

Salinas Valley: 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan Amendment 2

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 2040
- Providing incentives to constrain groundwater pumping within the sustainable yield
- Addressing the needs of beneficial uses and users

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 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 and Amendment 1 was developed with stakeholder input, including a brainstorming workshop for stakeholders to propose and

discuss their ideas. The list of PMAs developed in this workshop were then narrowed down based on feasibility, likelihood of stakeholder acceptance, and ability to address groundwater conditions.

The projects listed in the original GSP constitute an integrated management program for all 6 subbasins of the Salinas Valley. The SVBGSA selected these from a larger set of potential PMAs, which are listed in Appendix 9B of the original GSP.

9.2.1.2 GSP Amendment 1

Amendment 1 included 13 projects from the original GSP for further consideration based on the projects being the most reliable, implementable, cost effective, and acceptable to stakeholders. Developing the PMAs in GSP Amendment 1 involved building on, updating, and adding to the PMAs developed for the entire Salinas Valley as part of the 180/400 Subbasin GSP. The process for developing projects for GSP Amendment 1 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.

GSP Amendment 1 accounted for actions taken after the original GSP submittal, updated descriptions based on further refinement and necessary clarifications, separated demand planning from funding, and included Implementation Actions. In addition, projects that occur and primarily benefit areas outside the Subbasin were separated into a cross-boundary category. These included PMAs identified in the original 180/400 Subbasin GSP and new PMAs added through the development of GSPs for adjacent subbasins in 2022. Updates from the development of 2022 GSPs were incorporated into GSP Amendment 1.

9.2.1.3 GSP Amendment 2

GSP Amendment 2 further refines PMA descriptions and information for PMAs with feasibility studies completed as part of the first phase of GSP implementation and adds PMAs identified after Amendment 1. Throughout the preparation of these studies, SVBGSA provided information about each 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 2 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.
- **SWIM.** Early during GSP implementation, SVBGSA and Monterey County contracted Montgomery & Associates to develop the SWIM for the coastal Salinas Valley and update it based on the HCM updates in Chapter 4, together with MCWDGSA and Seaside Watermaster. The SWIM was used to estimate benefits for PMAs that advanced during this early GSP implementation period, with the specific version noted in each section below.
- **Monterey Subbasin Groundwater Flow Model (MBGWFM).** MCWDGSA developed the MBGWFM to support development of the 2022 Monterey Subbasin GSP and as one of the tools to model PMAs in the Monterey Subbasin. Results from modeling done for the Monterey Subbasin are included here. See 2022 Monterey Subbasin GSP and 2027 GSP Amendment 1 for a description of the modeling.

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 GSP Amendment 1 in 2021 dollars. 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 2 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 2, 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. Projects and Management Actions

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
A – 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	Demand Management – Deep Aquifers Allocations / Pumping Limits	Develop pumping allocations for the Deep Aquifers, including technical and economic baselines, evaluation of sustainable pumping targets, and formulation of allocation approaches	Decreases groundwater extraction to improve groundwater levels and protect Deep Aquifers from seawater intrusion	Pumping targets not yet quantified	Approximately \$750,000 - \$1,000,000 for program development; ongoing costs not yet determined
MA5	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
MA6	Seawater Intrusion Response Plan	Establish triggers and identify response measures if seawater intrusion is detected in new locations or if increased chloride concentrations render currently operable wells unusable	Mitigate impacts from seawater intrusion	Unable to quantify until response plan is completed	Approximately \$250,000 - \$300,000 for plan development
MA7	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
MA8	MCWRA Reservoir Operation	Collaborate with MCWRA to evaluate potential reoperation scenarios, which could be paired with projects such as the Interlake Tunnel, seasonal reservoir releases with aquifer storage and recovery (ASR), or other potential projects	More regular annual reservoir releases including dry years, which could provide water for seasonal storage through ASR in the northern Salinas Valley	Unable to quantify benefits until feasibility study is completed	Approximately \$400,000 - \$500,000
MA9	MCWRA Drought Reoperation	Support the existing Drought Technical Advisory Committee (D-TAC) when it develops plans for how to manage reservoir releases during drought	More regular seasonal reservoir releases; drought resilience	Unable to quantify benefits since drought operations have yet to be triggered	Minimal SVBGSA staffing costs for participation. No additional MCWRA costs since already formed

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
P – PROJECTS					
P1	Multi-benefit Stream Channel improvements	Prune native vegetation and remove non-native vegetation, manage sediment, and enhance floodplains for recharge. Includes 3 components: 1) Stream Maintenance, Program, 2) Invasive Species Eradication, and 3) Floodplain Enhancement and Recharge	Increased groundwater recharge through enhanced river infiltration, reduced evapotranspiration from arundo removal, and development of floodplain recharge features; improved in-stream flow benefits, riparian habitat, wildlife connectivity, floodplain function and stormwater conveyance, and modest reductions in flood risk and infrastructure damage	<u>Component 1:</u> benefits not quantified <u>Component 2:</u> benefit of 3,200 AF/yr of increased recharge <u>Component 3:</u> benefit of 400-1,300 AF/yr from 10 recharge basins	<u>Component 1:</u> Cost: \$150,000 for annual administration and \$95,000 for occasional certification; \$780,000 for the first year of treatment on 650 acres, and \$455,000 for annual retreatment of all acres <u>Component 2:</u> Average Cost: \$25,000/acre <u>Component 3:</u> Cost: \$11,160,000; Unit Cost: \$930/AF
P2	CSIP System Optimization	Infrastructure improvements to better accommodate diurnal and seasonal fluctuation in irrigation demand in the CSIP system, maximize use of recycled and Salinas River water, and further reduce groundwater extraction. 3 capital improvement projects identified for the next phase. Additional phases may include SVRP upgrades to allow delivery of tertiary treated wastewater to CSIP instead of groundwater when water demand is low	Decreased groundwater extraction	Benefit of up to 5,000 AF/yr of recycled and river water provided for irrigation in-lieu of groundwater extraction.	Combined capital cost of 3 CIP \$72,000,000 Unit cost: Not yet determined. SVRP upgrades capital cost: \$8,967,000 and Unit Cost: \$890/AF <i>(GSP Amendment 1 estimate)</i>

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
P – PROJECTS					
P3	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
P4	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
P5	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

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
P – PROJECTS					
P6	Irrigation Water Supply Project (or Somavia Road Project)	Extract groundwater during the peak irrigation season to induce greater groundwater recharge and storage during the winter/spring	Less groundwater pumping in area where extracted water is delivered	3,000 AF/yr of extracted water for in-lieu use or recharge	Capital Cost: \$5,925,000 Unit Cost: \$440/AF for extraction wells (not including distribution costs) (GSP Amendment 1 estimate)

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
CROSS-BOUNDARY PROJECTS					
<i>(projects outside the Subbasin that will likely have indirect benefits for the 180/400 Subbasin that may reduce the need for other projects and management actions)</i>					
ES1	Castroville and Eastside Canals	Modify MCWRA Permit 11043 to allow seasonal storage. Divert surface water near the Castroville Canal Intake and convey it to recharge basins in the central Eastside Subbasin. Scenarios of diversion flows evaluated at 50 cfs, 100 cfs, 200 cfs and 400 cfs	Raise groundwater levels, increase groundwater in storage	Annual average yield of 5,100 AF/yr to 26,800 AF/yr depending on diversion rate	Total construction cost of selected 100 cfs diversion \$284,000,000 Annualized cost with O&M: \$18,000,000, \$1,833/AF for 9,700 AF/yr average yield
ES2	Eastside Floodplain Enhancement and Recharge	Restore creeks and floodplains to slow the flow of water	More infiltration, less erosion, less flooding	2,300 AF/yr of water available for recharge in Eastside Subbasin 1,000 AF/yr increase in storage in Eastside Subbasin 200 AF/yr increase in storage in the 180/400 Subbasin	Capital Cost: \$12,596,000 Unit Cost: \$1,050/AF <i>(GSP Amendment 1 estimate)</i>
M1	MCWD Demand Management Measures	Provides in-lieu recharge through reducing groundwater demands	Reduced pumping in the principal aquifers resulting in an in-lieu recharge benefit; slightly less seawater intrusion	Equivalent to a 2,500 AF/yr in-lieu recharge benefit at the current population for MCWD service area	Ongoing annual costs \$483,405 budgeted for 2026-27 fiscal year

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
CROSS-BOUNDARY PROJECTS					
<i>(projects outside the Subbasin that will likely have indirect benefits for the 180/400 Subbasin that may reduce the need for other projects and management actions)</i>					
M2	Stormwater Recharge Management	Existing policies will facilitate and result in additional stormwater catchment and infiltration over time as redevelopment occurs	Groundwater recharge, urban flood risk reduction	Under the existing urban development footprint, approximately 550 AF/yr of stormwater is generated and infiltrated west of Highway 1 in Marina. Groundwater modeling indicates that stormwater recharge catchment and recharge will increase to 1,100 AF/yr on average as further projected development occurs, which will increase net subbasin infiltration rates by 200 AF/yr to 500 AF/yr in the Monterey Subbasin	No additional cost to implement

Project/ Management Action #	Name	Description	Project Benefits	Quantification of Project Benefits	Cost
CROSS-BOUNDARY PROJECTS					
<i>(projects outside the Subbasin that will likely have indirect benefits for the 180/400 Subbasin that may reduce the need for other projects and management actions)</i>					
M3	Indirect Potable Reuse	Direct non-potable irrigation use and/or injection of advanced treated water from Monterey One Water (M1W) and extraction using existing MCWD wells or new production wells	Reduced pumping in the principal aquifers resulting in an in-lieu recharge benefit; increase in groundwater levels	600 AF/yr for landscape irrigation with expansion up to 1,427 AF/yr with treatment expansion, 1 MGD injection of advanced treated water (1,120 AF/yr)	1,427 AF/yr for landscape irrigation - Unit cost: \$2,400/AF Approximately 2,400 AF/yr recharge through IPR Capital cost: \$65 million Unit cost: \$3,300/AF Costs per AF would likely decrease at higher production capacities due to economies of scale. (GSP Amendment 1 estimate)
M4	Reservation Road Pilot Desalination Plant (0.3 MGD)	Rehabilitation of the Reservation Road Desalination Plant as a supplemental water supply source	Reduced pumping in Monterey Subbasin, raises groundwater levels, increasing groundwater in storage, supports natural hydraulic gradient against seawater intrusion	300 AF/yr of potable water to MCWD customers	Approved MCWD Capital Improvement budget for FY 2027 is \$13,900,000
M5	Aquifer Storage and Recovery at Armstrong Ranch	Infiltration ponds at Armstrong Ranch to recharge surface water from the SRDF or alternatively sourced water into the shallow sediments above the Salinas Valley Aquitard, stored water recovered through an extraction wellfield at the site	Recharge to shallow sediments and Dune Sands Aquifer, increases groundwater in storage, supports natural hydraulic gradient against seawater intrusion in adjacent Monterey Subbasin	Maximum infiltration capacity approximately 2,500 AF/yr, estimated recovery yield of 76% (i.e., 1,900 AF/yr)	Under development

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. 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.
- **Land subsidence measurable objective.** Reducing pumping will help keep groundwater levels above historical lows, thereby reducing the potential for subsidence.
- **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 180/400 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.
- **Land subsidence measurable objective.** Reducing pumping will help keep groundwater levels above historical lows, thereby reducing the potential for subsidence.
- **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 180/400 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 Integrated Regional Water Management (IRWM) Group. 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.
- **Land subsidence measurable objective.** Promoting pumping reductions will help keep groundwater levels above historical lows, thereby reducing the potential for subsidence.

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 180/400 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 Best Management Practices (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: Demand Management – Deep Aquifers Pumping Allocation / Pumping Limits

This management action is an update to GSP Amendment 1 MA5: Undertake and Operationalize Guidance from the Deep Aquifers Study. The Study was completed in 2024 during the first phase of GSP implementation and provided a comprehensive scientific overview and definition of the Deep Aquifers across several Salinas Valley subbasins, bringing together prior investigations with new data and analysis. The Study defined the Deep Aquifers and their extent across several subbasins, developed a hydrogeologic conceptual model, presented a water budget, and reviewed both historical and recent groundwater conditions. Additionally, it offered 12 science-based guiding principles for groundwater users and agencies, focused on preventing further degradation of the Deep Aquifers and raising groundwater elevations to reduce risks of seawater intrusion and land subsidence.

Following completion of the Deep Aquifers Study, MCWRA developed the Monitoring Plan for the Deep Aquifers. SVBGSA, MCWDGSA, MCWRA, and the County of Monterey jointly prepared the Deep Aquifers Memorandum in the spring of 2026 to supplement the study findings. Among other recommendations, the memorandum identifies DM as an important tool for addressing groundwater extraction from the Deep Aquifers while longer term projects are developed. As described in MA1, SVBGSA completed its DM Framework in late 2025. The Framework identified pumping limits as 1 of the DM measures. It establishes the foundational structure through which the GSA could implement pumping allocations consistent with its authorities and groundwater sustainability objectives.

Building on this technical and policy foundation, this GSP includes the Deep Aquifers Pumping Allocation Program as a management action. Development of this program will follow the structure laid out in the DM Framework and be conducted in coordination with partner agencies, stakeholders, and the public. The work plan includes the technical, economic, legal, and administrative analyses necessary to support development of a pumping allocation program for the Deep Aquifers. Initial efforts focus on development of technical and economic baselines, evaluation of sustainable pumping targets, and formulation of allocation approaches. Throughout the process, the project team will engage partner agencies and conduct public workshops to share findings, solicit input, and refine recommendations for consideration and approval by the SVBGSA Board of Directors.

9.4.4.1 Relevant Measurable Objectives

The main measurable objectives benefiting from the DM – Deep Aquifers Pumping Allocation Program include:

- **Groundwater levels measurable objective.** Reducing pumping will result in higher groundwater levels in the Deep Aquifers than otherwise would occur.
- **Seawater intrusion measurable objective.** Reducing pumping will result in higher groundwater levels in the Deep Aquifers than otherwise would occur, which will help prevent seawater intrusion into the Deep Aquifers. If needed, potential actions to prevent seawater intrusion will be determined through the Seawater Intrusion Response Plan.
- **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 will help keep groundwater levels above historical lows, thereby reducing the potential for subsidence.

9.4.4.2 Expected Benefits and Evaluation of Benefits

The benefits from DM of the Deep Aquifers Pumping Allocations Program includes addressing undesirable results for Deep Aquifers groundwater levels, and protecting the Deep Aquifers from seawater intrusion. An ancillary benefit from shallower aquifers may include avoiding subsidence and reducing seawater intrusion.

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.

9.4.4.3 Circumstances for Implementation

Development of the Deep Aquifers Pumping Allocation Program is a priority PMA and will be initiated in 2026. It is estimated to take 3 years to complete. Following program adoption by the SVBGSA Board, implementation of the program will be ongoing.

9.4.4.4 Permitting and Regulatory Process

No permits are required to develop the Deep Aquifers Pumping Allocation Program. It will be developed in accordance with all applicable groundwater laws and respect all groundwater rights.

9.4.4.5 Implementation Schedule

The Deep Aquifers Pumping Allocation Program development is expected to be developed over approximately 3 years and ongoing thereafter, as shown in Table 9-6. The schedule will be adjusted as necessary during GSP implementation.

Table 9-6. Demand Management – Deep Aquifers Pumping Allocation Program Implementation Schedule

Task	Year 1				Year 2				Year 3				Ongoing
Establish Objectives, Scope, and Process													
Characterize Baseline Deep Aquifers Extraction and Conditions													
Develop Sustainable Pumping Target													
Develop Allocation Program Framework and Allocation Methodology													
Develop Monitoring, Accounting, and Enforcement Approaches													
Develop Program Rules, Administrative Policies, and Adaptive Management Framework													
Prepare Draft and Final Allocation Program													
Stakeholder Engagement and Agency Coordination													
Ongoing Implementation and Adaptive Management													

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. Authorities related to MA4: Demand Management - Deep Aquifers Pumping Allocation Program are identified in CWC §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]. Imposition of pumping allocations and controls requires a supermajority plus vote of the SVBGSA Board of Directors.

9.4.4.7 Estimated Cost

The estimated cost to develop this management action is \$750,000 - \$1,000,000. The cost of ongoing implementation will be estimated as part of program development.

9.4.4.8 Public Noticing

As part of the approval of the Deep Aquifers Pumping Allocation Program, a public process will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on it. 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 share information about the program and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

The general steps in the public notice process for approval of the program will include GSA 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.

Development of an ordinance or regulation for pumping allocations may require CEQA review and may require an EIR or a Mitigated Negative Declaration (the review could also result in a Negative Declaration or Notice of Exemption). The environmental review process will follow CEQA public noticing requirements for the applicable CEQA document.

9.4.5 MA5: 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.

9.4.5.1 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.

9.4.5.2 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.

9.4.5.3 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 180/400 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.

9.4.5.4 Permitting and Regulatory Process

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

9.4.5.5 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.

9.4.5.6 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].

9.4.5.7 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 9-7 summarizes typical unit costs for domestic water use efficiency measures (ERA Economics, 2026b). 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 9-7. 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+

9.4.5.8 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.

9.4.6 MA6: Seawater Intrusion Response Plan

The Seawater Intrusion Response Plan (SIRP) is a new management action in GSP Amendment 2. The SIRP will establish triggers and identify response measures if seawater intrusion is detected in new locations or if increased chloride concentrations render currently operable wells unusable. The SIRP will guide mitigation for impacts from active seawater intrusion on beneficial users, which happens incrementally over time. It will establish a structured, adaptive framework to monitor incremental changes in the seawater intrusion conditions and manage risks and impacts to beneficial users with operational responses.

SVBGSA will develop the SIRP with partner agencies, including MCWRA and MCWDGSA. Building upon existing groundwater monitoring programs, hydrogeologic studies, and regional groundwater flow and seawater intrusion models, the SIRP will integrate technical information

with governance, funding, and stakeholder engagement to support coordinated decision making on seawater intrusion impacts, in combination with the Deep Aquifers Pumping Allocation Program. It will establish baseline conditions, identify indicators, trigger levels, and potential response measures. It will need to define roles for SVBGSA and partner agencies to provide a framework for consistent response strategies and operational protocols.

This SIRP will establish response measures to mitigate seawater intrusion. This may include:

- Pumping management actions, such as relocating pumping, redistributing pumping loads, or seasonal pumping restrictions
- Reducing groundwater extraction or other demand management measures
- Drought restrictions
- Well destruction to reduce risk of downward vertical migration

The SIRP will identify operational response protocols and defined actions to occur when trigger levels are exceeded and for an actionable framework. An example protocol structure looks like:

- Trigger Level 1 – Early Warning: Increased monitoring, agency coordination, public notification, and voluntary conservation
- Trigger Level 2 – Significant Risk: Pumping reductions, temporary restrictions, pumping redistribution, drought actions, intensified public communication, and activation of alternative supplies
- Trigger Level 3 – Emergency Condition: Mandatory curtailments, well shutdowns, emergency water supply actions, mutual aid, and intensified public communication

9.4.6.1 Relevant Measurable Objectives

The main measurable objective benefiting from the Seawater Intrusion Response Plan is:

Seawater intrusion measurable objective. The SIRP will provide interim benefits to help meet the seawater intrusion measurable objective while longer-term projects are implemented.

9.4.6.2 Expected Benefits and Evaluation of Benefits

The purpose of the SIRP is to provide a proactive management framework that enables detection, evaluation, and responses to incremental seawater intrusion impacts while projects are being developed, and to mitigate the immediate effects of pumping before significant degradation of groundwater resources occurs. It will develop a structure and plan for potential actions to mitigate incremental seawater intrusion impacts to beneficial users.

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. Seawater intrusion will be evaluated based on the location of the 500 mg/L chloride isocontour developed by MCWRA for the SMC. The SIRP will include additional analysis of seawater intrusion. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of the SIRP.

9.4.6.3 Circumstances for Implementation

The SIRP is a priority PMA in the 180/400 Subbasin and will be implemented throughout GSP implementation. SGMA requires the seawater intrusion SMC to be based on a chloride isocontour, and undesirable results are defined as any progression of seawater intrusion beyond the minimum threshold (2017 mapped seawater intrusion extent). However, within the mapped seawater intrusion area some wells remain operable. There is variability in chloride levels but potential for increased chloride concentrations over time. Therefore, the SIRP has been identified as a priority management action because of recent seawater intrusion impacts to supply wells and the need for interim actions while projects are being developed.

9.4.6.4 Permitting and Regulatory Process

No permits are required for development of this management action. If the SIRP identifies the need to establish regulations by ordinance, CEQA review may be required prior to SVBGSA Board adoption.

9.4.6.5 Implementation Schedule

Development of the SIRP is estimated to take 3 years to complete. Following program adoption by the SVBGSA Board, implementation of the program will be ongoing.

9.4.6.6 Legal Authority

Legal authority for GSA to implement PMAs is grounded 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].

The SIRP is planned to be developed collaboratively 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. Section 8, among other objects and purposes, to “prevent the waste or diminution of the water

supply in the Agency, including the control of groundwater extractions as required to prevent or deter the loss of usable groundwater through intrusion of seawater.”

9.4.6.7 Estimated Cost

The estimated cost to develop this management action is \$250,000 - \$300,000 for plan development. The cost of ongoing implementation will be estimated as part of program development. Ongoing funding requirements for the SIRP may include costs such as seawater intrusion monitoring network improvements, modeling, maintaining data systems, and additional costs for activation of responses.

9.4.6.8 Public Noticing

As part of the approval of the Seawater Intrusion Response Plan, a public notice process will be necessary to ensure that all groundwater users and other stakeholders have the opportunity to comment on it. 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, and public notice will be conducted in accordance with the Brown Act. SVBGSA will share information about the SIRP and opportunities to comment on its website and in newsletters and will maintain an interested parties list for electronic notification about the project.

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.

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.

9.4.7 MA7: 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 Safe and Affordable Funding for Equity and Resilience (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.

9.4.7.1 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.

9.4.7.2 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.

9.4.7.3 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.

9.4.7.4 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.

9.4.7.5 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.

9.4.7.6 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.

9.4.7.7 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.

9.4.7.8 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.

9.4.8 MA8: MCWRA Reservoir Operation

This management action is an updated version of the Reservoir Reoperation management action that was in the original GSP. It has been updated based on further stakeholder discussion during the development of SVBGSA 2022 GSPs and further coordination with MCWRA.

This management action consists of SVBGSA collaborating with MCWRA and other interested parties to evaluate reservoir operation scenarios that promote groundwater sustainability of the 180/400 Subbasin and other subbasins in the Valley should a project advance that necessitates altering reservoir operations. Sustainability includes consideration of beneficial users dependent on reservoir flows, such as steelhead trout. This management action is focused on the operation of the Nacimiento and San Antonio Reservoirs under the prevailing reservoir operational rules and future Salinas River Operations HCP that regulate reservoir releases to manage reservoir storage, provide groundwater recharge, operate the SRDF and account for the multiple other reservoir operational considerations including dam safety, established agreements, and permits. The management action for drought operations of reservoirs is included in the description for the MCWRA Drought Reoperation.

This management action includes a feasibility study, which will involve working with MCWRA using updated models or developing model updates to simulate reservoir operations and groundwater-surface water interactions along the Salinas River.

Details of this management action are dependent on the outcome and progress of other activities, including the Salinas River Operations HCP that is under development by MCWRA. Given the importance of reservoir operations for groundwater sustainability, this management action will be undertaken if new capital projects necessitate reoperation of the reservoirs. While other capital projects could spur the need for reservoir reoperation, the only capital project under

consideration as of GSP Amendment 2 is the Interlake Tunnel and San Antonio Spillway Modification (ILT). ILT is an example that relies on infrastructure owned and operated by MCWRA and any analysis of the potential benefits from reservoir operation or implementation would require a cooperative effort between SVBGSA and MCWRA.

Interlake Tunnel and San Antonio Spillway Modification. The proposed Interlake Tunnel (ILT) project consists of design, permitting, construction, and maintenance of a tunnel that would divert water from Nacimiento Reservoir to San Antonio Reservoir. San Antonio and Nacimiento Reservoirs have storage capacities of 335,000 and 377,900 AF, respectively; however, the Nacimiento River watershed produces nearly 3 times the average annual flow of the San Antonio River watershed. Consequently, more available storage capacity must be maintained in Nacimiento Reservoir to prevent downstream flooding during storm events than must be maintained in San Antonio Reservoir. Initial modeling shows the proposed Interlake Tunnel project would transfer 30,000 AF/yr of water on average from Nacimiento Reservoir to San Antonio Reservoir, which is the same as in the Tunnel-Only alternative (MCWRA, 2023). The proposed project would increase the average annual combined reservoir storage by 54,000 AF, or 39,000 AF with the Tunnel-Only Alternative. The reservoir operating rules employed for this modeling reflect the current Nacimiento Dam Operations Policy (MCWRA, 2018), and therefore reflect changes due to the project as compared to current reservoir operations, not considering any potential reductions in reservoir capacity that may be required if deferred maintenance does not occur.

This project is intended to minimize flood control releases and increase the overall surface water supply available from Nacimiento and San Antonio Reservoirs by maximizing the opportunity for water to be collectively stored in the reservoirs and released for beneficial uses and users. Under both the proposed project and the Tunnel-Only Alternative, model results show average annual SRDF diversions would increase by approximately 1,000 AF. With the proposed project, model results show that combined reservoir releases would result in approximately 18,000 AF/yr of additional groundwater recharge along the Salinas River upstream of the SRDF. With the Tunnel-Only Alternative, there would be approximately 14,000 AF/yr of additional groundwater recharge (MCWRA, 2023).

