wells that direct water into the subsurface, thus helping water infiltrate into the unsaturated region above the water table. Dry wells can also help circumvent locations with a lot of clay near the surface, or hardpan intervals in the subsurface, by providing screens in more permeable sediment intervals. Site-specific analyses would be required to properly design and install these features for maximum benefit to the regional aquifer.

In Lieu Reuse

Stormwater can also be routed for retention and reuse to irrigate common areas within residential communities, medians, parks, and large building landscaping. This functions as in-lieu recharge, as it reduces the amount of groundwater needed for irrigation.

9.5.2.1 Relevant Measurable Objectives

Relevant measurable objectives benefiting from this project include:

- **Groundwater elevation measurable objective.** Using decentralized stormwater projects will increase water that recharges the principal aquifer, or if used in lieu of pumped groundwater for irrigation, will decrease groundwater extraction. By pumping less water, it has a similar effect of adding water to the principal aquifer. Adding water into the principal aquifer through direct recharge or in-lieu use will raise groundwater elevations over time.
- **Groundwater storage measurable objective.** Adding water to the principal aquifer will ultimately have the effect of increasing groundwater in storage.
- **Seawater intrusion measurable objective.** Seawater intrusion is occurring in the adjacent 180/400 Subbasin where it has advanced inland to within a few miles of the Langley Subbasin. Increasing groundwater recharge will support the natural hydraulic gradient that pushes back against the intruding seawater.

9.5.2.2 Expected Benefits and Evaluation of Benefits

The primary benefit from this project is increased groundwater recharge. The Subbasin covers an area of approximately 17,600 acres, with multiple small drainages interspersed throughout the subbasin which generally drain southward toward the Salinas River or westward toward the coast. The number of small drainages is unknown, however if 5% of the acreage is utilized for stormwater capture, it would allow for 880 acres receiving roughly 19 inches of precipitation annually. This has the potential to generate 1,390 AF/yr of stormwater runoff to be routed and captured in small neighborhood bioswales, basins, drywells, or even sent directly to agricultural lands. If only 1% of the acreage of the Subbasin is utilized for stormwater capture, that would allow for 176 acres receiving roughly 19 inches of precipitation annually to generate 279 AF/yr of stormwater runoff to be routed and captured. During the implementation period, these numbers will be refined with flood studies that are more location specific and accurate; that will demonstrate the variation between dry, wet, and normal years. Additionally, these numbers will be refined as various neighborhoods implement stormwater capture infrastructure over time.

Increased storage of runoff will potentially increase groundwater elevations in the vicinity of the stormwater capture facilities. This could be seen as groundwater mounding. However, as more water is emplaced in the subsurface, more water will flow laterally, thereby expanding the zone of influence from each stormwater capture basin outward and raise groundwater elevations laterally. Additionally, water stored underground is not subject to ET in the same way water stored above ground is. This increases the return on investment by reducing recharge system losses. With these stormwater capture basins, proper maintenance can minimize recharge system losses and maximize potential infiltration and subsequent storage.

Benefits will be measured using the monitoring networks described in Chapter 7. Groundwater elevations will be measured with a network of wells that is monitored by MCWRA. A direct

correlation between stormwater recharge and changes in groundwater elevations may not be noticeable for smaller projects. Larger projects may include monitoring wells if they are not close enough to the existing monitoring network for the impacts to be measured. Various volumetric measurement methods may be installed along with either recharge basins or dry wells to assist in calculating increases to groundwater storage.

9.5.2.3 Circumstances for Implementation

Decentralized stormwater recharge projects is a contingency PMA. During initial phases of consideration, site-specific data would need to be obtained to confirm the local stratigraphy to better understand the potential for recharged water to remain in shallower subsurface layers versus reach the principal aquifer below any hardpan intervals. Agencies and organizations in the region are already engaged in efforts to promote stormwater recharge, and their efforts could be leveraged. Among other organizations, the Monterey County Public Works Department are both engaged in efforts to manage runoff and have set the stage for consideration integrated solutions of runoff and infiltration in these watersheds. Site specific analyses are required to determine the potential recharge benefit.

9.5.2.4 Permitting and Regulatory Process

This project will require a CEQA review process, which would likely result in either an EIR or a Mitigated Negative Declaration (the review could also result in a Negative Declaration or Notice of Exemption). Additionally, any project that coordinates with federal facilities or agencies may require NEPA documentation.

There will be a number of local, county and state permits, right of ways, and easements required depending on pipeline alignments, stream crossings, and project type.

9.5.2.5 Implementation Schedule

If this project is selected, it is anticipated to take approximately 5 years for planning, site selection, design, permitting and construction. A more refined schedule will be developed if selected.

9.5.2.6 Legal Authority

Legal authority for GSA to implement PMAs is guided by CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA has the powers and authorities “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. Legal authority for ES1: Eastside Floodplain Enhancement and Recharge is identified in SGMA §10726.2. The Joint Exercise of Powers Agreement establishing the

SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

9.5.2.7 Estimated Cost

The cost for this project was estimated for the 2022 GSP. construction cost for the decentralized stormwater recharge projects is unable to be estimated until specific projects are scoped. This project is designed as a program that encourages developers, municipalities, homeowners' associations, and landowners to install stormwater recharge projects and assists with initial planning costs. The program costs approximately \$150,000-\$200,000 for strategic outreach, assistance with site assessments, assessment of recharge potential, and help securing grant funds. This amount would fund cone penetration tests to assess recharge potential for 4 to 6 sites. If needed to increase implementation of stormwater recharge projects, SVBGSA could provide monetary incentives or fund and implement the projects themselves. Each site-specific project will have its own associated costs based on the level of complexity of the stormwater capture technique. These span from non-vegetated basin to capture and infiltrate stormwater to recharge basins coupled with dry wells. The project-specific construction costs will be estimated based on initial site assessments and feasibility studies.

9.5.2.8 Public Noticing

If this contingency project is prioritized for further development, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will maintain information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.5.3 P3: Managed Aquifer Recharge of Overland Flow

This program incentivizes development of groundwater recharge basins that recharge overland flow and stormwater runoff from the Gabilan Range before they reach streams and the Salinas River. This program is structured similar to the program instituted in Pajaro Valley, whereby

agricultural landowners dedicate a portion of their land to recharge ponds, and direct overland flood flows into the ponds. This could include some type of incentive for recharge basins that would be situated to collect runoff before it enters a local stream and allowed to infiltrate. It could also be combined with Project 2 and include multi-benefit projects along the floodplain to increase recharge capacity, since floodplains generally have high recharge.

This program will require additional analysis on actual available runoff from each of the watersheds. It assumes that the stormwater is not being diverted upstream; however, many of the mountain ranges have diversion operations already occurring upstream in the watershed. Rain gauges and studies will be required to determine the true estimate of water available from each subwatershed.

This project currently plans for 4 recharge basins, each with a potential recharge capacity of about 100 AF/yr. Their locations will be chosen based on site availability and suitability. The most suitable sites have clean soil and high recharge potential. Soil tests will guide site selection so that contaminants do not leach into groundwater and contaminate drinking water. Aquifer recharge potential is highest where there are areas of highly permeable soils, good connection to underlying aquifers (lack of hardpan intervals), and topography that directs surface runoff toward retention/catchment areas. The SVBGSA will investigate where recharge ponds would yield the greatest amount of groundwater recharge, combining data on soil permeability, stratigraphy, and land use to map areas of high potential recharge.

The program would reach out to landowners to increase awareness of the benefits of recharge basins and work with local stakeholders to identify lands with high recharge capacity. It could also work with interested landowners to identify sites, undertake potential site analyses with cone penetration tests (push tests), and design recharge basins. This program will involve monitoring water quality and could potentially improve stormwater quality and reduce stormwater volume, which is regulated under the ILP. Water recharged will comply with regulatory standards. The project could potentially include development of a permit coordination program for recharge projects. The program could also work with various organizations and government agencies to connect existing incentivization programs and funding to landowners interested in collaborative recharge projects that require land and access.

9.5.3.1 Relevant Measurable Objectives

Relevant measurable objectives benefiting from this project include:

- **Groundwater elevation measurable objective.** By routing stormwater and runoff from streams into recharge facilities and restored floodplains, more water will be added to the principal aquifer. This water will be slowed down and allowed to infiltrate, which will result in higher groundwater elevations than otherwise would occur.

- **Groundwater storage measurable objective.** Adding water to the principal aquifer will ultimately have the effect of increasing groundwater in storage. Groundwater storage is also calculated from measured groundwater elevations. By raising groundwater elevations, the change in storage will be positive.

9.5.3.2 Expected Benefits and Evaluation of Benefits

This project will help increase groundwater elevations compared to where they otherwise would be through enhanced infiltration of runoff. Runoff occurs when the rate of rainfall exceeds the soil infiltration rate. This runoff then flows over the land surface before accumulating into washes and streams as measurable stream flow. In the initial phases of overland flow, this water often infiltrates into the soils, which enhances soil moisture and facilitates recharge to the aquifer. The benefits to increased soil moisture go beyond increased opportunity for recharge. Enhanced soil moisture contributes to erosion protection as well as near-surface temperature regulating processes (Rivas, 2006; Mittelbach *et al.*, 2011). Four recharge basins sized at 100 AF/yr are planned for this project with a combined benefit of about 400 AF/yr in increased recharge (assuming no hard pan intervals impede deep percolation to the aquifer).

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Various volumetric measurement methods may be installed and water quality samples taken along with either recharge basins or dry wells to assist in calculating increases to groundwater storage and monitoring the project effect on water quality.

9.5.3.3 Circumstances for Implementation

The Overland Flow MAR project is a contingency project. A number of agreements and rights must be secured before the project is implemented. Primarily, a more formal cost/benefit analysis must be completed to determine if the on-farm modifications will provide quantifiable benefits to the principal aquifer. Recharge basins installed as part of this project could be directly funded by the SVBGSA or grant funding, or SVBGSA could develop an incentive program. Funding must be approved by the SVBGSA Board of Directors. In addition, site-specific data would need to be obtained to confirm the local stratigraphy to better understand the potential for recharged water to remain in shallower subsurface layers versus reach the principal aquifer below any hardpan intervals.

9.5.3.4 Permitting and Regulatory Process

Projects described in this section may require a CEQA environmental review process and may require an Environmental Impact Report (EIR) or a Mitigated Negative Declaration (the review

could also result in a Negative Declaration or Notice of Exemption). Additionally, permits from a variety of state and federal agencies may be necessary, and any project that coordinates with federal facilities or agencies may require National Environmental Policy Act (NEPA) documentation.

In addition, permits from the following government organizations that may be required for overland flow MAR projects include:

- **USACE** – A Regional General Permit may be required if there are impacts to wetlands or connections to waters of the United States.
- **CDFW** – A Standard Agreement is required if the project could impact a species of concern.
- **EPA** – NEPA documentation must be submitted for any project that coordinates with federal facilities or agencies. Additional permits may be required if there is an outlet or connection to waters of the United States.
- **NMFS** – A project may require authorization for incidental take, or another protected resources permit or authorization from NMFS.
- **SWRCB Stormwater Pollution Prevention Plan** – A General Permit to Discharge Stormwater may be required depending on how stormwater is rerouted.
- **California Department of Transportation (Caltrans)** – An Encroachment Permit is required if any state highway will be obstructed.

9.5.3.5 Implementation Schedule

If selected, the schedule will depend on whether programmatic permitting can be obtained or whether each individual project needs its own feasibility, permitting, and design. It will take up approximately 5 years to design, permit, and construct the project.

9.5.3.6 Legal Authority

Pursuant to California Water Code § 10726.2 (a) and (b), the SVBGSA has the right to acquire and hold real property, and to divert and store water once it has acquired any necessary real property or appropriative water rights. Some right in real property (whether fee title, easement, license, leasehold or other) may be required to implement a recharge project. A permit to appropriate water may not be needed to infiltrate overland flow if constructed on a parcel without a USGS blue line stream. If a blue line stream crosses the parcel, SVBGSA will evaluate whether a permit is needed. SVBGSA recognizes that this process takes several years to complete. If a permit is needed, SVBGSA will pursue a SWRCB 5-year temporary permit under the Streamlined Permit Process while it applies for the diversion permit.

9.5.3.7 Estimated Cost

This project was costed during the development of the 2022 GSP. The construction of 4 recharge basins, each with an expected benefit of 100 AF/yr, is expected to have a capital cost of \$1,032,000 for a total of \$4,128,000. Spread over 25 years and assuming a 6% discount rate, the annualized cost is \$86,700 per recharge basin, including annual maintenance. The unit cost is \$870/AF. These costs were estimated assuming that only 1 recharge basin would be built, but there may be economies of scale that lower the cost if more are built. These costs are approximate; exact costs will depend on site specifics.

9.5.3.8 Public Noticing

If this contingency project is prioritized for further development, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will maintain information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.5.4 P4: Surface Water Diversion from Gabilan Creek

This project entails diverting flood flows from Gabilan Creek and recharging this water at a nearby location in either recharge basins or dry wells.

Gabilan Creek drains north from the Gabilan Range and briefly runs through the Langley Subbasin where it turns south before entering the Eastside Subbasin. A stream gage on the Creek recorded an average flow of 20 cfs from 1971 to 2014. Flows are highly variable depending on seasonal storm events and whether it is a dry or wet year.

Historical data from the Gabilan Creek stream gage indicates that it receives the highest flows in the winter, and that it is highly variable between years, with some years receiving little to no flow. Given the potential for State permits to divert stream water, daily flows over the historical 90th percentile for that day of the year were calculated, and during those days, no more than 20%

of the total flow for that day were diverted. With current permitting, the resulting water that could have been available for diversion under historical conditions shows that water available for recharge is highly variable. Based on historical data, the potential average annual diversion is about 450 AF/yr, but with a standard deviation of more than 1,000 AF/yr. The median potential diversion is 200 AF/yr.

Based on this analysis, mean annual diversions were calculated to determine the potential diversion amounts for diversion structures ranging from capacities of 5 to 50 cfs. A diversion capacity of 20 cfs would be expected to potentially capture a mean of 350 AF/yr. For each 5 cfs of capacity added beyond that to a diversion structure, the expected diversion grows by less than 10%.

Water must be able to permeate the subsurface sediments for dry wells and recharge basins to be effective. The analysis of the permeability of subsurface sediments looked at which zones are good to site a recharge basin or screen a dry well in for recharge purposes. An initial analysis of the subsurface conditions in the vicinity of Gabilan Creek show frequent occurrences of clay and granite gravel from the Gabilan Range. Well construction logs analyzed show coarser sediments from approximately 30 feet below land surface to 130 feet below land surface. However, these sediments include a mix of decomposed granite, clay, gravel, sand, and fractured granite. Well construction logs show depth to water from approximately 80 feet to 100 feet below land surface as recorded at the time of well installation, which ranges from 20 to 80 years ago. The actual siting would require a more detailed subsurface analysis of sediments and more thorough analysis of depth to water for all seasonal conditions, such that the bottom of the dry well would remain above the water table for groundwater quality protection purposes. Sites with contaminated soils will be avoided, and water recharged will comply with regulatory standards.

Given the challenge of finding a good recharge location, along with the potentially low water yield benefit of a diversion structure, a preliminary cost analysis was not pursued at this stage. Multiple pilot holes would likely need to be drilled to identify a good recharge pond and/or dry well location. A diversion structure of 20 cfs would be costly for the quantity of water that would be diverted since only flows over the 90th percentile would be diverted. Based on the historical record, there may not be flows for several years, and other flows may be very unreliable. This would negate both the investment in the diversion structure and the recharge infrastructure.

Under the current State permitting process, SVBGSA would likely only be able to divert flood flows that are over the 90th percentile on any given day. SVBGSA performed a preliminary analysis of the streamflow that would meet the 90th percentile threshold and be diverted. Additionally, SVBGSA looked at the potential for recharge through a recharge basin or dry well. If pursued, a more detailed analysis of diversion and recharge locations would need to occur, along with discussions with landowners.

