



County of Monterey

Item No.

Board Report

Board of Supervisors
Chambers
168 W. Alisal St., 1st Floor
Salinas, CA 93901

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Receive an update on the New Seawater Intrusion Project (NSIP) Feasibility Study.

RECOMMENDATION:

It is recommended that the Monterey County Water Resources Agency Board of Directors:

Receive an update on the New Seawater Intrusion Project (NSIP) Feasibility Study.

SUMMARY/DISCUSSION:

Background

The DWR Sustainable Groundwater Management Round 2 Salinas Valley Implementation Grant (SGM R2-S) includes funding for feasibility studies of alternative supplies, including the expansion of the Castroville Seawater Intrusion Project (CSIP), hereafter referred to as New Seawater Intrusion Project (NSIP). The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) has been developing the NSIP feasibility study with support from MCWRA, Carollo Engineering and Schaaf and Wheeler Consulting Civil Engineers.

Discussion

One of the projects identified in the 180/400-Ft. Aquifer Subbasin and Eastside Aquifer Subbasin Groundwater Sustainability Plans is an expansion of CSIP to serve additional agricultural lands with new water supplies to offset groundwater use. The NSIP study is evaluating both CSIP expansion and a new, potentially separate distribution system with its own dedicated infrastructure (e.g. pipes, pumps, turnouts, storage, diversion and treatment facilities).

The purpose of this study is to 1) investigate potential source waters; 2) identify and prioritize areas/users that could be served by the new sources and the ability to expand the delivery of in lieu supplies to meet irrigation demands in areas at risk of seawater intrusion; 3) evaluate infrastructure needs and sizing for serving new users; and 4) develop alternatives for paired source waters and infrastructure systems and estimate costs.

The NSIP study area encompasses portions of the 180/400-Foot Aquifer Subbasin and Eastside Subbasin where demand is concentrated in the 400-foot aquifer and Deep Aquifers and it covers the areas experiencing or at risk of seawater intrusion. Work to date on the NSIP feasibility study has included evaluating the availability, timing, and quality of potential source waters, identifying irrigation demands and geographic areas where groundwater offset would provide the greatest benefit, understanding the infrastructure needs, and developing conceptual alternatives that can be used to estimate costs and guide next steps.

Multiple potential source waters have been considered, including maximizing use of secondary effluent, Salinas industrial wastewater, the Reclamation Ditch, Blanco Drain, Tembladero Slough, and Permit 11043. Historical data from 2019-2024 show that while meaningful volumes of supply are available, availability is highly seasonal, with excess water largely occurring during winter months. In addition, water quality is a consideration. For planning purposes, the analysis assumes that NSIP deliveries would need to match existing CSIP water quality, implying the likely need for treatment or blending to ensure suitability for agricultural uses.

Groundwater demands in the NSIP study area, using five-year average well usage data from 2019-2024, total approximately 28,000 acre-feet of average annual pumping for irrigation. The demand analysis identified that the 400-foot aquifer accounts for the largest portion of use (over 13,700 AF). Deep Aquifers pumping is approximately 4,600 AF, and the 180-foot aquifer represents a comparatively smaller share of demand.

Three conceptual scenarios have been identified to evaluate different scales and strategies for groundwater offset.

- Scenario 1 - Maximum NSIP System: This scenario would serve all wells within the NSIP area and offset approximately 27,600 AF per year in demand from 251 wells. requiring extensive infrastructure, including roughly 31 miles of transmission main and 42 miles of laterals. Because supply availability does not align with peak irrigation demand, this alternative would require significant seasonal storage-approximately 18,000 AF-to make winter supplies available during the primary growing season. All of the source waters investigated, including diversions under Permit 11043, would be needed to support this system.
- Scenario 2 - Wells within the 500 mg/L Intruded Zone: This more targeted alternative focuses on wells already within the mapped seawater intrusion area. It would serve approximately 88 wells with an average annual demand of about 11,000 AF. Infrastructure requirements are reduced with about 12 miles of transmission main and 10 miles of laterals. Under this scenario, direct delivery could offset roughly 60% of total annual demand, with the remainder requiring approximately 4,500 AF of storage. This scenario does not rely on Permit 11043.
- Scenario 3 - CSIP Expansion: This scenario evaluates expanding the existing CSIP system to take advantage of excess winter recycled water supplies. Estimates suggest that excess supply in November could serve approximately 860 AF of wintertime demand, with potential inerties at three locations using large-diameter pipelines. While this approach cannot fully address summer peak demand, it offers a lower-cost, incremental opportunity to reduce groundwater pumping during periods when supply is available.

Next steps for advancing the NSIP effort include preparing order-of-magnitude cost estimates for treatment, pipelines, and storage, evaluating the feasibility of using Lake Merritt or other storage concepts, completing the feasibility report describing the evaluated alternatives, constraints, and trade-offs, conducting groundwater modeling for at least one representative scenario, and identifying

decision points and actions required if the project moves toward implementation. NSIP is aimed at balancing groundwater protection benefits with realistic supply, infrastructure, and operational constraints. These more targeted or incremental approaches offer practical near-term benefits with lower complexity. However, NSIP will not achieve the minimum threshold for seawater intrusion on its own without additional projects or management actions.

OTHER AGENCY INVOLVEMENT:

Salinas Valley Basin Groundwater Sustainability Agency

FINANCING:

The feasibility study work, including consultants and staff participation, is funded by the Sustainable Groundwater Management Round 2 grant between DWR and SVBGSA. The MCWRA staffing appropriations are funded through a subgrant agreement with the SVBGSA and are included in the FY2025-26 Adopted Budget and will not require any additional funding needs.

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