Seawater Intrusion - A Shared Problem in Monterey County

Sprinklers in a field in Salinas Valley
Source: Thomson200, Wikimedia Commons, Creative Commons CC0 1.0.

SUMMARY

Continued groundwater extraction in portions of the Salinas Valley Basin has contributed to seawater intrusion into coastal subbasins, with saline groundwater documented several miles inland from Monterey Bay. Seawater intrusion into the 180-Foot and 400-Foot pressure aquifers has been observed since the early twentieth century and continues in affected areas.

While certain mitigative infrastructure projects are operational in limited areas, no basin-scale seawater intrusion mitigation project has advanced to the stages of approval, long-term funding, permitting, and construction stages.

The 180/400-Foot Aquifer Subbasin is designated as critically overdrafted (as further defined in the Glossary and Acronyms section) under the Sustainable Groundwater Management Act (SGMA)**,** meaning groundwater extraction has historically exceeded natural recharge —the water that returns to the aquifer from rainfall, river flows, and other sources. SGMA establishes a statutory timeline to achieve groundwater sustainability by 2040. If sufficient progress toward sustainability is not demonstrated, the State Water Resources Control Board may intervene, potentially reducing local discretion in groundwater management decisions.

The Civil Grand Jury (CGJ) recommends that the governing boards of the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) and the Monterey County Board of Supervisors establish clear implementation timelines, identify sustainable funding mechanisms, and advance specific mitigation projects to construction.

Additional technical background and project descriptions are provided in Appendices A through E.

BACKGROUND

Recurring Topic Among Civil Grand Juries

Seawater intrusion and groundwater overdraft have been examined repeatedly by Monterey County Civil Grand Juries since the 1990s. Prior reports identified overdraft conditions, seawater intrusion, and the need for coordinated groundwater management. Following the enactment of SGMA, SVBGSA was formed to implement groundwater sustainability planning.

Despite these efforts, seawater intrusion in coastal aquifers continues, and basin-scale mitigation projects remain in feasibility or planning stages. Monterey County relies on local groundwater and river systems for domestic use and crop irrigation.

Basin Conditions and Aquifers Affected

The Salinas Valley Groundwater Basin contains several aquifers that supply irrigation and municipal water throughout Monterey County. Seawater intrusion has affected portions of the basin for decades, particularly in coastal areas where groundwater pumping has reduced freshwater pressure. Historically, this pressure prevented seawater from moving inland. Additional background is provided in Appendix A.

Significance of the Sustainable Groundwater Management Act

SGMA, enacted in 2014, established California's framework for sustainable groundwater management. SGMA requires high- and medium-priority basins to form Groundwater Sustainability Agencies and adopt Groundwater Sustainability Plans.

SGMA has six sustainability indicators that are the metrics used to prevent significant and undesirable results in groundwater basins. These include chronic lowering of groundwater levels, reduction of storage, seawater intrusion, water quality degradation, land subsidence, and depletion of interconnected surface water. Although all these indicators must be met under SGMA, this report focuses only on the seawater intrusion indicator.

One of the basins identified under SGMA as experiencing chronic overdraft is in Monterey County. The County's 180/400-Foot Aquifer Subbasin is subject to a statutory sustainability deadline of 2040.

While SGMA emphasizes local control, the State Department of Water Resources reviews plan adequacy and implementation progress. If a Groundwater Sustainability Plan is found inadequate or implementation is insufficient, the State Water Resources

Control Board has the authority to place the basin on probation and impose reporting requirements, fees, or pumping restrictions.

Agriculture is the dominant water user in the Salinas Valley Basin. Monterey County agriculture is a multi-billion-dollar industry and accounts for the majority of groundwater extraction in the basin. Much of this irrigation occurs in coastal portions of the valley where the 180-Foot and 400-Foot Aquifers supply groundwater. These aquifers are also the areas where seawater intrusion has been most extensively documented.