9.5.4.1 Relevant Measurable Objectives

Relevant measurable objectives benefiting from this project include:

- **Groundwater elevation measurable objective.** By routing stormwater and runoff from streams into recharge facilities and restored floodplains, there will be more water added to the aquifer. This water will be slowed down and allowed to infiltrate, which has the effect of adding water to the aquifer. Adding water into the aquifer will raise groundwater elevations over time.
- **Groundwater storage measurable objective.** Adding water to the principal aquifer will ultimately have the effect of increasing groundwater in storage. Groundwater storage is also calculated from measured groundwater elevations. By raising groundwater elevations, the calculation of change in storage will be positive.
- **Seawater intrusion measurable objective.** Seawater intrusion occurring in the adjacent 180/400 Subbasin where seawater has advanced inland to within a couple of miles of the Eastside Subbasin. Increasing groundwater storage will support the natural hydraulic gradient that pushes back against the intruding seawater.

9.5.4.2 Expected Benefits and Evaluation of Benefits

The primary benefit from this project is increased groundwater recharge due to recharged 90th percentile flood flows diversion.

Based on analysis of historical data, a diversion structure with a capacity of 20 cfs will capture about 350 AF/yr, on average. However, annual variation is high. Diversions were simulated over a 44-year historical period, and the median diversion was only 9 AF/yr, because there were many years when no water was diverted and a couple of years when thousands of AF were diverted. During the implementation period, these numbers will be refined with flood studies that are more regionally specific and accurate. Recharge of 350 AF/yr will result in a smaller change in groundwater storage due to loss to ET; however, the exact amount is unknown at this point.

The benefit is greatest at the location of the recharge facilities, which would likely be sited relatively close to the stream due to anticipated infrastructure costs and subsurface sediments.

Increased storage of flood waters can also increase groundwater elevations in the vicinity of the recharge facilities. This typically will be seen as groundwater mounding. However, as recharged water is emplaced in the subsurface, more water will flow laterally, thereby expanding the zone of influence from the recharge facility outward and raise groundwater elevations laterally. Additionally, water stored underground is not subject to ET in the same way water stored above ground is. This increases the return on the investment, by reducing recharge system losses. Even

with recharge basins, proper maintenance can minimize recharge system losses and maximize potential storage.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific programs. ISW will be measured through shallow groundwater wells near locations of ISW. In addition, various volumetric measurement methods may be installed along with either recharge basins or dry wells to assist in calculating increases to groundwater storage directly.

9.5.4.3 Circumstances for Implementation

Gabilan Creek Diversion is a contingency project. It could decrease flood flows along Gabilan Creek, which could detract from projects other stakeholders are undertaking, such as the Gabilan Floodplain Enhancement Project being undertaken by the RWMG and CCWG. Prior to selection, the effect on other potential projects under consideration by SVBGSA or other entities must be considered. Site specific analyses are required to determine the potential recharge benefit. Land access and water diversion rights must be secured, which may take a significant number of years. A diversion permit or SWRCB 5-year temporary permit must be obtained prior to diversion.

9.5.4.4 Permitting and Regulatory Process

A diversion permit is needed to divert water from the Gabilan Creek. SVBGSA recognizes that this process takes several years to complete. SVBGSA will pursue a SWRCB 5-year temporary permit under the Streamlined Permit Process while it applies for the diversion permit.

The project described in this section will require a CEQA environmental review process and may require an EIR or a Mitigated Negative Declaration (the review could also result in a Negative Declaration or Notice of Exemption). In addition, permits from the following government organizations may be required:

- **USACE** – A Regional General Permit may be required if there are impacts to wetlands or connections to waters of the United States.
- **CDFW** – A Standard Agreement is required if the project could impact a species of concern.
- **EPA** – NEPA documentation must be submitted for any project that coordinates with federal facilities or agencies. Additional permits may be required if there is an outlet or connection to waters of the United States.

- **NMFS** – A project may require authorization for incidental take, or another protected resources permit or authorization from NMFS.
- **County of Monterey** – A Use Permit may be required. A Grading Permit is required if 100 cubic yards or more of soil materials are imported, moved, or exported. An Encroachment Permit is required if objects will be placed in, on, under, or over any County highway.

9.5.4.5 Implementation Schedule

If selected, the schedule will begin after a SWRCB temporary permit for diversion and recharge of high flows is secured. It will take up at least 5 years to design, permit, and construct the project.

9.5.4.6 Legal Authority

Pursuant to California Water Code § 10726.2 (a) and (b), the SVBGSA has the right to acquire and hold real property, and to divert and store water once it has acquired any necessary real property or appropriative water rights. Some right in real property (whether fee title, easement, license, leasehold or other) may be required to implement a recharge project. A diversion permit or a SWRCB 5-year temporary permit is required for the authority to divert water.

9.5.4.7 Estimated Cost

Capital costs were estimated at \$10,074,000 for the 2022 GSP. On an annualized basis, assuming a 6% discount rate, and 25-year term, this amounts to \$788,100. Including an annual O&M cost of \$34,000 generates a total annualized cost of \$822,100. Assuming 350 AF/yr. is recharged, the unit cost for water stored is estimated at \$2,350/AF. This unit cost estimate is based on the amount of water available for recharge because the groundwater storage benefit is unknown at this point. Therefore, the unit cost for the storage benefit is likely higher than \$2,350/AF.

9.5.4.8 Public Noticing

If this contingency project is prioritized for further development, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will maintain information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.5.5 P5: Brackish Groundwater Restoration Project

This project was originally conceptualized as 2 individual projects in the original 180/400 Subbasin GSP and Amendment 1: 1) a Seawater Intrusion Extraction Barrier and 2) a Regional Municipal Supply Project. The Regional Municipal Supply Project was also included in the Eastside, Monterey, and Langley GSPs. SVBGSA conducted a feasibility analysis for a single combined project, renamed the Brackish Groundwater Restoration Project (BGRP). The BGRP is designed to improve current groundwater quality within the existing seawater intruded area and push seawater intrusion back to the minimum threshold, protecting against further seawater intrusion in the 180/400 and Monterey Subbasins, thus preventing seawater intrusion from reaching the Eastside or Langley Subbasins.

The extraction barrier portion of the BGRP includes a series of extraction wells parallel to the coastline in the seawater intruded area to continuously extract brackish groundwater (a mixture of freshwater and seawater) and form a hydraulic barrier by lowering groundwater levels and capturing seawater as it comes on land. This prevents seawater from advancing inland of the extraction well barrier. The BGRP would generate significant volumes of brackish water that could be desalted and used as a new potable or non-potable water supply, or for injection back into the 180-Foot and 400-Foot Aquifers. Some injection is included in all project scenarios, creating a secondary freshwater barrier near the seawater intrusion minimum threshold and measurable objective mapped isocontour.

Figure 9-2 is a conceptual diagram outlining the BGRP. The left side of the figure shows extraction wells drawing water from both the ocean and land sides, as depicted by the arrows. The wells would be placed in the intruded zone where the seawater enters the groundwater basin and mixes with the freshwater. Both brackish water and seawater would be extracted from the barrier of several extraction wells to prevent seawater from continued progression inland. The extracted water is then treated and can be used as a new regional water supply and/or for injection. The figure also shows how groundwater levels at the extraction barrier wells are lower than surrounding groundwater levels, preventing water from moving past the extraction barrier, while inland groundwater levels will rise due to injected water and offsetting pumping with the new supply.

All extracted groundwater would be conveyed to a centralized brackish water treatment facility. The BGRP includes a 2-pass, multi-stage RO system to achieve the necessary removal of boron, which could have elevated concentrations in the influent water. Concentrate/brine produced at the treatment facility is assumed to be discharged using the existing M1W ocean outfall. The distribution piping would convey treated brackish groundwater to inland injection wells or end users.

The treated extracted brackish water could be used either in lieu of groundwater for potable or non-potable uses or for groundwater injection directly improving groundwater levels and helping to push the seawater intrusion back toward the ocean. Potential end users include large public water systems serving urban areas as well as the CSIP system.

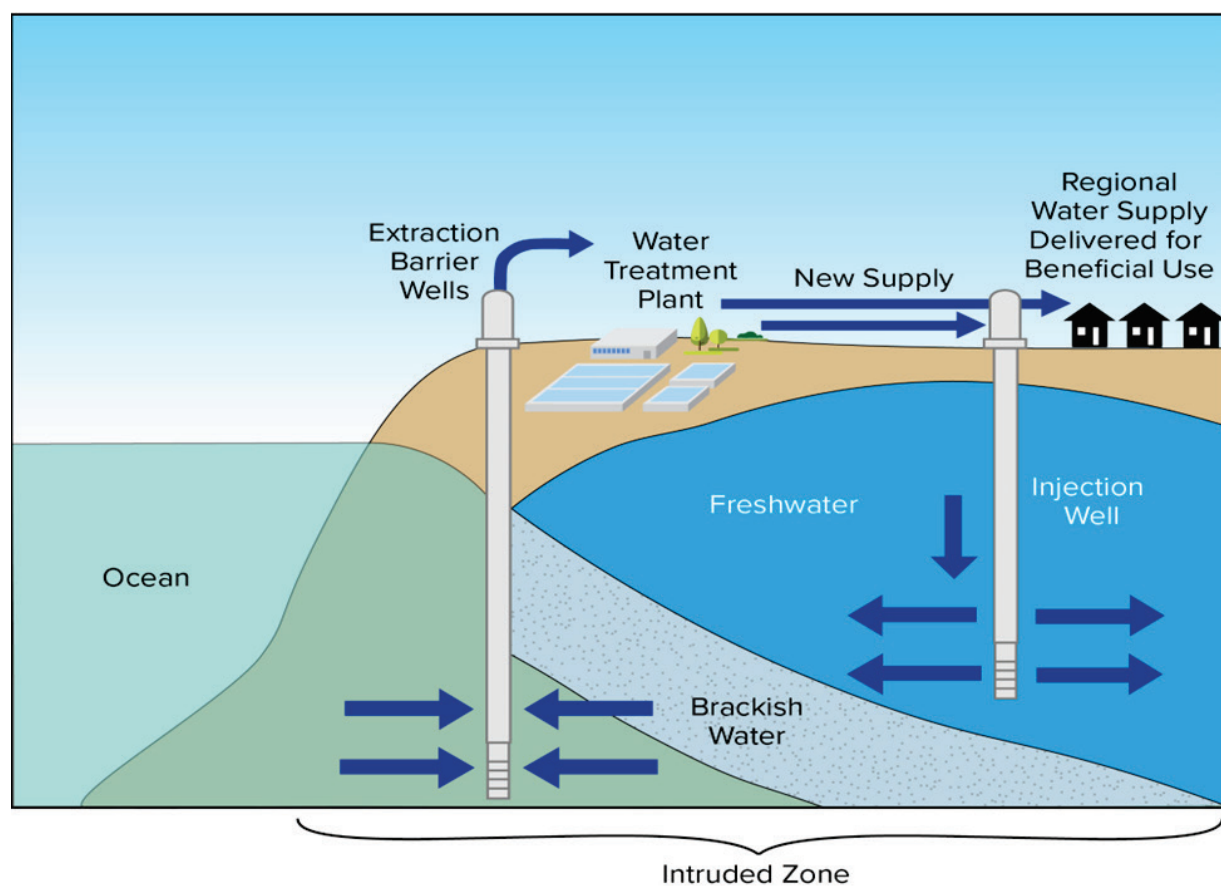


Figure 9-1. BGRP Concept

SVBGSA identified and evaluated the feasibility of 7 BGRP scenarios. Each scenario's production capacity (treated water for injection or direct delivery), hydrogeologic characteristics, conveyance and treatment infrastructure components, overall cost, and implementation strategies were developed and used to compare scenarios for effectiveness in meeting the GSP

requirements. The BGRP Feasibility Study Phase 1 Report (SVBGSA, 2025c) and Scenarios Analysis (Carollo, 2025) included these 7 scenarios:

1. Extraction, Treatment, and Direct Deliveries Plus Injection – Small
2. Extraction, Treatment, and Direct Deliveries Plus Injection – Medium
3. Extraction, Treatment, and Direct Deliveries Plus Injection – Large
4. Extraction, Treatment, and Injection Only
5. Extraction, Treatment, and Eastside Injection
6. Extraction North of the Salinas River, Treatment, and Direct Deliveries Plus Injection
7. Extraction From the 180-Foot Aquifer, Treatment, and Injection in the 400-Foot Aquifer

BGRP Phase 1 Reports are available on SVBGSA’s website here: <https://svbgsa.org/brackish-groundwater-restoration-project/>. The BGRP Small scenario has been selected as part of the IIS PMA portfolio and will be refined in the next phase of project development.

9.5.5.1 Relevant Measurable Objectives

The main measurable objectives benefiting from the BGRP include:

- **Seawater intrusion measurable objectives.** Developing a hydraulic barrier close to the coast, injecting water inland of the seawater intrusion front, and decreasing extraction inland help change the inland groundwater gradient to a seaward groundwater gradient in the 180-Foot and 400-Foot Aquifers (seaward to the extraction wells that run parallel to the coast). The project will push the seawater intrusion isocontour back to the measurable objective.
- **Groundwater level measurable objectives.** Injecting water and reducing inland extraction helps raise groundwater levels where the majority of the extraction occurs, other than from the extraction barrier wells. However, at the coast, the extraction barrier will reduce groundwater levels in the vicinity of the extraction wells and if impacts are identified, mitigation will be required for any affected beneficial uses. During environmental review in the next phase of GSP implementation, these effects will be evaluated and further considered relative to the groundwater level minimum thresholds established in this portion of the basin.
- **Groundwater quality measurable objectives.** Extracting brackish water caused by seawater intrusion, treating it, and reinjecting it into the groundwater basin will improve the water quality and reduce the number of wells with chloride levels exceeding Basin Plan objectives and SMCLs for drinking water.

9.5.5.2 Expected Benefits and Evaluation of Benefits

This project maximizes benefits to all groundwater users in the basin and is effective at both raising inland groundwater levels and achieving the seawater intrusion minimum threshold and measure objective. SVBGSA evaluated 7 BGRP scenarios and compared their effectiveness at stopping and pushing seawater intrusion back beyond the GSP minimum threshold and measurable objective line (2017 seawater intrusion isocontour) with SWIM v2. The modeling results for all 7 scenarios are documented in the Modeling Results Technical Memoranda (M&A, 2025). The modeling results found that the BGRP Small can nearly meet the minimum threshold for seawater intrusion by 2040 and is expected to be able to meet it through further design adjustments. Modeling was refined with SWIM v3 for certain scenarios and results of the BGRP Small as part of the IIS portfolio is discussed and provided in Chapter 10 of this GSP.

The BGRP will protect beneficial users at risk of seawater intrusion and provide an alternative source of supply to potential end users, diversifying water supplies where there 100% reliance on groundwater in the urban areas. BGRP can also provide a new replacement source of water for supplementing groundwater pumping in the CSIP System. The volume of treated water and new supply ranges from 20,900 AF/yr to 67,800 AF/yr depending on the scenario.

Within the seawater intruded area (on the coastal side of the mapped isocontour), the BGRP will reduce the overall chloride mass by -920,000 kg to -2,500,000 kg, depending on the scenario. Although this reduction in the chloride mass balance is not a SGMA requirement, beneficial users in the basin will benefit from injection of treated water, increased fresh water supplies and reduced chlorides in the basin.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP.

9.5.5.3 Circumstances for Implementation

BGRP is a contingency project for the Langley Subbasin because direct delivery could potentially be extended into the Langley Subbasin, if needed. It is a priority project in the adjacent 180/400 and Eastside Subbasins. During the first phase of GSP implementation, a feasibility study was completed for the BGRP. The BGRP Small Scenario is included in the IIS portfolio, discussed further in Chapter 10. BGRP Small, as configured in the BGRP Phase 1 Scenarios Analysis TM (October 2025), considered the minimal amount of groundwater extraction that would enable the extraction and injection wells to effectively inhibit the progression of seawater intrusion inland.

The BGRP will be developed in phases beginning in 2027. The next 5 years will focus on project design, environmental review, pilot testing, permitting, land acquisition, and funding. These activities establish the technical, regulatory, and financial foundation necessary for final design and construction. Final design, procurement, and construction are anticipated to occur between 2030 and 2035, followed by project startup, optimization, and long-term operations.