This GSP is primarily concerned with project benefits that maintain groundwater sustainability in the 180/400 Subbasin. However, ancillary benefits and relative costs of the example project or others that might be proposed must also be addressed and carefully evaluated. These projects will affect the entire Salinas Valley, and the analyses of these projects must consider the impact on all subbasins. This GSP includes review of reservoir operations as a management action to help maintain groundwater sustainability along the Salinas River, including some portion that augments groundwater in the 180/400 Subbasin. This management action will likely need to consider any new flow regime and reservoir operations resulting from the planned HCP, and subject to any biological opinion or incidental take permit issued by the National Marine

Fisheries Service (NMFS), or other regulations issued by applicable regulatory agencies. MCWRA is currently negotiating with NMFS and U.S. Fish and Wildlife Service (USFWS) to develop an HCP for MCWRA's water operations and management activities, including facility maintenance, water supply operations, and flood management. The HCP is a planning document and part of MCWRA's application for a Section 10(a)(1)(B) incidental take permit under the Endangered Species Act. California Department of Fish and Wildlife (CDFW) will also be involved in permitting MCWRA's activities that relate to state regulated species. The HCP will include protocols for reservoir operations to meet MCWRA's mission and obligations while minimizing effects to species covered under the HCP. The relationship between groundwater levels and surface water flow, including reservoir releases, will be further examined once the guidance for ISW is available.

9.4.8.1 Relevant Measurable Objectives

Should a capital project prompt review and refinement of reservoir operations, the main measurable objectives that could benefit include:

- **Groundwater levels measurable objective.** With a new capital project, optimizing reservoir releases to manage storage between reservoirs and groundwater recharge could result in increased groundwater recharge, increased diversions at the SRDF, and decreased CSIP supplemental well pumping, all of which will result in higher groundwater levels than otherwise would occur.
- **Groundwater storage measurable objective.** Higher groundwater levels will help improve groundwater in storage.
- **Seawater intrusion measurable objective.** With a new capital project, optimizing reservoir releases to manage storage between reservoirs and groundwater recharge could result in additional surface flows to reach the SRDF for re-diversion, more surface water may be used in the CSIP area, which would result in reduced CSIP supplemental well pumping and lower seawater intrusion potential.
- **ISW measurable objective.** Increased recharge near locations of ISW will result in higher shallow groundwater levels in ISW monitoring wells.

9.4.8.2 Expected Benefits and Evaluation of Benefits

Reservoir operations are important to groundwater sustainability. Should reservoirs be operated differently, the benefits will depend on how they are reoperated. Quantification of the benefits will be assessed as part of evaluation. Because it is unknown how they would be reoperated, it is not possible 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. Additional methods for measuring and verifying pumping reductions and their effects on groundwater conditions may be incorporated as part of specific programs.

9.4.8.3 Circumstances for Implementation

Reservoir Operation is a contingency PMA, with studies to be undertaken if a project necessitates a review of and potentially modifications to reservoir operations. In order for this management action to move ahead, MCWRA and SVBGSA would need to agree to coordinate on such an analysis and SVBGSA would lead the effort to source associated funding. Ultimately, MCWRA would determine whether such an effort would be pursued under their role as owner and operator of the reservoirs.

9.4.8.4 Permitting and Regulatory Process

The initial phase of this management action is a feasibility study, which does not require permitting or meeting regulatory requirements.

Operating the reservoirs requires coordination with permits from NMFS, USFWS, CDFW, SWRCB, or other agencies that have authority over Salinas River flows.

9.4.8.5 Implementation Schedule

With a new capital project, the feasibility study associated with this management action will be conducted in coordination with that project.

9.4.8.6 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 §10725.4 specifically provides GSAs with the authority to conduct investigations. 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].

No legal authority is required to undertake the feasibility study. MCWRA, SVBGSA, NMFS, and other project partners will participate in the study. Implementing reservoir operations is under the authority of MCWRA. The SVBGSA does not have any authority over their surface water facilities or reservoir operations.

9.4.8.7 Estimated Cost

This management action is estimated to cost approximately \$400,000 - \$500,000 (estimated for 2022 GSP Amendment 1).

9.4.8.8 Public Noticing

The work associated with this effort would be under the purview of MCWRA. SVBGSA will provide information about this management action at meetings of the SVBGSA Board of Directors, Advisory Committee, and Subbasin Committees to update the public on such analysis and outcomes from model efforts. Public notice of these meetings will be conducted in accordance with the Brown Act.

9.4.9 MA9: MCWRA Drought Reoperation

MCWRA formed a Drought Operations Technical Advisory Committee (D-TAC) to provide, when drought triggers occur, technical input and advice regarding the operations of Nacimiento and San Antonio Reservoirs. The D-TAC developed Standards and Guiding Principles to be used in the development of a proposed reservoir release schedule triggered under specific, seasonally defined conditions. This management action would result in decisions on reservoir operation and flow releases during a drought.

The proposed reservoir release operations schedule triggered under specific, seasonally defined conditions of drought will be developed based on the best available scientific knowledge, data, and understanding of the environmental biology, hydrology, and hydrogeology of the Salinas Valley; under the technical expertise of the members of the D-TAC. If adopted by the MCWRA Board of Directors or MCWRA Board of Supervisors, the proposed reservoir release schedule will be implemented based on specific tools and templates made available to the D-TAC. These are discussed further in the Implementation Procedures. The proposed reservoir release schedule will acknowledge, address, and balance the water needs of various stakeholders for limited resources during a drought.

The D-TAC will use a MCWRA provided template when developing the release schedule. The specific actions will also be described in a narrative form to expound upon the actions taken for each month shown in the release schedule. Reservoir releases will be made under direction of the MCWRA Board of Directors or Board of Supervisors through the adoption of a reservoir release schedule or dry winter release priorities, to be executed by MCWRA staff. Appendix 9B outlines the D-TAC Standards, Guiding Principles, and Implementation Procedures. The recommendations of the D-TAC may change with the development and adoption of a Habitat Conservation Plan (HCP), but the D-TAC Standards, Guiding Principles, and Implementation procedures will remain in place unless modified by an HCP.

Summary Actions

The Standards and Guiding Principles Document and any recommended release schedule prepared by the D-TAC will first be received by the Water Resources Advisory Committee (WRAC). The WRAC will meet to discuss recommended release schedules and will solicit information, data, and public comment regarding appropriate MCWRA operations during droughts. Following receipt of public input regarding any subsequent release schedule, the WRAC will then prepare a written recommendation regarding reservoir operations which will be transmitted to the MCWRA Board of Directors for consideration and action. Any interested party that dissents from the WRAC's recommendation may submit separate written comments to the MCWRA Board of Directors. The MCWRA Board of Directors will determine, in accordance with applicable law, whether MCWRA will adopt a release schedule, provided the MCWRA General Manager may, in his sole discretion, refer the question of whether MCWRA should implement a recommended release schedule to the MCWRA Board of Supervisors for final determination. In the event the MCWRA General Manager elects not to refer the question of implementation of a recommended release schedule to the MCWRA Board of Supervisors, the decision of the MCWRA Board of Directors regarding such questions shall constitute final agency action for all purposes. The MCWRA Board of Directors (or MCWRA Board of Supervisors, if applicable) will retain full discretion and authority to accept or reject, in whole or in part, the written recommendations of the WRAC.

9.4.9.1 Relevant Measurable Objectives

The main measurable objectives benefiting from MCWRA drought reoperation include:

- **Groundwater levels measurable objective.** Reservoir release schedules during multi-year droughts aims to provide annual groundwater recharge and help prevent lowering of groundwater elevations. However, the trade-off may be that if conservation flows are reduced in drought years, CSIP has to rely on groundwater extraction to a greater extent.
- **Seawater intrusion measurable objective.** Reservoir release schedules during multi-year droughts 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. However, the trade-off may be that if conservation flows are reduced in drought years, CSIP has to rely on groundwater extraction to a greater extent.
- **Groundwater storage measurable objective.** Reservoir release schedules during multi-year droughts aims to provide annual groundwater recharge and help prevent lowering of groundwater elevations, and therefore increase groundwater in storage from what would otherwise occur. However, the trade-off may be that if conservation flows are reduced in drought years, CSIP has to rely on groundwater extraction to a greater extent.

9.4.9.2 Expected Benefits and Evaluation of Benefits

The D-TAC will help develop a release schedule aimed at mitigating negative effects from droughts, including from surface water flows and groundwater recharge. The proposed reservoir release schedule will be based on scientific data and will acknowledge, address, and balance the water needs of various stakeholders for limited resources during a drought. The proposed reservoir release schedule will maintain geographic equity, avoid adverse impacts to Valley-wide agricultural operations, and avoid, to the extent possible, consecutive years where only minimum releases are made from the reservoirs. Annual reservoir releases will help recharge the aquifers in the Salinas Valley, which will help prevent declines in groundwater elevations and storage during drought periods overall.

This GSP is unable to quantify the benefits at this time because the D-TAC recommendation will be different each time it convenes.

- If and when D-TAC does convene and the recommendation is implemented by the MCWRA Board of Directors or MCWRA Board of Supervisors, benefits will be measured 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.

9.4.9.3 Circumstances for Implementation

The D-TAC is already established and is a priority PMA convened by MCWRA. Its convening will occur when conditions trigger it on an annual basis.

9.4.9.4 Permitting and Regulatory Process

This management action follows the ongoing permitting and regulatory process used by MCWRA for reservoir operations.

9.4.9.5 Implementation Schedule

The D-TAC is already established. Its convening will occur when conditions trigger it on an annual basis.

Annually, the D-TAC will meet any time a “drought trigger” occurs to develop a recommended release schedule for Nacimiento and San Antonio Reservoirs. MCWRA presents the annual

reservoir release schedule at the October meeting of the MCWRA WRAC. If the December 1 forecasted combined reservoir storage volume is below 220,000 AF and the San Antonio Reservoir forecasted storage is below 82,000 AF, the D-TAC release schedule process will begin. MCWRA will schedule a D-TAC meeting to occur no earlier than February 15 and the D-TAC will meet as needed through March 31. The release schedule will be developed for April through December of the current year. If significant inflow occurs during this period, then modifications to the release schedule will be made through existing MCWRA protocols. The D-TAC will develop a recommended release schedule consistent with its Standards and Guiding Principles. The D-TAC's Standards and Guiding Principles and any subsequent release schedule will be presented to the MCWRA Board of Directors and/or Board of Supervisors for consideration and decision.

9.4.9.6 Legal Authority

MCWRA, which owns and operates the reservoirs, is implementing the D-TAC. The SVBGSA will participate in and work in cooperation with MCWRA on the D-TAC. No additional legal authority is needed.

9.4.9.7 Estimated Cost

This management action is already underway. MCWRA is already funding costs associated with facilitation of the D-TAC. SVBGSA costs include consultant participation in the D-TAC.

9.4.9.8 Public Noticing

Because this management action is already underway, MCWRA has already completed initial public noticing. Public noticing will occur for the October WRAC meeting that activates the D-TAC and when the reservoir release schedule developed by the D-TAC goes to Reservation Operations and/or the Board of Directors for consideration.

9.5 Projects

9.5.1 P1: Multi-benefit Stream Channel Improvements

This project has been widened from the Invasive Species Eradication project in the original GSP to combine complementary and overlapping components into a single project, referred to together as a program. This program includes the invasive species eradication work that was in the original GSP, plus adds the Stream Maintenance Program (SMP) and floodplain restoration for a more holistic project. Over the past half century, the Salinas River has been impacted by the construction of the San Antonio and Nacimiento Dams and flood control levees intended to move water away from agricultural fields. While the dams provide flood protection and groundwater recharge, they have also changed natural river geomorphology, resulting in changes

in sediment transport and allowing vegetation density to increase on the historically dynamic channels of the Salinas River. The invasion and expansion of dense stands of *Arundo donax*, originally planted to stabilize banks, has been a major driver in loss of channel capacity. While managed reservoir releases can increase groundwater recharge, the alteration of natural floodplains and geomorphology, along with continued agricultural development on lower river terraces, has increased flood risk to adjacent agricultural land during minor flow events, decreased direct groundwater recharge, and contributed to increased ET through vegetation build-up. Targeted, informed stream maintenance and floodplain enhancement can improve stream function both morphologically and biologically.

This program takes a 3-pronged approach to stream channel improvements. First, it addresses vegetation growth and geomorphic conditions in the river channel by removing perennial native and non-native vegetation in designated maintenance channels (and removing *Arundo donax* (arundo) and *Tamarix sp.* (tamarisk) throughout the river corridor). Second, the program smooths sediment to reduce flow impediments and/or removes sediment in secondary channels to create functioning secondary channels. Third, it enhances secondary channel floodplains to increase groundwater recharge.

This 3-pronged approach increases greater river channel capacity by removing dense native and non-native vegetation, provides vegetation free areas within the greater river channel for infiltration, and stabilizes stream banks and earthen levees by reducing downstream velocities. This program's activities also benefit native species throughout the river ecosystem. By improving geomorphological function through vegetation and sediment removal activities, the coordinated efforts allow native species to reestablish in areas where invasive species have become dominant. River maintenance activities enhance groundwater recharge efforts by providing additional open areas on lower riparian terraces for infiltration. Infiltration through the streambed accounts for a significant portion of the groundwater budget. Invasive species such as arundo, which transpires more than most common native riparian species in the Salinas River riparian zone, negatively impacts water availability and river flows (Zefferman and Barker, 2024; Cal-IPC, 2011).

Surface water flows, and notably minor flood flows for flows occurring on intervals of 2 – 10 years, can be impacted by the density of vegetation. Native riparian species, which are typically less dense than non-native arundo, allow for more dynamic action that scours the riverbed and allows natural secondary channels to form, which can convey water across a broader spatial area during low flow events and conveyance of flood waters in the broader active flood terraces in the river. This wider use of the floodplain can slow velocities and distribute minor flood waters over a broader spatial area of the greater river channel.

Stream channel vegetation removes water from the riparian zone through ET. Water loss through ET from invasive species such as arundo transpires 3.5 (+/- 0.4) AF/yr per acre, whereas native

riparian vegetation can transpire 1.7 - 4 AF/yr per acre (Zefferman and Barker, 2024; Melton and Hang, 2021; Cal-IPC, 2011). The differences in water consumption between vegetation types can have impacts on water in the river and can be shifted through overall vegetation management (Zefferman and Barker, 2024; Cal-IPC, 2011). The Salinas River is characterized by a braided channel in some areas of the floodplain and a confined channel in other areas. Plants can take root in locations that adversely impact the flow of water, resulting in either a channelized river or in creating directional velocities that can cause localized damages including levee failure. Sedimentation of fine-grained material can also impede infiltration to the subsurface. Geomorphological processes are important to managing a natural riverbed and floodplain to enhance recharge, groundwater levels, and groundwater storage. An increase of recharge potential from the excavation of secondary channels ranges from 435 to 3,473 AF/yr for the length of the river depending on the estimated infiltration rates, with no increases in recharge estimated in some areas of the downstream reaches where the channel is constricted and the Salinas Valley Aquitard is present (Montgomery & Associates, 2026e).

This program includes 4 main types of tasks: vegetation maintenance, non-native vegetation removal, sediment management, and floodplain enhancement and recharge.

- **Vegetation Maintenance.** Vegetation, both native and non-native, will be removed within designated maintenance areas using a scraper, mower, bulldozer, excavator, truck, or similar equipment to remove the vegetation above the ground. Discing may be conducted to break up roots and further mobilize the channel bottom. Vegetation maintenance includes pruning lower tree limbs in select areas and removing dead mass. Maintenance activities will not include disturbance of emergent wetland vegetation that provides suitable habitat for threatened California red-legged frogs or for the endangered tidewater gobies. In instances where native vegetation needs to be removed for site-specific conditions or tie-ins, these impacts can be compensated with replanting and revegetation in other areas, or by removing arundo outside of secondary channels, as mitigation for stream channel maintenance. Native trees will be planted during the rainy season to enhance their rate of success.
- **Non-Native Vegetation Removal.** Non-native vegetation removal primarily focuses on the arundo present in the region but may include *Phragmites australis* (phragmites), *Nicotiana glauca* (tree tobacco) and *Tamarix spp.* (tamarisk) shrubs as well. Arundo is a grass that was introduced to the Americas in the 1800s for construction material and for erosion control purposes (Cal-IPC, 2011). In 2011, the California Invasive Plant Council determined that the Salinas Watershed had the second largest invasion in the state, with approximately 1,500 infested acres. While arundo thrives near water, in locations such as wetlands and rivers, it grows in many habitats and soil types. It requires a substantial amount of water, making it 1 of the thirstier plants in a given region and outpacing the water demands of most native vegetation. To manage this invasive species, arundo

biomass is typically masticated or hand cut if needed, and then treated with multiple applications of herbicide over several years. Permits allow arundo treatment in the entire riparian corridor, including along the low-flow channel.

- **Sediment Management.** Sediment management includes secondary channel bed grading and sediment removal. Sediment grading and removal may occur exclusively, or after vegetation maintenance activities described above. Sediment removal and grading activities help reestablish proper gradients to allow for improved drainage downstream, encourage preferential flow into and through secondary channels, and minimize resistance to flow (MCWRA, 2016). Sediment removal will follow best practices to protect native species while producing maximum benefit for flood reduction and groundwater recharge.
- **Floodplain Enhancement and Recharge.** Floodplain enhancement restores areas along the River, creeks, and floodplains and modifies levees/berms to create a larger area for infiltration of flows and encourage groundwater recharge in areas where the Salinas Valley Aquitard is not present. Restored floodplain and riparian habitat can slow down the velocity of the River and creeks and encourage greater infiltration. Due to agricultural and urban encroachment, streams have become more highly channelized, flow has increased in velocity, particularly during storm events, and there has been a loss of functional floodplains.

Program Components

This multi-benefit stream channel improvement program is implemented through 3 program components. These build off existing programs and permits to undertake the 4 main types of tasks. During GSP implementation, these components may be modified as needed to accomplish the program goals most efficiently.

Component 1: Stream Maintenance Program

The first component continues the Salinas River SMP, which maintains the river corridor to reduce minor flood risk and minimize bank and levee erosion while supporting and improving ecological conditions for fish and wildlife consistent with other priorities for the Salinas River (MCWRA, 2016). It is a coordinated SMP that includes MCWRA, the Resource Conservation District of Monterey County (RCDMC), and the River Management Unit (RMU) Association representing approximately 50 landowner members along the river corridor. Project benefits include increased water availability, flood risk reduction, reduced velocities during high flows to lessen bank and levee erosion, and enhanced infiltration by managing vegetation and sediment throughout the river and its tributaries.

The SMP occurs along the area of the Salinas River in Monterey County. The 92 miles of the river in Monterey County are broken into 7 River Management Units from San Ardo in the south to Highway 1 in the north. The management activities are focused on the secondary channels of the Salinas River located outside of the primary low-flow channel and are preferentially aligned with low-lying undeveloped areas that are active during times of higher flow (MCWRA, 2016). The SMP includes 3 main activities as part of stream maintenance: native and non-native vegetation maintenance and sediment management in secondary channels, and non-native arundo removal outside secondary channels.

Component 2: Invasive Species Eradication

The second component supports and/or undertakes removal of arundo, tamarisk, and other invasive plant species by the RCDMC. RCDMC is the lead agency on an estimated 20-year effort to fully eradicate arundo from the Salinas River Watershed, working in a complementary manner with the SMP. This project is called the Salinas River Arundo Eradication Program or the Salinas River Invasive Plant Control and Restoration Program and focuses on removal of woody invasive species such as arundo, tamarisk (*Tamarix sp.*), and tree tobacco (*Nicotiana glauca*) along the Salinas River, as well as retreatments needed to keep it from coming back. It includes 3 distinct phases: mechanical biomass reduction and initial herbicide treatment, re-treatment, and ongoing monitoring and maintenance treatments. As of April 2026, total net acreage of arundo under treatment was 1,100 acres. Arundo that remains untreated from the original 1,500 mapped acres has expanded by approximately 20%, leaving approximately 650-700 arundo acres remaining to be treated. The initial treatment phase typically includes mechanical reduction (mastication or hand cutting) in all areas of the river that have yet to be treated. Initial herbicide treatment will be conducted on any mechanically reduced arundo, or as the first phase of treatment. The re-treatment phase includes herbicide spot treatment of the approximately 700 acres that will be initially treated and typically includes 2-3 treatments within the first 5 years following initial treatment. The final phase is the ongoing monitoring and maintenance treatment phase. This phase requires monitoring for regrowth of the invasive species or new invasive species and chemical treatment where needed every 3 to 5 years.

Component 3: Floodplain Enhancement and Recharge

The third component complements the first 2 by restoring and enhancing floodplains to enable high flows to be slowed and directed toward areas where water can infiltrate into the ground. For this component, SVBGSA will partner with the Greater Monterey County RWMG, Central Coast Wetlands Group (CCWG) and other organizations that are already undertaking creek and floodplain restoration efforts and encourage inclusion of features that would enhance recharge.

Restored floodplain and riparian habitat along creeks and rivers can slow down water velocity and encourage greater infiltration, especially with small to moderate flows. Due to agricultural and urban encroachment, streams have become more highly channelized, and flow has increased

in velocity, particularly during storm events. This flow has resulted in greater erosion and loss of functional floodplains. With a new water right, potential recharge basins adjacent to the primary and secondary channels could be created by notching levees to allow river flow to enter and by building additional levees to hold water and allow time for recharge. Levees would not exceed 6 feet, and there would be no excavation. Off-channel recharge basins studied for recharge potential receiving flow through the notched levees during 22,000 cubic feet per second (cfs) flow events, indicated a range of 0.25 – 1.00 AF/yr per acre of recharge basin (Montgomery & Associates, 2026e).

9.5.1.1 Relevant Measurable Objectives

The main measurable objectives benefiting from this project include:

- **Groundwater levels measurable objective.** Removing invasive species, better managing streams, and directing minor high flows into restored floodplains or off-channel recharge basins will facilitate more water infiltrating and percolating into the subsurface to raise groundwater elevations where there no Salinas Valley Aquitard or shallow clays are present. If groundwater levels are lower than the streambed, this will add water to a principal aquifer and raise groundwater levels higher than would occur otherwise. Decreasing riparian ET will also leave more of the water released from the reservoirs in the River for use in CSIP, which may help reduce groundwater extraction in the coastal area.
- **Groundwater storage measurable objective.** Adding water to the principal aquifer will ultimately have the effect of increasing groundwater in storage.
- **ISW measurable objective.** Removing vegetation pathways for ET will result in higher shallow groundwater levels near locations of ISW.

9.5.1.2 Expected Benefits and Evaluation of Benefits

The groundwater-related expected benefits are increased groundwater elevations in the vicinity of the river channel due to increased infiltration and percolation to the principal aquifers, increased groundwater in storage, and increased groundwater elevations near locations of ISW. In addition, the project provides habitat restoration, increased connectivity for wildlife, and minor flood risk reduction.

Increased storage of flood waters from minor events can increase groundwater elevations in the vicinity of the Salinas River where the Salinas Valley Aquitard and shallow clays are not present. This typically will be seen as groundwater mounding subparallel to the river corridor. However, as more water infiltrates into the subsurface, more water will flow laterally, thereby expanding the zone of influence from the river outward and raise groundwater elevations laterally. With

continued removal of arundo, ET will decrease over time, allowing for more water to remain in the system.

Assuming removed arundo will be replaced by native herbaceous vegetation, there will be an estimated average water savings of 1.76 (+/- 0.25) AF/yr of area treated. Removal of arundo on an additional 700 acres along the entire Salinas River, leading to a total of 1,800 acres removed and maintained, will decrease ET by approximately 3,161 AF/yr throughout the Salinas Valley. The actual net water savings will depend on the type of vegetation that replaces arundo, the frequency of drought, floods, and vegetation scouring events, climate, and other factors. This will enhance recharge from the Salinas River within the southern part of the Subbasin and leave more water in the River to get down to the CSIP, where surface water is used in lieu of groundwater to help address seawater intrusion and declining groundwater elevations. With this reduction of non-productive water consumption, less water can be released from the reservoirs to get the same amount of water downstream, which increases the Valley's sustainable yield and drought resilience. It also results in indirect recharge as removal reduces groundwater use by the plants.

Component 3 of this project includes various floodplain enhancement features, restoration activities and off-channel recharge basins. Preliminary project scoping includes the development of 6 recharge basins along the Salinas River where there is suitable recharge potential. Initial estimates of the combined benefit of the 6 recharge basins covering 1,340 acres is expected to be 367 to 1,334 AF/yr in increased recharge.

This program will also enhance streamflow by returning patterns of flow to a more natural state. Arundo infestation decreases the natural channel migration and complexity of sandy-bottomed streams by confining the channel to an armored, single stem with faster flowing water, which then becomes susceptible to erosion and incision. A narrowing channel with reduced capacity also heightens flood risk. Removing arundo will allow greater normalization of natural geomorphic processes and sediment transport by de-armoring low-flow channel banks and adjacent floodplain areas to enable channel migration and braiding.

Stream channel improvements will provide many additional ecosystem benefits, including:

Habitat restoration. This project will help restore riparian habitat. Results from 4 years of plant community monitoring of arundo sites initially treated in 2016 show that diversity and abundance of native plants have increased over this time period, and this trend is expected to continue. Field biologists conducting pre-activity surveys have also observed increased wildlife activity post-arundo removal. Since the large flow events in 2023, former arundo-dominated areas that had received multiple treatments are largely indistinguishable from non-invaded areas in terms of plant species diversity and structure.