Responsible Agencies

Multiple public agencies share responsibility for groundwater management and seawater intrusion mitigation in Monterey County. These agencies coordinate through statutory authority, joint powers agreements, and project-specific partnerships. Although numerous agencies participate in water management within Monterey County, this report focuses on the three entities with the most direct responsibility for planning, funding, and implementing basin-scale seawater intrusion mitigation projects. See Appendix E for a broader list of water management entities operating within the County.

Salinas Valley Basin Groundwater Sustainability Agency

Formed in 2017 pursuant to SGMA, SVBGSA, a joint powers authority, represents a range of interests including agriculture, cities, and public utilities. It is responsible for developing and implementing Groundwater Sustainability Plans for the Salinas Valley Basin. The agency is charged by the State of California Department of Water Resources with achieving groundwater sustainability within statutory timelines established under SGMA.

Monterey County Water Resources Agency

The Monterey County Water Resources Agency, a public agency operating within Monterey County, manages surface water infrastructure and certain groundwater-related projects in the Salinas Valley. The agency constructs and operates components of the Salinas Valley Reclamation Project and the Castroville Seawater Intrusion Project

(CSIP), which provide recycled water for agricultural irrigation in designated service areas.

Monterey One Water

Monterey One Water, a joint powers authority, operates wastewater treatment and recycled water facilities that supply water used in agricultural irrigation and potable reuse programs. These operations support efforts to reduce groundwater pumping in coastal subbasins.

Existing Mitigation for Seawater Intrusion

Several infrastructure projects have been developed in the Salinas Valley to reduce groundwater overdraft and limit seawater intrusion. These efforts include diverting and storing winter flows from the Salinas River, as well as delivering surface water for agricultural irrigation in areas most affected by seawater intrusion. Major components of these efforts include the Salinas Valley Water Project, the Castroville Seawater Intrusion Project, and associated diversion and conveyance facilities. Together, these projects aim to reduce reliance on groundwater pumping in coastal areas and slow the inland migration of seawater. Additional technical details regarding these projects are provided in Appendix B.

Proposed Mitigation Solutions to Seawater Intrusion

Additional projects have been proposed to supplement existing infrastructure and further reduce reliance on groundwater pumping in areas affected by seawater intrusion. Concepts under discussion include treating and reusing brackish groundwater, expanding existing conveyance systems to deliver surface water to additional areas of the basin, and aquifer storage and recovery projects that would store surplus winter flows for later use. These proposals aim to increase the availability of non-groundwater supplies and improve long-term basin sustainability. Additional technical details regarding these proposed projects are provided in Appendix C.

METHODOLOGY

The CGJ investigated seawater intrusion and groundwater sustainability in the Salinas Valley through document review, public meeting observation, site visits, and interviews.

Jurors reviewed publicly available technical reports, feasibility studies, groundwater sustainability plans and amendments, annual reports submitted to the California Department of Water Resources, and prior Civil Grand Jury reports addressing groundwater management. The CGJ also examined relevant State statutes, including SGMA.

Jurors attended selected public meetings of SVBGSA and conducted interviews with representatives of regional water agencies, joint powers authorities, nonprofit stakeholder organizations, and Monterey County officials responsible for groundwater, agriculture, and surface water management.

The CGJ toured the Monterey One Water recycling facility to observe recycled water treatment and distribution operations associated with seawater intrusion mitigation efforts.

DISCUSSION

The CGJ reviewed the status of seawater intrusion in the Salinas Valley Basin and the progress of mitigation efforts developed by regional water agencies. While technical studies and feasibility analyses have advanced, implementation of basin-scale solutions has remained limited. The following discussion summarizes the conditions identified during the investigation and the factors affecting progress toward groundwater sustainability.

Current Basin Conditions and Implementation Status

Seawater intrusion in the Salinas Valley Groundwater Basin has been documented for decades and remains a significant concern in coastal portions of the 180-Foot and 400-

Foot aquifers. Monitoring data confirms the inland migration of saline groundwater in affected areas. These conditions have resulted in the loss or impairment of wells and continue to threaten long-term groundwater reliability.