9.5.5.4 Permitting and Regulatory Process

The BGRP involves several state, federal, and local regulatory approvals and other discretionary actions necessary to construct and operate. Anticipated permit requirements and applicable regulations for this project include:

- ***EPA*** - Class V Underground Injection Control Program (Part C, Safe Drinking Water Act) Registration (40 CFR § 144.82)
- ***EPA*** - Underground Injection Control (UIC) Program under the Safe Drinking Water Act (SDWA) Class V Injection Well Permit; Injection Wells (40 CFR § 144.84)
- ***EPA*** - Endangerment Demonstration; Injection Wells
- ***Monterey Bay National Marine Sanctuary (MBNMS)*** - Review and coordination of all CCRWCB Clean Water Act 404, RHA Section 10, and National Pollutant Discharge Elimination System permits (15 CFR § 922.134)
- ***USFWS*** - ESA compliance Section 7 consultation (16 USC 1536, 50 CFR 402.14)
- ***USFWS*** - Fish and Wildlife Coordination Act (16 USC 661-667e; Act of March 10, 1934; ch. 55; 48 stat. 401)
- ***NMFS*** - ESA compliance Section 7 consultation (16 USC 1536, 50 CFR 402.14)
- ***USACE*** - Nationwide or Individual Section 404 Permit (Clean Water Act, 33 USC 134)
- ***USACE*** - Section 10, Rivers and Harbors Act Permit (33 USC. 403)
- ***Clean Water Act*** - 33 USC Chapter 26
- ***National Historic Preservation Act*** - 54 USC § 301000 *et seq.*
- ***Safe Drinking Water Act*** - 42 USC § 300f *et seq.*
- ***SWRCB, CCRWQCB*** - National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (Order 99-08-DWQ)
- ***SWRCB, CCRWCB*** - 401 Water Quality Certification (Clean Water Act Section 401, 33 USC 1341)

- ***SWRCB, CCRWCB*** - National Pollutant Discharge Elimination System (NPDES) Permit (Clean Water Act Section 402, 33 USC 1342)
- ***SWRCB, CCRWCB*** - Compliance with National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Order 2010-0014-DWQ); Project Construction
- ***SWRCB, CCRWCB*** - Waste Discharge Requirements under the Porter-Cologne Water Quality Control Act (Cal. Water Code §§ 13000 et seq.); Injection Wells, Surface Water Treatment Plant
- ***SWRCB DDW*** - Permit to Operate a Public Water System (California Health and Safety Code § 116525)
- ***SWRCB DDW*** - Approval for Recharge of Purified recycled Water
- ***California State Lands Commission*** - Right-of-Way Permit (Land Use Lease) (2 CCR 2002, 2003)
- ***CDFW*** - Incidental Take Permits (California Endangered Species Act Title 14, Section 783.2 (potential))
- ***CDFW*** - Streambed Alteration Agreement (California Fish and Wildlife Code Section 1602) (potential)
- ***California Coastal Commission (CCC)*** - Coastal Development Permit (Public Resources Code §§ 30000 et seq.)
- ***Caltrans*** - Encroachment Permit (Streets and Highway Code § 660, 670)
- ***California State Historic Preservation Officer*** - National Historic Preservation Act Section 106 Consultation (54 USC 306108, 36 CFR 800 et seq.)
- ***Construction Activities within the jurisdiction of Cities*** - Use Permits, encroachments/easement permits, grading permits and erosion control permits may be required pursuant to local city/county codes.
- ***Monterey Bay Unified Air Pollution Control District*** - Authority to Construct (Local district rules, per Health and Safety Code §§ 42300 et seq.) and Permit to Operate (local district rules, Rule 200)
- ***Monterey Bay Unified Air Pollution Control District*** - Authority to Construct permit under Local Rule 3.1; Project Construction
- ***Monterey Bay Unified Air Pollution Control District*** - Permit to Operate under Local Rule 3.2; Surface Water Treatment Plant

- ***County of Monterey Health Department, Environmental Health Bureau*** - Well Construction Permit (Monterey County Code, Title 15 Chapter 15.08, Water Wells; Injection Wells)
- ***County of Monterey Health Department, Environmental Health Bureau*** - Hazardous Materials Business Plan and Inventory (Health and Safety Code Chapter 6.95)
- ***County of Monterey Public Works Department*** - Encroachment Permit (Monterey County Code (MCC) Title 14 Chapter 14.040); Pipeline and associated distribution system facilities
- ***MCWRA*** - Ordinances 3709 and 3790
- ***County of Monterey Housing and Community Development Department*** - Conditional Use Permit (MCC Chapter 21.74); Surface Water Treatment Plant
- ***County of Monterey Housing and Community Development Department*** - Grading Permit (MCC Chapter 16.08); Project Construction
- ***County of Monterey Housing and Community Development Department*** - Erosion Control Permit (MCC Chapter 16.12); Project Construction
- ***County of Monterey Housing and Community Development Department*** - Coastal Development Permit. (Public Resources Code 30000 *et seq.*)
- ***MIW*** - Agreement to use facilities

The BGRP will require a CEQA Environmental Impact Report and NEPA Environmental Impact Assessment, which can be prepared as a combined document. The CEQA and NEPA analyses could serve as the clearinghouse for the collection of technical support, environmental impact analyses and mitigation, and other information gathering necessary for each third-party agency to exercise discretion on approval of the proposed BGRP. Prior to initiating this process, a multi-party memorandum of understanding should be developed to establish coordination and collaboration in the preparation of the CEQA and NEPA documents and other information that may be necessary for each party to consider approval of the BGRP.

9.5.5.5 Legal Authority

Legal authority for GSA to implement PMAs is guided by CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. GSA legal authority for BGRP is identified in SGMA §10726.2. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

To implement the BGRP, SVBGSA will likely partner with other water agencies or utilities that have legal authority to operate large-scale water projects.

9.5.5.6 Implementation Schedule

The implementation schedule presented is anticipated to take 10 years as shown in Table 9-8.

Table 9-8. Implementation Schedule for the Brackish Groundwater Restoration Project

Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10 +
Project Management										
Agency & Interested Party Coordination										
Pilot Projects & Evaluation										
Preliminary Engineering & Environmental Review										
Permitting										
Property Acquisition										
Grant Funding & Financing										
Final Design & Engineering										
Procurement										
Project Construction										
Commissioning & Startup										
Operations, Monitoring, Maintenance & Optimization										

9.5.5.7 Estimated Cost

Table 9-9 summarizes the standardized costs of the BGRP scenarios (ERA Economics, 2026b). The table shows total construction costs (including soft costs), annual O&M, and replacement costs. The present value costs are shown, the annualized cost, and the cost per AF of project yield. Project yield reflects injected water for the BGRP alternatives. Therefore, the \$/AF cost reflects the cost per acre-foot of injected water. Seven BGRP scenarios were considered. These include:

1. Extraction, Treatment, and Direct Deliveries Plus Injection – Small
2. Extraction, Treatment, and Direct Deliveries Plus Injection – Medium
3. Extraction, Treatment, and Direct Deliveries Plus Injection – Large
4. Extraction, Treatment, and Injection Only

5. Extraction, Treatment, and Eastside Injection
6. Extraction North of the Salinas River, Treatment, and Direct Deliveries Plus Injection
7. Extraction from the 180-Foot Aquifer, Treatment, and Injection in the 400-Foot Aquifer

Table 9-9. BGRP Scenarios Cost Summary

Cost Category	1	2	3	4	5	6	7
Total Construction Cost (\$M)	\$709	\$1,002	\$1,465	\$951	\$947	\$629	\$951
Annual Treatment O&M (\$M)	\$51	\$80	\$110	\$80	\$80	\$80	\$80
Annual O&M (\$M)	\$18	\$27	\$38	\$33	\$33	\$21	\$46
Present Value Total Cost (\$M)	\$2,254	\$3,376	\$4,750	\$3,459	\$3,453	\$2,862	\$3,728
Annualized Cost (\$M)	\$101	\$152	\$214	\$156	\$155	\$129	\$168
Annual Yield (Acre-feet)	28,000	46,900	67,800	46,900	46,900	20,900	29,000
\$/Acre-Foot Cost	\$3,625	\$3,241	\$3,155	\$3,321	\$3,315	\$6,166	\$5,788

Project cost inputs developed by Carollo Engineers (2025), BGRP Technical Memorandum Scenarios Analysis.

9.5.5.8 Public Noticing

Public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will share information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.5.6 P6: New Seawater Intrusion Project/CSIP Expansion

This project will increase the size and reach of the existing CSIP distribution system beyond the current Zone 2B boundary to provide recycled and diverted river water to additional lands for irrigation and agricultural use or provide a new, parallel system to deliver alternative irrigation water supplies to additional agricultural areas from a range of sources. SVBGSA, in collaboration with MCWRA, prepared the New Seawater Intrusion Project (NSIP) Evaluation resulting in the identification of 3 project scenarios (Carollo Engineers, 2026).

As shown on Figure 9-3, the NSIP area includes lands with agricultural users historically reliant on groundwater pumping in or near the seawater intruded area and from the Deep Aquifers. It targets the area of heavy agricultural use in the area between the City of Salinas, CSIP service area, north of the Salinas River, and south of the rural communities of Oak Hills and Prunedale. Between 2019 and 2022, the NSIP area average annual groundwater pumping and agricultural demand was approximately 28,020 AF/yr with peak uses between April and November.

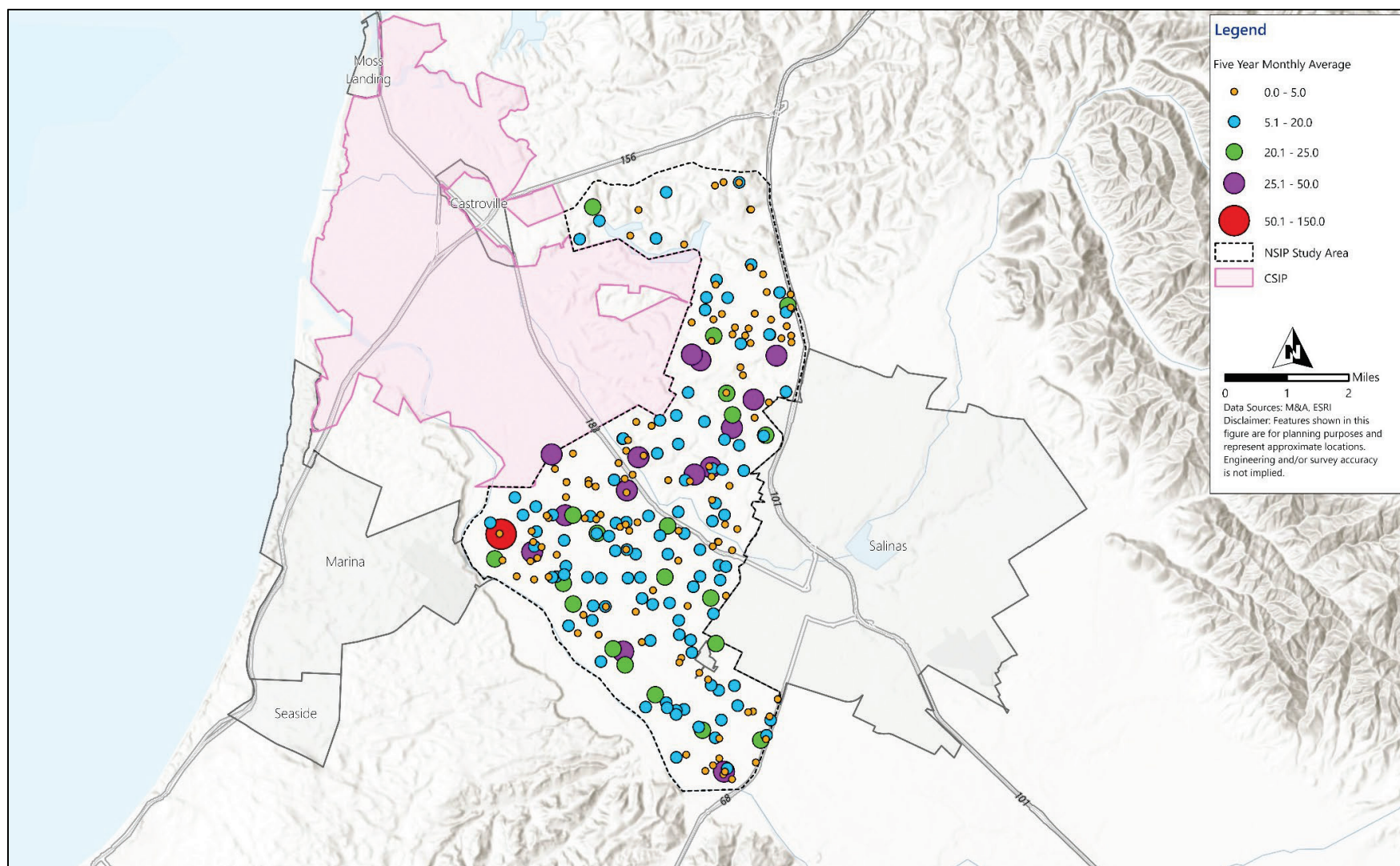


Figure 9-2. NSIP Study Area Five Year Monthly Average Demand of All Wells (2019-2023)

MCWRA prepared a source water analysis focused on quantifying the volume, reliability, seasonality, and operational constraints associated with multiple candidate source waters under MCWRA control or influence. The evaluation is based primarily on historical hydrologic and operational data spanning approximately 2016 through 2025, supplemented with longer term datasets where available. This approach captures a representative range of hydrologic conditions while reflecting current system operations and regulatory frameworks. Seven primary source water categories were evaluated:

- Secondary effluent from the M1W RTP
- Industrial wastewater from the City of Salinas
- Excess reservoir releases available for re-diversion at the SRDF
- Reclamation Ditch flows (Application A032263D)
- Tembladero Slough flows (Applications A032263C/D)
- Blanco Drain return flows (Application A032263D)
- Salinas River diversions under Permit 11043

For each source, MCWRA developed estimates of usable supply by applying water right constraints, operational limitations, instream bypass requirements, diversion capacities, and data availability. Where direct measurement data were limited (e.g., Blanco Drain and Tembladero Slough), surrogate methods and prior technical studies were used to estimate flows, and data uncertainties are acknowledged in the analysis.

Using these sources, the following NSIP scenarios have been identified:

CSIP Expansion (Recycled Water Direct Delivery) focuses on conveying excess recycled water from the SVRP directly to select NSIP users. Given the limited capacity of the existing infrastructure, it would require a new, single recycled water conveyance system directly from SVRP to be used year-round with the available recycled water supplies. This system offsets groundwater demand by 5,320AF/yr and provides a relatively low-cost, near-term option that primarily benefits winter demands and serves as a supplemental or first-phase project.

Maximum (Max) Size NSIP (Standalone System) envisions a fully independent regional system sized to offset all groundwater pumping within the NSIP area, offsetting demands of approximately 248 wells with 25,080 AF/yr of supplies. This scenario integrates multiple water sources, centralized treatment, and large-scale storage (e.g., Merritt Lake Reservoir with multiple source waters, centralized treatment, and substantial seasonal storage on the order of 15,000 AF) to reliably meet peak irrigation demands. For the Salinas River surface water source diverted using Permit 11043, a permit modification would be necessary to allow storage. The analysis considers supply availability ranges of high, medium, and low.

NSIP Serving Wells Only Within 500 mg/L Chloride Isocontour Zone (Phased or Hybrid NSIP Implementation) bridges these approaches by initially delivering recycled water directly to users and incrementally expanding infrastructure, storage, and treatment over time—potentially incorporating direct capture of available supplies during high-flow periods—to ultimately transition toward a comprehensive NSIP system while managing costs and adapting to supply availability and user needs. This targets service to regions within the NSIP Study Area that are affected by seawater intrusion in the 180-Foot and 400-Foot Aquifers, as defined by the 500 milligrams per liter (mg/L) chloride isocontour, and offsets groundwater demands by 11,020 AF/yr. It includes surface water diverted using Permit 11043 as a source water under the current permit conditions (no storage over 30 days). The analysis considers supply availability ranges of high, medium, and low.

The key infrastructure components of these 3 configurations are summarized in Table 9-10.

