

DRAFT

Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA)
Demand Management Framework

Executive Summary

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ES. Executive Summary

The Salinas Valley is one of California's most productive agricultural regions, relying heavily on integrated surface and groundwater to support farms, communities, the environment, and the regional economy. The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) was formed to plan for and carry out sustainable management of six subbasins of the Salinas Valley: 180/400-Foot Aquifer (180/400), Eastside Aquifer (Eastside), Forebay Aquifer (Forebay), Upper Valley Aquifer (Upper Valley), Monterey, and Langley Area (Langley). The six subbasins are referred to as the Salinas Valley or Valley¹. As required under the Sustainable Groundwater Management Act (SGMA), the SVBGSA is charged with managing conditions in each subbasin to avoid significant and unreasonable impacts to groundwater storage, levels, quality, interconnected surface water, subsidence, and seawater intrusion. SVBGSA coordinates management with Marina Coast Water District, Arroyo Seco Groundwater Sustainability Agency, and the County of Monterey Groundwater Sustainability Agency.

The SVBGSA, working with partner agencies and GSAs, is committed to achieving and maintaining sustainable groundwater conditions. The SVBGSA Groundwater Sustainability Plans (GSPs) outlined the basin conditions and approach to comply with SGMA through investments in projects and management actions that augment groundwater supply or reduce groundwater demand. As needed based on groundwater conditions and to ensure SGMA compliance, SVBGSA is working towards developing an optimal mix of supply projects and demand management actions that can be deployed to achieve sustainable conditions at a manageable total cost to the Valley.

This document provides an executive overview of the SVBGSA Demand Management Framework (Framework). Demand management in the Salinas Valley would be achieved by implementing measures (or actions) to manage groundwater demand. The Framework includes a definition and summary of demand management, description of potential demand management measures that may be applied in the Salinas Valley, preliminary analysis of measures, and a process for selecting different measures for further evaluation.

This Framework builds on initial demand management planning efforts by SVBGSA that are part of the SVBGSA Demand Management Strategy. In 2022, the SVBGSA conducted an assessment of Salinas Valley stakeholders and SVBGSA leadership perspectives about demand management, with an emphasis on how well demand management is understood and supported.

¹ This document uses the terms Salinas Valley Basin, SVBGSA, and Salinas Valley. The Salinas Valley Groundwater Basin is a defined area that includes all subbasins under SVBGSA authority, plus additional lands outside of that area. The Salinas Valley includes six subbasins as defined by Department of Water Resources Bulletin 118 boundaries that are managed by SVBGSA, in coordination with other GSAs. The economic effects of demand management measures are felt outside of a single subbasin or area and as such this Framework encompasses a broader area, including all of Monterey County.

The outcome of this effort was a report titled “*Stakeholder Assessment - Demand Management Approach and Feasibility by the Salinas Valley Basin Groundwater Sustainability Agency*” that was accepted by the SVBGSA Board of Directors (Board) in 2023. Subsequently, in 2024, the SVBGSA² commissioned a white paper summarizing legal considerations for demand management and initiated a sequence of workshops for “*Our Water Future in the Salinas Valley: Planning for Uncertainty.*” In late 2024, the SVBGSA commissioned economic analysis, financial analysis, and development of the Framework. SVBGSA Subbasin Committees and the public have provided input on Framework development through a series of public Subbasin Committee meetings in late 2024 and 2025.

The Framework identifies measures to manage groundwater demand and provides a basis for the Board to consider and prioritize the measures that can achieve desired groundwater benefits. Where applicable based on groundwater conditions, demand management measures could be implemented in coordination with supply augmentation projects to ensure that SGMA requirements are met in a cost-effective manner.

Demand Management

Demand management (hereafter abbreviated DM) means actively managing net pumping to keep groundwater in balance and avoid harm. This includes both reactive and proactive measures. Net pumping³ is pumping minus recoverable return flows. For example, DM includes managing consumptive use of groundwater or non-recoverable outflows (e.g., evapotranspiration or flow to an unusable water body). Activities that target reductions of deep percolation from irrigation may serve certain purposes—particularly in areas overlying confined seawater-intruded aquifers where applied water is non-recoverable. However, in areas where return flows are recoverable, such activities may reduce the quantity of water diverted or applied but they also reduce recharge to usable groundwater. DM measures should be developed considering the components of the groundwater budget.