Multiple mitigation strategies have been developed to address seawater intrusion, including recycled water substitution, surface water diversion, desalination of brackish groundwater, aquifer storage and recovery, and demand management measures. Several mitigation infrastructure projects operate in limited areas, but most basin-scale mitigation strategies remain in feasibility study, engineering review, or environmental permitting stages.

Technical planning has advanced, but no major seawater intrusion mitigation project has progressed to full approval, secured long-term funding, received permits, or begun construction at a scale sufficient to address basin-wide conditions. As a result, groundwater extraction in stressed subbasins continues to exceed recharge in certain areas, and seawater intrusion persists.

Funding and Implementation Challenges

The mitigation strategies under evaluation involve substantial capital investment and ongoing operational costs. Desalination facilities, diversion infrastructure, storage basins, injection wells, and recycled-water distribution systems require extensive permitting, environmental review, land acquisition, and financing. Projects of this type typically require investments of hundreds of millions of dollars and long-term operational funding commitments. Potential funding sources for projects of this scale may include local ratepayer funding, State grant programs, and federal infrastructure funding.

Although feasibility studies have been completed for several proposed projects, a comprehensive basin-wide funding strategy has not been finalized. Without reliable funding sources, these projects remain in the planning phase. Continued delays may increase overall costs as aquifer conditions worsen, and corrective measures become more complex.

SGMA provides a framework for local management; moving projects from study to construction requires coordination among governing boards, water users, funding agencies, and regulators. In addition, implementation requires coordination among multiple public agencies with overlapping authority. Appendix E summarizes the County water entities that are involved.

Regulatory Deadlines and Risk of State Intervention

The Salinas Valley Groundwater Basin is designated as critically overdrafted, meaning it must achieve groundwater sustainability by 2040. The State Department of Water Resources reviews both the adequacy of Groundwater Sustainability Plans and progress toward their implementation.

If the basin fails to demonstrate adequate progress toward sustainability, the State Water Resources Control Board may intervene and place the basin on probation. State intervention could result in mandatory reporting requirements, fees, or restrictions on pumping. Such an intervention would reduce local discretion in groundwater management decisions.

As a case in point, in April 2024, the State Water Resources Control Board placed portions of the Tulare Lake Subbasin, which includes portions of Kings County, on probation after determining that the basin had not demonstrated adequate progress toward SGMA sustainability requirements. This probation included mandates requiring farmers to meter their wells, register them at $300 each, report extractions, and pay $20 per acre-foot pumped. The State's $20-per-acre-foot pumping fees have been reported to total nearly $10 million a year in Kings County. The timeline established under SGMA places increasing importance on timely project selection, funding identification, and measurable implementation milestones if Monterey County is to avoid similar State intervention.

Implementation and Decision-Making

Groundwater in the Salinas Valley supports agricultural production, municipal supply, and domestic wells. Continued overdraft, therefore, has significant implications for water supply reliability, economic stability, and regulatory compliance.

Existing mitigation infrastructure, for example, the CSIP, has reduced groundwater pumping in limited areas; however, comparable basin-wide infrastructure has not yet been implemented. Demand management tools, as described in Appendix D, provide a framework for reducing groundwater extraction through measures such as pumping limits, water-use allocations, fees, or fallowing irrigated land; however, large-scale reliance on demand reductions alone may have significant economic and operational implications. Such measures could reduce irrigated acreage, affect agricultural production and employment, and require new monitoring, reporting, and enforcement systems to regulate groundwater pumping.

Achieving groundwater sustainability will require decisions about project priorities, cost allocation, and long-term financing. In the absence of such decisions, planning efforts will remain conceptual, and seawater intrusion will continue to advance.

CONCLUSION

Seawater intrusion in the Salinas Valley Basin has been documented for decades and continues in portions of the 180-Foot and 400-Foot pressure aquifers. While technical studies and mitigation concepts have advanced, basin-scale implementation sufficient to restore groundwater balance has not yet occurred.