Increased connectivity for wildlife. Within the Central Coast region there are several mountain ranges, coastal areas, valley floors, and upland habitats that need to be connected to allow for the wildlife movement necessary for gene flow and healthy populations (Thorne *et al.* 2002). The Salinas River riparian area is an important linkage for wildlife movement between upland habitat via tributaries. Removal of dense arundo stands will reduce physical impediments to movement for wildlife species such as mountain lion, bobcat, deer, and American badger. RCDMC has documented this through wildlife camera monitoring, which has shown increased detections of large mammals such as deer, bobcat, and coyote after arundo removal. This project will promote habitat use and movement of wildlife by increasing availability of food and nesting resources.

Flood risk reduction. Stream maintenance has the societal benefit of reducing minor flood risk to neighboring lands, which are mostly agricultural fields. Arundo's dense structure creates increased surface roughness, thus backing up water and causing flooding during minor high flow events. When agricultural fields are flooded with river water, farmers lose crops and thus considerable income, and must leave their fields fallow for months after flooding due to food safety concerns. Flooding can also damage levees which then have to be repaired and bring weed seeds and propagules (including arundo) into fields which then have to be controlled.

Enhanced conveyance and infrastructure protection. The maintenance of secondary channels through the SMP improves conveyance of storm flows which protects levees from scour, erosion and overtopping.

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. ISW will be measured through shallow monitoring wells near locations of ISW.

9.5.1.3 Circumstances for Implementation

Multi-benefit Stream Channel Improvements is a priority PMA. The SMP and Salinas River Arundo Eradication Program are ongoing projects with MCWRA, the RCDMC, and the RMU Association. Program administration is provided by the RCDMC and the RMU Association. Landowners currently pay for maintenance activities in the maintenance channels and for associated biological monitoring and reporting, with supplemental support for administrative and biological expenses from federal, state, and local funding. SVBGSA could support the program, become an administrative partner in the program with other program partners, or fund maintenance and monitoring activities.

Floodplain enhancement projects are included as contingency projects and will be implemented if additional water is required to maintain sustainability. A number of agreements and rights must be secured before individual projects are implemented. Primarily, a more formal cost/special benefit analysis must be completed to determine how many site options are preferable. Water diversion rights may need to be secured to divert stormwater, which may take a significant number of years.

9.5.1.4 Permitting and Regulatory Process

For Components 1 and 2, the permitting process has already been initiated by MCWRA and RCDMC, and permits are in place until 2035 for the program. Invasive species eradication will be continued under existing permitting. All participants in the SMP must enter into an agreement with RCDMC and comply with all terms, conditions, and requirements of the permits and Program Guidelines.

Component 3 may require a CEQA environmental review process and 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.

Permits for all 3 components are detailed below.

Component 1 Permits:

- ***U.S. Army Corps of Engineers (USACE)*** – The Department of the Army Regional General Permit 20 for the SMP, Corps File No. 22309S, was executed on September 28, 2016, by the USACE. The original RGP was authorized under §404 of the Clean Water Act (33 U.S.C. §1344) through November 15, 2021, and a 5-year extension was granted. The NMFS and the USFWS concurred with the USACE determination that the project was not likely to adversely affect the following federally endangered or threatened species: the San Joaquin kit fox (*Vulpes macrotis mutica*), the California tiger salamander (*Ambystoma californiense*), the Monterey spineflower (*Chorizanthe pungens* var. *pungens*), the yellow-billed cuckoo (*Coccyzus americanus*), or the South-Central California Coast (S-CCC) steelhead (*Oncorhynchus mykiss*). The USFWS issued a Biological Opinion on August 22, 2016, for the federally endangered least Bell's vireo (*Vireo bellii pusillus*) and tidewater goby (*Eucyclogobius newberryi*) and its critical habitat and the federally threatened California red-legged frog (*Rana draytonii*). As of August 2026, the RGP is undergoing a renewal process, and the Biological Opinion will be revised.

- **NMFS** – The RCDMC also has a letter of concurrence in which NMFS supports USACE’s decision that the SMP “is not likely to adversely affect species listed as threatened or endangered or critical habitats designated under the Endangered Species Act.”
- **CCRWQCB** – The Clean Water Act §401 Water Quality Certification for Discharge of Dredged and/or Fill Materials, Certification No. 32716WQ02, was approved on August 31, 2016, with an original expiration date of November 30, 2025. This permit was amended and extended through November 30, 2035.
- **CDFW** – The SMP is authorized under a Routine Maintenance Agreement (RMA) 1600-2016-0016-R4, approved October 14, 2016, and held by the RCDMC. The RMA has been amended several times, most recently (amendment 6) on July 18, 2025. The RMA covers all impacts under the program from the original date of approval through December 31, 2026. RCDMC will seek an extension of the permit for 5-10 years beyond the current expiration date.
- **CNRA** – An EIR was completed by MCWRA in compliance with the CEQA.

Component 2 Permits:

- **CDFW** – The invasive species eradication is authorized under a Restoration Management Permit # RMP-2026-0032-R4 approved July 30, 2026, for a term of 10 years, and held by the RCDMC.
- **EPA** Discharge Elimination System (NPDES) permit CAG990005 allows the Salinas River Arundo Control Program to apply pesticides to waterways.

In addition, the RCDMC Salinas River Arundo Control Program filed a CEQA Mitigated Negative Declaration in 2011, received a technical assistance letter from NMFS, completed a USFWS No Take Request, and received a technical assistance letter from USFWS.

Component 3 Permits that may be required for floodplain enhancement 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.
- **CNRA** – Projects of a magnitude capable of having a demonstrable impact on the environment will require a CEQA environmental review process. Projects will require either an EIR, Negative Declaration, or a Mitigated Negative Declaration.

9.5.1.5 Implementation Schedule

If selected, the components of this program may be implemented on different schedules. The annual implementation schedule for Component 1 is outlined in Table 9-8. Approximately 40 new acres could be added to the program each year, taking about 10 years to add the remaining acres if selected for full implementation. Annual maintenance needs to be continued indefinitely. For Component 2, up to 100 of the remaining 700 acres of uncontrolled arundo could begin treatment each year, as shown in Table 9-9. Component 3 could be initiated anytime. This schedule is shown in Table 9-10.

Table 9-8. Annual Implementation Schedule for Stream Maintenance

Task Description	Dec 1	Mar 31	Sep 1	Nov 30
Phase I – Annual RMU report, Work Plan, and noticing				
Phase II – Pre-maintenance surveys				
Phase III – Maintenance activities				

Table 9-9. Implementation Schedule for Invasive Species Eradication

Task Description	Year												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Treat and retreat first 100 acres													
Treat and retreat second 100 acres													
Treat and retreat third 100 acres													
Treat and retreat fourth 100 acres													
Treat and retreat fifth 100 acres													
Treat and retreat sixth 100 acres													
Treat and retreat seventh 100 acres													

Table 9-10. Implementation Schedule for Floodplain Enhancement and Recharge

Task Description	Year				
	1	2	3	4	5
Studies/Preliminary Engineering Analysis					
Agreements/Right of Way/Water Rights					
CEQA					
Permitting					
Design					
Bid/Construct					

9.5.1.6 Legal Authority

RCDMC has legal authority over the Component 1 SMP for program administration and permitting. Private landowners and local cities that conduct maintenance in the permitted work areas must agree to permit conditions and execute an agreement with RCDMC. Private landowners and local cities currently pay for all maintenance activities including heavy equipment work, while a combination of private and public funding support administration and biological surveys and monitoring.

For Component 2 invasive species removal, the RCDMC has legal authority for program administration and permitting. The RCDMC obtains Landowner Access Agreements with property owners or managers (tenants) to allow them to do the work or to allow the RCDMC to oversee landowner-conducted work.

Legal authority for GSA to implement PMAs is guided by CWC Part 2.74 Chapter 5, which identifies the powers and authorities of GSAs. For floodplain restoration activities, the SVBGSA has the right to divert and store water once it has access to the appropriate water rights. Pursuant to California Water Code §10726.2 (b), 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. 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].

9.5.1.7 Estimated Cost

Component 1 SMP program permits have been completed and renewed or were in the process of renewal as of August 2026. The annual administrative and biological survey/monitoring costs of Component 1 of this program are approximately \$100,000 - \$150,000, excluding the cost of stream maintenance activities (equipment operation and other implementation work), which varies from year to year based on number of participants and work site conditions. These costs are currently paid by program participants; however, the SMP program could cover the costs of stream maintenance activities, biological monitoring, and/or reporting to reach higher

participation rates from landowners and therefore increase project benefit. Prevailing wage does not apply to individual program participants conducting SMP activities, therefore the cost per acre is lower than for the Invasive Species Eradication Program. Some of the programmatic costs for Component 1 are covered through the Invasive Species Eradication activities. The cost for the vegetation management is approximately \$2,200/acre for the first year and \$400/acre for annual maintenance thereafter. This does not include the cost of sediment management, which can be high. The cost estimate for SMP activities, required biological monitoring, and reporting is included in Table 9-11. As of 2025, 289 acres of native and non-native vegetation have been treated at least once under the SMP, though not all areas are treated every year.

Table 9-11. Cost Estimate of SMP Vegetation Management

	Acres	First year of vegetation management (\$2,200/acre)	Subsequent years of vegetation management (\$400/acre)
Upper Valley	250	\$550,000	\$100,000
Forebay	263	\$578,600	\$105,200
180/400	137	\$301,400	\$54,800
Subtotal	650	\$1,430,000	\$260,000

For Component 2, Invasive Species Eradication, the total cost of initial treatment of arundo, retreatment and herbicide application, program administrative costs, biological surveys, monitoring and permitting is \$25,000/acre. These costs include a prevailing wage contractor, administrative expenses related to grant management and certain Component 1 programmatic costs. If additional acres are treated, the cost per acre will go down. The indirect projected yield for the invasive species eradication project is estimated at 1.7 AF/yr. per acre of invasive species removed. With the costs and estimated project benefits, the amortized cost of water for this project is estimated to be \$15,000/AF.

Component 3 includes the construction of 6 recharge basins, with an expected benefit of an average of 140 AF/yr in increased recharge per basin and a capital cost of \$1,116,000 each, for a total of \$6,696,000. Spread over 25 years and assuming a 6% discount rate, the annualized cost is \$93,300 per recharge basin, including yearly maintenance. The unit cost is \$666/AF (estimated in 2022 GSP Amendment 1). These costs are approximate; exact costs will depend on site specifics.

9.5.1.8 Public Noticing

The work associated with this effort would be under the purview of MCWRA and RCDMC. SVBGSA will provide information about this project at meetings of the SVBGSA Board of Directors, Advisory Committee, and Subbasin Committees to update the public on such analysis and outcomes from these efforts. Public notice of these meetings will be conducted in accordance with the Brown Act.

If SVBGSA leads any project components, 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.

9.5.2 P2: CSIP System Optimization

The Monterey County Water Recycling Projects, which include the CSIP distribution system, SVRP, and SRDF as shown on Figure 9-1, are owned by the MCWRA and operated by M1W through an agreement with MCWRA. CSIP and SVRP became operational in April of 1998. Since 2010, diverted stored reservoir water via the Salinas River Diversion Facility (SRDF) supplies additional source water to the system. During the first phase of GSP implementation, MCWRA made initial improvements and evaluated opportunities to optimize the CSIP distribution system to reduce or eliminate groundwater pumping. The projects have slowed the rate of seawater intrusion as intended, particularly in the 180-Foot Aquifer. However, current infrastructure cannot keep up with flow demands during peak summer irrigation due to distribution system constraints and loss of supplemental wells.

During the first phase of GSP implementation, MCWRA implemented most of the CSIP Optimization projects identified in GSP Amendment 1. MCWRA, in coordination with M1W, has installed Remote Monitoring Units (RMU) at all the turnouts (points of use for irrigation) to improve monitoring of water use and has used them to inform an update to the CSIP hydraulic model. M1W has created an online scheduling platform that is in use. These tools together are a step toward the goal of improving water use scheduling and deliveries.

SVBGSA supported MCWRA with grant funding to implement CSIP Booster Station Enhancements. There are 3 booster stations located in the CSIP distribution system that were designed to provide increased pressure during low pressure situations in the system and to aid in circulating water to the far end lines of the system during high demand usage. Because it is a gravity fed distribution system, maintaining adequate pressures can be challenging, especially in high demand situations. Groundwater wells were often used to boost pressure and add additional

water volume in the system when the originally configured booster stations could not fully address the low-pressure problems. The booster station pump enhancements provide optimized usage and increased pressure in the system at critical low-pressure areas, which then decreases the need for turning on groundwater wells for addressing the low pressure.

CSIP originally had 22 supplemental wells to support water demands because recycled water could not fully meet demand. As of 2026, a number of these wells have been taken offline or destroyed, and only 8 supplemental wells remain active. The CSIP distribution system is also constrained when demand peaks during certain hours and there is not enough water storage within the system to take advantage of all the available supplies. These bottlenecks in the system and lack of storage lead to the need for operation of CSIP supplemental wells to meet total irrigation needs when either the treated or rediverted water is not available, or the volume is not sufficient.

This Project addresses these challenges through infrastructure and program implementation improvements. In a phased approach, the CSIP system will be optimized to better accommodate diurnal and seasonal fluctuation in irrigation demand, maximizing use of water supplied from the SVRP and the SRDF, thereby reducing the need for groundwater pumping. Furthermore, this project aligns CSIP irrigation with water availability, rather than on demand, to ensure the available supply water can be used to a greater extent.

9.5.2.1 CSIP Distribution System Improvements

The CSIP hydraulic model was used to further understand system constraints and recommendations for the next phase of capital improvement projects (CIP). Hydraulic modeling identified specific system constraints—particularly at the FF0 Loop, the primary Salinas River crossing, and overall system head loss—that limit non-groundwater supply capacity. The CSIP Basis of Design Report (BODR) presents preliminary engineering designs and cost estimates for 3 CIPs identified through the CSIP Hydraulic Modeling and Analysis Report prepared for MCWRA by E2 Consulting Engineers and Schaaf & Wheeler in July 2025. The goals of these improvements include reducing reliance on supplemental groundwater wells during peak summer irrigation demand, improving hydraulic reliability, and enhancing system redundancy in support of seawater intrusion management.

The next phase of CSIP Optimization projects includes the following 3 CIPs:

CIP 1 – FF0 Loop Check Valve and Pressure Relief Valve

Install a check valve and pressure relief valve on Rodgers Loop to prevent hydraulic short-circuiting when the Espinosa Booster Pump Station is operating. This allows more efficient use of existing pumps and increases deliverable flow under both gravity and pumped conditions.

- Key Benefits:
 - Improves system efficiency with minimal construction
 - Increases peak deliverable flow by up to ~6,500 gpm with booster pumps active
 - Reduces localized low-pressure conditions at critical turnouts

Cost Estimate (60% Design – Class B): Total Construction Cost of ~\$1.1 million (includes contractor overhead and profit, contingencies, and allowances).

CIP 2 – Second CSIP Storage Pond Outlet Pipeline

Construct a second pond outlet pipeline and associated bypass/diversion structures to increase conveyance capacity across the Salinas River and provide operational redundancy.

- Key Benefits:
 - Addresses the primary hydraulic bottleneck in the system
 - Increases gravity-fed and pumped delivery capacity
 - Enables continued operation during maintenance of existing outlet infrastructure
 - Reduces dependence on groundwater pumping during peak demand

Cost Estimate (30% Design – Class C): Total Construction Cost of ~\$26.2 million (includes 25% contingency, contractor overhead and profit).

CIP 3 – In-System Storage Tank and Booster Pump Station

Develop in-system storage and a new booster pump station to provide a secondary, pressurized supply point within the eastern portion of the CSIP system.

- Key Benefits:
 - Enables peak irrigation demands to be met without groundwater pumping
 - Allows off-peak filling using recycled and surface water
 - Improves system resilience and pressure balance
 - Represents the most effective long-term solution for eliminating supplemental well use
 - Cost Estimate (30% Design – Class C): Total Construction Cost of ~\$33.7 million

9.5.2.2 Modify Monterey One Water Tertiary Recycled Water Plant – Winter Modifications

The SVRP at the Regional Treatment Plant (RTP) is owned by M1W and delivers tertiary treated wastewater to the CSIP system for irrigation. The primary, secondary, and tertiary treatment processes have a maximum capacity of 29.6 MGD and treat approximately 16 to 20 MGD of influent wastewater. During the wet weather months, the majority of secondary treated

wastewater is discharged to the ocean, forgoing the opportunity for beneficial reuse. During the wet weather months, there is some demand for recycled water in the CSIP system; however, M1W cannot produce tertiary treated water at a rate lower than 5 MGD, which is needed to supply the growers in the winter. As a result, growers turn to the groundwater basin for their irrigation needs during these months when CSIP is offline. Modifications are required at the Reclamation Plant to efficiently treat and deliver recycled water during the wet weather months at low flows. GSP Amendment 1 identified that the Winter Modifications project consists of 2 parts: upgrading the chlorine scrubbers to minimize the winter maintenance shutdown and improving the Reclamation Plant to allow delivery of tertiary treated wastewater to CSIP when water demand is less than 5 MGD and to reduce the shutdown time for annual maintenance of the chlorine scrubber. M1W and MCWRA completed the chlorine scrubber upgrade in 2024, with SVBGSA grant funding support. In Amendment 2, additional improvements to the SVRP, which provides recycled water to the CSIP distribution system, are consolidated under PS-2, and could constitute another phase of CSIP Optimization.

The second part of this project is to allow delivery of tertiary treated wastewater to the CSIP system when recycled water demand is less than 5 MGD. Improvements to the Reclamation Plant include minor modifications to the chlorine contact basins and construction of a new conveyance pipeline to the distribution system, bypassing the storage pond. Together with the chlorine scrubber upgrade, these improvements will provide near year-round operation of the Reclamation Plant to provide water to CSIP, even when demand is low in winter months. The exception is a brief “hard” shut down for the Reclamation Plant maintenance, which is typically a 2-week window in January. SVBGSA will work closely with M1W and MCWRA to support and implement this project.

9.5.2.3 Maximize SRDF Diversion

The SRDF operates through the season up to a current maximum diversion of 36 cfs. The facility has the ability to operate between April 1 and October 31 and can theoretically deliver annually up to approximately 15,000 AF/yr to the CSIP system. However, since its startup in 2010, it has provided an average of 5,740 AF/yr between April and October, with a maximum delivery in 2024 of 7,694 AF/yr, a deficit largely attributable to a misalignment between the timing of supply and demand for the water. In many years, such as during droughts, the SRDF cannot operate due to lack of available water from the reservoirs to the Salinas River and percolation of remaining river water to the groundwater basin upstream of the SRDF. After the CSIP distribution system is optimized, MCWRA could increase the total diversions from the SRDF in some years with no added capital expenditures. There would be additional capacity available to offset a portion of the demand if the CSIP area is expanded. The other components of CSIP optimization must be completed to be able to maximize the SRDF deliveries.

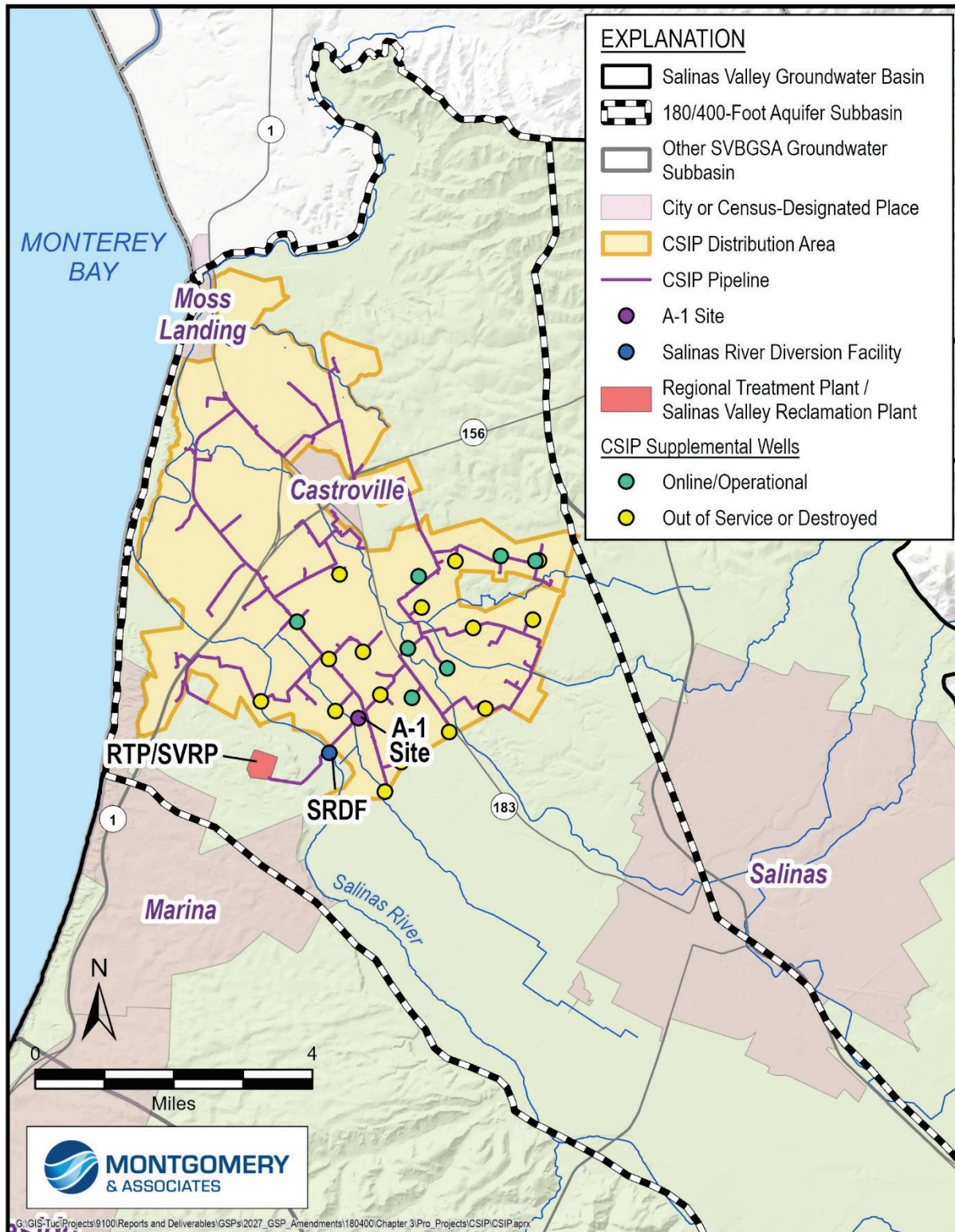


Figure 9-1. Castroville Seawater Intrusion Project Location

9.5.2.4 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.

9.5.2.5 Expected Benefits and Evaluation of Benefits

The primary benefit from CSIP optimization includes reduction or avoidance of groundwater pumping from wells in the CSIP area throughout the year. Two types of wells pump groundwater in the CSIP area: CSIP supplemental wells and privately owned standby wells used to provide groundwater for irrigation either in lieu of, or in addition to, irrigation water provided by the CSIP system. CSIP supplemental wells are MCWRA-owned wells that provide water to the CSIP system when the combination of recycled and river water is insufficient to meet demands.

Groundwater modeling in the original GSP estimate the joint benefits of CSIP optimization and SVRP winter modifications and maximize SRDF diversions in terms of groundwater elevation and seawater intrusion. The GSP jointly estimates project benefits for all 3 CSIP projects included in the GSP, rather than for each project independently, because they are intertied. Model results from the original GSP suggest that these projects reduce seawater intrusion. Results are not included here because the project scoping has progressed, and modeling does not reflect the current project scope or more recent groundwater models. Nevertheless, this project is anticipated to significantly reduce groundwater extraction. During the implementation period, project benefit estimates will be refined.

MCWRA's historical data of private standby well pumping indicates that since 2010, the average pumping of standby wells located within the CSIP distribution area was around 2,000 AF/yr prior to the addition of SRDF. According to MCWRA, private wells can include domestic wells in the area not connected to the system or used based on owner preference. Some users have chosen not to receive CSIP water. Since 2013, private well pumping has decreased. The combination of the CSIP distribution system improvements and SVRP winter modifications are intended to minimize this pumping by standby wells.

CSIP supplemental well pumping occurs every year. The average CSIP supplemental well extractions since 2010 is approximately 4,550 AF/yr, with a maximum of 11,000 AF/yr in 2022 when there were no surface water diversions at SRDF. Combining the average private standby well pumping and the CSIP supplemental well pumping yields an average benefit of approximately 6,200 AF/yr of reported well pumping within the CSIP area (WY 2010-2025) that could be partially offset by this project together with SVRP winter modifications.

The primary benefit from SVRP Winter Modifications is the ability to supply to the CSIP system during low-demand wet weather months and the reduction of the winter maintenance shutdown, thus reducing groundwater pumping that is relied upon during this period. This project has the potential to yield up to 1,950 AF in some years through in-lieu recharge, providing an alternative to groundwater sources in the existing CSIP area. Table 9-12 provides the groundwater well pumping—including both CSIP supplemental and private standby wells—for 5 years during the winter months when the Reclamation Plant is not online. This results in an average wet weather pumping rate of 1,184 AF/yr based on the WY 2020-2024 average, with a minimum of 690 AF/yr and a maximum of 1,950 AF/yr. The Reclamation Plant modifications would significantly reduce the need for wintertime groundwater pumping. The demand for water from the Reclamation Plant during the winter will also increase if CSIP Expansion is implemented.