SVBGSA Demand Management Framework

The Framework synthesizes the SVBGSA DM Strategy into a guidance document and technical reference with actionable steps for each potential DM measure. It includes the following:

- A definition of DM and how it applies to the SVBGSA
- An overview of baseline conditions in the Salinas Valley, emphasizing components that affect DM measures

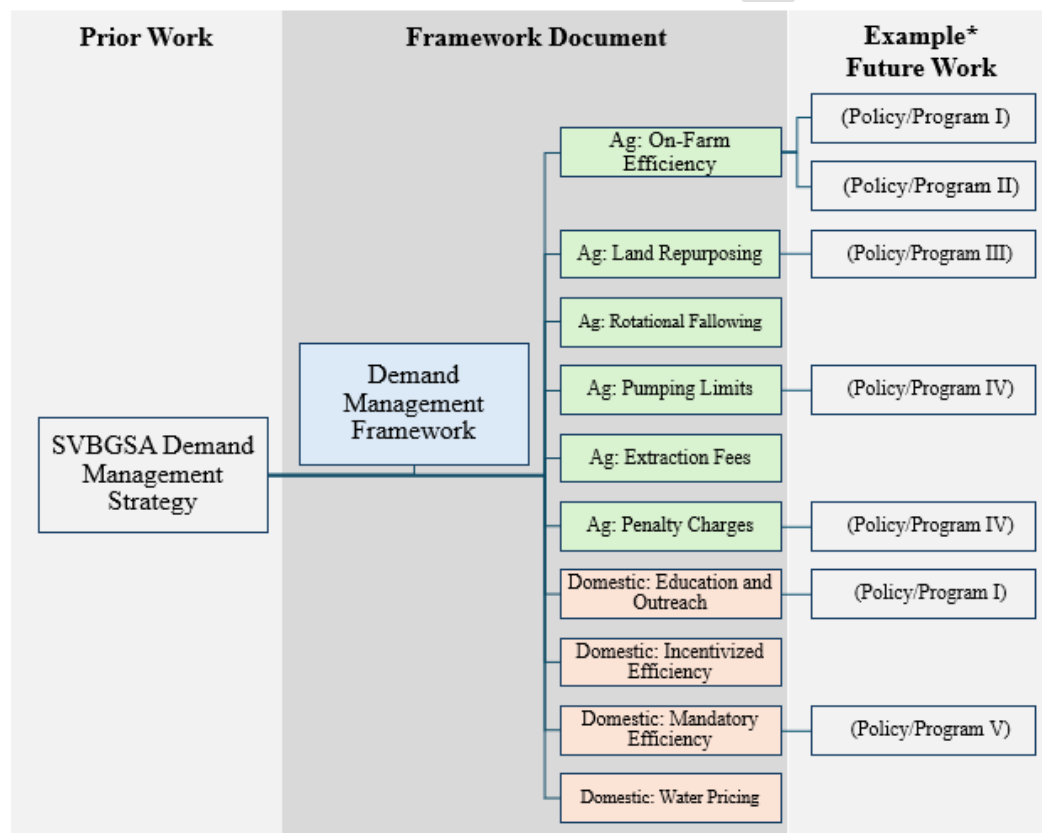
² The SVBGSA Board is the decision-making authority for the SVBGSA. This document refers to the SVBGSA and it is understood that the Board makes all decisions.

³ The Framework uses the term “pumping” in later sections of this document. Each DM measure would be accompanied by a measurement approach and evaluation of appropriate components of the groundwater budget (such as net pumping).

- A process to activate DM measures in different areas
- Global DM elements such as measurement methods, administrative requirements, and accounting approaches
- Specific DM measures to manage pumping, including a concise description of each measure, steps for implementation, and preliminary cost estimates⁴

The Framework does not cause activation of any DM measure. The next step by the SVBGSA is to build on the Framework by prioritizing the DM measures for additional analysis, establishing policies and programs, funding mechanisms, and specifying other administrative requirements. The Framework describes these steps and provides recommendations for how the SVBGSA can evaluate and select DM measures. Figure ES-1 provides an overview of SVBGSA DM Strategy, Framework, and future steps for developing policies and programs to activate selected DM measures.