Table 9-10. Summary of Infrastructure of NSIP Scenarios

	Expansion of CSIP	Max NSIP	Intruded Area Only
Number Wells Served	18	248	88
Demands Served, AF/yr	5,320 (19% of all wells within NSIP)	28,020	11,020
Supply Used	Recycled Water	All Supplies	All Supplies
Supply, AF/yr	5,320	25,080	25,780
Required Storage Volume	3.5 MG	≈ 15,000 AF	≈ 8,000 AF
Miles of Treated Water Transmission Lines	18	38	16
Miles of Raw Water Transmission Lines	6	14	14
Miles of Laterals	TBD	39	12
Treatment size, mgd	N/A	50	20

Across all scenarios, the NSIP analysis demonstrates that:

- Achieving sufficient supply for the NSIP area will require a combination of alternative supply development, storage, and operational flexibility.
- Recycled water is a critical and reliable component of supply but is insufficient as a standalone solution.
- Surface water and drainage-derived supplies are highly variable and dependent on hydrologic conditions.

- Even under optimized conditions, demand management or supplemental groundwater use may be required during extended drought periods.
- Since NSIP effectively reduced groundwater extraction, it enables groundwater levels to rise in the study area; however, seawater intrusion continues to progress inland at only a slightly slower rate than the Baseline Scenario.
- Water quality evaluation indicates that treatment to meet agricultural irrigation standards—particularly maintaining chloride concentrations below 500 mg/L to protect crop yields—is feasible using conventional treatment processes for blended surface supplies.

9.5.6.1 Relevant Measurable Objectives

The main measurable objectives benefiting from this project include:

- **Groundwater levels measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels than otherwise would occur, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Reducing pumping will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.
- **Land subsidence measurable objective.** Reducing pumping, particularly from the Deep Aquifers, will help keep groundwater levels above historical lows, thereby reducing the potential for subsidence.

9.5.6.2 Expected Benefits and Evaluation of Benefits

The NSIP project concept was evaluated using the SWIM (v3) to assess its effect on seawater intrusion and groundwater levels. NSIP operates by eliminating groundwater pumping within the seawater intrusion area and providing an alternative water supply beginning in 2035. Pumping outside of the NSIP area occurs as it does in the Baseline Scenario, including CSIP supplemental and private standby well pumping. Only the Max NSIP High Scenario was modeled.

The elimination of up to 25,080 AF/yr of groundwater extraction under the Max NSIP scenarios resulted in substantial groundwater level increases. Figure 9-4 shows the groundwater levels compared to baseline for the 3 aquifers for the Max NSIP. By the 2040-2041 evaluation period, in the 180-Foot and 400-Foot Aquifer groundwater levels are up to 40 feet higher than in the Baseline Scenario in the proximity of the NSIP area. In the Deep Aquifers, groundwater levels are up to 5 feet higher than in the Baseline Scenario.

While the groundwater level response is substantial, the Max NSIP scenario does not meet the seawater intrusion minimum threshold by 2040-2041. In both the 180-Foot and 400-Foot Aquifers, the 500 mg/L chloride isocontour does not meet the minimum threshold. The contrast between the Max NSIP's large groundwater level response and its mixed seawater intrusion outcomes reflects fundamental differences in how pumping removal and active injection near the intrusion front affect chloride movement.

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA. Reductions in groundwater pumping will be tracked through the GMP.

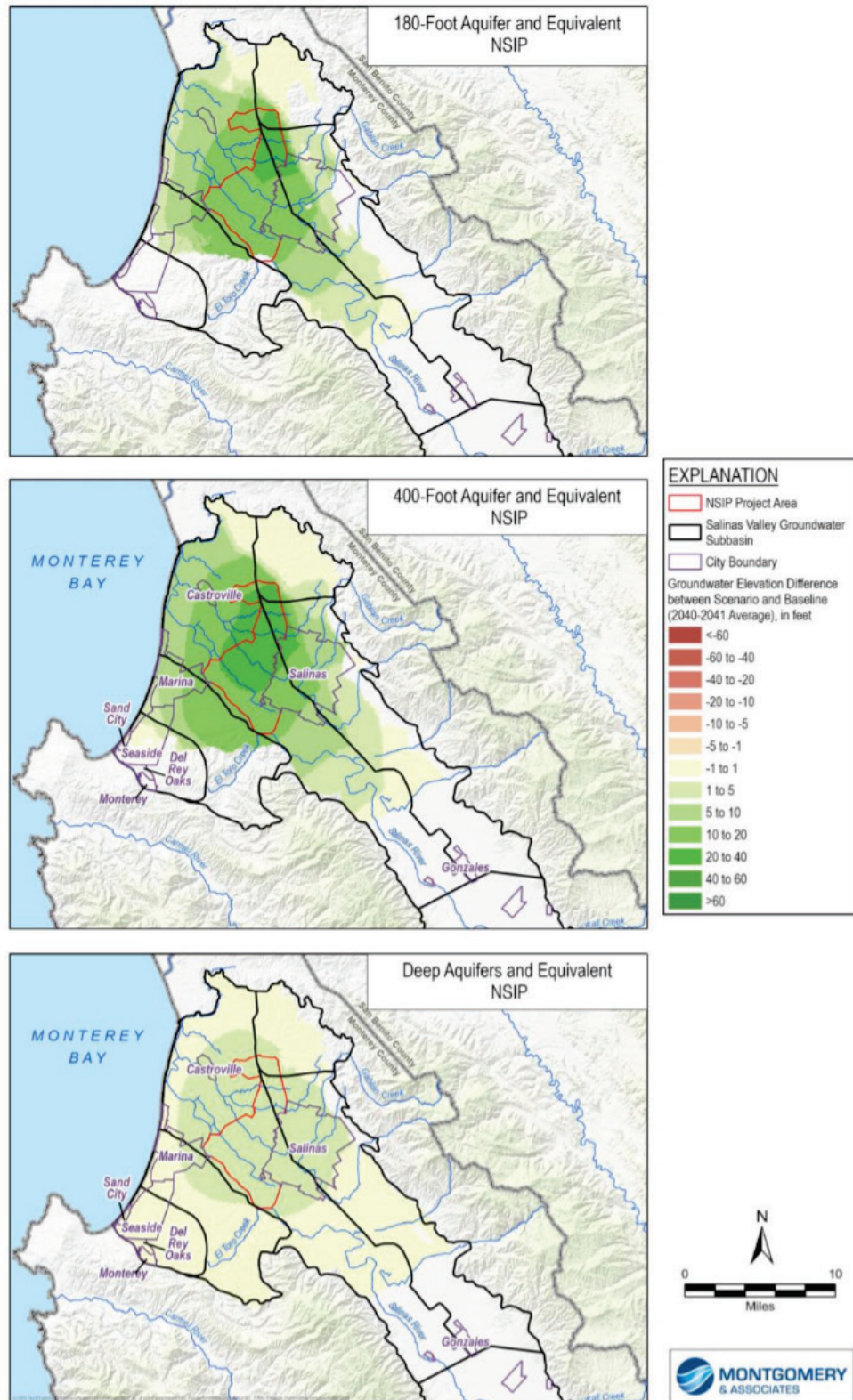


Figure 9-3. Max NSIP Scenario Groundwater Levels Difference from Baseline Scenario

9.5.6.3 Circumstances for Implementation

NSIP/CSIP Expansion is a contingency project. NSIP represents a scalable project to reduce groundwater extraction and mitigate seawater intrusion in the Salinas Valley. A phased implementation approach is possible beginning with expansion of recycled water delivery and advancing toward a larger integrated system as additional supply reliability, storage, permitting, and funding pathways are developed.

Key next steps to be taken for any NSIP scenario to be further considered include:

- Refinement of source water availability and quality data
- Advancement of water rights and regulatory approvals
- Evaluation of storage feasibility (including Merritt Lake)
- Economic and financial analysis
- Progression through preliminary design, environmental review (CEQA/NEPA), and final design and construction

Under the CSIP Expansion Scenario, further analysis is needed to determine how the expanded delivery area would contribute to ongoing CSIP operations and the tradeoffs between expansion or the CIP identified in the next phase of CSIP Optimization.

9.5.6.4 Permitting and Regulatory Process

Several local, county, and state permits may be required depending on pipeline alignments, treatment, and storage facilities. Depending on the project scenario and potential source waters used, MCWRA water right permit modifications may be required to be approved by the SWRCB.

This project will require a CEQA review process, which would likely result in either an EIR or a Mitigated Negative Declaration (the review could also result in a Negative Declaration or Notice of Exemption). Additionally, any project that coordinates with federal facilities, funding programs, or agencies would require NEPA documentation.

9.5.6.5 Legal Authority

Legal authority for GSA to implement PMAs is guided by in CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA with the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary

for SGMA implementation. GSA legal authority for NSIP is particularly grounded in SGMA §10726.2. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

This project may be developed cooperatively with MCWRA. MCWRA is a flood control and water agency established in 1990 by special act of the state legislature codified at Water Code Appendix Chapter 52, with broad water management authority in Monterey County. The MCWRA has the authority, among other powers, to levy benefit assessments to fund projects. Although it has not yet been determined, if this project is needed as a contingency project, MCWRA is likely to either be the lead agency or a partner agency given their hold over existing water rights and potential source waters.

9.5.6.6 Implementation Schedule

If selected, it is anticipated that the project would take at least 6 years to develop.

9.5.6.7 Estimated Cost

The CSIP Expansion scenario has a total estimated capital cost of \$32,180,000. Due to the limited ability of the CSIP Expansion Scenario to offset demands in the seawater intruded zone, it was clear that this scenario would not meet minimum thresholds and therefore standardized lifecycle costs for it as a standalone scenario were not developed.

Planning-level cost estimates for the NSIP scenarios were developed by the engineering teams. Project economic costs were developed using a standardized framework that includes and schedules out capital (construction and soft costs), O&M, and long-term replacement components. Project costs are expressed as the present value and the annualized cost per acre-foot of project water developed and delivered. The NSIP project water is defined as the average annual volume of water that the project delivers. NSIP developed new or reallocated surface and recycled supplies that partially offset groundwater extraction. These estimates are considered conceptual and are expected to be refined as project configurations, infrastructure requirements, and operational assumptions are further developed.

NSIP could serve up to approximately 17,600 acres in the area between the existing CSIP system and the City of Salinas. Two project concepts—Intruded Area Only and Max NSIP—were developed with scenarios considering supply availability ranges of high, medium, and low.

The cost estimates for the Intruded Area Only and Max NSIP scenarios reflect preliminary construction costs organized by major infrastructure components. Storage costs include the improvements needed at Merritt Lake to provide the required impoundments and associated facilities. Treatment costs include on-site treatment facilities and related process infrastructure. These estimates are expressed in current dollars and include a 30% construction contingency,

Monterey County sales tax of 7.75% applied to half of construction costs, and 15% for contractor general conditions, overhead, and profit. Land acquisition costs are not included.

Table 9-11 summarizes the standardized economic costs of the NSIP scenarios. The table shows total construction costs (including soft costs), annual O&M, and replacement costs. The NSIP scenarios (High, Medium, and Low) vary by the annual yield (acre-feet); O&M costs have been scaled by the corresponding yield for each scenario. The present value costs are shown, the annualized cost, and the cost per AF of project water. Economic costs range from \$2,957 per AF to \$7,434 per AF.

Table 9-11. Max NSIP and Intruded Wells Only Estimated Economic Lifecycle Costs

Cost Category	Intruded Only			Max		
	High	Medium	Low	High	Medium	Low
Total Construction Cost (\$M)	\$698	\$698	\$698	\$1,428	\$1,428	\$1,428
Annual Treatment O&M (\$M)	\$6	\$5	\$3	\$11	\$9	\$5
Annual O&M (\$M)	\$13	\$12	\$7	\$7	\$6	\$3
Present Value Total Cost (\$M)	\$1,120	\$1,087	\$910	\$1,840	\$1,761	\$1,618
Annualized Cost (\$M)	\$50	\$49	\$41	\$83	\$79	\$73
Annual Yield (Acre-feet)	11,020	10,160	5,512	28,020	22,570	12,790
\$/Acre-Foot Cost	\$4,575	\$4,818	\$7,434	\$2,957	\$3,513	\$5,697

Notes:

Lifecycle costs for 40 years of operations with replacement costs at 20 years of operations

Lifecycle costs for the CSIP Expansion Scenario not determined

9.5.6.8 Public Noticing

Public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during project development. MCWRA may be the appropriate lead agency for NSIP. MCWRA conducts public noticing for all meetings of its Boards and committees that require public noticing pursuant to the Brown Act and for public hearings, such as for its annual adoption of budgets and assessments for the Monterey County Water Recycling Projects. SVBGSA may also hold public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

9.5.7 P7: Coastal Injection/Aquifer Storage and Recovery (ASR)

The aquifer storage and recovery (ASR) project was not included in the original GSP for the Langley Subbasin, but has been part of the 180/400 Subbasin projects considered since its 2020 GSP and could affect Langley groundwater levels if implemented in the adjacent 180/400 or Eastside Subbasins. In cooperation with MCWRA, during the first phase of GSP implementation SVBGSA prepared a preliminary feasibility study that evaluated the ASR project as described in the 180/400 GSP Amendment 1. It identified an ASR project concept that aimed to reduce seawater intrusion while ensuring a sustainable water supply for the CSIP area by:

- Increasing surface water diversions for recharge during the wet season
- Injecting diverted surface water inland of the seawater-intruded area to raise groundwater elevations
- Partially recovering injected water during the growing season to supplement CSIP supplies and reduce reliance on native groundwater

The analysis determined that the 180/400 Amendment 1 project concept was generally infeasible due to existing system constraints. For water to be considered able to be re-diverted at the SRDF, it must be stored in 1 of the reservoirs for 30 days. This restricts the ability to reliably release and re-divert stored water during the winter months when inflow to the reservoirs is high. Further, given the operational constraints of releasing and re-diverting water in the winter, MCWRA recommended keeping normal reservoir operations in support of the conservation program and SRDF operations from April through October, and developing a separate, parallel ASR diversion and conveyance system.

To address the constraints identified, the study developed a new project scenario referred to as New Diversion of Winter High Flows for ASR. This project concept provides for the diversion of excess winter watershed flows that bypass the reservoirs and diverts flow downstream at a new diversion structure, upstream of the SRDF structure. However, diverted winter flows are used only for injection, either into both aquifers or only into the 400-Foot Aquifer, since seawater intrusion has slowed in the 180-Foot Aquifer.

This project concept is further refined in the Castroville and Eastside Canals and Alternatives Preliminary Feasibility Study based on an evaluation of water rights, river flow, and engineering constraints (Montgomery & Associates, *et al.*, 2026). It is referred to as the Coastal Injection concept in this Study. Under the Coastal Injection project concept, Permit 11043 water is diverted just upstream of the existing SRDF location using a diversion facility with a capacity of 50 cfs. Diverted river water is conveyed to a surface storage reservoir at Merritt Lake. Stored water is treated, then delivered to a network of injection wells located just inland of the seawater intrusion area and existing CSIP system, and injected into the 400-Foot Aquifer, as shown on Figure 9-5.

In the Castroville and Eastside Canals and Alternatives Preliminary Feasibility Study, aquifer injection into the northern Eastside Subbasin was also investigated to raise groundwater levels and lessen the gradient driving seawater intrusion. Under this project concept, referred to as Northern Eastside Injection, Permit 11043 water would be diverted at the Castroville Canal Intake location and conveyed to a surface storage reservoir. Stored water would then be treated and delivered to a network of injection wells located in the northern Eastside Subbasin. Surface storage allows for regulation of flows to the treatment plant and more consistent injection. Injection wells are appropriate in the northern Eastside Subbasin because shallow clays would inhibit infiltration from recharge basins. Two scenarios were studied: 1 with a diversion flow rate at 50 cfs and the other at 100 cfs. Under the 50 cfs scenario, shown in Figure 9-6, diverted water is stored in a proposed surface reservoir at the Merritt Lake site; under the 100 cfs scenario, diverted water is stored in a proposed surface reservoir in the Gabilan Range near Alisal Creek.