Multiple agencies share responsibility for groundwater management under SGMA. Existing infrastructure has reduced groundwater pumping in limited areas; however, broader implementation of mitigation strategies will require defined project selection, coordinated governance, and sustainable long-term funding.

The statutory deadline to achieve groundwater sustainability by 2040 establishes a clear, measurable timeline for progress. Advancing specific projects from feasibility to construction, identifying durable funding mechanisms, and aligning stakeholder responsibilities are necessary steps to maintain local control of groundwater management and avoid outcomes like those imposed in other basins placed on SGMA probation.

The CGJ issues its findings and recommendations to support timely decision-making and accountability in the management of Monterey County's groundwater resources.

FINDINGS AND RECOMMENDATIONS

Finding (F1): Although multiple technical and feasibility studies addressing seawater intrusion have been completed, no major seawater intrusion mitigation project has advanced to full approval, funding, or construction. As a result, seawater intrusion continues in portions of the Salinas Valley Basin, increasing long-term risk to groundwater reliability for agricultural, municipal, and domestic users.

Recommendation (R1): The Board of Directors of SVBGSA adopt and publish a written implementation schedule by December 31, 2026, identifying the specific seawater intrusion mitigation project or projects (Brackish Groundwater Restoration Project, Aquifer Storage and Recovery, or the Castroville-Eastside Canal Project) it intends to advance to construction, including estimated costs, funding sources, and target dates for permitting and groundbreaking.

Finding (F2): The existing CSIP and related facilities, including the Salinas Valley Reclamation Project and Salinas River Diversion Facility, provide alternative water supplies to portions of the northern Salinas Valley. However, comparable infrastructure has not been implemented in other areas experiencing groundwater stress. This uneven distribution of alternative supplies limits basin-wide progress toward reducing groundwater pumping.

Recommendation (R2): The Board of Directors of the Monterey County Water Resources Agency prepare and publicly present a feasibility and financing plan identifying options to expand existing alternative water supply infrastructure, or develop new projects, including the Castroville-Eastside Project, to reduce groundwater extraction in coastal aquifers outside the current Castroville service area by March 31, 2027.

Finding (F3): If any of the subbasins within the Salinas Valley Basin fails to meet state-mandated groundwater sustainability requirements under SGMA, the State Water Resources Control Board may intervene, which could result in mandatory pumping reductions and increased regulatory oversight. This would impact local agriculture and economies and reduces local control. Avoiding State intervention requires the timely implementation of groundwater sustainability projects and the identification of reliable funding mechanisms. Absent such decisions, planned groundwater sustainability projects may remain conceptual and seawater intrusion in affected aquifers may continue to progress.

Recommendation (R3): The Monterey County Board of Supervisors conduct a publicly noticed study session to evaluate long-term funding mechanisms to support groundwater sustainability projects developed by SVBGSA and direct staff to report back with recommended funding options by June 30, 2027.

Finding (F4): Disagreements among stakeholders regarding responsibility for and funding of seawater intrusion mitigation have the potential to delay implementation of basin-wide solutions. Continued delays increase the likelihood that mitigation measures will become more costly and difficult to implement over time.

Recommendation (R4): The Board of Directors of the Salinas Valley Basin Groundwater Sustainability Agency conduct a public workshop and develop a written consensus-based framework outlining options for project cost allocation and post the framework for public review by December 31, 2026.

REQUEST FOR RESPONSES

Required Responses

The following responses are required pursuant to Penal Code Sections 933 and 933.05:

The CGJ requires a response from the governing bodies below to the following findings and recommendations within 90 days.

Respondent	Findings	Recommendations
Monterey County Board of Supervisors	F3	R3
Board of Directors, Salinas Valley Basin Groundwater Sustainability Agency	F1, F3, F4	R1, R3, R4
Board of Directors, Monterey County Water Resources Agency	F2	R2

Invited Responses

The CGJ invites responses from the below elected officials whose districts include portions of Monterey County to the following findings and recommendations.