Table 9-12. Winter Extraction from CSIP Supplemental and Standby Wells

	Nov 2020- Mar 2021	Nov 2021- Mar 2022	Nov 2022- Mar 2023	Nov 2023- Mar 2024	Nov 2024- Mar 2025
November	140	180	280	200	40
December	230	70	70	10	100
January	520	510	50	140	440
February	210	620	450	240	70
March	460	570	150	100	70
Total	1,560	1,950	1,000	690	720

The original GSP shows groundwater elevation benefits to the 180-Foot Aquifer and 400-Foot Aquifers for CSIP optimization, SVRP winter modifications, and maximize SRDF diversions. The GSP jointly estimates project benefits for these 3 CSIP projects included in the GSP, rather than for each project independently, because they are intertied. They are not included here because the project scoping has progressed, and modeling does not reflect the current scope. However, this project is anticipated to significantly reduce groundwater extraction. During the implementation period, project benefit estimates will be refined.

- 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 the project.

9.5.2.6 Circumstances for Implementation

CSIP Optimization is a priority project for implementation. The first phase of CSIP Optimization identified in GSP Amendment 1 has been implemented. The next phase of CSIP Optimization will be prioritized for funding and implementation in coordination with MCWRA. The 3 identified CSIP CIP have advanced designs at 30%-60%. Other phases of CSIP or SVRP improvements may be identified through operations and condition assessments and as additional information becomes available. No additional circumstances for implementation are necessary.

9.5.2.7 Permitting and Regulatory Requirements

All 3 CIPs require encroachment permits from the County of Monterey. MCWRA is the lead agency for CEQA review. CEQA compliance is anticipated to involve preparation of an Initial Study checklist to support a Notice of Exemption, Negative Declaration, or Mitigated Negative Declaration.

CIP-1 and CIP-2 would result in less than 1 acre of disturbance, therefore, a General Construction Storm Water Permit Order 2009-0009-DWQ will not be required for these projects. CIP-3 has a larger project footprint and would require stormwater management compliance. No sensitive or protected species nor Waters of the State/U.S. are located on or near the CIP sites.

9.5.2.8 Implementation Schedule

Table 9-13 includes the anticipated schedule for each component; however, the selection of and schedule for each component are independent. It is anticipated that the full project will take approximately 8 years to implement.

Table 9-13. Implementation Schedule for CSIP Optimization

CSIP Optimization	2027	2028	2029	2030	2031	2032
Program management, coordination and planning						
Environmental review, permitting and easements						
Funding and grant administration						
CIP 1 — Rodgers Loop check valve, PRV and bypass vault						
CIP 2 — Second pond outlet pipeline and diversion structures						
CIP 3 — Property acquisition, final design and procurement						
CIP 3 — Storage tanks, booster station, electrical and SCADA						
Commissioning, operator training and operational acceptance						
Operations, Monitoring, Maintenance & Optimization						

9.5.2.9 Legal Authority

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. Section 8, among other objects and purposes, includes to “prevent the waste or diminution of the water supply in the Agency, including the control of groundwater extractions as required to prevent or deter the loss of usable groundwater through intrusion of seawater.”

The existing CSIP facilities and the Salinas River Diversion Facility (SRDF, or Diversion Facility) are owned by MCWRA and are located on land owned by MCWRA or over which MCWRA has permanent easements. MCWRA has the authority to control water use within the CSIP and Salinas River Diversion Facility system. M1W is under contract to operate and maintain the CSIP system (Water Recycling Agreement, 2015). The Reclamation Plant and storage components are owned by and located on property owned by M1W. The SVBGSA will work in cooperation with MCWRA and M1W to modify and optimize the CSIP system. No additional legal authority is necessary.

9.5.2.10 Estimated Cost

MCWRA’s CSIP Optimization engineering cost estimate is included here with the cost standardization for other SVBGSA projects. Project costs are reported in (2030) dollars. All costs include 15%-25% construction contingency and sales tax. Costs are escalated at a 3% annual rate of inflation to July 2030. Project planning occurs between 2027 and 2030 with project construction between 2030 and 2035. Total planning and construction costs are \$72.7 million. Annual O&M costs and equipment replacement costs are not yet developed. The project would be funded through a combination of external grant funding, debt, and local revenues.

In GSP Amendment 1, M1W and MCWRA estimated that the Reclamation Plant Improvements would cost approximately \$8,967,400, including the design and construction costs of the scrubber upgrade. This cost estimate was prepared in 2022 and will be updated if and when this component of CSIP Optimization is undertaken.

9.5.2.11 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 is the lead agency for CSIP Optimization. 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.

9.5.3 P3: 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 9-2, 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.

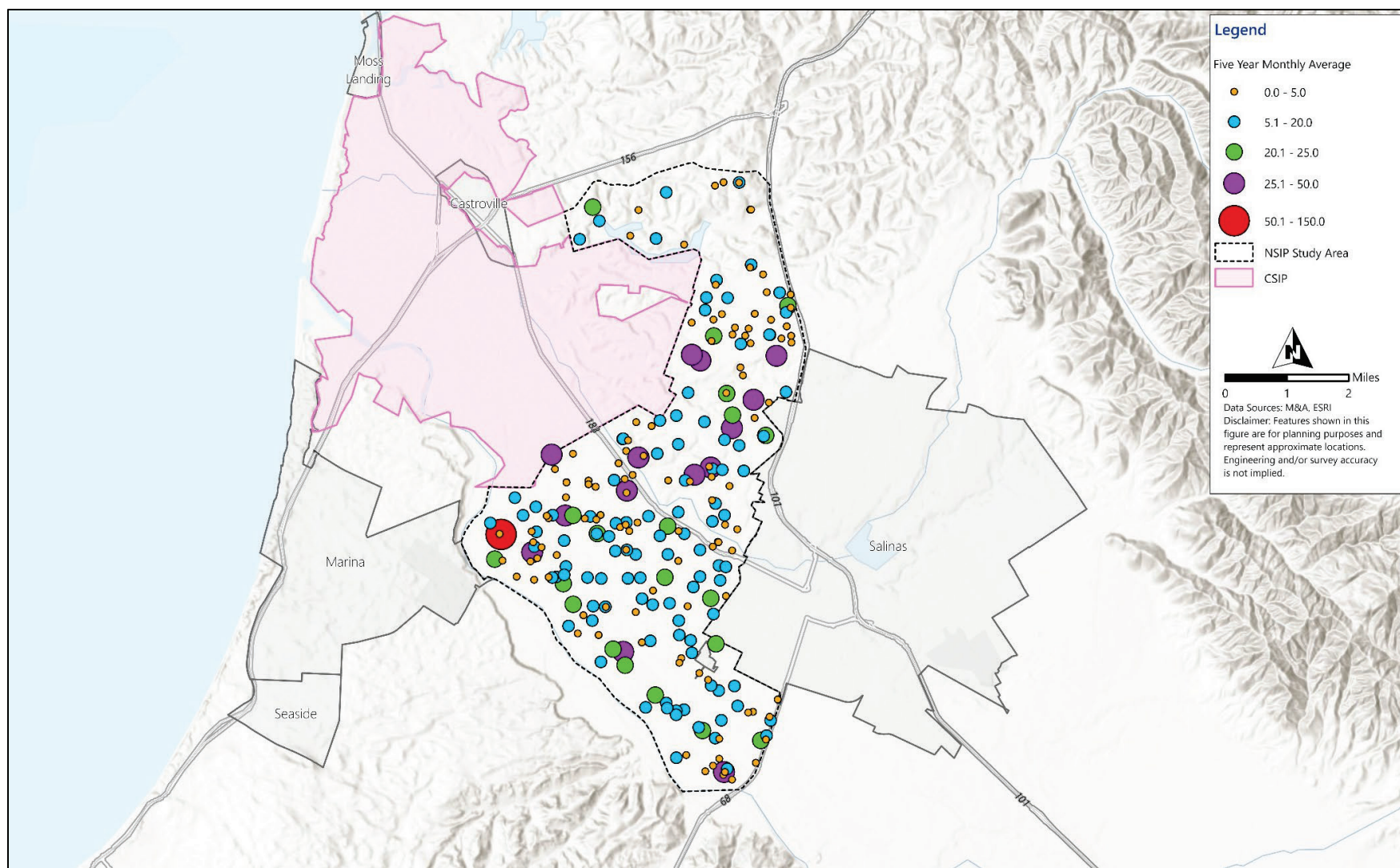


Figure 9-2. NSIP Study Area Five Year Monthly Average Demand of All Wells (2019-2023)

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 9-14.

Table 9-14. 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.

9.5.3.1 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.

9.5.3.2 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 9-3 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.

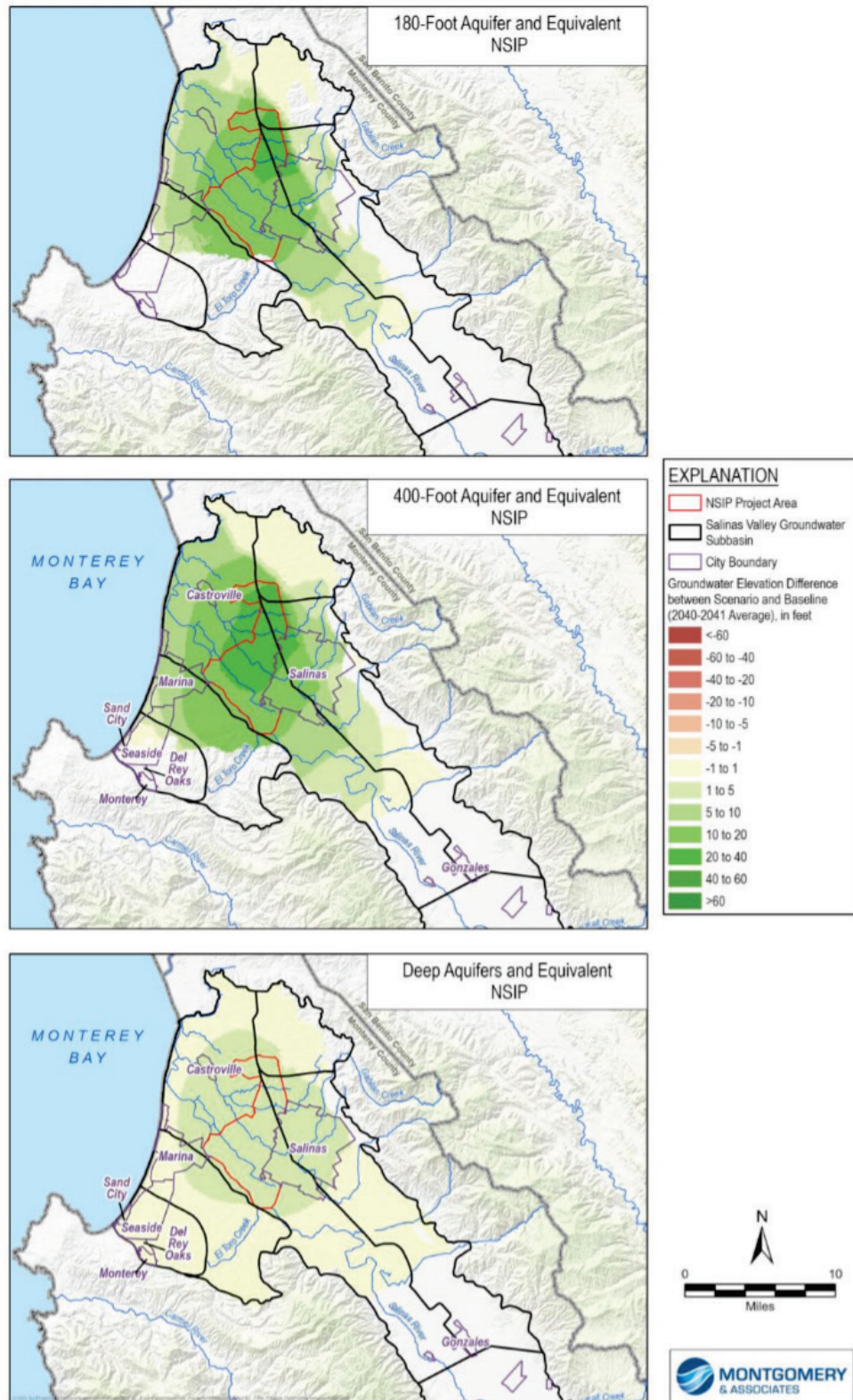


Figure 9-3. Max NSIP Scenario Groundwater Levels Difference from Baseline Scenario

9.5.3.3 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.

9.5.3.4 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 State Water Resources Control Board.

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.

9.5.3.5 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.

9.5.3.6 Implementation Schedule

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

9.5.3.7 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 9-15 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 9-15. 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

9.5.3.8 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.

9.5.4 P4: 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 9-4 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 reverse osmosis (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.

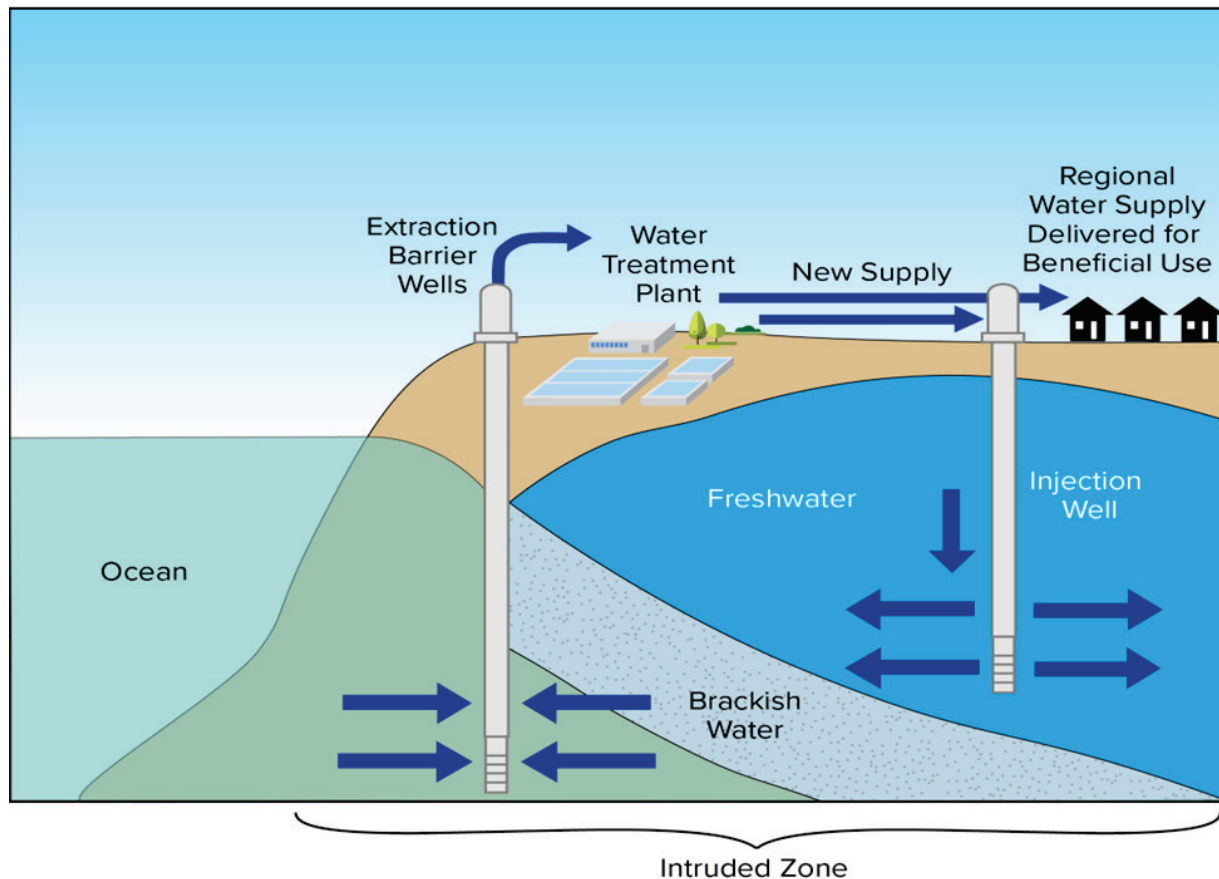


Figure 9-4. BGRP Concept

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.

9.5.4.1 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.

9.5.4.2 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.

9.5.4.3 Circumstances for Implementation

BGRP is a prioritized project. 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 Brackish Groundwater Restoration Project (BGRP) will be implemented in phases beginning in 2027. The next 5 years will focus on project development, 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.

9.5.4.4 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.*)
- ***California Department of Transportation*** - 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 EIR 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.

9.5.4.5 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.

9.5.4.6 Implementation Schedule

The implementation schedule presented is anticipated to take 10 years as shown in Table 9-16.

Table 9-16. 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										

9.5.4.7 Estimated Cost

Table 9-17 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 9-17. 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.

9.5.4.8 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.

9.5.5 P5: Coastal Injection/Aquifer Storage and Recovery

GSP Amendment 2 further updates the aquifer storage and recovery (ASR) project concepts that were initially referred to as the SRDF Winter Flow Injection Project in the original GSP and as Seasonal Release with ASR or Direct Delivery in Amendment 1. 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 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 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.

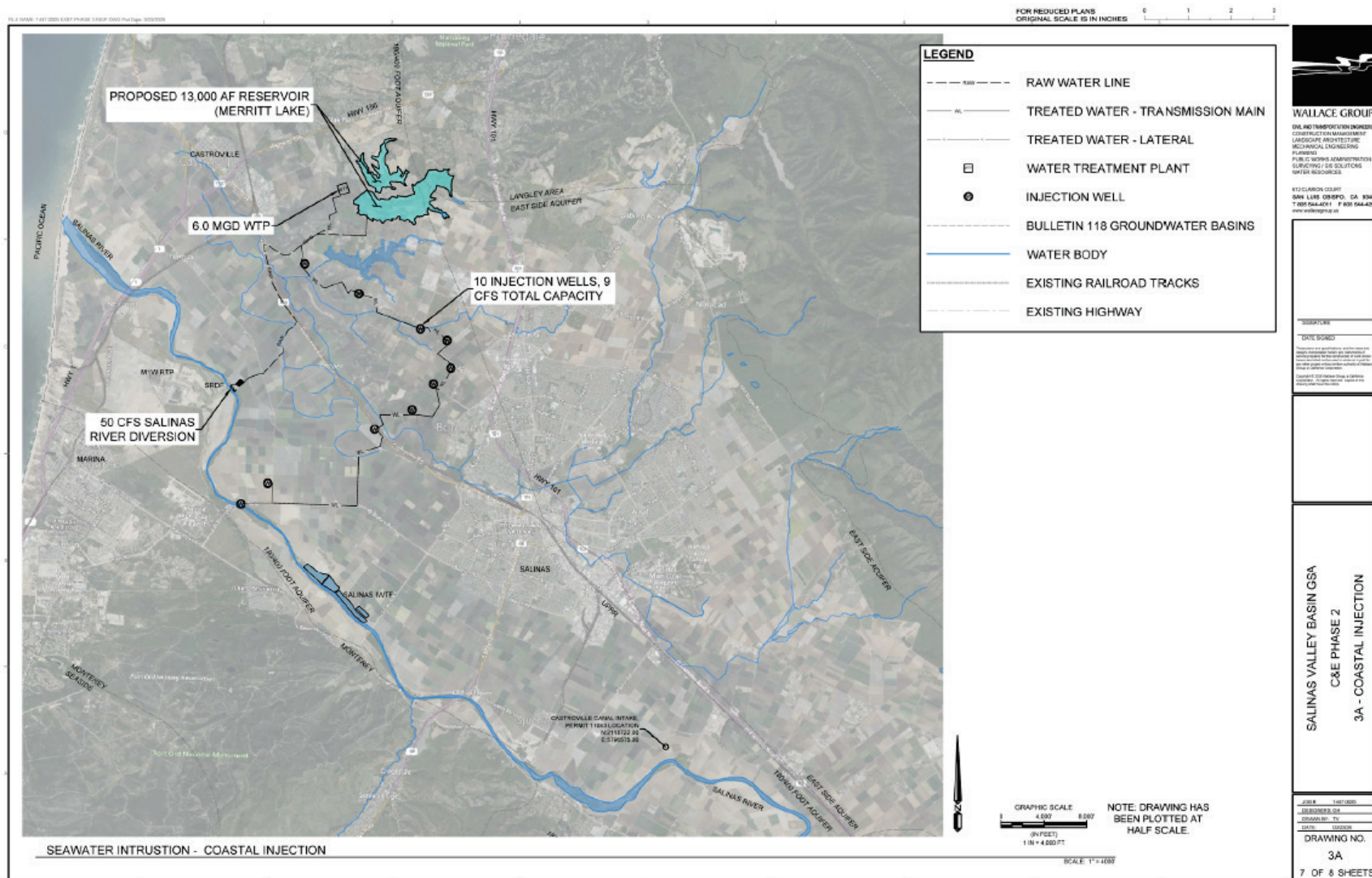


Figure 9-5. Infrastructure Layout for Coastal Injection Project Concept

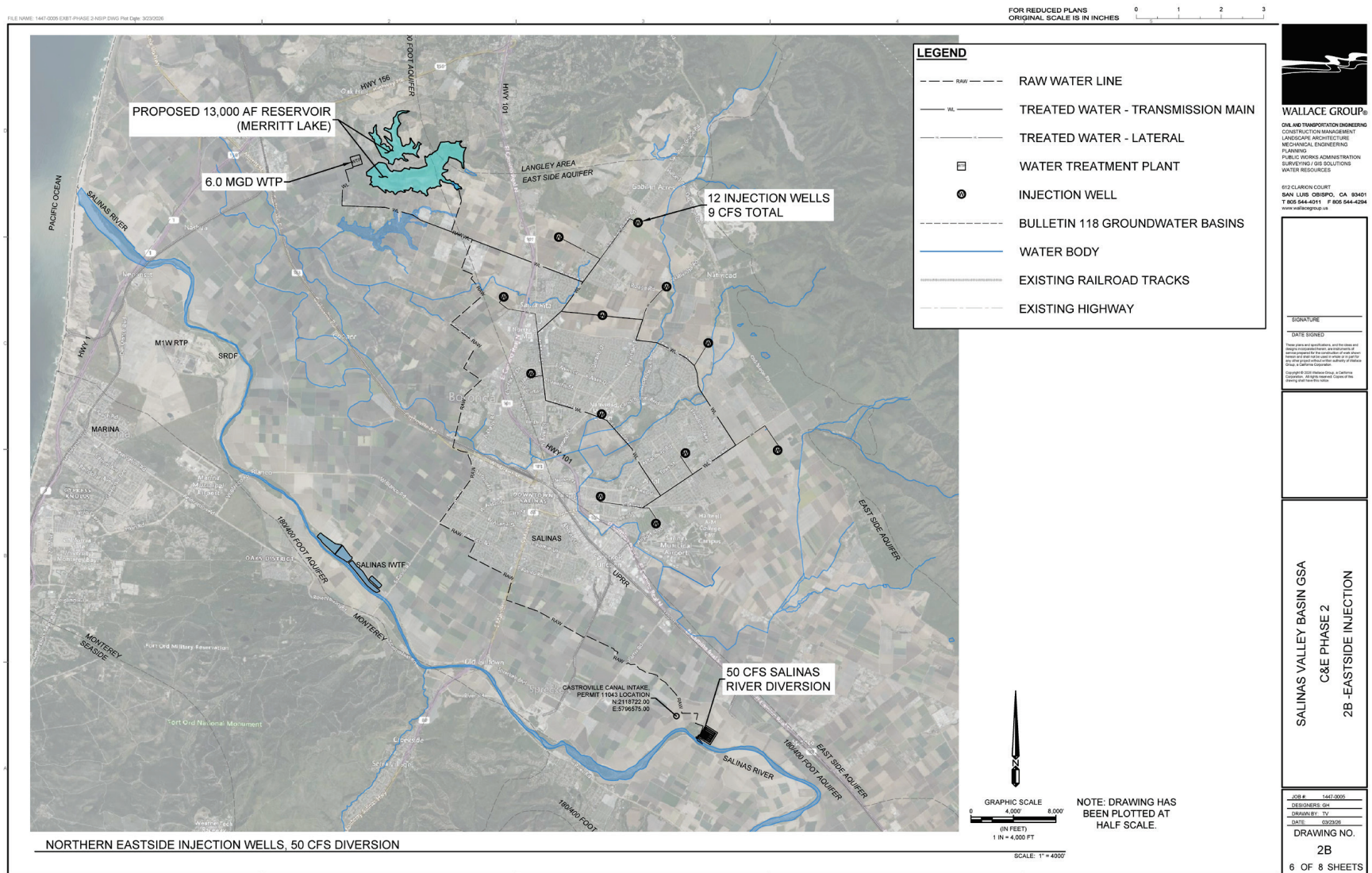


Figure 9-6. Infrastructure Layout for Northern Eastside Injection Concept, 50 cfs Diversion Scenario

9.5.5.1 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.

9.5.5.2 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.