Figure ES- 1. SVBGSA DM Strategy Overview



The Framework includes an overview of baseline conditions in the Salinas Valley. This includes physical groundwater conditions, land use, and other economic and community characteristics.

⁴ The SVBGSA commissioned a separate assessment of the economic impact of demand management in the Salinas Valley, which is currently in-progress, and the results will be summarized in a forthcoming technical report.

Monterey County includes both rural and urban areas, with the Salinas Valley serving as a major hub for irrigated agriculture. The economy is driven in large part by farming and food processing, with important crops including (but not limited to) lettuce, strawberries, broccoli, wine grapes, leafy greens, and other vegetables. With a gross farm value of more than \$5 billion, irrigated agriculture supports tens of thousands of jobs and drives substantial economic activity in local businesses, communities, and services. Major population centers within the SVBGSA include the cities of Salinas, Soledad, Gonzales, and King.

A preliminary assessment of the cost of each DM measure to the agency (SVBGSA and potentially partner GSAs and agencies), water users, and broader regional economy is provided. The direct costs of a DM measure include the cost of administration (e.g., SVBGSA costs to run a program) and costs imposed on water users (e.g., domestic or agricultural water user investments in efficient water use practices and technology). DM measures may also cause direct and indirect financial burden on landowners, water users, SVBGSA or other partner agencies in the Salinas Valley, and the broader Monterey County economy and communities. For example, changes in Salinas Valley farming will have ripple effects that affect the local businesses and communities. Many of these costs are not additive – a cost initially imposed on one sector or party may be passed on to another party. DM measures should be developed considering all costs, equity, feasibility, and economic impacts to the region.

The Framework applies to the entire Salinas Valley, but it is structured to account for differences in subbasin and aquifer conditions. Subbasins can be classified by stages—defined on a numerical scale from 0 to 4—that indicate progressively lower groundwater levels relative to the Subbasin’s SMC. Triggers determine which stage each subbasin is in. This structure allows the Framework to be applied to the Salinas Valley while accommodating the unique characteristics of individual subbasins or areas. Stages and triggers are established on the subbasin-scale since SGMA compliance is by subbasin. DM measures may be implemented for larger or smaller areas that do not align with subbasin boundaries. Potential DM measures and appropriate areas will be evaluated and recommended to the Board in coordination with partner agencies.

The Framework includes an overview of global elements for implementing DM measures. Global elements are considerations that apply to all DM measures. These include:

- **Administration.** Identification of the requirements of the entity/agency responsible for administering the measure(s), ranging from developing rules, to measurement, accounting, reporting, and enforcement. Rules define how each measure is implemented and the responsibilities of the administrator and affected or participating water users (or landowner or other responsible party).
- **Economic, financial, and technical analysis.** Evaluation of costs, benefits, and technical feasibility for each DM measure and other GSP implementation projects and management actions.

- **Funding approach.** Assessment and recommendations for funding DM measures in a fair and equitable manner.
- **Measurement.** Method by which any change in net pumping is quantified. This includes an overview of the technologies used, ranging from remote sensing to metering.
- **Water accounting system.** System for establishing the components of the groundwater budget at different spatial, aquifer, and temporal scales and tracking the balance, debits, and credits over time.

DM measures include ten potential actions that are grouped into those that apply to agricultural irrigation and those that apply to domestic groundwater use.

There are six agricultural DM measures that range from incentive-driven efficiency programs to mandatory pumping restrictions. Each measure has different requirements for implementation, which are summarized in this Framework and would be further developed with specific policies or programs, as well as evaluation of other feasibility considerations. Table ES-1 lists the agricultural DM measures.

Table ES- 1. Agricultural Demand Management Measures

Measure	Description
On-Farm Water Use Efficiency	Encourages growers to adopt more efficient irrigation practices. May include technical assistance or financial incentives to support implementation. These programs typically have a modest and widely distributed effect on pumping, so measurement/accounting is important.
DM Fee	Imposes a fee that has a nexus to groundwater extractions, potentially in a tiered structure. Designed to provide a financial signal to reduce water use and potentially fund other activities. Fees can be per acre, per acre-foot, or some combination of both.
Rotational Fallowing / Fallow Bank	Establishes an incentive structure for voluntary, temporary land idling/fallowing. The duration of fallowing can be seasonal, annual, or multi-year and can be tailored spatially and scaled up and down over time in response to changing groundwater conditions.
Land Repurposing	Incentivizes transition of land to lower-water-use alternatives or non-irrigated uses. May be developed with incentives for specific co-benefits and also leverage the potential for market-driven changes in land use.
Pumping Limits / Allocations	Establishes groundwater extraction limits (i.e., limits pumping).
Penalty Charges	Imposes financial penalties for violating programs or excessive pumping. Intended to reinforce compliance with other measures/programs to deter use (e.g., fines for pumping in excess of limits).