Respondent	Findings	Recommendations
Hon. Zoe Lofgren, U.S. Representative, Congressional District 18	F3	R3

Hon. Jimmy Panetta, U.S. Representative, Congressional District 19	F3	R3
Hon. John Laird, California State Senator, Senate District 17	F3	R3
Hon. Dawn Addis, California Assembly Member, District 30	F3	R3
Hon. Robert Rivas, California Assembly Member, District 29	F3	R3

DISCLAIMER

Reports issued by the grand jury do not identify persons interviewed. Penal Code Section 929 requires that reports of the Civil Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury.

GLOSSARY AND ACRONYMS

180/400-Foot Aquifer Subbasin – Coastal subbasin of the Salinas Valley Groundwater Basin.

AF -- Acre-Foot – A unit of water volume equal to the amount needed to cover one acre of land to a depth of one foot (approximately 325,851 gallons).

ASR (Aquifer Storage and Recovery) – A process that injects treated water into an aquifer for storage and later recovery.

Brackish water – Water with dissolved solids concentration higher than freshwater but lower than seawater, typically requiring desalination for beneficial use.

California Environmental Quality Act – This act generally requires State and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible.

CFS (Cubic Feet per Second) – A measure of flow rate commonly used for river diversions and water releases.

Critically overdrafted – A condition in which continued groundwater management under existing practices would likely result in significant adverse environmental, social, or economic impacts due to groundwater overdraft, where groundwater extraction exceeds the basin's sustainable supply.

CSIP -- Castroville Seawater Intrusion Project – Recycled water delivery system designed to reduce groundwater pumping in the Castroville area.

Demand management – Structured measures to reduce net groundwater pumping to maintain basin sustainability under SGMA.

Desalination – The process of removing dissolved salts from water to make it suitable for beneficial use, such as irrigation or potable supply.

Groundwater basin – A geologically defined area where groundwater is naturally stored and flows within interconnected aquifers, bounded by natural features such as bedrock or faults, and managed as a single hydrologic unit.

Groundwater sustainability – Management of groundwater resources to avoid undesirable results such as chronic lowering of groundwater levels or seawater intrusion.

Overdraft – Long-term extraction of groundwater in excess of recharge, resulting in declining water levels.

SGMA – Sustainable Groundwater Management Act – California law enacted in 2014 requiring sustainable management of groundwater basins.

Salinas River Diversion Facility – Infrastructure component of the Salinas Valley Water Project that diverts river flows to reduce groundwater pumping. Commonly referred to as the “Rubber Dam.”

Salinas Valley Reclamation Project (SVRP) – Project providing recycled water for agricultural irrigation in portions of the Salinas Valley.

Saline groundwater – Groundwater containing elevated concentrations of dissolved salts, typically measured as chloride or total dissolved solids.

Seawater intrusion – Inland migration of saline groundwater into freshwater aquifers due to reduced hydraulic pressure from overdraft.

Subbasin – A subdivision of a groundwater basin created by dividing it into smaller units using geologic, hydrologic, or institutional boundaries.

SVBGSA -- Salinas Valley Basin Groundwater Sustainability Agency – Joint powers authority responsible for implementing SGMA in the Salinas Valley Basin.

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APPENDIX A – BASIN CONTEXT

This appendix provides a technical background on the hydrogeology of the Salinas Valley Basin, the aquifers affected by seawater intrusion, and the historical development of intrusion studies.

Physiographic Setting and Groundwater Conditions

The Salinas Valley Basin consists of layered alluvial aquifers formed by sediment deposits from the Salinas River and surrounding mountain ranges. These aquifers historically supplied groundwater for agriculture, municipal systems, and domestic wells.

Groundwater levels fluctuate based on recharge, river flows, and pumping. In coastal subbasins, sustained pumping has lowered groundwater elevations below sea level in portions of the 180-Foot and 400-Foot aquifers, reducing hydraulic pressure that historically limited inland movement of saline groundwater.