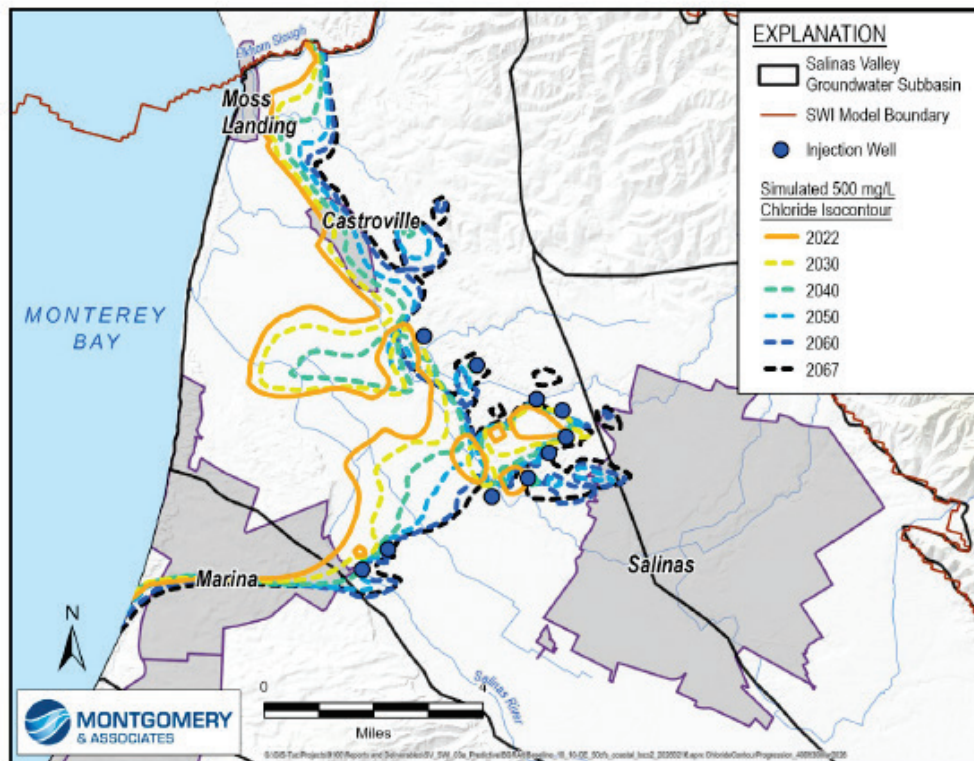
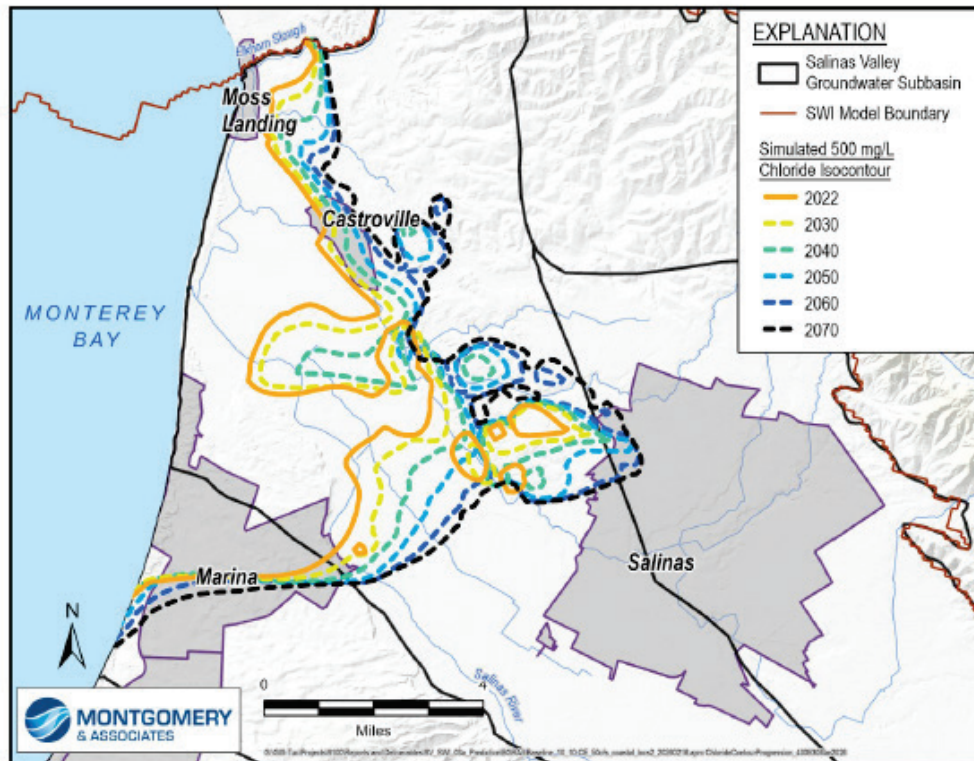


Figure 9-7. Progression of Chloride Isocontour in the 400-Foot Aquifer under the Baseline (top) and Coastal Injection Scenario (bottom)

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.

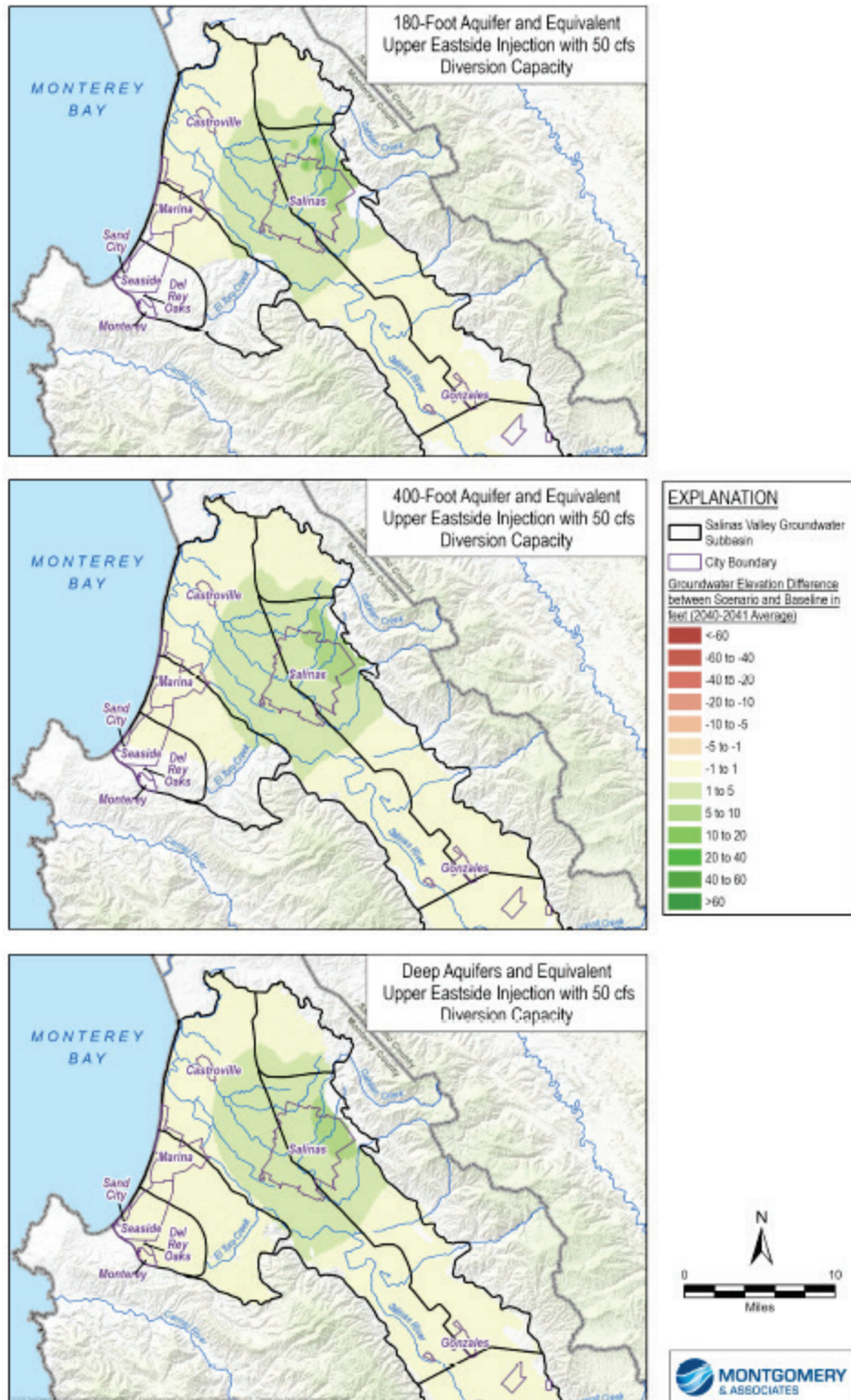


Figure 9-8. Difference between North Eastside Injection Project (50 cfs) Average November 2040-2041 Water Levels and Baseline Scenario for 180-Foot, 400-Foot, and Deep Aquifers.

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 500 mg/L chloride isocontour developed by MCWRA.

9.5.5.3 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.

9.5.5.4 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 (“DSOD”)*** - 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.

9.5.5.5 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).

9.5.5.6 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.

9.5.5.7 Estimated Cost

The standardized total construction cost estimate and O&M are summarized in Table 9-18 (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 9-18 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 9-18. 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)

9.5.5.8 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.

9.5.6 P6: Irrigation Water Supply Project

This project was included in the original GSP as Alternative Project 4: Use the Southern Portion of the 180/400 Subbasin for Seasonal Storage. A similar project is included in the Eastside Subbasin GSP as the Eastside Irrigation Water Supply Project, and is also referred to as Somavia Road Project. Both projects rely on extracting the same source water but distribute it to different locations, so 1 project would need to be selected, or source water split between the 2 projects.

Under this project, conventional groundwater extraction well facilities would be constructed in the southern portion of the 180/400 Subbasin to extract seasonally stored groundwater during peak irrigation season for supply and environmental needs. Due to the laterally extensive presence of the Salinas Valley Aquitard within much of the 180/400 Subbasin, the ability of the Salinas River to effectively recharge the most productive aquifer zones for cyclic storage and extraction is limited. However, the Salinas Valley Aquitard is less prominent farther south, transitioning to shallow clays that may have thin spots around Chualar. In addition, there is a mapped gap in the aquitard near Somavia Road.

The project locates extraction wells in this southern area, where the Salinas Valley Aquitard and shallow clay layers are thin or absent, and convey the extracted groundwater to areas with additional supply needs, such as the Eastside Subbasin or the coastal portion of the 180/400 Subbasin. The original project concept was based on the premise that increased summer pumping would create additional aquifer storage capacity and thereby support greater recharge during the winter. However, initial analyses indicate considerable uncertainty regarding the extent to which this mechanism would occur and the impacts to reservoir storage and downstream surface flow users.

SVBGSA supported joint surface water and groundwater investigations to assess the extent to which recharge to the 180-Foot Aquifer occurs through Salinas Valley Aquitard gaps near Somavia Road. Results from the surface water study show that most streamflow loss between the Chualar and Spreckels stream gages occurs near the river bend just upstream of Somavia Road. However, the degree to which this infiltrating water reaches the underlying 180-Foot Aquifer and whether additional drawdown would induce more recharge is less certain. Overall, the groundwater data indicate more of a regional effect where recharge to the 180-Foot Aquifer primarily occurs where shallow clays are absent, largely in the Forebay Subbasin. Regional recharge appears to influence groundwater levels, masking any potential signal of local direct recharge. As a result, the evidence does not conclusively suggest there could be rapid, additional recharge at Somavia Road.

Further studies would be needed to design and assess the benefits of the project. The project would need to ensure that it does not induce additional stream depletion that would reduce flows to the SRDF, reduce reservoir storage or flows needed for environmental purposes. The effect on

groundwater levels and the SMC in the area of additional extraction would also need to be assessed.

The cost estimate for the project includes construction of 3 production wells to extract water. The water would be sent to a centrally located sump, from which the water would be discharged to a distribution network. The extraction wells will only screen the 180-Foot Aquifer; accordingly, total well depths would likely not exceed 350 feet below ground surface (bgs). The extraction wells are capable of production rates up to 2,000 gpm. With 2 primary wells extracting water during a typical 6-month irrigation season and the third as back-up, approximately 3,000 AF would be available as supplemental water. Well spacing could be such that the seasonal drawdown would be spread over about 1 mile along the river.

9.5.6.1 Relevant Measurable Objectives

The main measurable objectives benefiting from this project include:

- **Groundwater levels measurable objectives.** Reducing pumping in the area water is delivered to will result in higher groundwater levels than otherwise would occur. Analysis of the effect on groundwater levels in the area of extraction still need to be assessed. To assist with meeting groundwater level measurable objectives, the positive effect on RMS wells in the area of delivery would need to outweigh negative impacts in the area of extraction.
- **Groundwater storage measurable objective.** Since groundwater in storage is calculated based on groundwater levels and seawater intrusion, whether the project will help meet the groundwater storage measurable objective cannot be determined until further project design is completed.

9.5.6.2 Expected Benefits and Evaluation of Benefits

The original GSP anticipated the project benefit to be up to 3,000 AF of water available to the Subbasin for direct delivery and in-lieu recharge. Further investigations and field studies will confirm this anticipated benefit as part of the project feasibility study. This water could potentially offset coastal pumping.

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. ISW will be measured through shallow groundwater wells near locations of ISW.

9.5.6.3 Circumstances for Implementation

The Irrigation Water Supply Project is a contingency project. Significant hydrogeologic studies are necessary to substantiate the Salinas River recharge rates in the area nearby Chualar to make sure that any groundwater extracted during the summer will be recharged by winter flows, to consider fluctuations in river flows across wet and dry years and the extent to which downstream surface water users might be impacted. If selected, agreements with individual landowners will be necessary to put extraction wells on their property.

9.5.6.4 Permitting and Regulatory Process

The Irrigation Water Supply Project may require a CEQA environmental review process and may require an EIR. 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 NEPA documentation.

All wells drilled will comply with the County's well permitting process. All other state and local entities permit processes will be followed for this modified project.

9.5.6.5 Implementation Schedule

If selected, it is anticipated the project would take approximately 5 years to develop.

9.5.6.6 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. Legal authority for P8 Irrigation Water Supply Project 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].

9.5.6.7 Estimated Cost

Estimated capital costs include well construction, well pumps and motors, wellhead piping infrastructure, and land access. Estimated capital costs do not include conveyance infrastructure for direct discharge to the river channel or to a coastal distribution network, contingency or administrative costs. Estimated capital costs are \$5,925,000. Estimated annual O&M costs are \$867,600. These costs do not include water treatment. Based on a project yield of 3,000 AF/yr of extracted water, the amortized cost of water is \$440/AF.

9.5.6.8 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 Cross-Boundary Projects and Management Actions

The projects listed here are projects described in other Subbasin GSPs that are anticipated to have a positive impact on the 180/400 Subbasin by virtue of these other subbasins being adjacent to the 180/400 Subbasin and working on improving their groundwater conditions through these PMAs. All improvements and benefits in these adjacent subbasins are anticipated to have positive impact within the 180/400 Subbasin. Any analyses and decisions regarding these projects will consider the impact on all subbasins.

9.6.1 Project ES1: Castroville and Eastside Canals

In the original 180/400 Subbasin GSP, this project was Project 7: 11043 Diversion Facilities Phase I: Chualar. In Amendment 1 this project was Project ES2: Eastside 11043 Diversion at Chualar and Project ES3: Eastside 11043 Diversion at Soledad. Castroville and Eastside Canals Project has expanded to include multiple project concepts and sizes, some of which benefit the 180/400 Subbasin and others benefit the Eastside Subbasin.

MCWRA holds SWRCB Permit 11043 (Permit), which is a diversion right on the Salinas River. Permit 11043 authorizes diversion of up to 400 cfs and 135,000 AF/yr from the Salinas River for irrigation and municipal use, subject to diversion bypass flow requirements. Analyses of historical and projected flows show that divertible water is available primarily during the winter wet season (January through April) and that diversion opportunities are highly variable from year to year. Average annual diversion volumes range from approximately 5,000 AF/yr at 50 cfs to 25,000–30,000 AF/yr at 400 cfs—well below the permitted volume. The current amended permit

allows diversion at 2 identified locations: 1 location near Soledad called the Eastside Canal Intake, and 1 location near Chualar called the Castroville Canal Intake. An additional diversion location was considered near the SRDF and would require a permit amendment (Figure 9-9). Because diversion opportunities are intermittent and do not align with peak demand, all viable project concepts require some form of seasonal storage. The parameters currently defined in Permit 11043 do not include storage of diverted water, so amendments to existing petitions are likely needed for project concepts including storage, as well as additional Permit amendments and regulatory approvals.

SVBGSA, working together with MCWRA, conducted the Castroville and Eastside Canals and Alternatives Preliminary Feasibility Study (Montgomery & Associates *et al.*, 2026) to develop 4 project concepts for use of water diverted under Permit 11043:

- **Eastside Recharge Basins:** To raise groundwater levels in the central and/or southern Eastside and 180/400 Subbasins, surface water is diverted near the Castroville Canal Intake and conveyed to recharge basins in the central Eastside Subbasin. Diversion flows include 50 cfs, 100 cfs, 200 cfs and 400 cfs.
- **Northern Eastside Injection:** To raise groundwater levels in the northern Eastside Subbasin, diverted water is stored in surface reservoirs (Merritt Lake or a Gabilan Range site), treated to drinking water standards, and injected into the northern Eastside Subbasin. Injection is used in areas where shallow clays limit recharge basin effectiveness. Diversion flows include 50 cfs and 100 cfs. For more information about this concept, see P7: Coastal Injection/Aquifer Storage and Recovery.
- **Coastal Injection:** To slow or halt seawater intrusion in the coastal aquifers, a 50 cfs diversion upstream of the existing Salinas River Diversion Facility conveys water to Merritt Lake for storage, treatment, and injection into the 400-Foot Aquifer near the seawater intrusion front. For more information about this concept, see P7: Coastal Injection/Aquifer Storage and Recovery.
- **NSIP using Salinas River Diversions:** To support groundwater recovery in the Deep Aquifers and seawater intruded area, uses Salinas River flow diversion of 100 cfs in addition to other sources to provide treated surface water directly to agricultural users in the Deep Aquifers and seawater intruded area, reducing groundwater pumping. For more information about this concept, see P4.

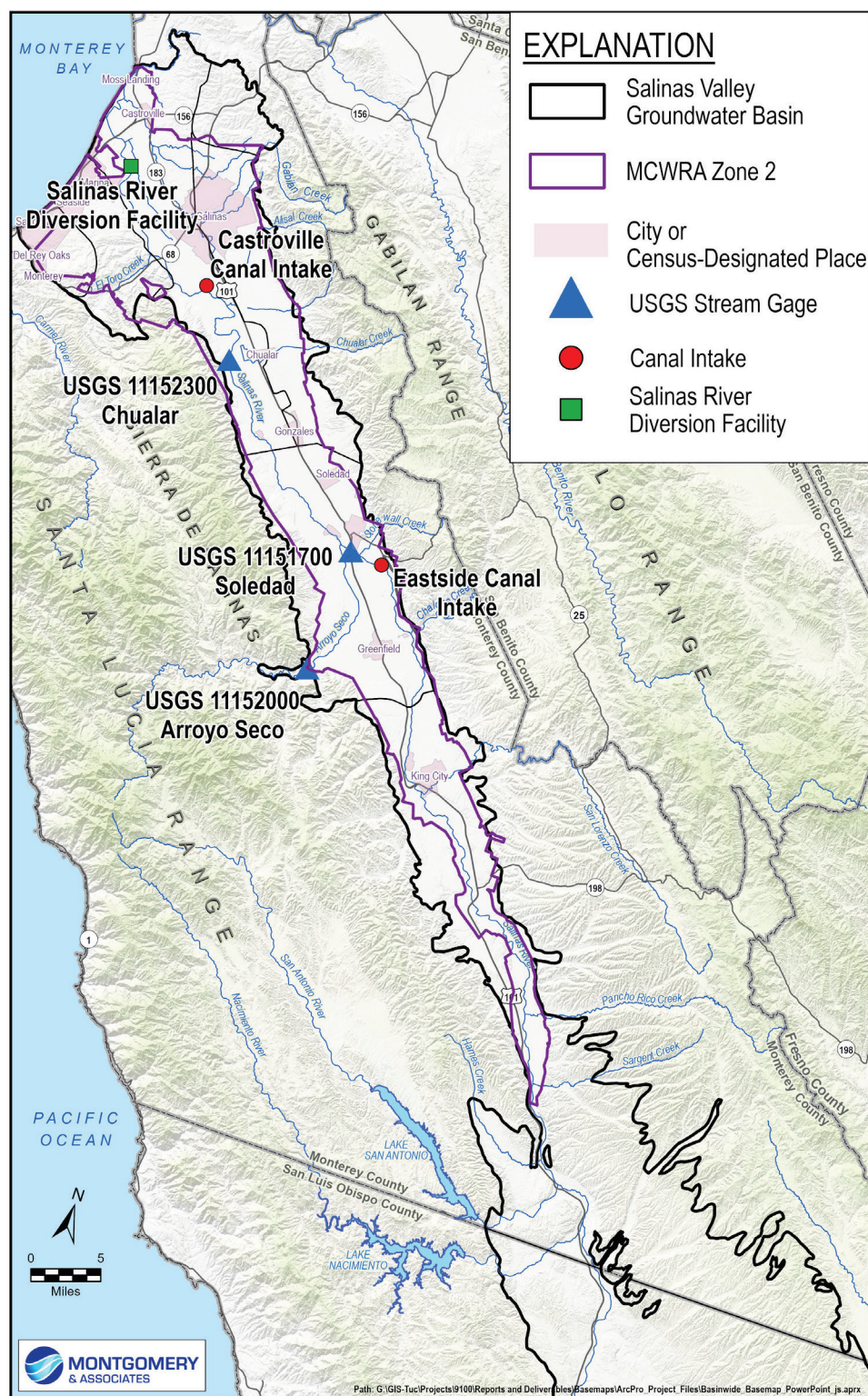


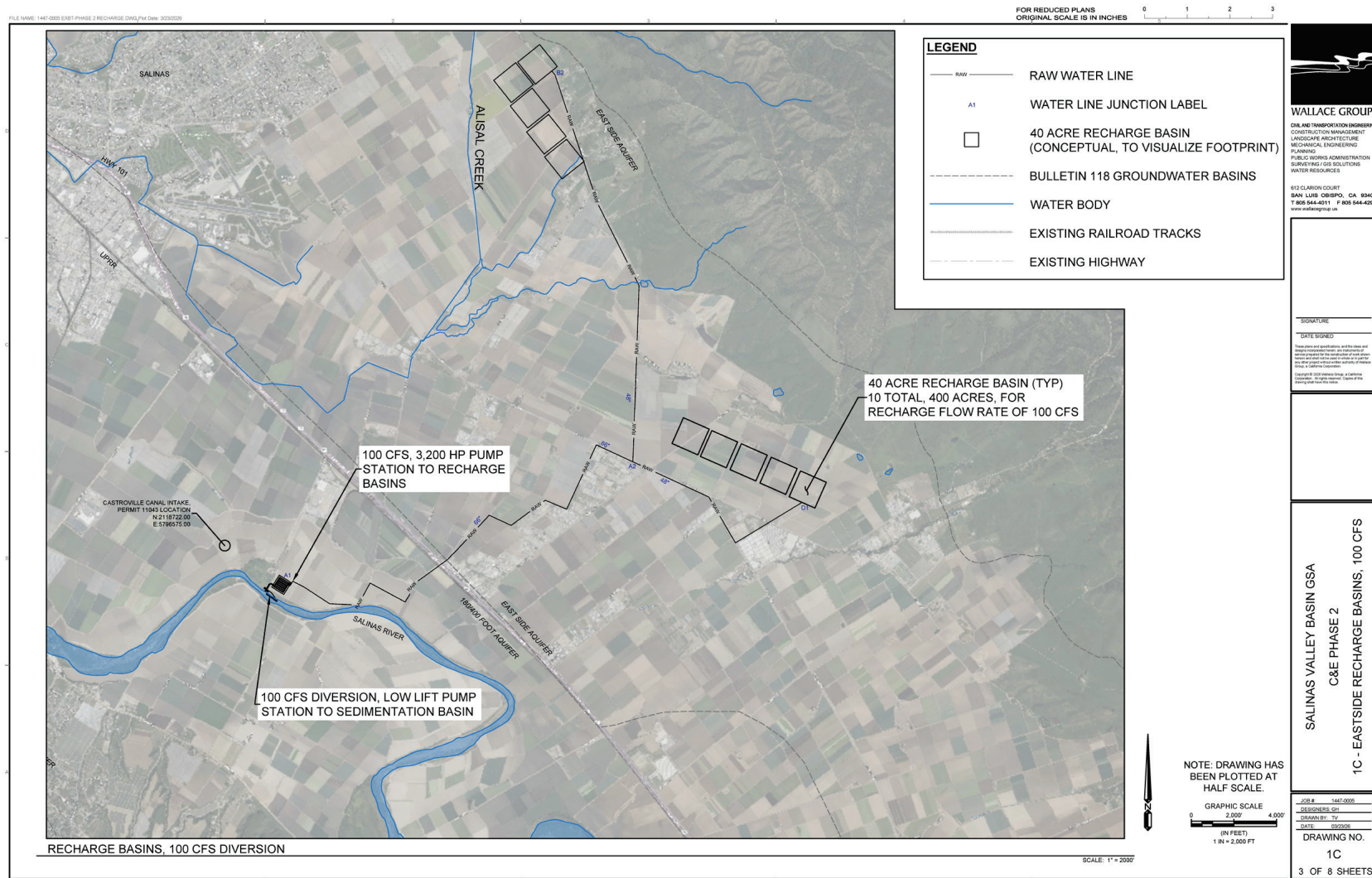
Figure 9-9. Map of Permit 11043 Diversion Locations, USGS Surface Water Flow Gages and the Salinas River Diversion Facility

As of GSP Amendment 2, SVBGSA Board prioritized the Eastside Recharge Basins for inclusion in the preferred portfolio. Accordingly, the remaining sections describing this project focus on that scenario, with further details on the other scenarios in the feasibility study. The infrastructure layout of the Eastside Recharge Basins includes river intake diversion at the Castroville Canal Intake location, conveyance through a pipeline, treatment in sedimentation basins, and the recharge basins. Analyses of historical and projected flows show that divertible water is available primarily during the winter wet season (January through April) and that diversion opportunities are highly variable from year to year. The range of diversion sizes (50, 100, 200 and 400 cfs) result in a range of average volume available from 4,800 – 24,700 AF/yr.