Four (4) domestic DM measures are included in the Framework. These focus on voluntary, incentive-driven efficiency approaches and pricing mechanisms as well as mandatory water conservation measures. Many of these measures would require SVBGSA working with partner

agencies in the Salinas Valley. Similar to agricultural measures, each domestic DM measure has different requirements that would be subsequently developed in a program or policy. Table ES-2 lists the domestic DM measures.

Table ES- 2. Domestic Demand Management Measures

Measure	Description
Education and Outreach	Promotes water use efficiency through public campaigns, materials, and community engagement. Aims to increase awareness of efficiency opportunities and behaviors.
Incentivized Water Use Efficiency	Provides rebates or incentives to adopt water-efficient appliances, fixtures, or reduce outdoor landscaping. Encourages voluntary efficiency improvements through cost-sharing, resources, or other financial incentives.
Mandatory Efficiency Measures	Requires specific water use efficiency actions for residential and commercial users (e.g., landscape restrictions, appliance standards). Typically implemented through local ordinances.
Water Pricing Mechanisms	Implements tiered or usage-based pricing to incentivize reduced discretionary water use. Designed to align customer costs with actual water usage and efficiency goals. Must be developed in compliance with state law.

The Framework describes each measure, provides an overview of the necessary analysis for a policy or program, defines feasibility, and effectiveness of the measure.

DM Measure Costs

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. Refined cost estimates will be developed as part of subsequent development of a policy and program, and additional cost estimates will be available in a forthcoming report describing the economic impact analysis of DM in the Salinas Valley.

Table ES-3 summarizes relative costs for each agriculture 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, operating and maintenance (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 ES- 3. Summary of Agricultural Measure Costs

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>

Table ES-4 summarizes relative costs for each domestic DM measure.

Table ES- 4. Summary of Domestic Measure Costs

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>

Implementation

The Framework does not cause activation of any DM measure. The Framework describes conditions, identifies stages as a method to assess relative need for DM, provides an overview of

each DM measure, and outlines steps to implement a DM measure (or set of measures). For some measures the Framework includes preliminary analysis of the direct costs.

The next step is to prioritize DM measures for policy/program development in the SVBGSA workplan and collaborate with appropriate partner agencies. Future activities include:

- **Identification of Initial Stages.** Evaluate triggers and recommend to the Board an initial stage for each subbasin.
- **Cost and Technical Analysis of DM Measures.** Expand technical, economic, financial analyses, and groundwater modeling to refine the estimated groundwater savings, costs, and economic implications of each DM measure.
- **Financial and Economic Feasibility of DM and other Projects.** Prepare expanded economic and financial analyses of prioritized DM measures and projects contributing to groundwater sustainability. Identify the most feasible and cost-effective combination of DM measures and projects to meet SGMA requirements. This ensures that DM measures are developed in coordination with potential supply augmentation projects.
- **Funding Approach.** Define funding requirements for prioritized DM measures and develop mechanisms to allocate and recover costs.
- **DM Measure Program Rules.** For prioritized DM measures, define rules (i.e., how the measure will be managed and implemented), contracting mechanisms, monitoring, and enforcement mechanisms. This is typically defined in a guideline document for each measure.
- **Accounting System.** Specify a measurement approach and method to track groundwater use. Include appropriate investments in technology and software to standardize the accounting system.
- **Administration.** Define the structure to administer the DM measures (e.g., SVBGSA in coordination with appropriate partner agencies). Include a structure to monitor performance, receive stakeholder feedback, and conduct adaptive management.
- **Timeline.** Define the activation timeline for prioritized (and potentially other) DM measures including how each will evolve over time based on new data, funding availability, and groundwater conditions.