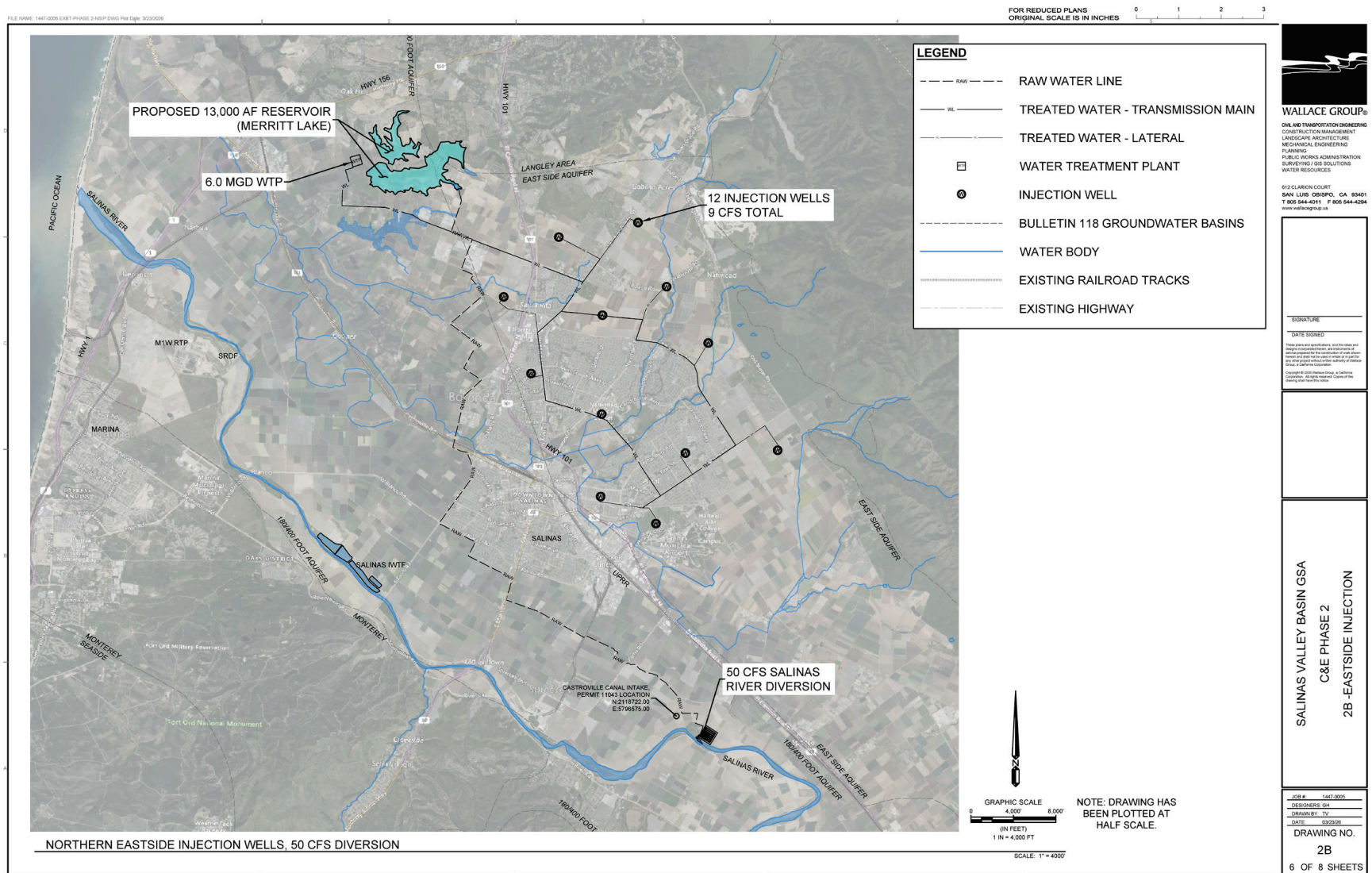


Figure 9-5. Infrastructure Layout for Northern Eastside Injection Concept, 50 cfs Diversion Scenario

9.5.7.1 Relevant Measurable Objectives

The main measurable objectives benefiting from the Coastal Injection and Aquifer Storage and Recovery include:

- **Groundwater levels measurable objective.** Injection will result in higher groundwater levels than otherwise would occur.
- **Seawater intrusion measurable objective.** Injection will raise groundwater levels inland of the seawater intrusion front, which will help lessen or reverse the inland hydraulic gradient that is driving seawater intrusion.
- **Groundwater storage measurable objective.** Injection will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.

9.5.7.2 Expected Benefits and Evaluation of Benefits

The Coastal Injection project concept was evaluated primarily using the SWIM v3 to be able to assess the impact on both groundwater levels and seawater intrusion. The Coastal Injection project concept, which injects treated water into the 400-Foot Aquifer to address seawater intrusion, results in only minor movement of the 500 mg/L chloride isocontour by 2040. However, the simulated progression of seawater intrusion in the 400-Foot Aquifer begins to diverge from baseline conditions over time. In later years, the project moderates the advancement of several significant parts of the seawater intrusion front to the northwest and west of the City of Salinas (Figure 9-7). The limited magnitude of this benefit is attributable mainly to the relatively small diversion capacity (50 cfs), which was limited by the storage capacity at Merritt Lake.

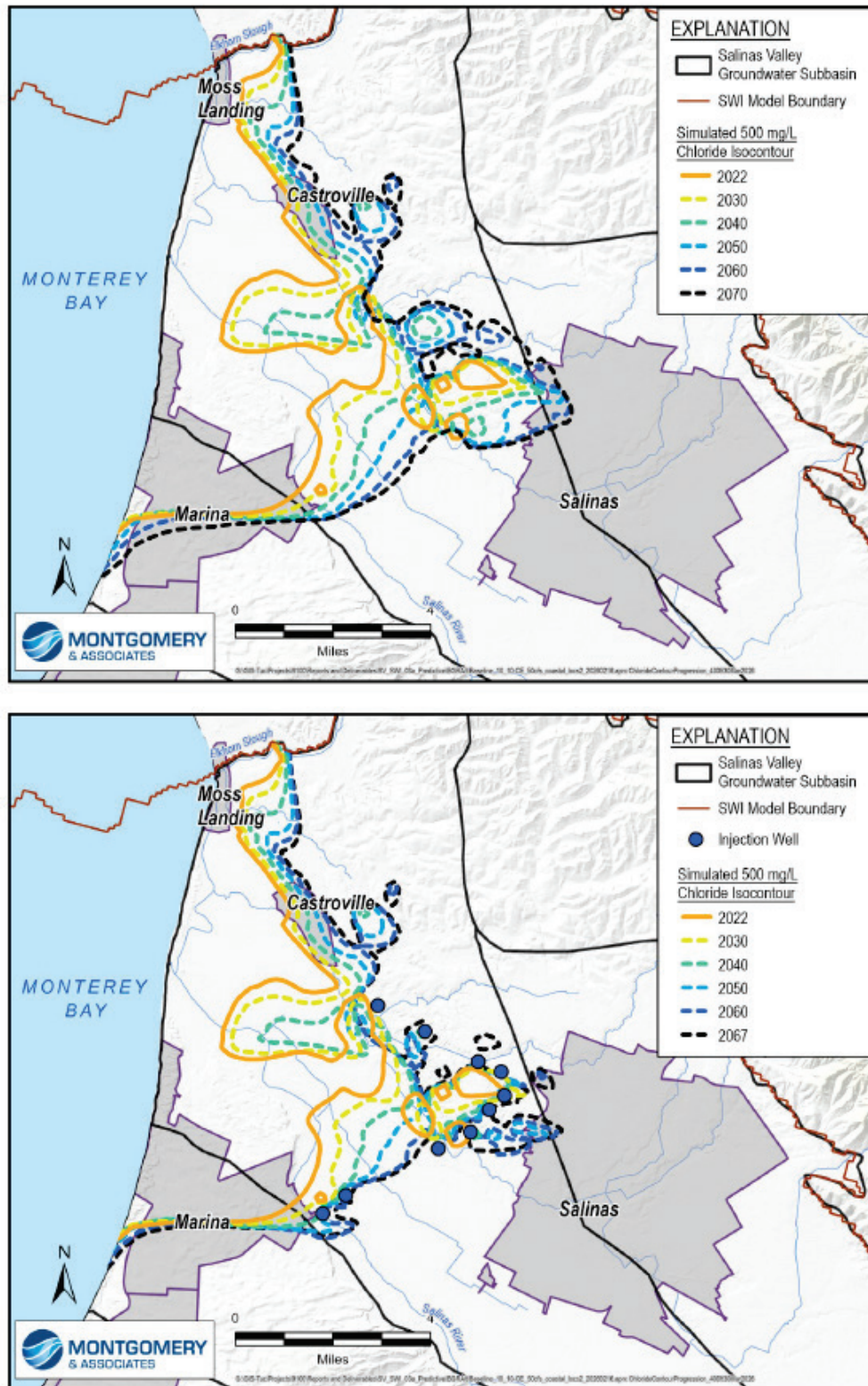


Figure 9-6. Progression of Chloride Isocontour in the 400-Foot Aquifer under the Baseline (top) and Coastal Injection Scenario (bottom)

The primary purpose of the Coastal Injection project concept was to address seawater intrusion rather than to explicitly achieve groundwater level SMCs. Nevertheless, the approach by which seawater intrusion is mitigated—increasing groundwater levels inland of the intrusion front—also partially moves conditions toward meeting groundwater level SMCs. In the scenario modeling, in the 400-Foot Aquifer, groundwater levels in the vicinity of the injection wells are approximately 3 to 6 feet higher than under baseline conditions.

Groundwater impacts were assessed for the Northern Eastside Injection project concept using the SVOM and comparing conditions to a Baseline Scenario and using other analyses. The Study found moderate localized groundwater level increases with minimal effect anticipated on seawater intrusion based on limited effect on groundwater levels near seawater intrusion front. Groundwater elevation differences range from 1 to 10 feet (Figure 9-8). Recharge through injection wells results in a localized groundwater response depending on the depth of injection, the degree of vertical connectivity and the transmissivity.

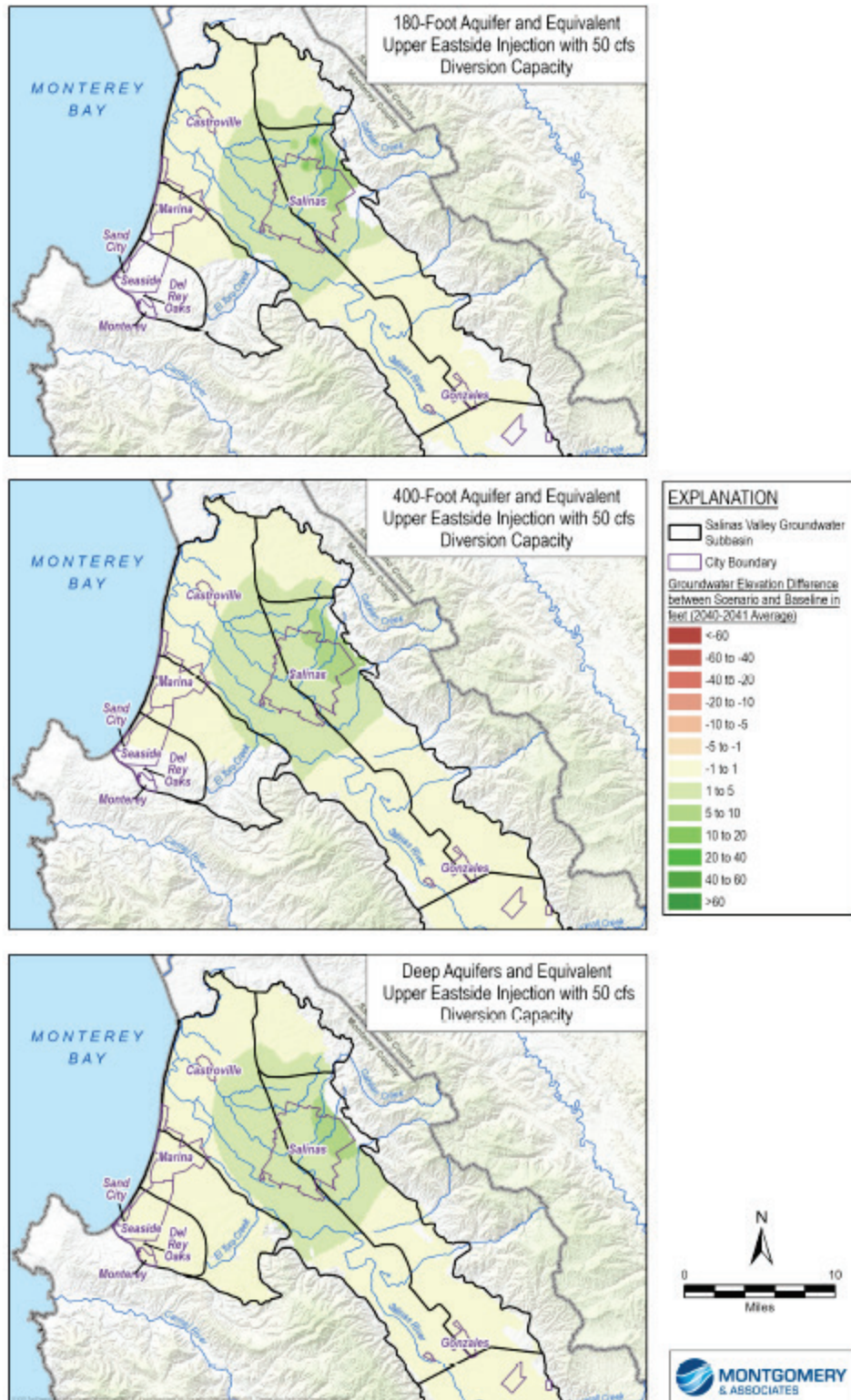


Figure 9-7. Difference between North Eastside Injection Project (50 cfs) Average November 2040-2041 Water Levels and Baseline Scenario for 180-Foot, 400-Foot, and Deep Aquifers

Benefits will be evaluated using the monitoring networks described in Chapter 7. Groundwater level responses will be assessed using the MCWRA groundwater monitoring well network. Land subsidence will be tracked using InSAR data provided by DWR, and seawater intrusion will be evaluated based on the location of the 50 mg/L chloride isocontour developed by MCWRA.

9.5.7.3 Circumstances for Implementation

Coastal Injection/ASR is a contingency project. If this project is determined to be needed, it will be implemented in coordination with MCWRA and will require agreements between MCWRA and SVBGSA. It will require either a Permit 11043 water rights permit modification or a new water right.

9.5.7.4 Permitting and Regulatory Process

MCWRA holds the SWRCB Permit 11043 diversion right. If this permit is the source water used, implementing this project will require close coordination with MCWRA and may require changes to the Permit approved by SWRCB. The project will be implemented in full compliance with the conditions of the Permit. A detailed evaluation of instream flow thresholds, fisheries habitat conditions, and cumulative watershed effects would still be required.

Other permits that might be required for this project include:

- ***USACE*** - Permit under Section 404 of the Clean Water Act (33 U.S. Code Section 1344).
- ***USFWS/NMFS*** - Federal Agency Consultation pursuant to Endangered Species Act Section 7 (16 U.S. Code Section 1537).
- ***USFWS*** - Incidental Take Permit (“ITP”) under the Endangered Species Act Section 10 (16 U.S. Code Section 1539).
- ***State Historic Preservation Office and the National Historic Preservation Act*** - Consultation with State Historic Preservation Officer or Tribal Historic Preservation Officer under Section 106 of the National Historic Preservation Act (16 USC Section 470 et seq.).
- ***CDFW*** - Incidental Take Permit under the California Endangered Species Act (California Fish and Game Code Section 2081).
- ***CDFW*** - Lake Streambed Alteration Agreement (California Fish and Game Code Section 1602).
- ***SWRCB/CCRWQCB*** - Waste Discharge Requirements pursuant to Section 401 of the Clean Water Act (40 Code of Federal Regulations 121) and the Porter Cologne Water Quality Control Act (California Water Code, Division 7, Section 13000 et seq.).

- ***DWR, Division of Safety of Dams*** - Approval of Dam Construction and Certificate of Approval to Operate (Water Code §§6000 et seq.)
- ***County of Monterey***– Well construction permits, Use Permit, Grading Permit and Encroachment Permit.

This is not an exhaustive list of all permits, approvals, or authorizations that may be required to construct, operate, or maintain potential water supply facilities. Rather, it identifies anticipated resource agency permitting requirements related specifically to environmental resource considerations and compliance with applicable state and federal environmental regulations. As project design, siting, and operational details are refined, additional permits or approvals may be identified, and the regulatory pathways described may change accordingly.

This project will require a CEQA review process, and would likely result in an EIR. Additionally, any project that coordinates with federal facilities or agencies may require NEPA documentation.