The diversion facility consists of a river intake diversion that would include a fish screen, pump station forebay, low lift pump station, sedimentation basin, and high-lift transfer pump station. The series of fish intake screens would be installed along a concrete wall constructed along the right bank of the river separating river flows from the forebay of the low-lift pump station. The low lift pump station transfers the screened, diverted river flow to the sedimentation basins located adjacent to the diversion facility. The sedimentation basins receive diverted flows from the river pump station and convey water to the downstream transfer pump station at low velocities to promote sedimentation. Flow from the sedimentation basins is then conveyed to the recharge basins located on the east side of the Valley via the high-lift transfer pump station.

Diverted waters are conveyed from the diversion facility in a 48”-132” pipeline (transmission main), dependent on diversion size, routed along existing private, agricultural roads, and public rights of way. The pipeline would be approximately 4 – 24 miles long, dependent on diversion size and therefore number and location of recharge basins, before branching into mains of smaller diameter serving the distributed recharge basins. Recharge basin design assumed an infiltration rate of 0.5 foot per day and were sited in areas where soils have been rated as having “moderately good” to “excellent” recharge potential based on UC Davis Soil Agricultural Groundwater Banking Index (SAGBI) aquifer recharge potential maps and out of areas underlain by an identified aquitard.

Under the assumption of successful amendments of the Permit, the Eastside Recharge Basins project uses 5 basins, each of 40 acres, to percolate and recharge the diverted water. An example of the infrastructure configuration for the 100 cfs diversion with 10 recharge basins is shown on Figure 9-10. For conceptual design purposes, the recharge basins were assumed to be rectangular 40-acre basins with up to 4 feet of water depth. These conceptual scenarios assume that the basins could be constructed with berm heights under the jurisdictional limits set by the California Division of Safety of Dams (DSOD). Geotechnical and hydrogeologic investigations need to be completed, including borehole tests for recharge suitability testing.



Locations are for conceptual design purposes only (C&E Study, Montgomery & Associates *et al.*, 2026)

Figure 9-10. Infrastructure Layout for Recharge Basins, 100 cfs Scenario

9.6.1.1 Relevant Measurable Objectives

The main measurable objectives benefiting from the Eastside Recharge Basins include:

- **Groundwater levels measurable objective.** Recharging surface water diverted under Permit 11043 will result in higher groundwater levels in the Eastside Subbasin, and to a lesser extent the 180/400 Subbasin, than otherwise would occur.
- **Groundwater storage measurable objective.** Recharging surface water diverted under Permit 11043 will result in higher groundwater levels in the Eastside Subbasin, and to a lesser extent the 180/400 Subbasin, and therefore greater groundwater in storage, than otherwise would occur.

9.6.1.2 Expected Benefits and Evaluation of Benefits

Eastside Recharge Basins benefit the Eastside Subbasin and 180/400 Subbasin. The primary expected benefit of the project concept is to provide an alternative water supply source to recharge, store, and later extract for municipal or agricultural use in the Eastside Subbasin. This will help raise groundwater levels compared to what would otherwise occur.

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.

9.6.1.3 Circumstances for Implementation

Castroville and Eastside Canals and Alternatives is a cross-boundary project that is a priority project in the Eastside GSP. The 180/400 Subbasin is unlikely to pursue this project independently of the Eastside Subbasin. During the first phase of GSP implementation, a preliminary feasibility study was completed for Salinas River diversion projects including Eastside Recharge Basins. Eastside Recharge Basins is included in the IIS portfolio, discussed further in Chapter 10. Eastside Recharge Basins will be implemented in phases beginning in 2027. The next 5 years will focus on project development, advancement of water rights amendments, 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.

9.6.1.4 Permitting and Regulatory Process

MCWRA holds the SWRCB Permit 11043 diversion right. Implementing this project will require close coordination with MCWRA and may require amendments 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.

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. Permits that may be required include, but may not be limited to:

- ***U.S. Army Corps of Engineers (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.).

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.

9.6.1.5 Implementation Schedule

The Eastside Recharge Basins are included in the preferred portfolio selected by the SVBGSA Board of Directors during the development of GSP Amendment 2. As such, a proposed implementation schedule is presented in Table 9-19 below.

Table 9-19. Proposed Implementation Schedule

Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10 +
Recharge Basin Master Plan										
Preliminary Engineering (10-30%)										
Groundwater Modeling										
Water Rights Amendments										
Environmental Compliance (CEQA/NEPA)										
Property Acquisition										
Grant Funding & Financing										
Final Design & Engineering										
Procurement										
Project Construction										
Commissioning & Startup										
Operations, Monitoring, Maintenance & Optimization										

9.6.1.6 Legal Authority

MCWRA, the holder of the 11043 permit, is a member of the SVBGSA. Either MCWRA will use the permit as a member of the SVBGSA, or MCWRA will need to transfer the permit to SVBGSA in order to implement this project.

Legal authority for SVBGSA 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. Legal authority for ES2 Castroville and Eastside Canals 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]. The SVBGSA has the right to divert and store water once it has the approval to utilize the 11043 Permit and the Permit has been amended to add storage.

9.6.1.7 Estimated Cost

The standardized total construction cost estimate and O&M are summarized in Table 9-20 (ERA Economics, 2026b). Capital and soft costs for the Eastside Recharge Basins project concept ranges from \$140 million - \$1.391 billion. The annual O&M and replacement costs have an estimated range of \$2 -\$24 million, with an annualized cost range of \$9 - \$87 million. Based on annual yield 5,100 – 26,800 acre-feet, the cost per AF of project yield ranges from \$1,725 - \$3,246/AF (ERA Economics, 2026b).

Table 9-20 show the estimated capital, O&M, and amortized cost of the annual yield of Eastside Recharge Basins scenarios for 4 diversion sizes (50, 100, 200 and 400 cfs) (ERA Economics, 2026b).

Table 9-20. Estimated Capital, O&M, and Amortized Cost

Cost Category	1A (400 cfs)	1B (200 cfs)	1C (100 cfs)	1D (50 cfs)
Total Construction Cost (\$M)	\$1,391	\$615	\$284	\$140
Annual O&M (\$M)	\$24	\$12	\$5	\$2
Present Value Total Cost (\$M)	\$1,932	\$887	\$395	\$195
Annualized Cost (\$M)	\$87	\$40	\$18	\$9
Annual Yield (Acre-feet)	26,800	17,200	9,700	5,100
\$/Acre-Foot Cost	\$3,246	\$2,322	\$1,833	\$1,725

9.6.1.8 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.

9.6.2 Project ES2: Eastside Floodplain Enhancement and Recharge

In the original 180/400 Subbasin GSP, this project was Alternative Project 2: Recharge Local Run-off from Eastside Range. It primarily benefits the Eastside but may have groundwater benefits for the 180/400 Subbasin. The scoping progressed with the development of Project A2 of the Eastside Subbasin GSP, which is reflected in this text.

This project restores and enhances areas along creeks and floodplains to slow and sink stormwater and encourage streambed and floodplain infiltration. In areas above the Salinas Valley Aquitard or other heavy clays limiting recharge, this project detains and manages stormwater. SVBGSA could partner with the Greater Monterey County RWMG, CCWG, and other organizations to support existing creek and floodplain restoration efforts and encourage inclusion of features that would enhance recharge.

Restored floodplain and riparian habitat along creeks can slow down the velocity of creeks and encourage greater infiltration. Due to agricultural and urban encroachment, streams have become more highly channelized, and flow has increased in velocity, particularly during storm events. This flow has resulted in greater erosion and loss of functional floodplains. Floodplain restoration efforts could be focused on lands directly adjacent to creeks, so as not to interfere with active farming. In addition, efforts to restore creeks and floodplains could be extended to the foothills to slow water closer to its source or incorporate features such as check dams to encourage greater recharge.

For initial scoping of this project, 5 locations for floodplain restoration have been identified that focus on the watersheds in the northern part of the Eastside Subbasin, where recharge potential is higher and groundwater elevations are low. These are initial project locations identified for the purpose of estimating project benefits and costs; however, more site analysis, project design, and outreach to nearby landowners are needed before specific projects are selected. Additional sites may also be added under this project. The effect of increased recharge on surrounding groundwater quality will be considered when selecting sites.

The 5 locations identified for floodplain restoration and stormwater recharge are noted on Figure 9-11. These locations consist of recharge basins or detention ponds to be included as part of floodplain restoration or stormwater recharge. Water recharged will comply with regulatory standards. The initial projects were identified as part of Monterey County's Stormwater Management Plan, and these 5 were selected for inclusion in this GSP project due to their potential for groundwater recharge or stormwater detention (Hunt *et al.*, 2019). These concept project locations need further work with respect to contacting landowners, assessing regulatory challenges, considering adjacent land use, and securing agency/landowner commitment to long-term management.

One example of floodplain restoration is the Gabilan Floodplain Enhancement Project put forth by the CCWG and Greater Monterey County RWMG. Stormwater generated in the uplands of the Gabilan Creek Watershed is a flood risk to Salinas and other downstream land users. This proposed project includes buying or leasing 80 acres of land in the floodplain above Salinas and implementing floodplain restoration projects. These projects would reduce 20-year maximum flows by 43%, or 326 cfs, and provide benefits such as increased infiltration, water supply reliability, decreased flood volume risk, environmental improvement, and increased urban green space (RWMG, 2018).

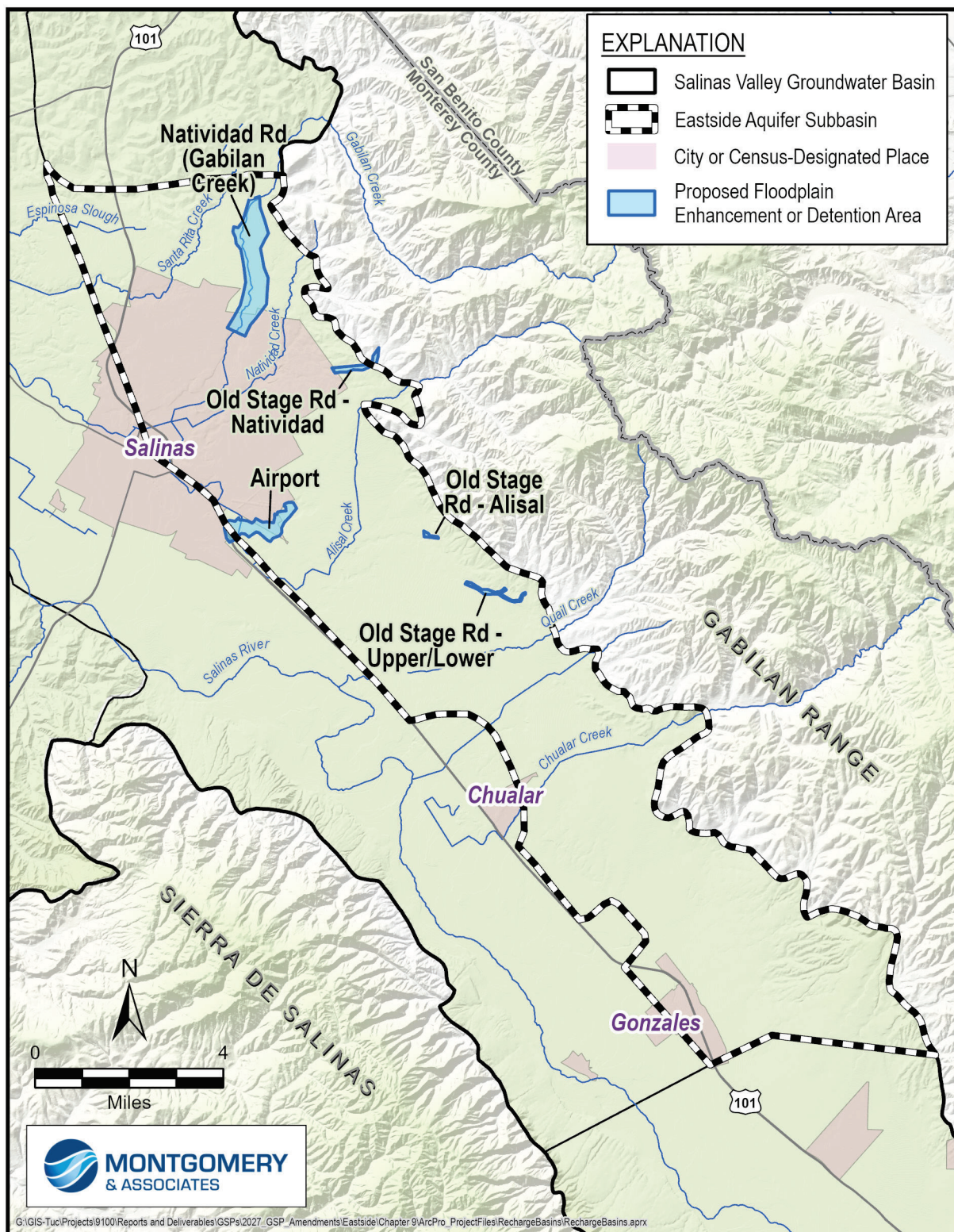


Figure 9-11. Potential Floodplain Restoration and Stormwater Recharge Projects in the Eastside Aquifer Subbasin

9.6.2.1 Relevant Measurable Objectives

The main measurable objectives benefiting from this project include:

- **Groundwater levels measurable objective.** Slowing water down and allowing it to infiltrate will increase recharge and result in higher groundwater levels than otherwise would occur. The 180/400 Subbasin and Eastside Subbasin are hydraulically connected, so raising groundwater levels in the Eastside Subbasin will likely help raise groundwater levels in the 180/400 Subbasin.
- **Seawater intrusion measurable objective.** Increasing recharge 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.** Increasing recharge will result in higher groundwater levels, and therefore greater groundwater in storage, than otherwise would occur.

9.6.2.2 Expected Benefits and Evaluation of Benefits

The primary benefit is increased groundwater elevations near the utilized floodplains. However, the number of reengaged floodplains, the size of floodplain basins, and the number and species of plants will determine how much water may infiltrate into the subsurface. The Stormwater Management Plan used 2 models to characterize current conditions and estimate project flood management benefits of potential site locations. One is a MODFLOW water balance model that simulates rainfall-runoff relationships, and the other is a HEC-RAS flood model that simulates channel and floodplain hydraulics. Initial modeling of stormwater runoff is reported in Table 9-21. In addition, a groundwater modeling simulation using the SVOM is used to determine the potential groundwater benefits for recharge of that water. Initial model runs indicate an increase of 200 AF/yr in groundwater storage for the 180/400 Subbasin from this project, out of a total benefit of 1,200 AF/yr. Additional analyses will be conducted to refine this value should this project be considered for implementation.

Table 9-21. Selected Watershed and Basin Benefits

Watershed Treatment Basin	Wet Season Daily Mean Flow (cfs)	Dry Season Daily Mean Flow (cfs)	Wet Season Annual Volume Captured (AF)	Dry Season Annual Volume Captured (AF)	Conceptual detention size (acres)
Natividad Road (Gabilan Creek)	3	0.3	1073	107	40
Old Stage Road - Natividad	0.25	0.2	89	7	1.1
Airport	2.67	0.52	955	186	32.7
Old Stage Road - Alisal	0.32	0.06	114	21	7.1
Old Stage Road - Upper/Lower	0.13	0.02	47	7	18.1

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.

9.6.2.3 Circumstances for Implementation

Eastside Floodplain and Recharge project is a cross-boundary project in the Eastside Subbasin GSP. The 180/400 Subbasin is unlikely to pursue this project independently of the Eastside Subbasin. The floodplain restoration and stormwater recharge project will be implemented if additional water is required to reach sustainability. 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 how many site options are preferable. Water diversion rights must be secured to divert stormwater, which may take many years.

9.6.2.4 Permitting and Regulatory Process

This project may 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. Projects with wells will require a well construction permit from County of Monterey Environmental Health Bureau. Permits that may be required for floodplain enhancement include:

- ***United States Army Corps of Engineers (USACE)*** – A Regional General Permit may be required if there are impacts to wetlands or connections to waters of the United States.
- ***California Department of Fish and Wildlife (CDFW)*** – A Standard Agreement is required if the project could impact a species of concern.
- ***Environmental Protection Agency (EPA) Region 9*** – 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.
- ***National Marine Fisheries Service (NMFS)*** – A project may require authorization for incidental take, or another protected resources permit or authorization from NMFS.

- **California Natural Resources Agency** – An Initial Study Mitigated Negative Declaration (IS/MND) is required to comply with CEQA.

9.6.2.5 Implementation Schedule

If selected, the implementation schedule for floodplain enhancement and recharge is presented on Table 9-22. Components of this project could be implemented separately and may take less time to implement or may be spread out over a longer time horizon.

Table 9-22. Implementation Schedule for Floodplain Enhancement and Stormwater Recharge

Task Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Years 7+
Studies/Preliminary Engineering Analysis							
Agreements/ROW							
CEQA							
Permitting							
Design							
Bid/Construct							
Maintenance							

9.6.2.6 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 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. 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].

9.6.2.7 Estimated Cost

The capital cost of floodplain enhancement and recharge is estimated at \$12,596,000 for recharge basins of the estimated sizes. This only includes the costs of recharge basins and not additional riparian restoration work that may be done as part of this overall project. There may also be additional costs for site feasibility studies, such as pilot boreholes to assess recharge capacity, and for dry wells or injection wells if recharge basins lack permeability. Annual O&M costs are anticipated to be approximately \$64,000. If there are no additional costs, the amortized cost of water for 1,000 AF/yr increased storage is estimated at \$1,050/AF.

9.6.2.8 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 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.

9.6.3 Project M1: MCWD Demand Management Measures

In the past 2 decades, MCWD has made significant strides in reducing its per capita potable water demand beyond targets delineated by the Water Conservation Act. Conservation reductions have come primarily from water conservation retrofits as well as from behavioral changes driven by increasing water rates, drought awareness, and public education programs. During the twenty-year period of 1999 through 2020, per capita water demand within the MCWD service area decreased from 144 gallons per capita per day (GPCD) to 80 GPCD, a decrease of approximately 44% (Schaaf & Wheeler, 2021). At the current population of 30,480 served by MCWD, this decrease in per capita water use provides an approximately 2,500 AF/yr of in-lieu recharge benefits.

Following the 2014-2016 drought, the State of California developed the “Making Water Conservation a California Way of Life” framework to address the long-term water use efficiency requirements called for in executive orders issued by Governor Brown. In May of 2018, Assembly Bill (AB) 1668 and Senate Bill (SB) 606 went into effect, which built upon the executive orders implementing new urban water use objectives for urban retail water suppliers.

Water use standards and regulations implementing SB 606 and AB 1668 were adopted by the State Water Resources Control Board (SWRCB) in 2023 and came into effect in 2024. These regulations require all urban retail water suppliers to meet an annual Urban Water Use Objective (UWUO), a supplier-specific water budget with 6 components: residential indoor standard, residential outdoor budget, commercial, industrial, and institutional (CII) dedicated-irrigation-meter landscape standard, water loss standard, variance, and bonus. Compliance is judged in

aggregate, not component-by-component, and is required beginning January 2027, with standards tightening progressively over a 25-year horizon. The regulations also established Commercial, Institutional, and Industrial (CII) Performance Measures, which are actions to be taken by suppliers to increase water use efficiency by CII water users.

MCWD plans to continue to implement conservation efforts within its service area to meet and exceed new legislative requirements as part of the “Making Water Conservation a California Way of Life” framework. Potable water demand reductions will be achieved through the following strategies.

- MCWD has adopted design standards and guidelines for new construction that exceed the State’s plumbing code requirements for water-conserving features, codified in Section 3.36 of the District Ordinances.
- MCWD will implement demand management measures discussed in Section 7 of its 2020 UWMP.
- Phased redevelopment of the Ord Community will include the replacement of a significant amount of water distribution system that is over 50-years old. These replacements should reduce system water losses.

In addition, MCWD plans to use recycled water to offset non-potable uses or augment groundwater production (see Project M3 – Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse).

9.6.3.1 Relevant Measurable Objectives

The measurable objective benefiting from DM measures includes:

- **Groundwater levels measurable objective.** Reducing pumping will result in less demand on groundwater pumping and higher groundwater levels, particularly near the location of production wells. The 180/400 Subbasin is naturally down-gradient from the Monterey Subbasin, and will also benefit from increased elevations across the boundary, as groundwater elevations adjustments will translate down-gradient over time.
- **Groundwater storage measurable objective.** Reducing pumping from the principal aquifer(s) in the Monterey Subbasin will ultimately have the effect of increasing groundwater in storage. Similar to above, additions to the groundwater storage in the Monterey Subbasin will translate down gradient to the 180/400 Subbasin over time.
- **Seawater intrusion measurable objective.** Increasing groundwater storage and groundwater elevation will support the natural hydraulic gradient that pushes back against the intruding seawater. The translation of increased groundwater elevations

and storage over time into the 180/400 Subbasin, thereby increasing the pressure buffer that helps halt and push back against seawater intrusion.

9.6.3.2 Expected Benefits and Evaluation of Benefits

Continued implementation and expansion of demand management efforts will reduce demand on groundwater resources from the Monterey Subbasin and provide in-lieu recharge to the Subbasin. As described above, the decrease in per capita water use historically provided up to 2,500 AF/yr of in-lieu recharge benefits. As the population expands, these in-lieu recharge benefits will increase. No quantification of cross-boundary benefits has been conducted at this time. However, an increase of in-lieu recharge is likely to have the added benefit of increasing groundwater levels and storage in the shared principal aquifers.

Pursuant to Section 7.3 of MCWD's 2020 UWMP:

The District will continue to track per capita demand rates to assess overall savings, in addition to comparing water consumption of new residential development against older households and households which have been retrofitted with conservation devices. The District will continually reassess rebate programs to address saturation rates and emerging technologies.

9.6.3.3 Circumstances for Implementation

MCWD DM Measures is a cross-boundary management action from the Monterey Subbasin GSP. Implementation is ongoing. No additional circumstances for implementation are necessary.

9.6.3.4 Permitting and Regulatory Process

As detailed above, MCWD is implementing demand management measures to meet and/or exceed the following legislative requirements:

- **Water Conservation Act** - With the adoption of the Water Conservation Act of 2009, also known as SB x7-7, the state is required to reduce urban water use by 20% by the year 2020. Each urban retail water supplier was required to develop a baseline daily per capita water use ("baseline water use") in their 2010 Urban Water Management Plan (UWMP) and establish per capita water use targets for 2015 and 2020 to help the state achieve the 20% reduction. Per the 2020 UWMP, MCWD's 2020 per capital water demand (or 80 GPCD) was approximately 32% lower than its per capita water use target for 2020 (117 GPCD).
- **MCCWL Urban Water Use Objectives** –Regulations adopted in 2023 implementing the "Making Water Conservation a California Way of Life" (MCCWL) framework require all urban retail water suppliers to calculate an annual Urban Water Use Objective

(UWUO) beginning in 2024. The UWUO is a supplier-specific water budget with 6 components: residential indoor standard, residential outdoor budget, CII dedicated-irrigation-meter landscape standard, water loss standard, variance, and bonus. Compliance is judged in aggregate, not component-by-component, and is required beginning January 2027, with standards tightening progressively over a 25-year horizon. Suppliers are assessed against the aggregate UWUO rather than each component individually. Formal compliance is required beginning January 2027, and the underlying standards become progressively more stringent over a 25-year horizon, extending water use efficiency requirements beyond those achieved under SB X7-7.

- **California plumbing code and design standards** - As discussed above, MCWD has adopted design standards and guidelines for new construction that exceed the State's requirements, including the California Green (CALGreen) Building Code Standards and Model Water Efficient Landscape Ordinance (MWELO).

CALGreen requires installation of water-efficient fixtures and equipment in new buildings and retrofits. CALGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. It also allows for an optional performance path to compliance, which requires an overall aggregate 20% reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CALGreen guidelines.

- The MWELO establishes a structure for planning, designing, installing, maintaining and managing water-efficient landscapes in new construction and rehabilitated projects. It promotes low water use landscaping through more efficient irrigation systems, greywater usage, onsite stormwater capture, and limiting the portion of landscapes that can be covered in turf.
- **Water Loss Performance Standards** – In 2022, the SWRCB adopted water loss performance standards for urban retail water suppliers, aiming for a significant long-term reduction in real losses. Effective starting in 2023, the SWRCB established individual volumetric standards for each urban retail water supplier, calculated to reflect the life-cycle cost-effective level of water loss based on specific system characteristics. While annual reporting is ongoing, suppliers will be required to start meeting individual volumetric loss standards over a 3-year period, with full compliance required by January 1, 2028. These standards constitute the water loss component of the Making Conservation a California Way of Life (MCCWL) regulatory framework.
- **Nonfunctional Turf Irrigation Ban (AB 1572)** – AB 1572, passed in 2023, is a California law that prohibits the use of potable water to irrigate nonfunctional turf at CII properties as well as common areas of homeowner associations (HOAs). The nonfunctional turf irrigation ban applies to turf (mowed grass maintained for aesthetic

purposes) that does not provide recreational or community benefits. Water suppliers are required to identify what landscapes fall under the ban and implement a plan to comply by the required schedule between 2027 and 2031 depending on the property type.

9.6.3.5 Implementation Schedule

Implementation of DM measures is ongoing and will be carried throughout GSP implementation.