Figure 1 illustrates a simplified cross-section of the basin and the 180-Foot and 400-Foot aquifers most affected by seawater intrusion. The two aquifers, also referred to as

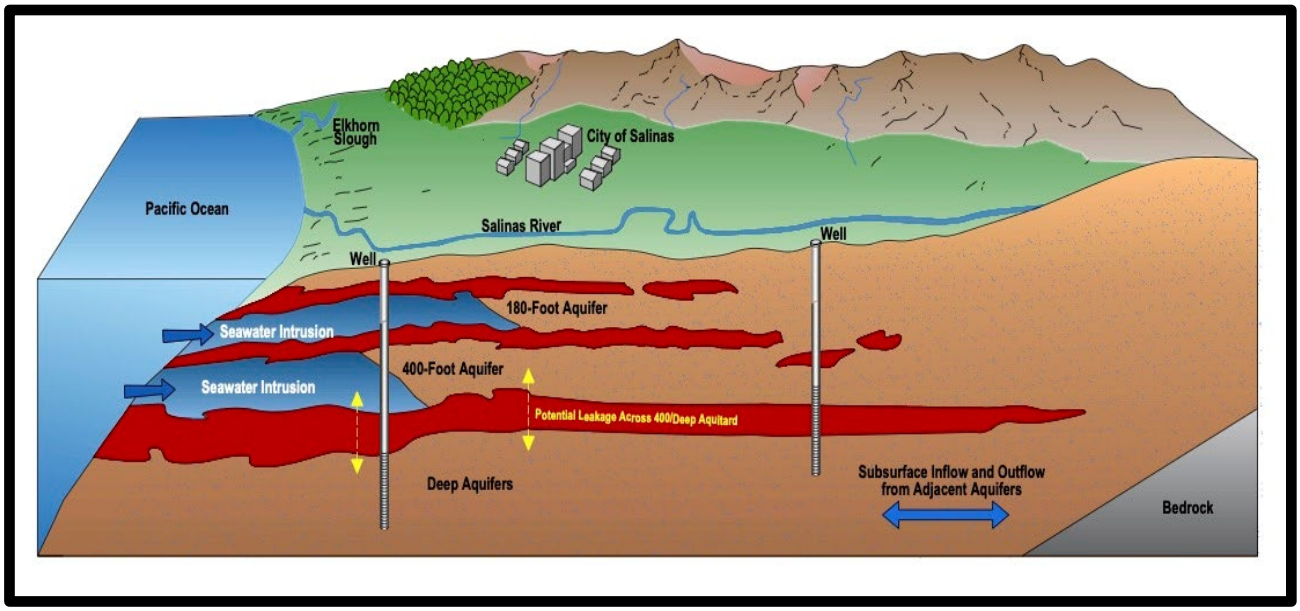

Figure 1 – Simplified profile of Salinas Valley hydrogeology

Source: Courtesy of SVBGSA.

“pressure aquifers,” extend to the boundary with Monterey Bay. Beneath them is the Deep Aquifer, which at present has not been impacted by seawater intrusion, primarily due to the clay aquitards shown in red. The California Department of Water Resources has formally designated the Salinas Valley Groundwater Basin as comprised of six primary subbasins: Upper Valley, Forebay, Langley, Eastside, 180/400-Foot Aquifer, and Monterey.

The 180/400-Foot Aquifer Subbasin is classified as critically overdrafted under SGMA. Figure 2 shows the geographic extent of these subbasins.