9.5.7.5 Implementation Schedule

If prioritized for further development, this project will take 7-10 years to implement. Project development will be done in phases, generally described as Phase 1 - Agreements, CEQA, permitting, including water rights (years 1-5), Phase 2 - Diversion, storage and treatment facilities and injection well construction (years 6-8), and Phase 3 – commissioning and initial operations (years 9-10).

9.5.7.6 Legal Authority

Legal authority for GSA to implement PMAs is guided by CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. CWC §10725.2 provides the GSA the powers and authorities to “perform any act necessary or proper” to implement SGMA regulations and allows the GSA to adopt rules, regulations, ordinances, and resolutions necessary for SGMA implementation. Legal authority for P7 Coastal Injection/ASR is identified in SGMA §10726.2. The Joint Exercise of Powers Agreement establishing the SVBGSA includes powers to establish and administer projects and programs for the benefit of the Basin [Subbasin].

This project may be developed cooperatively with MCWRA. MCWRA is a flood control and water agency established in 1990 by special act of the state legislature codified at Water Code Appendix Chapter 52, with broad water management authority in Monterey County. The MCWRA has the authority, among other powers, to levy benefit assessments to fund projects. Although it has not yet been determined, if this project is needed as a contingency project, MCWRA is likely to either be the lead agency or a partner agency given they hold existing water right.

9.5.7.7 Estimated Cost

The standardized total construction cost estimate and O&M are summarized in Table 9-12 (ERA Economics, 2026b). Capital and soft costs range from \$400 to \$1,017 million and annual O&M and replacement costs have an estimated range of \$3 to \$10 million. The total present value costs range from \$524 million to \$1.343 billion, with an annualized cost range \$24 to \$60 million. Based on an annualized yield of 5,100 to 9,700 acre-feet, the cost per AF of project yield ranges from \$4,622 to \$6,232. Project yield reflects injected water. Therefore, the \$/AF cost reflects the cost per acre-foot of injected water.

Table 9-12 shows the estimated capital, O&M, and amortized cost of the annual yield of Northern Eastside Injection scenarios for 2 diversion sizes (50 and 100 cfs) and Coastal Injection (ERA Economics, 2026b).

Table 9-12. Estimated Capital, O&M and Amortized Cost of Annual Yield

Cost Category	Northern Eastside Injection (100 cfs)	Northern Eastside Injection (50 cfs)	Coastal Injection (50 cfs)
Total Construction Cost (\$M)	\$1,017	\$516	\$400
Annual O&M (\$M)	\$10	\$5	\$3
Present Value Total Cost (\$M)	\$1,343	\$682	\$524
Annualized Cost (\$M)	\$60	\$31	\$24
Annual Yield (Acre-feet)	9,700	5,100	5,100
\$/Acre-Foot Cost	\$6,232	\$6,024	\$4,622

(ERA Economics, 2026b)

9.5.7.8 Public Noticing

If this contingency project is prioritized for further development, public notice will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on the project during its development. SVBGSA will maintain proactive stakeholder engagement at public meetings of the SVBGSA Board and committees on the project, and public notice will be conducted in accordance with the Brown Act. SVBGSA will share information about the project and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

Environmental review will follow the public noticing requirements of CEQA or NEPA. Additional public notice may be required to obtain permits or project approval, pursuant to the regulatory requirements of the permitting agency.

Depending on the funding strategy, SVBGSA will also provide public notices that may be required to obtain external (grant) funding or to establish new local funding or revenue mechanisms to implement the project, with adequate time and opportunity for public comment.

9.6 Other Groundwater Management Activities

Although not specifically funded or managed by this GSP, a number of associated groundwater management activities will be promoted and encouraged by the GSAs as part of general good groundwater management practices. If any particular action is scoped further and shown to significantly improve groundwater conditions, SVBGSA may consider implementing it as a project or management action under this GSP.

9.6.1 Continue Urban and Rural Residential Conservation

Existing water conservation measures should be continued, and new water conservation measures promoted for residential users. Conservation measures may include the use of low flow toilet fixtures, or laundry-to-landscape greywater reuse systems. Conservation projects can reduce demand for groundwater pumping, thereby acting as in-lieu recharge.

9.6.2 Promote Stormwater Capture

Stormwater and dry weather runoff capture projects, including Low Impact Development (LID) standards for new or retrofitted construction, should be prioritized and implemented. The Storm Water Resource Plan outlines an implementation strategy to ensure valuable, high-priority projects with multiple benefits (Hunt *et al.*, 2019). While not easily quantified and therefore not included as projects in this document, stormwater capture projects may be worthwhile and benefit the Valley.

9.6.3 Support Well Destruction Policies

Properly destroying unused wells in accordance with local and state regulations prevents the migration of poor-quality groundwater between aquifers. While well destruction does not directly address the SMC included in this GSP, controlling the migration of poor-quality groundwater allows more efficient use of existing resources.

9.6.4 Watershed Protection and Management

Watershed restoration and management can reduce stormwater runoff and improve stormwater recharge into the groundwater basin. While not easily quantified and therefore not included as projects in this document, watershed management activities may be worthwhile and benefit the Valley.

9.6.5 Support Reuse and Recharge of Wastewater

Wastewater collection and treatment provides opportunities to use and reuse water in various ways. Each wastewater treatment facility has unique infrastructure with different plans for expansion or upgrades. Potential upgrades could result in greater reliability, improved water quality, the ability to reuse treated wastewater or increase water reuse yields, or increased recharge to groundwater. These upgrades may directly or indirectly affect groundwater conditions.

10 GROUNDWATER SUSTAINABILITY PLAN IMPLEMENTATION

This chapter describes how the GSP for the Langley Subbasin will be implemented. The chapter serves as a roadmap for activities needed for GSP implementation to achieve sustainability by 2042 but focuses on the next 5-year implementation cycle and activities between 2027 and 2032.

Implementing this GSP will require the following activities, each of which is detailed in a subsequent subsection:

- Refinement and development of PMAs
- Development of funding mechanisms and financing plans for selected PMAs
- Data collection, monitoring, and SGMA compliance
 - Annual monitoring and reporting
 - Updating the DMS
 - Improving monitoring networks
 - Addressing identified data gaps in the HCM
- Coordination with interested parties and ongoing community outreach
- General administration of the SVBGSA and ongoing GSP implementation work streams

In addition, this chapter outlines a schedule for GSP implementation and an estimate for the GSP implementation cost and an overview of potential funding mechanisms. It also provides for adaptive management to occur throughout GSP implementation to achieve groundwater sustainability.

The implementation approach is based on the best available data as of the development of GSP Amendment 1 that is used to evaluate groundwater conditions and prepare the current assessment of PMAs described in Chapter 9. The Subbasin's conditions and the details of the projects and actions will evolve over time based on future data collection, model development, policy decisions, project engineering and permit requirements, and input from interested parties and stakeholders.

GSP Amendment 1 updates implementation activities based on work completed in the first 5 years of GSP implementation, which was the focus of Chapter 10 in the original GSP. This update continues SVBGSA's approach to managing multiple subbasins, describes the Valley-wide implementation pathway that will be revised as needed over time, and summarizes how SVBGSA will manage this Subbasin's groundwater sustainably. It identifies SGMA implementation activities through the GSP planning horizon, which will be adjusted as needed to adaptively manage groundwater in the Salinas Valley.

10.1 Projects and Management Actions to Manage Groundwater Sustainably

The Langley Subbasin is part of the larger Salinas Valley. Although each subbasin has unique characteristics, they are hydraulically interconnected to varying degrees. As a result, groundwater management actions in the Langley Subbasin can affect neighboring subbasins, just as management decisions in other subbasins may influence conditions within the Langley Subbasin. To address these interconnections, the SVBGSA is managing across all 6 subbasins through an Integrated Implementation Strategy (IIS), in collaboration with partner GSAs and other agencies.

Management of groundwater and surface water resources is related. SVBGSA is focused on groundwater management and coordinating groundwater management with other agencies that have water management responsibilities and authorities. In particular, SVBGSA works closely with MCWRA, which has water management authority countywide, including surface water management and operation of key water projects and infrastructure. A comprehensive approach to management of both surface and groundwater resources in the Salinas Valley is essential to maintaining a reliable water supply. Implementation of the GSPs and the analysis of the effects of proposed PMAs is based on the premise that the operation, maintenance, and management of existing reservoirs and other water infrastructure that influence groundwater conditions throughout the Valley will continue.

SVBGSA recognizes that sustainable water management depends on individual water users and the coordinated efforts and investments of multiple local agencies, and those agencies' activities are funded by the same set of landowners and taxpayers. SVBGSA strives to take a collaborative, efficient, and integrated approach to water resource management, recognizing the complementary roles of numerous interested parties and agencies involved with groundwater management, surface water operations, water supply projects, water quality management, and ecosystem stewardship in achieving long-term sustainability goals for the Salinas Valley.

A summary of the IIS is presented below, followed by the key PMAs relevant to the Langley Subbasin GSP and how they address SMC and help mitigate overdraft.

10.1.1 Integrated Implementation Strategy

SVBGSA has a unique structure and approach to multi-subbasin coordination that differs from other regions in California. While the inter-subbasin agreement provisions of SGMA do not directly apply to SVBGSA's jurisdiction, SVBGSA believes establishing a collaborative framework is the appropriate approach for the Salinas Valley in Monterey County. SVBGSA remains committed to working cooperatively to achieve and maintain groundwater

sustainability across the 6 subbasins it fully or partially manages. This commitment will be further reflected and advanced through the development and implementation of the IIS.

A multi-subbasin approach is necessary and appropriate for GSP implementation in the Salinas Valley due to the following factors:

- Aquifers across the 6 Salinas Valley Subbasins are hydraulically connected to varying degrees and cross subbasin boundaries.
- Low groundwater levels in the 180/400, Eastside, and Monterey Subbasins contribute to seawater intrusion.
- Salinas River connects 4 of the subbasins (180/400, Monterey, Forebay, and Upper Valley) and is the main source of groundwater recharge for the Valley.
- Nacimiento and San Antonio Reservoirs store water under MCWRA water rights, and reservoir releases provide groundwater benefits across subbasins.
- Seawater intrusion occurs in the 180/400 Subbasin and Monterey Subbasins and threatens Eastside Subbasin if it is not halted.
- Potential costs and repercussions of failing to avoid undesirable results are of regional importance and a Countywide concern.

SVBGSA will use the IIS to manage the 6 Salinas Valley subbasins jointly. As part of the IIS, SVBGSA evaluated comprehensive portfolios of PMAs to identify the most effective and coordinated path to sustainability. The evaluation weighed various factors including technical feasibility, cost-effectiveness, stakeholder impacts, and the ability of each project or management action to contribute to meeting sustainable management criteria within SGMA-mandated deadlines. This integrated approach recognizes that sustainability cannot be achieved across the entire Salinas Valley by addressing each subbasin in isolation. A coordinated strategy spanning SVBGSA's jurisdiction is essential to long-term groundwater management success.

In 2026, a comprehensive evaluation of portfolios of PMAs resulted in identification of the most effective and coordinated path to sustainability. The process started with presenting the completed studies of individual PMAs that were components of the portfolios. The SVBGSA Advisory Committee considered proposed portfolios, provided feedback to staff, and forwarded their input to the SVBGSA Board of Directors.

On August 13, 2026, the SVBGSA Board of Directors selected a preferred IIS portfolio of PMAs to guide further development and refinement of the preferred implementation pathway. The portfolio addresses undesirable results throughout the Salinas Valley, including seawater intrusion and chronic lowering of groundwater levels in multiple subbasins. Although individual

PMAs may affect specific areas, the portfolio was developed to help avoid undesirable results across the entire Salinas Valley.

Selection of a preferred portfolio identifies the long-term implementation pathway for further development and refinement but does not lock the SVBGSA into a fixed project configuration, authorize individual projects, or commit funding. Each project and management action will continue to require separate planning, environmental review, permitting, financing, and future Board approvals before implementation. SVBGSA will continue to refine projects, evaluate alternatives, and revise the preferred portfolio as needed during GSP implementation.

Other PMAs identified in Chapter 9 may also be implemented if a component of the selected portfolio proves infeasible or if further analysis indicates an alternative approach would better achieve GSA objectives, including meeting GSP goals, maintaining affordability, and addressing other key considerations. In addition, Chapter 9 includes ongoing and as-needed contingency PMAs that are necessary to prevent worsening conditions, improve groundwater conditions beyond minimum thresholds, advance progress toward measurable objectives, and address specific local issues. Together, these actions support ongoing assessment and adaptive management throughout GSP implementation.

PMAs in the preferred IIS portfolio include the following:

- Demand Management – Deep Aquifers Allocations / Pumping Limits
- Seawater Intrusion Response Plan
- Demand Management – 10% Agricultural Pumping Reduction (180/400, Eastside, Langley, and Monterey Subbasins)
- Demand Management – Rural Residential Water Efficiency Programs
- Castroville Seawater Intrusion Project Optimization
- Brackish Groundwater Restoration Project (Small)
- Eastside Recharge Basins (100 cfs diversion)

These PMAs constitute the core actions that will avoid SGMA undesirable results within SVBGSA's jurisdiction. SVBGSA will continue to refine the scale, location, design, and implementation details of the PMAs. A funding strategy will be developed and applied for individual projects in the IIS portfolio. As part of upcoming phased implementation, additional investigations, field and pilot testing, environmental review, permitting, and design activities, SVBGSA will continue improving its understanding of projects and management action design and implementation and modify them appropriately. Furthermore, additional analysis may provide opportunities for better PMA integration and cost savings. SVBGSA is committed to

adaptive management, modifying the approach to sustainability as additional data and analyses become available.

Modeling of the portfolio’s effects on groundwater conditions include assumptions based on the continuation of current conditions, including existing land use patterns, reservoir operations, and climate conditions. Changes to any of these factors could affect the ability of the Salinas Valley to achieve and maintain sustainable groundwater management and will continue to be evaluated as PMAs are developed. Contingency PMAs may be considered as needed, drawing from a range of options identified in Chapter 9.

Funding for PMAs can follow multiple cost allocation approaches. These could be based on physical benefits, proportional contribution to the problem being assessed, joint and separable costs associated with each project component, or a negotiated allocation.

10.1.2 Key Projects and Management Actions for the Langley Subbasin

The priority PMAs for the Langley Subbasin GSP are drawn from the IIS preferred portfolio of PMAs and other PMAs that contribute to preventing undesirable results, reaching measurable objectives, or otherwise addressing the needs of beneficial users. This priority does not imply that other PMAs have no influence on groundwater conditions in the Langley Subbasin, nor that PMAs within the Langley Subbasin do not affect conditions in other subbasins. Rather, the PMAs identified here are those most directly relevant to the Langley Subbasin GSP. Refinements to the PMAs identified in the Langley Subbasin GSP will be incorporated into annual reports and periodic evaluations.

Table 10-1 summarizes the PMAs described in Chapter 9, identifying those prioritized for the Langley Subbasin, as well as those that are contingency and will be implemented on an as-needed basis. SVBGSA will continue to further scope, develop, and advance any of these PMAs as appropriate.

Table 10-1. Summary of Langley Projects and Management Actions

Priority PMAs	Contingency PMAs
Demand Management and Planning (MA1)	Rural Residential Well Mitigation (MA5)
Fallowing, Fallow Bank, Agricultural Land Retirement, and Multi-benefit Land Repurposing (MA2)	Decentralized Residential In-Lieu Recharge Projects (P1)
Conservation and Agricultural BMPs (MA3)	Decentralized Stormwater Recharge (P2)
Rural Residential Demand Management Water Use Efficiencies (MA4)	Managed Aquifer Recharge with Overland Flow (P3)
	Surface Water Diversion from Gabilan Creek (P4)
	Brackish Groundwater Restoration Project (P5)

Priority PMAs	Contingency PMAs
	New Seawater Intrusion Project/CSIP Expansion (P6)
	Coastal Injection/Aquifer Storage and Recovery (P7)

Under SGMA, GSAs need to avoid undesirable results and mitigate long-term overdraft by 2042 for medium- and high-priority basins. In addition, GSAs evaluate their GSPs and implementation progress and prepare an assessment every 5 years or with each plan amendment. In reviewing these SGMA documents, DWR considers whether failure to meet any interim milestones are likely to affect the ability of the GSA to achieve the sustainability goal of the basin.