9.6.3.6 Legal Authority

This action is implemented pursuant to MCWD's authority as a public water system. Plumbing standards are adopted in Section 7 of the Marina Coast Water District Code.

9.6.3.7 Estimated Cost

MCWD has increased its conservation program budget in recent years, from a total expense of \$336,553 in fiscal year 2018-19 to an estimated budget of \$483,405 for fiscal year 2026-27. The increase in conservation program budget reflects increases in MCWD's educational outreach efforts and resultant demand for rebates and retrofits. It is anticipated that MCWD will maintain its current level of conservation spending.

9.6.3.8 Public Noticing

MCWD's UWMP is updated every 5 years and documents historical and planned implementation of demand management measures. The plan is adopted by MCWD following a public hearing and is publicly available.

MCWD calculates its urban water use objectives annually and report its water use pursuant to SB 606 and AB 1668.

9.6.4 Project M2: Stormwater Recharge Management

The Cities of Marina and Seaside, the 2 major municipalities within the Marina-Ord Area, have policies that will facilitate additional stormwater catchment and infiltration beyond existing efforts as development and redevelopment occurs.

The City of Marina has historically relied on onsite infiltration as a means of stormwater management and continues to implement policies for onsite infiltration. The City of Marina storm drain design standards specify retention of stormwater runoff from new development or redevelopment sites and require that no runoff from a project site to flow to public streets.

The portion of the City of Seaside within the Monterey Subbasin similarly relies on onsite infiltration of stormwater. Although the City of Seaside historically had not required onsite

infiltration of stormwater, the city manages stormwater runoff in accordance with its National Pollutant Discharge Elimination System (NPDES) permit, which is through requirement of Best Management Practices that encourages onsite infiltration or other methods of reducing stormwater runoff. Furthermore, the City of Seaside's recent General Plan update includes policies to promote groundwater recharge by implementing stormwater infiltration.

As discussed in Section 3.5.1.4 in the Monterey Subbasin GSP, redevelopment at the former Fort Ord was governed by the Fort Ord Base Reuse Plan, which was later incorporated into each individual jurisdictional area's land use plans. The 1997 Fort Ord Base Reuse Plan called for eliminating all ocean stormwater discharges and infiltrating all stormwater runoff east of Highway 1. Pursuant to this Plan, most stormwater outfall pipes that historically extended into Monterey Bay have been removed and several percolation basins were constructed west of Highway 1. In addition, the US Army Garrison Presidio of Monterey (USAGPOM) is currently developing plans to decommission a 66-inch diameter stormwater outfall located within the Fort Ord Dunes State Park, anticipated to occur by 2025. The percolation basins were considered temporary with the long-term objective to percolate all stormwater on the east side of Highway 1 as part of the redevelopment of the former Fort Ord. The Fort Ord Storm Water Master Plan (Creegan + D'Angelo, 2005) was prepared to provide guidelines for meeting the obligation for onsite infiltration.

The current and planned urbanized areas within the Marina-Ord Area overlies well-drained, highly permeable dune sands. Infiltration basins or subsurface infiltration systems are effective stormwater disposal methods. It is anticipated that as future development and redevelopment within the Marina-Ord Area occur, additional stormwater from urbanized areas and construction sites will be captured and infiltrated, providing recharge to the groundwater basin.

9.6.4.1 Relevant Measurable Objectives

The measurable objective benefiting from demand management measures includes:

- **Groundwater levels measurable objective** – Promoting and requiring stormwater infiltration will percolate more water into the subsurface, which will raise groundwater elevations and add water to the principal aquifer(s) in the Monterey Subbasin. The 180/400 Subbasin is naturally downgradient from the Monterey Subbasin, and will also benefit from increased elevations across the boundary, as groundwater elevations adjustments will translate downgradient over time.
- **Groundwater storage measurable objective** – Adding water to the groundwater system will ultimately have the effect of increasing groundwater in storage. Similar to above, additions to the groundwater storage in the Monterey Subbasin will translate down gradient to the 180/400 Subbasin over time.

- **Seawater intrusion measurable objective** – Increasing groundwater storage and groundwater elevations will support the creation of seaward hydraulic gradients that push back against the intruding seawater. The translation of increased groundwater elevations and storage over time into the 180/400 Subbasin, thereby increasing the pressure buffer that helps halt and push back against seawater intrusion.

9.6.4.2 Expected Benefits and Evaluation of Benefits

Managed stormwater recharge is expected to increase sustainable yield and groundwater elevations. Runoff occurs when the rate of rainfall exceeds the soil infiltration rate. This project captures and infiltrates this runoff, which would otherwise flow to the ocean, and facilitates recharge to principal aquifer(s) in the Monterey Subbasin. Based on land use, stormwater catchment area, and precipitation data gathered for the MBGWFM, it estimated that approximately 540 AF/yr of stormwater runoff is generated within the current urbanized areas in the Marina-Ord Area. A significant portion of this volume is infiltrated via existing stormwater catchment facilities. The MBGWFM indicates the amount of runoff capture and re-infiltration will increase to approximately 1,100 AF/yr over time as future development occurs under the existing guidelines. The MBGWFM indicates that net infiltration rates within the Subbasin will increase by approximately 200 AF/yr to 500 AF/yr as a result of stormwater catchment and re-infiltration within the Subbasin.

No quantification of cross-boundary benefits has been conducted at this time. However, an increase of recharge will likely have the added benefit of increasing groundwater levels and storage in the principal aquifers shared with the 180/400 Subbasin.

Benefits of stormwater recharge on attaining applicable measurable objectives will be measured using the monitoring networks described in Chapter 7.

9.6.4.3 Circumstances for Implementation

Stormwater management policies implemented by the Cities of Marina and Seaside are ongoing. No additional circumstances for implementation are necessary.

9.6.4.4 Permitting and Regulatory Process

Stormwater Recharge Management is a cross-boundary management action from the Monterey Subbasin GSP. Implementation is ongoing. The Cities of Marina and Seaside comply with the Central Coast Regional Water Quality Control Board's Regional Municipal Stormwater Permit (i.e., Phase II NPDES Permit for Small Municipal Separate Storm Sewer Systems (MS4)). Both cities are member entities of the Monterey Regional Stormwater Management Program (MRSWMP). The regional program was developed to respond to SWRCB's implementation of the Phase II NPDES Stormwater Program. The purpose of the Phase II NPDES Stormwater

Program is to implement and enforce Best Management Practices (BMPs) to reduce the discharge of pollutants from municipal separate storm sewer systems. The municipalities are responsible for conducting their stormwater management program in accordance with the terms of the regional program.

No additional permitting or regulatory process is required of this action.

9.6.4.5 Implementation Schedule

Implementation of stormwater recharge management is ongoing and will be carried throughout GSP implementation.

9.6.4.6 Legal Authority

This action is implemented by local municipalities. Chapter 8.46 of the City of Marina's municipal code and Chapter 8.46 of the City of Seaside's municipal code respectively provide these municipalities the legal authority to manage stormwater discharge within their jurisdictional limits.

9.6.4.7 Estimated Cost

There are no additional costs to implement this project.

9.6.4.8 Public Noticing

No additional public noticing is required.

9.6.5 Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse

The project consists of recycled water reuse through landscape irrigation and/or indirect potable reuse (IPR) within MCWD's service area. As described below, the source water for both of these options is recycled water from the M1W RTP, which undergo advanced treatment to meet criteria under Title 22 of the California Code Regulations (CCR) for subsurface applications of recycled water. Advanced treated recycled water is non-potable. Reuse of this water through IPR involves injection into a groundwater aquifer and recovery through an appropriately permitted Groundwater Replenishment Reuse Project (GRRP), which provides seasonal storage and generates potable water that can meet a larger portion of MCWD's water demand beyond irrigation and non-potable needs.

Recycled Water Generation, Collection, and Treatment

MCWD operates 2 wastewater collection systems serving the City of Marina and the Ord Community (i.e., communities within the former Fort Ord). Wastewater is conveyed to the M1W RTP north of Marina. The RTP treats wastewater collected from multiple communities in Monterey County, from Pacific Grove to Moss Landing along the coast and inland to the City of Salinas. In 2020, municipal wastewater flows to the RTP were 19,000 AF/yr, with MCWD contributing 2,170 AF/yr, or 11%. Wastewater is treated to secondary treatment standards at the RTP facilities. That water not designated for further treatment and recycling is discharged via an ocean outfall. Water designated for further treatment is conveyed to either the Reclamation Plant or the Advanced Water Purification Facility (AWPF), as discussed below.

The SVRP is capable of producing an average of 33,000 AF/yr of tertiary-treated recycled water. It currently produces about 14,000 AF/yr of tertiary-treated recycled water meeting the standards of unrestricted reuse under Title 22 of the California Code of Regulations. The majority of the recycled water is delivered to the Castroville Seawater Intrusion Project (CSIP), irrigating farmland in the greater Castroville area and reducing demands on Salinas Valley groundwater. As agricultural demands are seasonal, this capacity cannot be fully utilized year-round.

In 2020, M1W completed the AWPF with a capacity to supply advanced treated water to the Seaside Subbasin for IPR and to meet MCWD's recycled water demand.

In 1989, MCWD entered into an annexation agreement with Monterey Regional Water Pollution Control Agency (MRWPCA; now M1W) for wastewater treatment. This agreement established MCWD's first right to receive tertiary treated wastewater from the SVRP. Per Section 12 of the agreement, MCWD has the right to obtain treated wastewater (i.e., Title 22 recycled water) from M1W equal in volume to that of the volume of MCWD wastewater treated by M1W and additional quantities not otherwise committed to other uses. As such, MCWD's Section 12 recycled water supply will increase over time as MCWD's water demand and wastewater generation increases and could be used as source water for a MCWD expansion of the AWPF. MCWD's Section 12 recycled water supply is projected to grow from 2,295 AF/yr in 2025 to 7,577 AF/yr by 2050.

Landscape Irrigation

On April 8, 2016, MCWD and M1W entered into the Pure Water Delivery and Supply Project Agreement, as amended by the 2017 First Amendment, wherein the Product Water Conveyance Facilities were designed, constructed, owned, and operated by MCWD with a capacity sufficient to convey a minimum of 5,127 AF/yr of advanced treated water, including the 3,700 AF/yr capacity for M1W and a total of 1,427 AF/yr capacity for MCWD. The Product Water Conveyance Facilities include a regional advanced treated water transmission line through Marina, the Ord Community, and into the City of Seaside and allow delivery of advanced treated

water from the AWPf for landscape irrigation within these communities and IPR in the Seaside Subbasin.

The regional transmission line was completed in 2019 and placed in operation in 2020 as part of the Pure Water Monterey Project. With completion of the AWPf and the transmission line, MCWD is constructing a recycled water distribution system to allow delivery of its 600 AF/yr of advanced treated water for landscape irrigation in the near term (RBF, 2003). This distribution system could increase deliveries for landscape irrigation to as much as 1,427 AF/yr or more in the future through expansion of the AWPf. MCWD's right to purchase recycled water has a contractual upper limit in the summer months, so providing 1,427 AF/yr of recycled water supply requires the commitment of summertime flows from M1W and MCWRA. The recycled water distribution system currently under construction and the regional transmission line are shown on Figure 9-12.

Landscape irrigation use of recycled water reduces groundwater demand and thus functions as an in-lieu groundwater recharge project.

IPR in Monterey Subbasin

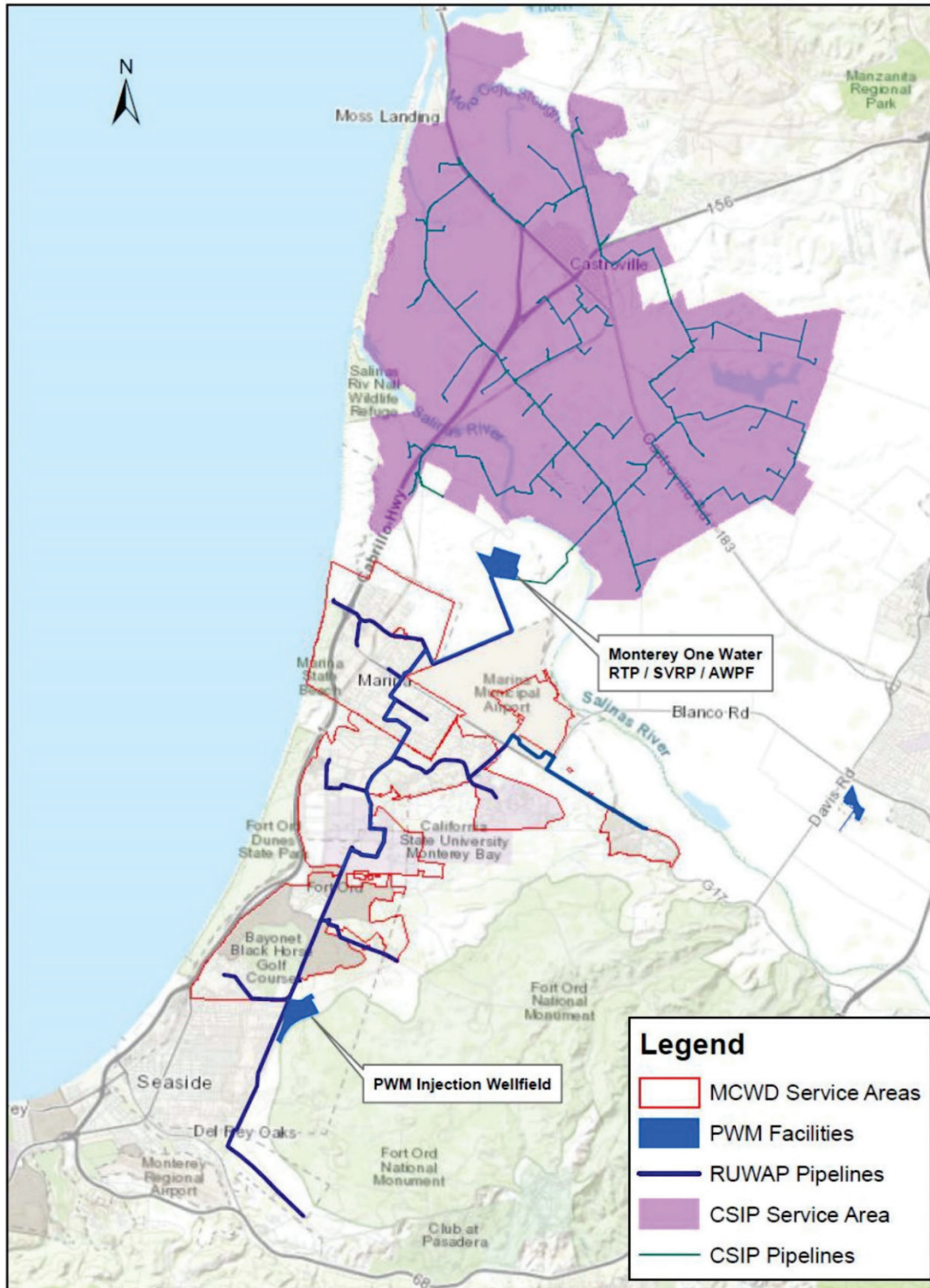
Advanced treated recycled water (also known as “purified water”) is non-potable unless it is injected into a groundwater aquifer and recovered as part of an appropriately permitted Groundwater Replenishment Reuse Project (GRRP). A GRRP provides seasonal storage capacity and generates potable water that can meet a larger portion of MCWD's water demand beyond irrigation and non-potable needs.

MCWD conducted a joint, regional 3-party study with FORA and M1W for water supply planning for redevelopment of the former Fort Ord (2020 Water Supply Augmentation Study) (EKI, 2020). The 2020 Water Supply Augmentation Study conceptualized various groundwater augmentation and direct supply options for screening and systematic evaluation. The study identified IPR through expansion of the AWPf as the recommended option (EKI, 2020). In 2022, MCWD completed a feasibility study that confirmed the possibility of implementing an IPR project and identified injection into the Deep Aquifers as the preferred option (EKI, 2022). The feasibility study included an evaluation of IPR alternatives using a groundwater flow model and development of a conceptual design.

MCWD is currently advancing environmental review and design of an IPR project at the Sand Tank site near California Avenue, one of the sites identified in the 2022 feasibility study. The project would include injection of approximately 1 MGD, or 1,120 AF/yr, of advanced treated recycled water through a single injection well with a capacity of approximately 1,000 gallons per minute (gpm), for subsequent extraction by production wells MCWD-10 and MCWD-11. A schematic of the proposed project layout is shown on Figure 9-13.

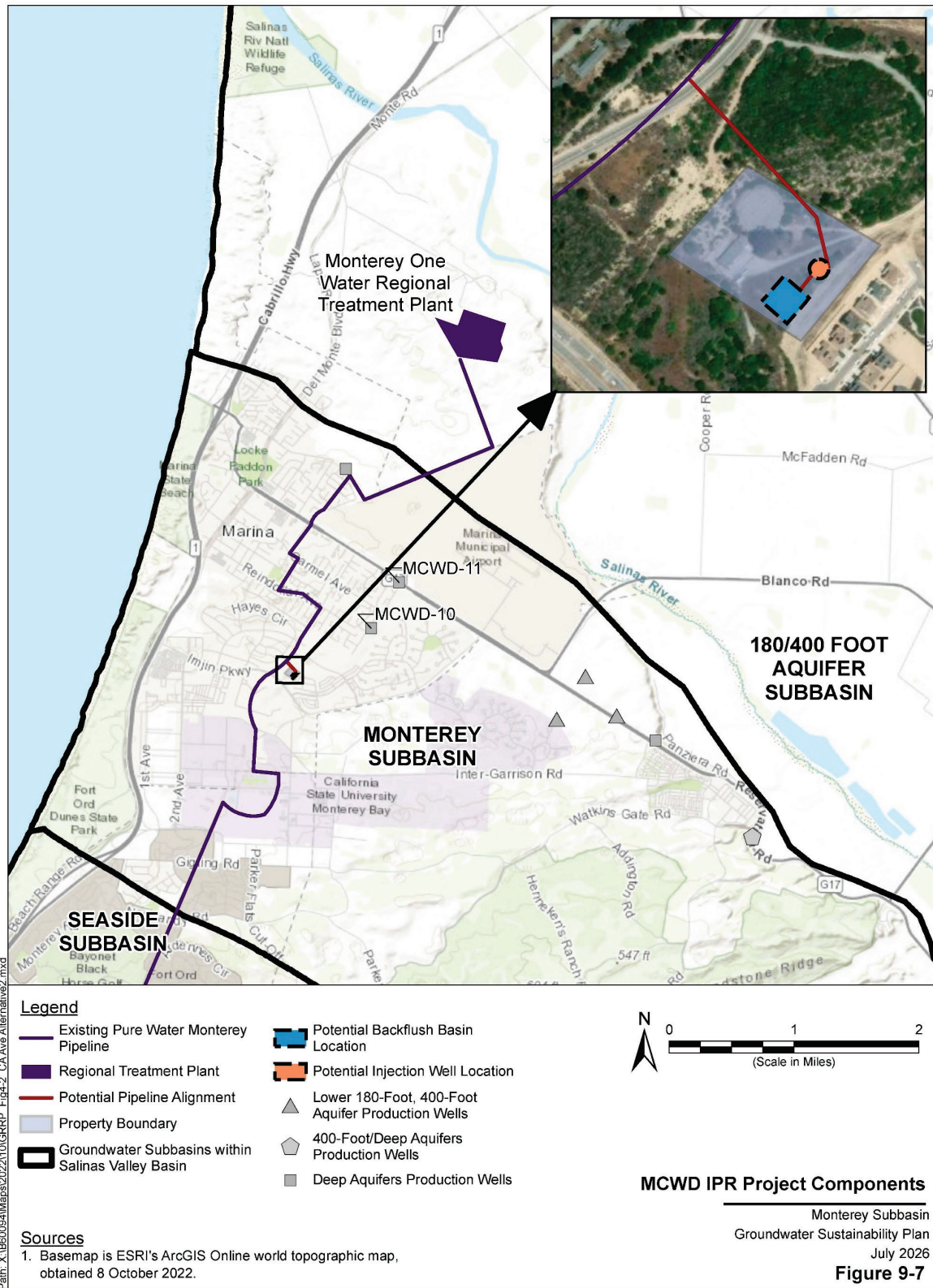
As described above, MCWD's sewer flows will increase over time as MCWD's water demand increases and could be used as source water for an MCWD expansion of the AWPf. As described above, based upon projected water demands and sewer flows, approximately 5,500 AF/yr of net advanced treated water could be generated for IPR by MCWD (minus that used directly for landscape irrigation) by 2040. The majority of this water is more likely to be available during winter/spring months when CSIP is not operational and therefore is more compatible with IPR than landscape irrigation.

The current operation frequency of MCWD's production wells generally ranges from 10% to 40%. These operation frequencies are low and, barring other constraints (e.g., concerns regarding seawater intrusion), could likely be increased to an operational frequency of up to 70% to capture injected water. Additional production wells might need to be constructed to provide additional extraction capacity, depending on the volume and rate of injection. The project could be readily expanded beyond to 1MGD facilitate injection of additional advanced treated water as it becomes available.



Note: The Regional Urban Water Augmentation Project (RUWAP) pipeline extends to near South Boundary Road in General Jim Moore Boulevard. The extension of the RUWAP pipeline down South Boundary Road (the portion that heads east at the southern part shown herein) is planned but not yet constructed.

Figure 9-12. MCWD Recycled Water System



9.6.5.1 Relevant Measurable Objectives

The measurable objective benefiting from recycled water use through landscape irrigation or a IPR project includes:

- **Groundwater levels measurable objective** – Providing either in-lieu groundwater recharge by eliminating irrigation demand and direct recharge through IPR has the effect of adding water to the principal aquifer(s) in the Monterey Subbasin. Adding water to the principal aquifer(s) will ultimately increase groundwater elevations or decrease their decline. The 180/400 Subbasin is naturally downgradient from the Monterey Subbasin, and will also benefit from increased elevations across the boundary, as groundwater elevations adjustments will translate downgradient over time.
- **Groundwater storage measurable objective** – Adding water to the groundwater system will ultimately have the effect of increasing groundwater in storage. Similar to above, additions to the groundwater storage in the Monterey Subbasin will translate down-gradient to the 180/400 Subbasin over time.
- **Seawater intrusion measurable objective** – Increasing groundwater storage and groundwater elevations will support the natural hydraulic gradient that pushes back against the intruding seawater. The option of injection/extraction into the 180-Foot and 400-Foot Aquifers may provide additional benefits of creating a barrier near MCWD's existing production wells against seawater intrusion. The translation of increased groundwater elevations and storage over time into the 180/400 Subbasin, thereby increasing the pressure buffer that helps halt and push back against seawater intrusion.

9.6.5.2 Expected benefits and evaluation of benefits

The primary benefit from recycled water use is to provide an alternative water supply to address the current overdraft in the Monterey Subbasin and supply future redevelopment of the former Fort Ord. Using recycled water for landscape irrigation reduces groundwater demand, which provides an in-lieu recharge benefit and is expected to increase groundwater elevations near groundwater productions. IPR application directly recharges the groundwater aquifers, thereby increasing the Subbasin's sustainable yield and groundwater elevations.

MCWD has updated its evaluation of alternative injection sites since completion of the 2022 feasibility study. The updated evaluation includes 3 MCWD-owned alternative sites: the currently preferred Sand Tank site, the 4th Avenue site, and the inactive production well MCWD-12. The regional Seawater Intrusion Model, version 4 (SWIM v4), completed in 2026, was used to assess groundwater elevation benefits in the Deep Aquifers. As shown on Figure 9-14, an IPR project of approximately 1 MGD (1,120 AF/yr) would create a sustained

groundwater elevation increase of 1 to 5 feet in the Deep Aquifers throughout the coastal portion of the Monterey Subbasin, with benefits extending into the 180/400 and Seaside Subbasins. Localized increases in water levels exceed 15 feet within the City of Marina.

No quantification of cross-boundary benefits has been conducted at this time. However, an increase of recharge will likely have the added benefit of increasing groundwater levels and storage in the shared principal aquifers.

Project deliveries will be quantified directly through volumetric measurements of delivered or injected advanced treated water. Benefits towards attaining applicable measurable objectives will be measured using the monitoring networks described in Chapter 7.

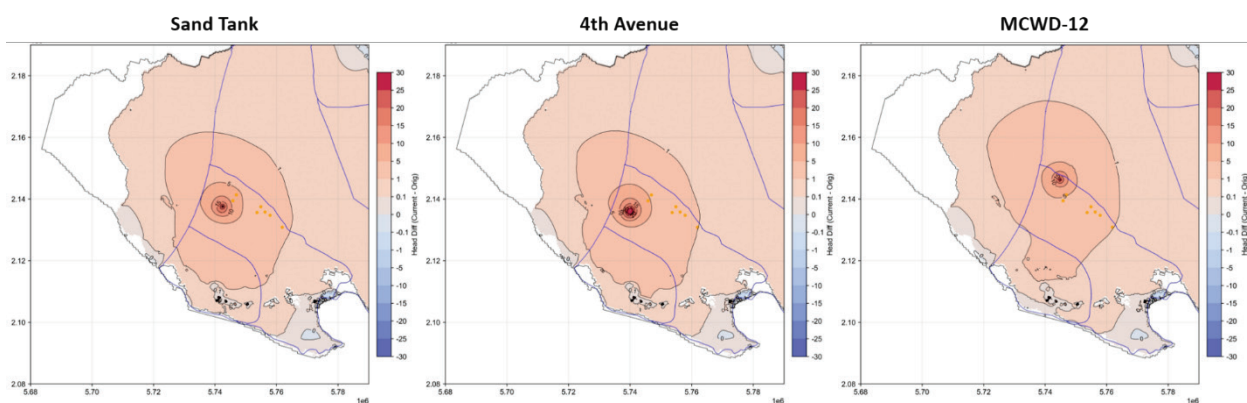


Figure 9-14. Deep Aquifer Groundwater Elevation Benefits of the MCWD IPR Project at Three Alternative Locations

9.6.5.3 Circumstances for Implementation

MCWD Recycled Water Reuse through Landscape Irrigation and IPR is a cross-boundary project from the Monterey Subbasin GSP. As discussed above, MCWD is currently constructing its recycled water distribution system to allow delivery of 600 AF/yr of recycled water for landscape irrigation. No additional circumstances for implementation are necessary.

Project planning for AWP expansion for IPR use is currently ongoing. MCWD plans to initiate preliminary design and environmental review in fiscal year 2026-2027. Further design and construction efforts will be initiated as soon as funds become available. MCWD continues to develop a funding strategy and is actively pursuing state and federal funding opportunities. If grant funding is not secured, the project may be financed through GSA funds or alternative funding mechanisms.

9.6.5.4 Permitting and Regulatory Process

Landscape Irrigation

The regulatory requirements for recycled water use for landscape irrigation are defined in California Code of Regulations, Title 22, Article 3. M1W and MCWD have existing permits with the RWQCB to produce, transmit, and distribute advanced treated water for landscape irrigation.

Production of disinfected, advanced treated recycled water at M1W facilities is regulated under Waste Discharge Requirements (WDR) permit Order No. R3-2017-0003. Transmission and distribution of advanced treated water from the M1W AWPf are regulated under Order No. WQ 2016-0068-DDW (General Permit). The General Permit allows MCWD's distribution of advanced treated recycled water for non-residential irrigation use in accordance with its Title 22 Engineering Report approved by the SWRCB in April 2020. The report detailed specific uses and the use area requirements for the advanced treated recycled water produced by M1W. The General Permit will need to be modified if significant changes are made to the transmission, distribution, storage, or use, and/or the volume or character of the recycled water applied within MCWD's service area.

IPR in Monterey Subbasin

Major permitting processes required for an Advanced Water Treatment Plant (AWTP) expansion and IPR use include CEQA, SWRCB permitting, and RWQCB permitting.

- **CEQA Compliance:** The project will be required to comply with CEQA requirements likely by preparing an EIR. It is assumed that the EIR would build upon the Pure Water Monterey EIR, and thus may take the form of a supplemental EIR, rather than a standalone EIR.
- **SWRCB Permitting:** Regulations for subsurface application of recycled water are included in CCR Title 22, Division 4, Chapter 3, Article 5.2. These regulations include minimum treatment requirements for full advanced treatment at the AWPf, as well as requirements to demonstrate adequate retention time within the aquifer. The SWRCB Division of Drinking Water (DDW) oversees permitting of such a project.

Detailed descriptions of all regulatory requirements for the advanced treatment of wastewater as well as implementation of a GRRP are included in Section 2 of the Pure Water Monterey Final Engineering Report (Nellor *et al.*, 2019).

- **CCRWQCB Permitting:** The CCRWQCB is responsible for waste discharge requirements and water recycling requirements for wastewater treatment plants and thus

oversees the general water quality effects of discharging treated wastewater into groundwater basins.

- M1W has an existing WDR permit for the Pure Water Monterey project, which applies to both the AWPf, as well as injection of the purified recycled water into the Seaside Subbasin. In order for MCWD to inject the purified recycled water into the Monterey Subbasin, the Pure Water Monterey WDR would either need to be modified to explicitly include this use, or a new WDR would need to be issued by the CCRWQCB.

Additional construction permits are required prior to construction, including but not limited to, City of Marina encroachment permit, grading permit, and building permit, and County approval of use permitting, grading permit, and well construction permit.

9.6.5.5 Implementation Schedule

Landscape Irrigation

MCWD owns and operates the regional transmission line from the AWPf and is currently constructing a recycled water distribution system that will allow distribution of 600 AF/yr to customers. MCWD delivered 414 AF/yr of recycled water in 2025 to the Bayonet and Black Horse Golf Course (MCWD, 2026) and is expanding its recycled water distribution system in the California State University Monterey Bay subarea and in the Dunes Development Area. Future expansions of the distribution system would allow deliveries up to the 1,427 AF/yr available from the AWPf.

IPR in Monterey Subbasin

MCWD plans to initiate preliminary design and environmental review in fiscal year 2026-2027. Completion of the IPR project is currently estimated within 3.5 to 5 years depending on funding availability and financing structure (Table 9-23).

Table 9-23. Representative Implementation Schedule for MCWD Indirect Potable Reuse

Task Description	Year 1	Year 2	Year 3	Year 4	Year 5
Permitting					
CEQA					
Design					
Bidding					
Construction					
Tracer study and analysis					

9.6.5.6 Legal Authority

This project will be implemented pursuant to MCWD's authority as a water district.

9.6.5.7 Estimated Cost

Landscape Irrigation

Infrastructure needed to treat and deliver 1,427 AF/yr of advanced treated water for landscape and other non-potable uses within MCWD has already been constructed and funded with State Revolving Fund loans and various grants. The estimated unit cost to MCWD of the advanced treated water is approximately \$2,400/AF/yr.

IPR in Monterey Subbasin

Conceptual costs for an IPR project evaluated as part of the Water Supply Augmentation Study (EKI, 2020) and the Recycled Water Feasibility Study (EKI, 2022) and adjusted to conform with GSP cost assumptions are described in Section 9.2.3. The project facilities include:

- Pipeline to convey advanced-treated recycled water from the regional transmission pipeline to the injection well.
- One injection well, approximately 1,300 feet deep, with a total injection capacity of 1,000 gpm, at the Sand Tank site location plus associated well pads, pedestals, site piping, hydropneumatic tank, and electrical, instrumentation, and controls work.
- Two monitoring wells to monitor and track groundwater levels and water quality.
- Infrastructure for the disposal of backflush water produced through periodic pumping of the injection well. Options include a percolating basin or disposal into the sewer collection system.

It is assumed that the source water and finished water are available and rights to these sources can be obtained. Planning-level costs are based on prior feasibility evaluations and GSP-level assumptions. Actual costs will depend on the final project capacity, location, conveyance requirements, monitoring facilities, treatment needs, water-supply arrangements, and project phasing.

Capital plus soft costs (planning environmental, permitting, engineering, legal, mitigation etc.) for IPR use at an assumed 2,400 AF/yr project capacity are estimated to be approximately \$65 million. Annual O&M costs are estimated at \$3,110,000 for operation of the AWPf, injection wells, and additional production wells. Total annualized cost is \$7,820,000. Based on the assumed project capacity of 2,400 AF/yr, the unit cost of water is \$3,300/AF. Project per unit

cost may decrease with economies of scale. Detailed cost estimates and assumptions are included in the Monterey GSP.

9.6.5.8 Public Noticing

Stakeholder engagement is a critical aspect of developing a successful and implementable project. Key stakeholders include the U.S. Army, local governments and adjacent municipalities, as well as the public. MCWD intends to engage stakeholders early in project development.

Before any project initiates construction, it will go through a public notice process to ensure that all groundwater users and other stakeholders have the opportunity to comment on projects before they are built.

In addition to the public noticing detailed above, all projects will follow the public noticing requirements per CEQA.

9.6.6 Project M4: Reservation Road Pilot Desalination Plant

In 1996, MCWD constructed a pilot seawater desalination facility to explore the feasibility of extracting seawater through shallow wells along the beach. The facility, located at the former wastewater treatment plant site on Reservation Road between Dunes Drive and the Monterey Bay, has a capacity of 0.3 MGD. The plant was operated between 1997 and 2003 and has been idle since.

MCWD is currently advancing rehabilitation of the Reservation Road Desalination Plant as a supplemental water supply source. The project involves replacing the well pump, piping, vault, the intake well and brine discharge piping, including pipe inspection and testing and comprehensive facility electrical systems. Upon completion, the facility will deliver 300 AF/yr of potable water to MCWD customers.

9.6.6.1 Relevant Measurable Objectives

The measurable objective benefiting from the pilot desalination plant includes:

- Groundwater elevation measurable objective – Providing an alternative supply and reducing pumping will result in higher groundwater levels, particularly near the location of production wells in the Monterey Subbasin.
- Groundwater storage measurable objective – Reducing pumping from the principal aquifers in the Monterey Subbasin will ultimately have the effect of increasing groundwater in storage.
- Seawater intrusion measurable objective – Seawater intrusion has advanced a few miles inland in Monterey Subbasin. Increasing groundwater storage and groundwater

elevation will support the natural hydraulic gradient that pushes back against the intruding seawater.

9.6.6.2 Expected Benefits and Evaluation of Benefits

Operation of the Reservation Road Pilot Desalination Plant will reduce groundwater demand from the Monterey Subbasin and provide in-lieu recharge. As described above, the project is anticipated to deliver 300 AF/yr to MCWD. Project deliveries will be quantified directly through volumetric measurements of delivered water. Benefits towards attaining applicable measurable objectives will be measured using the monitoring networks described in Chapter 7.

9.6.6.3 Circumstances for Implementation

Reservation Road Pilot Desalination Plant is a cross-boundary project from the Monterey Subbasin GSP. Implementation is ongoing. As discussed above, MCWD awarded a contract for Phase 1 construction of the renovation project in January 2026 for a planned projection in 2027. No additional circumstances for implementation are necessary.

9.6.6.4 Public Noticing

Stakeholder engagement is a critical component for this project. MCWD is coordinating with the State Parks and the City of Marina. Public outreach continues through MCWD's website and on-site noticeboard updates.

9.6.6.5 Permitting and Regulatory Process

Permitting for this facility was completed with the original construction in 1997. MCWD is updating its water systems permit with California Division of Drinking Water to reinstate the intake well water source. The EIR was completed in May 1995, and final notice of determination was completed in February of 1999. For the rehabilitation project, a public Notice of Exemption (NOE) under the CEQA was filed on September 25, 2025. Because this is the rehabilitation of an existing facility, not new construction, the project qualifies for this exemption. All required permits from State Parks and other agencies are in place.

9.6.6.6 Legal Authority

This project will be implemented pursuant to MCWD's authority as a water district.

9.6.6.7 Implementation Schedule

In 2023, MCWD completed a facility condition assessment and prepared a preliminary cost estimate. Following additional data collection and video inspection of key infrastructure components, MCWD initiated design of the Reservation Road Desalination Plant Renovation

Project. The design consultant has completed Phase 1 design documents and is progressing subsequent phase designs. In parallel, MCWD has coordinated with multiple state agencies to address permitting and regulatory requirements. MCWD initiated rehabilitation construction in 2026 for phase 1 of the rehabilitation, including cleaning and rehabilitation of the intake and disposal wells. The second phase will include rehabilitation of the water treatment equipment. Completion of the facility is scheduled in early 2027.

9.6.6.8 Estimated Cost

The approved MCWD Capital Improvement budget for FY 2027 is \$13,900,000. This total project cost includes civil improvements, consulting, demolition, general construction, and electrical/instrumentation work including balance of the Dual-Pass RO Membrane Treatment System and the Pre-Treatment Conditioning Package System.

9.6.7 Project M5: Aquifer Storage and Recovery at Armstrong Ranch

The Armstrong Ranch Property is a 220-acre vacant site located northeast of the MCWD service area in the 180/400 Subbasin. An ASR project at Armstrong Ranch would consist of infiltration ponds to recharge surface water from the SRDF or alternatively sourced water into the shallow sediments above the Salinas Valley Aquitard. This stored water would be recovered through an extraction well field at the site.

MCWD completed a feasibility assessment of the project in May 2025 (EKI, 2025). The primary purpose of the feasibility assessment was to analyze the maximum storage and recovery capacity of an ASR project. The feasibility study involved identifying potential water supply availability assumptions associated with optimization of the SRDF and/or additional recycled water supplies from the M1W AWTP and conducting a detailed modeling evaluation of recharge and recovery well infrastructure design and operational alternatives with a numerical groundwater flow model. Modeling results indicated that the maximum infiltration capacity of an ASR project is approximately 2,500 AF/yr with an estimated recovery yield of 76% (i.e., 1,900 AF/yr).

9.6.7.1 Relevant Measurable Objectives

The measurable objective benefiting from aquifer storage and recovery includes:

- **Groundwater elevation measurable objective** – The project provides direct recharge through ASR, some of which is not recovered. This has the effect of adding water to the shallow sediments, which are hydraulically connected to the Dune Sands Aquifer in the adjacent Monterey Subbasin. In the 180/400 Subbasin the project site is underlain by the Salinas Valley Aquitard. Adding water to the shallow sediments is projected to mound and increase groundwater elevations or decrease their decline in the adjacent Monterey Subbasin.

- **Groundwater storage measurable objective** – Adding water to the groundwater system will ultimately have the effect of increasing groundwater in storage in the adjacent subbasin.
- **Seawater intrusion measurable objective** – Increasing groundwater storage and groundwater elevations in the Dune Sands Aquifer of the adjacent Monterey Subbasin will support the natural hydraulic gradient that pushes back against the intruding seawater.

9.6.7.2 Expected Benefits and Evaluation of Benefits

The primary benefit from ASR is the direct recharge into the shallow sediments, which may increase the sustainable yield of the Monterey Subbasin by raising groundwater elevations. The project is anticipated to have a maximum infiltration capacity of 2,500 AF/yr with approximately 1,900 AF/yr available for recovery.

Project deliveries will be quantified directly through volumetric measurements of delivered or injected advanced treated water. Benefits towards attaining applicable measurable objectives will be measured using the monitoring networks described in Chapter 7.

9.6.7.3 Circumstances for Implementation

ASR at Armstrong Ranch is a cross-boundary project from the Monterey Subbasin GSP. Implementation will depend on confirmation of a viable water source, completion of additional feasibility and environmental review, regulatory approvals, coordination with regional partners, and availability of funding. The project may be implemented in phases, with its final configuration and timing refined as planning advances.

9.6.7.4 Public Noticing

Stakeholder engagement is a critical aspect of developing a successful and implementable project. As the actual location of the MCWD-owned property for this project is located within the 180/400 Subbasin, key stakeholders include the SVBGSA, MCWRA, local governments and adjacent municipalities, as well as the public. MCWD intends to engage stakeholders early in project development.

Before any project initiates construction, it will go through a public notice process to ensure that all groundwater users and other stakeholders have the opportunity to comment on projects before they are built.

In addition to the public noticing detailed above, all projects will follow the public noticing requirements per CEQA.

9.6.7.5 Permitting and Regulatory Process

Permits that might be required for the ASR component include:

EPA – All ASR projects must register with the EPA’s Underground Injection Control program.

SWRCB – All ASR projects must submit an Underground Storage Supplement as part of the application to receive either a Temporary Permit, a Standard Permit, or a Streamlined Permit from SWRCB.

CCRWQCB – General Waste Discharge Requirements paperwork must be filed with CCRWQCB to comply with its General Order that governs the injection of water to recharge aquifers.

Monterey County Health Department – Well construction permits must be obtained from the Monterey County Health Department.

The project will require a CEQA review process. Additionally, any project that coordinates with federal facilities or agencies may require NEPA documentation.

9.6.7.6 Legal Authority

This project will be implemented pursuant to MCWD’s authority as a water district.

9.6.7.7 Implementation Schedule

An implementation schedule is under development.

9.6.7.8 Estimated Cost

Estimated project costs are under development.

9.7 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.

9.7.1 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.

9.7.2 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.

9.7.3 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.

9.7.4 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.

9.7.5 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 180/400 Subbasin will be implemented. The chapter serves as a roadmap for activities needed to achieve sustainability by 2040 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 other 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 2 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 2 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 and Amendment 1. 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 180/400 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 180/400 Subbasin can affect neighboring subbasins, just as management decisions in other subbasins may influence conditions within the 180/400 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 180/400 Subbasin GSP and how they address SMC and 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
- 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 180/400 Subbasin

The priority PMAs for the 180/400 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 180/400 Subbasin, nor that PMAs within the 180/400 Subbasin do not affect conditions in other subbasins. Rather, the PMAs identified here are those most directly relevant to avoiding undesirable results in the 180/400 Subbasin GSP and reaching measurable objectives. Refinements to the PMAs identified in the 180/400 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 180/400 Subbasin and those included in the IIS preferred portfolio 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 180/400 Projects and Management Actions

Priority PMAs	Contingency PMAs
Demand Management and Planning (MA1)	Rural Residential Well Mitigation (MA7)
Fallowing, Fallow Bank, Agricultural Land Retirement, and Multi-benefit Land Repurposing (MA2)	CSIP Expansion or New Seawater Intrusion Project (P3)
Conservation and Agricultural BMPs (MA3)	Coastal Injection/Aquifer Storage and Recovery (P5)
Demand Management – Deep Aquifers Allocations (MA4)	Irrigation Water Supply Project (P6)
Rural Residential Demand Management Water Use Efficiency (MA5)	
Seawater Intrusion Response Plan (MA6)	

Priority PMAs	Contingency PMAs
CSIP System Optimization (P2)	
Brackish Groundwater Restoration Project (P4)	
Castroville and Eastside Canals (ES1)	

Under SGMA, GSAs need to avoid undesirable results and mitigate long-term overdraft by 2040 for critically overdrafted 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 180/400 Subbasin has long-term overdraft, and it is projected to be in overdraft throughout the GSP planning period unless PMAs bring extraction and the sustainable yield in balance. Overdraft can be mitigated by reducing pumping or recharging the subbasin, either through direct or in-lieu means. The IIS preferred portfolio comes close to meeting the seawater intrusion minimum threshold by 2040. SVBGSA anticipates that with further refinements, it will be sufficient for avoiding all undesirable results in the 180/400 Subbasin. Table 10-2 shows a summary of the SMC results of the IIS preferred portfolio as of the drafting of GSP Amendment 2 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 effects of the preferred IIS portfolio on the 180/400 Subbasin SMCs. Under the preferred IIS portfolio, 20% of RMS wells in the 180-Foot Aquifer and 7% of the RMS wells in the 400-Foot Aquifer are projected to fall below the groundwater level minimum thresholds by 2040-2041, the SGMA evaluation period indicating conditions in 2040. Groundwater level SMC in the Deep Aquifers will be met through the Deep Aquifers allocations. As project design or program development advances, 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 the extent of seawater intrusion in the 180/400 Subbasin in 2040 following full implementation of the preferred IIS portfolio. Although the extent of seawater intrusion was reduced and pushed towards the coast in some areas, exceedances of the minimum threshold remained in other areas. Further refinement of BGRP will be needed to adjust injection and

extraction locations and rates to address seawater intrusion on the edges of the minimum threshold isocontour. The Seawater Intrusion Response Plan (SIRP) will assess near-term risk or impact from seawater intrusion on beneficial uses and users in this vicinity. Based on BGRP and other PMA refinements and the risk assessment in the SIRP, adjustments to the seawater intrusion minimum threshold may be considered in the next 5-year evaluation.

Table 10-2. IIS Portfolio Effects on SMC in 180/400 Subbasin

SMC	Summary of IIS Portfolio Effect on 180/400 Subbasin SMC
Chronic Lowering of Groundwater Levels	180-Foot Aquifer: 20% minimum threshold exceedances 400-Foot Aquifer: 7% minimum threshold exceedances Deep Aquifers: to be met through Deep Aquifers pumping allocations
Reduction in Groundwater in Storage	To be calculated
Seawater Intrusion	Close; measurable objective anticipated to be met by 2040 after further project refinements
Degraded Water Quality	No extraction or GSA action anticipated to result in degradation of groundwater quality
Land Subsidence	Groundwater levels maintained above historical lows, indicating low risk of subsidence

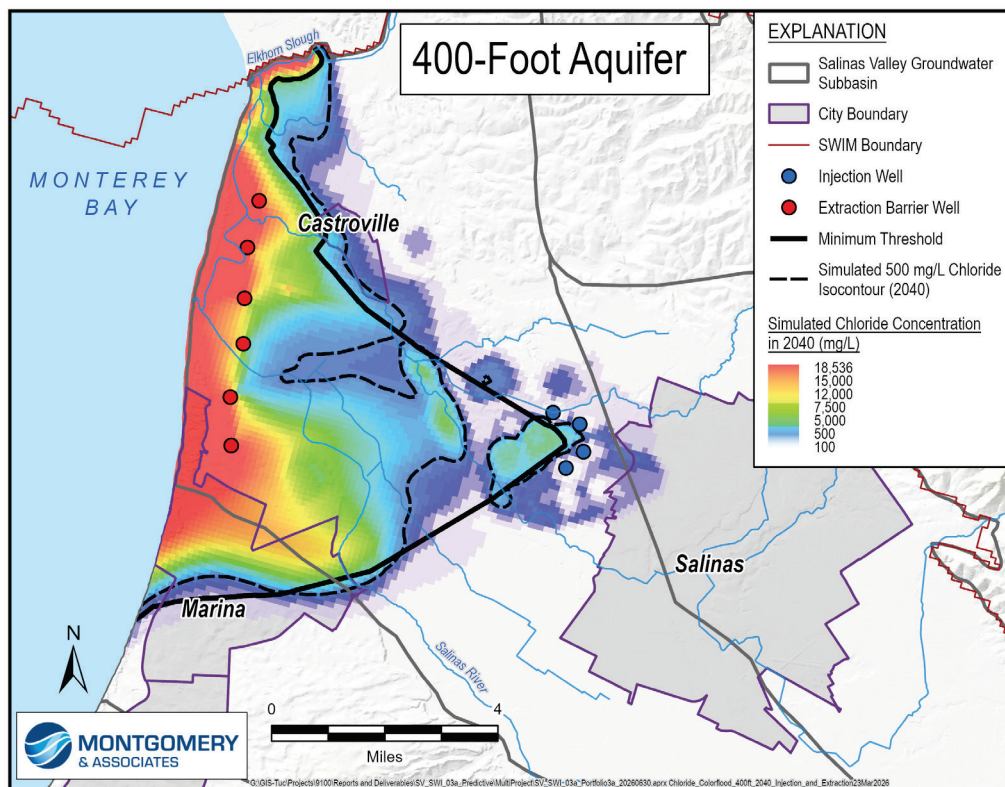
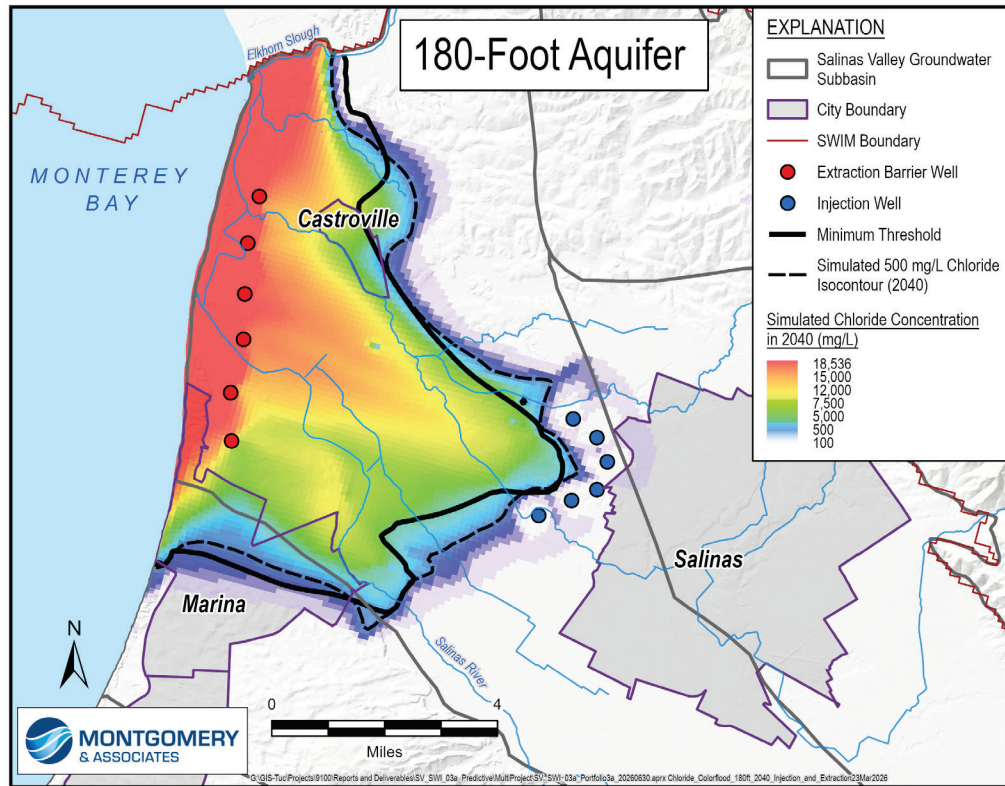


Figure 10-1. IIS Portfolio Seawater Intrusion Results for 180-Footer and 400-Footer Aquifers

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. Modeling of the IIS preferred portfolio shows that when PMAs are operational, groundwater levels are stabilized for the period of 2040-2065.

10.2 Project and Management Actions Funding Strategy

SVBGSA commissioned development of a funding strategy (ERA, 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, interconnected surface waters, 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, verses 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 2, most monitoring network data gaps have been filled. Chapter 7 shows how the monitoring networks could benefit from additional monitoring wells in the 180-Foot and Deep Aquifers. 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 2, 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, interconnected surface water 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 Langlely 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 180/400 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 Central Coast Regional Water Quality Control Board (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 fiscal year (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 2 for the 180/400 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 180/400 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. 180/400 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 2. PMAs will be revisited and adjusted as needed throughout GSP implementation.

Figure 10-2. 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.