As discussed in Chapter 6, the Langley Subbasin groundwater budget is roughly in balance and not in long-term overdraft. The Langley Subbasin is hydraulically connected to the 180/400 and Eastside Subbasins, and therefore management may need to be adjusted based on the how conditions in those subbasins impact the Langley Subbasin. The IIS preferred portfolio does not simulate the effects of rural residential PMAs, which are critical for the Langley Subbasin; however, given that the Subbasin is roughly in balance, the portfolio is assumed to be sufficient for avoiding undesirable results in the Langley Subbasin. Table 10-2 shows a summary of the SMC results of the IIS preferred portfolio as of the drafting of GSP Amendment 1 in 2026.

The portfolio will be refined over time, PMA planning will be adjusted in alignment with the IIS, and updates or changes will be documented in 5-year GSP periodic evaluations. Chapter 9 includes contingency PMAs that can be implemented if future conditions are worse than anticipated or additional actions are needed for adaptive management. The portfolio of PMAs ensures that lowering of groundwater levels or depletion of supply during periods of drought will be offset by increases in groundwater levels or storage during other periods.

Table 10-2 summarizes the anticipated effects of the preferred IIS portfolio on the Langley Subbasin SMCs. Modeling results of minimum threshold exceedances in the Langley Subbasin are not the best indicator of projected groundwater sustainability due to the level of uncertainty, as discussed in Chapter 6. However, review of the preferred IIS portfolio results, historical groundwater conditions, and projected baseline scenario indicate that groundwater levels will likely stabilize if groundwater extraction continues at current rates. The DM triggers and stages, as well as the Rural Residential Demand Management Water Use Efficiencies, provide measures that can be adapted if conditions warrant it. In addition, the PMAs can be refined and adjusted to avoid undesirable results and ensure groundwater conditions either achieve or are progressing toward the measurable objectives.

Figure 10-1 shows that with full implementation of the preferred IIS portfolio by 2040, the extent of seawater intrusion is not projected to reach the Langley Subbasin.

Table 10-2. IIS Portfolio Effects on SMC in Langley Subbasin

SMC	Summary of IIS Portfolio Effect on Langley Subbasin SMC
Chronic Lowering of Groundwater Levels	Less than 15% minimum threshold exceedances
Reduction in Groundwater in Storage	Less than 15% minimum threshold exceedances
Seawater Intrusion	Measurable objective met; no seawater intrusion by 2042 in the Langley Subbasin
Degraded Water Quality	No degradation of groundwater quality due to pumping or GSA action
Land Subsidence	Low risk of subsidence; groundwater levels maintained above historical lows

In addition to avoiding undesirable results for all 6 sustainability indicators, SGMA requires mitigating long-term overdraft. Long-term overdraft is determined when groundwater levels do not decline, after undesirable results are avoided. Based on the assessment of overdraft that Langley has not historically been in long-term overdraft, as well as review of projected modeling results, it is not anticipated that Langley will be in overdraft in the future.

10.2 Project and Management Actions Funding Strategy

SVBGSA commissioned development of a funding strategy (ERA Economics, 2026c) for the IIS portfolio and other portfolios that were considered. The funding strategy standardized project costs and presented alternative financing approaches, SVBGSA revenue needs, and cost allocation approaches. This analysis supported preliminary evaluations of individual project financial feasibility. The funding strategy defines individual project costs in addition to overall portfolio costs.

The IIS PMA portfolio includes a mix of PMAs with different cost structures, funding opportunities, implementation responsibilities, and beneficiaries. As a result, SVBGSA anticipates that funding strategies will be developed for individual projects or PMAs as project scopes, costs, implementation roles, and funding needs are refined. Project-specific funding strategies will allow SVBGSA and its partners to evaluate the appropriate combination of external funding, local funding mechanisms, financing approaches, and cost allocation methods based on the specific purpose, beneficiaries, and implementation structure of each project. This will be guided by the foundational information in the SVBGSA funding strategy.

Implementation of the IIS portfolio will involve multiple agencies and organizations with different responsibilities for project development, project funding, infrastructure ownership, operations, and water management. Some PMAs may be implemented directly by SVBGSA, and others may be led by partner agencies, water suppliers, or other entities with specific facilities, service areas, or legal authorities. As project scopes and implementation roles are refined, SVBGSA will evaluate the most appropriate funding mechanisms for projects it implements, funds, or supports through funding contributions. This evaluation will be conducted in

coordination with stakeholders and the Board of Directors to ensure that funding approaches reflect project beneficiaries, legal authorities, and implementation feasibility.

Potential funding sources include but are not limited to:

- **Grant funding.** SVBGSA will pursue federal, state, and local grants to the extent possible.
- **Contributions from local jurisdictions, partner agencies, organizations, and companies.** Where appropriate, SVBGSA will work with partners to coordinate implementation and funding for projects or components of projects.
- **Benefit assessment (Proposition 218 vote).** For projects with substantial capital costs or benefits that extend across multiple subbasins, SVBGSA may consider a Proposition 218-compliant local funding mechanism, depending on the project purpose, beneficiaries, legal authority, and method of cost recovery. If structured as an assessment, SVBGSA would evaluate the parcels receiving special benefit, distinguish special benefits from general benefits, define the applicable assessment area or zone of benefit, and develop a proportional method for calculating each parcel's assessment. If structured as a property-related fee or charge, SVBGSA would instead evaluate the cost of providing the applicable service, identify the parcels subject to the charge, and calculate charges so that revenues do not exceed the cost of the service and each parcel's charge does not exceed its proportional cost responsibility. The appropriate structure, procedural requirements, and supporting documentation would be developed in consultation with legal counsel before initiating any Proposition 218 proceeding.
- **Fee.** Fees may be collected for a variety of purposes, such as funding a regulatory program or providing a product or service (e.g., Proposition 26). Fees are not subject to a vote or protest proceeding, but they cannot exceed the cost of running the program or providing the product or service. Some regulatory programs need to be implemented via ordinance.
- **Fines and penalties.** With the establishment of an ordinance, SVBGSA has the authority to impose fines and penalties, such as may be associated with a regulatory program. Imposition of a fine or penalty must provide due process, usually a hearing after notice/citation and before assessment of the fine or penalty, and funds must be put back into the program.
- **Special tax.** SVBGSA has the authority to levy a special tax for a specific purpose, such as a parcel tax or some sales tax components. This requires a two-thirds vote of the electorate.
- **Other funding mechanisms.** SVBGSA is evaluating other potential funding approaches including but not limited to private partnerships, broader assessments, and partnerships.

SVBGSA understands that PMA costs will need to be funded through a combination of external funding, local funding mechanisms, financing approaches, and partner contributions. The existing Funding Strategy provides additional detail on the PMAs under consideration, the estimated costs and timing of those projects, potential funding sources, public-sector debt financing options, and local funding mechanisms that may be available to support implementation. As project scopes, implementation roles, and funding needs are refined, SVBGSA will continue to evaluate the appropriate funding approach for each PMA and as part of the entire portfolio. SVBGSA will also coordinate with funding agencies, partner agencies, local stakeholders, and the Board of Directors to identify feasible funding strategies and pursue available funding opportunities.

10.3 Data, Monitoring, and SGMA Compliance

SVBGSA conducts ongoing data collection, monitoring, technical evaluation, and regulatory compliance activities to support SGMA implementation across all Salinas Valley subbasins. These efforts provide the technical foundation for groundwater sustainability planning, performance assessment, decision-making, and adaptive management. Activities include groundwater monitoring, groundwater extraction reporting, well registration, data management, annual reporting, 5-year periodic plan evaluations, groundwater modeling, and coordination with partner agencies to address data gaps and improve understanding of subbasin conditions.

SVBGSA works closely with the MCWRA, other groundwater sustainability agencies, technical consultants, and regional stakeholders to expand monitoring networks, improve data quality and accessibility, refine hydrogeologic understanding, and support compliance with SGMA requirements. Ongoing activities focus on improving the collection, management, and analysis of information related to groundwater elevations, groundwater extraction, groundwater quality (including seawater intrusion), land subsidence, ISW, groundwater-dependent ecosystems, and other indicators of subbasin conditions.

During the first phase of GSP implementation, SVBGSA completed several foundational technical initiatives that strengthened long-term groundwater sustainability planning and SGMA compliance. As described in the sections below, these efforts included development and implementation of expanded groundwater monitoring and reporting programs, significant expansion of monitoring networks to address data gaps, refinement of the HCM, groundwater-dependent ecosystem verification, and development of groundwater, river, and economic models. In compliance with SGMA, SVBGSA has established and continues to update the DMS and web-based information tools with data from completed annual reports. SVBGSA will continue to update the DMS and web map along with annual reports for data and 5-year GSP periodic evaluations for other layers. Investments made in the first 5 years of GSP implementation established a stronger technical framework for developing PMAs and tracking progress toward sustainability goals across the Salinas Valley.

10.3.1 GMP and Well Registration

The data collection networks in the GMP are designed to accomplish monitoring of groundwater levels, seawater intrusion, and groundwater extractions. Well registration is also part of the GMP, which, when coupled with other monitoring programs, aids in assessing how wells could be affected by changing groundwater conditions. All groundwater production wells, including wells used by *de minimis* pumpers, are required to be registered with MCWRA under the GMP. Well registration is intended to establish a relatively accurate count of all the active wells in the Subbasin. This implementation action will help gain a better understanding of the wells in active use, versus those that have been decommissioned. Well registration will collect information on active wells such as well owner, well operator, well location, well construction, and type of well use. Well locations and construction information supports more accurate planning that helps guide sustainable groundwater management decisions.

If a well goes dry and a new well is drilled, both the new well and inactive (dry) well must be documented during well registration. If the well is dry due to declining groundwater elevations, the SVBGSA, local partner, and state agencies are also informed through the “Household Water Supply Shortage System,” which is intended to document drought impacts. If the well is dry due to declining groundwater elevations, the SVBGSA could convene a working group to assess the groundwater situation and inform the Well Mitigation management action if a number of wells are going dry in a specific area. The Well Mitigation management action is intended to assist rural residential drinking water users if PMAs are not able to maintain access to reliable domestic water supplies due to groundwater management and provides a framework for responding to localized impacts that may occur despite broader efforts to improve groundwater conditions.

SGMA requires GSAs to manage groundwater extractions within a Basin’s [subbasin’s] sustainable yield. Accurate extraction data is fundamental to groundwater management. MCWRA has collected groundwater extraction data through GEMS since 1993. In collaboration with SVBGSA, with the establishment of the GMP, GEMS was updated and expanded by Ordinance 5426. MCWRA provides SVBGSA annual GEMS data that can be used for groundwater management. A GSA may not require *de minimis* users (as defined) to meter or otherwise report annual extraction data. Other public agencies such as the County of MCWRA may have such authority. Currently, all non-*de minimis* are required to report extraction data. The groundwater extraction information will be used to report total annual extractions in the Subbasin.

10.3.2 Improving Monitoring Networks and Filling Data Gaps

As of GSP Amendment 1, all monitoring network data gaps have been filled. Chapter 7 shows how the monitoring networks provide sufficient spatial coverage and do not need to be

improved. However, some wells in the groundwater level monitoring network have unknown well construction information. SVBGSA will work with MCWRA to fill this data gap during GSP implementation through MCWRA's well registration effort. As part of the required periodic evaluations, SVBGSA will review the monitoring networks every 5 years to determine whether additional monitoring wells are needed.

Key data gaps related to the HCM have also been addressed through GSP Amendment 1, and SVBGSA has worked with the CCWG to conduct field verification of GDEs and monitoring protocols. If new data gaps are identified, or if additional information is needed to support project development or subbasin management, SVBGSA and its partner agencies will evaluate opportunities to collect the necessary data and improve the understanding of subbasin conditions.

10.3.3 Models

SVBGSA continues to develop, maintain, refine, and apply a suite of groundwater, surface water, seawater intrusion, flood, and economic models that support SGMA implementation throughout the Salinas Valley. These models provide the analytical framework for evaluating basin conditions, forecasting future groundwater responses, assessing the effectiveness of PMAs, supporting required reporting, and informing SVBGSA decision making. These tools can be periodically updated to incorporate new monitoring data, improved hydrogeologic understanding, and evolving management needs.

During the first phase of GSP implementation, SVBGSA invested significantly in development and enhancement of technical modeling tools to provide a consistent, valley-wide basis for evaluating groundwater sustainability. Building on previous efforts by Monterey County and MCWRA, this work included updates to regional groundwater flow models, development of predictive planning tools, advancement of seawater intrusion modeling capabilities, evaluation of surface water and flood-related processes, and development of economic models and cost analyses of PMAs. These tools also support stakeholder engagement.

SVIHM: The SVIHM, originally developed by the USGS, serves as the primary regional historical groundwater and surface water model for much of the Salinas Valley. The model simulates groundwater flow, groundwater recharge, stream-aquifer interactions, groundwater storage changes, and other hydrologic processes across multiple subbasins.

After the USGS finalized the SVIHM in April 2025, SVBGSA, MCWRA, and MCWDGSA worked together to update and refine the SVIHM in October 2025 using additional monitoring data, updated hydrogeologic information, and findings from recent technical studies. These updates improve the model's ability to represent current basin conditions and provide a stronger foundation for evaluating groundwater sustainability and future management options.

SVOM: Building upon the SVIHM, USGS developed and SVBGSA, MCWRA, and MCWDGSA updated a predictive planning tool for evaluating potential future groundwater conditions under a range of implementation scenarios. The SVOM incorporates operational assumptions related to reservoir releases, water management infrastructure, groundwater demands, and anticipated future conditions.

The model is used to evaluate projected groundwater elevations, groundwater storage, ISW conditions, and the potential benefits of PMAs through the SGMA planning horizon. Alongside the SVIHM updates, SVBGSA, MCWRA, and MCWDGSA updated the SVOM in March 2026.

SWIM: SVBGSA and Monterey County also developed the SWIM specifically to evaluate seawater intrusion conditions and management strategies within the coastal portions of the Salinas Valley. In early 2026, SVBGSA worked with MCWDGSA and Seaside Watermaster to update the model. The model simulates groundwater flow and chloride transport while accounting for density-dependent movement of freshwater, brackish water, and seawater.

The SWIM is used to evaluate both existing and potential future seawater intrusion conditions, assess the effectiveness of proposed PMAs, identify areas at risk of continued intrusion, and support development of strategies intended to protect the 180-Foot, 400-Foot, and Deep Aquifer systems. Model results are used extensively to support planning efforts in the 180/400, Monterey, Eastside, and Langley Subbasins.

HEC-RAS: For modeling related to the fluvial dynamics of the Salinas River, SVBGSA uses the HEC-RAS model developed for the SMP and supported 2026 updates to the HEC-RAS model. This model helps assess river and floodplain conditions, recharge opportunities, project hydraulics, flood-related constraints, and interactions between proposed infrastructure and surface water systems.

As project concepts advance, HEC-RAS modeling provides a tool for evaluating engineering feasibility, permitting considerations, flood conveyance requirements, and potential benefits associated with recharge and water management projects located along the Salinas River and its tributaries.

Economic Modeling: Recognizing that successful PMA implementation requires consideration of economic as well as hydrologic outcomes, SVBGSA has supported development and application of economic modeling tools to evaluate the costs, benefits, and potential regional economic effects of groundwater sustainability strategies.

Economic analyses are used to assess implementation scenarios, evaluate project or management alternatives, estimate potential economic impacts to agricultural and municipal groundwater users, and evaluate funding mechanisms. These efforts help ensure that groundwater

sustainability strategies remain technically feasible as well as economically and financially, and sensitive to the importance of groundwater resources within the Salinas Valley.

Collectively, these modeling tools provide SVBGSA with an integrated framework for evaluating groundwater conditions, assessing future risks, prioritizing PMAs, supporting regulatory compliance, and advancing long-term groundwater sustainability throughout the Salinas Valley. As implementation progresses, the models will continue to be refined and applied to support adaptive management and informed decision-making.

10.3.4 Updating the Data Management System

The SVBGSA has a DMS that is used to store, review, and upload data collected from the monitoring programs outlined above, as described in Chapter 7. A web application is available on the SVBGSA's website for stakeholders to view the data. The DMS is updated as new information is collected for annual reports, developed as part of GSP implementation, or, when appropriate, provided by stakeholders.

10.3.5 Annual Monitoring and Reporting

SGMA requires completion of annual reports to document Subbasin conditions relative to the SMC presented in Chapter 8. SVBGSA submits annual reports for the Langley Subbasin to DWR by April 1 each year and makes them publicly available. The purpose of the reports is to provide monitoring, groundwater extraction, and total water use data to DWR, compare monitoring data to the SMC, and adaptively manage actions and projects implemented to achieve sustainability.

The monitoring of the 6 sustainability indicators is described in Chapter 7. Chapter 7 outlines the data collected through the monitoring programs that will be used to complete annual reports. Where possible, SVBGSA leverages data collection and analysis completed by MCWRA to avoid duplication of efforts.

10.3.6 5-year Periodic Evaluations

SGMA requires the development of 5-year GSP periodic evaluations to assess whether the GSA is on track to achieve the sustainability goal in the Subbasin. The assessments include a description of significant new information that has been made available since GSP submittal, whether any new information warrants changes to any aspect of the plan, and how the GSP will be adapted accordingly.

The periodic evaluations may include updating the groundwater models with newly collected data and updating model scenarios to reflect both the additional data and refinements in designs

or assumptions. They also include a comparison of the hydrology experienced to that anticipated in the GSP in the review of groundwater conditions.

SVBGSA engages stakeholders in the development of the 5-year assessment. In contrast to the annual reports, which share monitoring data and yearly progress related to the SMC, the 5-year assessment involves a more systemic reevaluation of the SMC minimum thresholds and measurable results, as well as reporting on progress meeting the interim milestones.

10.4 Interested Parties Coordination and Outreach

Successful implementation of SGMA requires ongoing coordination among agencies, groundwater users, and other interested parties throughout the Salinas Valley. Because groundwater resources, management responsibilities, and sustainability challenges extend across jurisdictional and subbasin boundaries, implementation of GSPs depends on collaboration among organizations with differing authorities, expertise, and stakeholder interests.

SVBGSA recognizes that achieving groundwater sustainability is not solely a technical or regulatory effort. It also requires effective communication, information sharing, and engagement with the communities, businesses, agencies, and organizations that rely on groundwater resources. Coordination and outreach activities help ensure that groundwater management decisions are informed by regional perspectives, local knowledge, regulatory considerations, and stakeholder input.

During the first phase of GSP implementation, SVBGSA established and expanded several coordination and engagement programs to strengthen relationships among participating agencies and interested parties, improve communication pathways, and support transparent implementation of the GSPs. These programs continue to evolve as implementation progresses and as groundwater management priorities, regulatory requirements, and stakeholder needs change over time.

The following subsections describe ongoing and completed efforts related to interagency coordination, integration of groundwater sustainability considerations into land use planning, coordination with water quality agencies and programs, and stakeholder outreach and engagement activities that support GSP implementation throughout the Salinas Valley.

10.4.1 Agency Coordination and Collaboration

SVBGSA continues to coordinate with partner GSAs and other groundwater management agencies to support integrated implementation of GSPs across the Salinas Valley. Coordination occurs through formal agreements, joint committees, technical working groups, staff collaboration, data sharing, project development efforts, and regular communication among agencies responsible for groundwater management and SGMA compliance.

Agency coordination supports development and implementation of monitoring programs, technical studies, groundwater models, grant-funded projects, annual reporting, periodic evaluations, and implementation of PMAs that may affect multiple subbasins. Coordination also helps ensure that groundwater management decisions account for the hydraulic interconnectedness of the Salinas Valley subbasins and the regional nature of groundwater sustainability challenges such as overdraft, seawater intrusion, groundwater quality, and climate resilience.

Leading up to submittal of the original GSPs and during the first phase of GSP implementation, SVBGSA established multiple interagency coordination agreements and expanded collaboration through steering committees, technical committees, implementation committees, and staff collaboration. SVBGSA will continue to support coordinated groundwater management throughout the Salinas Valley through these efforts and will periodically review and adjust coordination as needed during different phases of SGMA implementation.

10.4.2 Land Use Coordination

Many decisions affecting groundwater—such as development patterns, agricultural practices, and infrastructure investments—are made through local land use processes. SGMA recognizes that sustainable groundwater management must be done in coordination with cities and counties responsible for land use decisions. Land use authority remains under the jurisdiction of counties and cities. Most land use agencies in the Salinas Valley are members of the SVBGSA Joint Powers Authority, including the County of Monterey and cities of Salinas, Gonzales, Soledad, and King. The City of Greenfield is within the ASGSA’s ASCMA of the Forebay Subbasin. The City of Marina is within the MCWDGSA’s Marina-Ord Management Area of the Monterey Subbasin. During the first phase of GSP implementation, SVBGSA requested land use plan information from each jurisdiction to update Appendix 3B Land Use Plans.

SVBGSA coordinates with the County and cities by convening meetings with each jurisdiction to review GSP amendments and the findings of the periodic evaluations, to review land use plans or projects to assess activities that may potentially create risks to groundwater quality or quantity and to consider the local groundwater conditions in relation to the GSP SMC in the planning area or development location, to consider relevant land use plans during PMA development and implementation, and as needed or as requested by any agency.

Land use changes may result in changes to groundwater pumping to support new uses and should consider the applicable subbasin conditions and SMC. Land use agencies must now consider adopted GSPs when:

- Updating or amending general plans
- Approving land use entitlements or development projects

- Revising or adopting policies related to groundwater resources or that may affect groundwater resources

Effective coordination between groundwater management and land use planning can support multiple environmental and community objectives. These strategies not only support groundwater sustainability but also improve resilience to drought, flooding, and climate change. Key opportunities include:

- Strategic location and design of new development
- Improved stormwater management to enhance groundwater recharge
- Protection and enhancement of local water resources
- Maintenance of base flows in streams
- Protection of natural recharge areas and upper watershed resources
- Restoration and protection of floodplains
- Conservation of groundwater-dependent ecosystems

10.4.3 Water Quality Coordination

SVBGSA coordinates with agencies that have primary responsibility for groundwater quality regulation and drinking water protection. The primary goal is to support implementation of SGMA, while acknowledging existing regulatory authorities and opportunities to collaborate. Under SGMA, SVBGSA monitors groundwater quality conditions and evaluates potential groundwater quality impacts associated with groundwater management activities but does not replace or assume the responsibilities of existing water quality regulatory agencies.

Key coordination partners include the CCRWQCB, Monterey County Health Department, non-profit Central Coast Water Quality Preservation, Inc, and other agencies and organizations as appropriate.

During the first phase of GSP implementation, SVBGSA expanded collaboration with groundwater quality agencies and initiated development of a Water Quality Coordination Group to facilitate communication among the key coordination partners. The Water Quality Coordination Group convenes at least annually to review the water quality data from the Salinas Valley Annual Reports. In addition, they discuss data coordination, trend analysis, programs available for alternative water supplies and current priorities and challenges among the partners.

Water quality coordination also supports SVBGSA's commitment to protecting beneficial uses of groundwater and advancing policies that recognize the human right to safe, clean, affordable,

and accessible drinking water. SVBGSA will continue these efforts throughout SGMA implementation.

10.4.4 Outreach and Engagement

SVBGSA conducts ongoing outreach and engagement activities to promote transparency, foster stakeholder participation, and ensure that groundwater users and interested parties remain informed about groundwater conditions and GSP implementation activities. Outreach is designed to provide meaningful opportunities for public involvement and to support communication and engagement with diverse stakeholder groups throughout the Salinas Valley.

SVBGSA conducts a variety of communication and engagement activities, including public meetings, workshops, an advisory committee and subbasin committees, technical or ad-hoc working groups, website resources and informational materials, electronic newsletter communications, and direct engagement with community organizations and groundwater users. These efforts support two-way communication by providing stakeholders with information while also allowing the Agency to receive local knowledge, feedback, and recommendations.

SVBGSA also maintains communications and engagement with DACs, underrepresented communities, small water systems, and domestic well owners to help ensure that groundwater sustainability planning reflects the needs of all beneficial users and uses of groundwater. Outreach efforts support awareness of groundwater conditions and sustainability goals, PMAs, monitoring programs, reporting requirements, and opportunities for stakeholder participation in SVBGSA decision making.

During the first phase of GSP implementation, SVBGSA expanded its communication and engagement programs, strengthened stakeholder committee structures, increased opportunities for public participation, and developed additional tools and resources to improve transparency and accessibility of groundwater information. The activities described in Chapter 2 will be continued, providing a foundation for collaborative groundwater management across all Salinas Valley subbasins.

10.5 General Administration

SVBGSA conducts general administrative activities to support SGMA implementation across the Salinas Valley. These activities include governance and agency management, financial administration, stakeholder engagement and communications, grant management, regulatory compliance, and evaluation of PMAs that support groundwater sustainability objectives. Administrative and financial services are provided through SVBGSA's contracted staffing resources.

SVBGSA maintains governance and oversight through regular meetings of the Board of Directors, Board committees, subbasin committees, the Advisory Committee, and technical working groups. The Agency coordinates with partner agencies, local jurisdictions, water providers, and other regional stakeholders to support aligned groundwater management across jurisdictional boundaries. Ongoing administrative responsibilities include management of Board and committee activities, policy review and updates, performance and staffing oversight, regulatory compliance tracking, records management, financial administration, and implementation of the Agency's annual work plans.

Financial management activities include annual budget preparation, financial reporting, grant administration, fee administration, auditing support, and long-range planning to support GSP implementation. SVBGSA administers state and regional grants, as applicable, that support planning, monitoring, data collection, technical studies, stakeholder engagement, and implementation projects throughout the Salinas Valley. Budget and financial reporting processes continue to be refined to enhance transparency, consistency, and long-term fiscal planning.

General administrative activities are performed jointly with the coordination and outreach tasks outlined above, because stakeholder engagement and transparency are central to SVBGSA.

SVBGSA also maintains administrative support for SGMA compliance activities. Administrative oversight supports the integration of technical, financial, and stakeholder input into decision-making processes and implementation planning.

During the first phase of GSP implementation, SVBGSA completed several organizational and governance improvements to strengthen Agency operations and long-term implementation capacity. These efforts included development of a communications strategy and supporting implementation plan; modernization of budget and financial reporting formats; completion of a five-year Groundwater Sustainability Fee evaluation and adoption of associated fee updates; refinement of subbasin committee roles and membership programs; updates to the Advisory Committee charter and bylaws; development of a Board Code of Conduct; implementation of Board development and training initiatives; adoption or revision of key administrative policies and procedures; establishment of performance review processes for contracted administrative services; and development of governance tools, public information resources, and communication platforms to support effective implementation of SGMA across the Salinas Valley.

SVBGSA will continue ongoing administrative activities and organizational improvements. Collectively, they demonstrate SVBGSA's commitment to effective governance, financial stewardship, transparent decision-making, stakeholder engagement, and successful implementation of groundwater sustainability programs across all Salinas Valley subbasins.

10.6 GSP Implementation Cost and Funding

10.6.1 SVBGSA Groundwater Sustainability Fee

SVBGSA established a Groundwater Sustainability Fee (pursuant to California Water Code Sections 10730 through 10730.2) to fund the regulatory activities necessary to implement SGMA and sustainably manage groundwater resources across the Salinas Valley subbasins. The fee funds ongoing activities such as groundwater sustainability planning and implementation, monitoring and reporting, technical studies, groundwater modeling, stakeholder engagement, communications and outreach, administrative operations, and support for development and evaluation of PMAs. The fee could also provide local matching funds if required by state and federal grant guidelines.

The fee was originally established in 2019 based on a study prepared by Hansford Economic Consulting. The fee structure allocates program costs between agricultural and non-agricultural beneficiaries and is reviewed annually by the SVBGSA Board of Directors in conjunction with adoption of the Agency's budget and work plan.

During the first phase of GSP implementation, SVBGSA completed several modifications to its fee structure. In 2023, the Board adopted a tiered fee approach to better align costs with the activities associated with individual subbasins. The current fee structure includes Tier 1 funding for activities that benefit all subbasins and Tier 2 funding for activities that are specific to one or more subbasins.

In 2024, the Board received and accepted a comprehensive 5-year evaluation of the Groundwater Sustainability Fee prepared by Hansford Economic Consulting. The evaluation assessed the fee structure, cost allocations, and implementation experience since adoption of the fee.

Based on the findings of the evaluation, the Board approved updates to the fee methodology in 2025, including transitioning from irrigated acreage to cropped acreage for agricultural fee calculations, refining allocation methods for parcels that span multiple subbasins, and updating the data used to determine cost allocations among groundwater user groups. These changes were incorporated into the FY 2026 fee calculations and provide a more appropriate basis for supporting SGMA implementation throughout the Salinas Valley.

SVBGSA will continue to administer the fee and conduct periodic reviews to ensure that the fee meets the revenue requirements and is appropriately assessed, as well as develop other funding mechanisms, as necessary.

10.6.2 Cost of GSP Implementation

GSP implementation costs can be organized into 3 general categories. First, administration, which includes the ongoing cost of GSA governance, staffing, monitoring, reporting, stakeholder engagement, GSP updates, and other regulatory activities. Second are project development (planning and capital) and operations and maintenance, which includes the full financial costs of planning, designing, permitting, constructing, financing, operating, and maintaining PMAs in the IIS portfolio for groundwater sustainability. Finally, there are costs imposed on water users, which are the local financial or economic impacts that result from implementation actions, such as agricultural land fallowing, pumping reductions, domestic conservation, replacement water costs, or other impacts associated with changes in groundwater levels, groundwater quality, or project performance.

This section summarizes GSP implementation for the next phase of GSP implementation.

Table 10-3 summarizes the conceptual planning-level costs for the 5 years of GSP implementation following the 2027 GSP Amendment 1 for the Langley Subbasin. This table does not include the Valley-wide costs for routine administrative operations and other Valley-wide costs funded through the SVBGSA operational fee outlined in 10.5.1. The Subbasin specific costs, shown in Table 10-3, include data collection and analysis beyond tasks already undertaken by other agencies. These tasks could be undertaken by staff, consultants, or partner agencies. The costs are comprised of tasks related to data, monitoring, and SGMA compliance; interested parties coordination and outreach; and general administration. Costs also include priority PMAs that are anticipated to be advanced during these next 5 years.

Costs are primarily related to further developing and refining project concepts, conducting pilot projects, permitting, and landowner outreach. It does not include funding for construction of projects. Individual PMAs will require additional funding for project feasibility and design studies, environmental permitting, and landowner outreach. These are initial estimates of costs and will likely change as more data become available.

These costs are independent of fees currently collected by MCWRA; no fees will be collected by SVBGSA that duplicate fees already being collected by MCWRA.

For components of this GSP being developed in coordination with other GSPs in the Salinas Valley, the establishment costs are split between subbasins, and initial implementation costs are estimated based on the direct costs to the Langley Subbasin. These are initial estimates; however, the final cost and division between subbasins will be reviewed and revised as necessary prior to implementation and per approval of the SVBGSA Board.

Table 10-3. Langley Area Subbasin Estimated Planning-Level Costs for GSP Implementation

[TO BE ADDED]

10.7 Schedule for Implementation and Adaptive Management

The SVBGSA oversees all or part of 6 subbasins in the Salinas Valley. Implementing this GSP must be integrated with the implementation of the 5 other GSPs in the Salinas Valley. The schedule for GSP implementation reflects the significant integration and coordination needed to implement all 6 SVBGSA GSPs in a unified manner. Changes to the schedule during the GSP implementation will be discussed in the 5-year periodic evaluations.

A general schedule showing the major tasks and estimated timeline during the first 5 years of GSP implementation is provided on Figure 10-2. This includes the main tasks that will comprise the next phase of GSP implementation. With a focus on the 5 years following the 2027 GSP Amendment 1. PMAs will be revisited and adjusted as needed throughout GSP implementation.

Figure 10-1. GSP Implementation Schedule

[TO BE ADDED]

Implementation of this GSP will rely on best available science and will be continually updated as new data and analyses are available. SVBGSA will adaptively manage groundwater and the implementation of the GSP. The work of SVBGSA and stakeholders to complete this GSP provides a solid base to guide groundwater management; however, certain conditions may provide the need to adapt and change management as envisioned in this plan. For example, if existing conditions change, such as a prolonged drought that affects groundwater conditions, or additional funding for specific projects becomes available, SVBGSA may adapt its management strategy. If that occurs, SVBGSA will work through an open and transparent process with stakeholders, partner agencies, and DWR to ensure it continues to meet regulatory requirements and reaches sustainability.