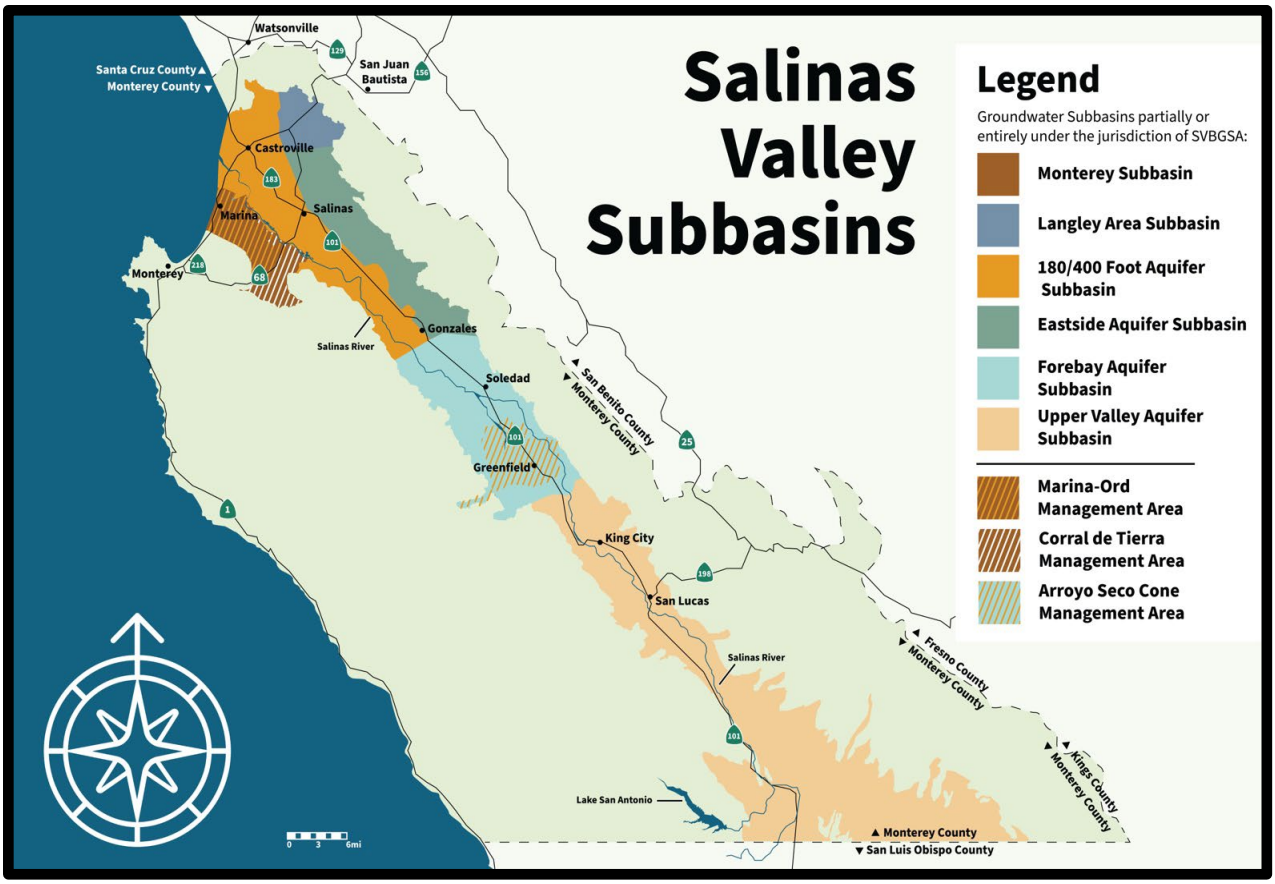

Figure 2 – Subbasins in Salinas Valley

Source: Courtesy of SVBGSA.

Agricultural irrigation accounts for the majority of groundwater extraction in the Salinas Valley Basin. In coastal portions of the basin, sustained pumping from the 180-Foot and 400-Foot aquifers has reduced groundwater elevations below sea level in some areas, allowing saline groundwater to migrate inland. As a result, agricultural groundwater from the Salinas River is the primary surface water feature influencing recharge of the Salinas Valley Groundwater Basin. Expansion of irrigated agriculture in the 20th century significantly increased groundwater pumping throughout the basin.

In response to declining groundwater levels and recurring flooding, the Monterey County Water Resources Agency constructed Nacimiento Dam (completed in 1957) and San Antonio Dam (completed in 1967). These reservoirs enabled controlled releases into the Salinas River to support groundwater recharge during dry periods and remain central to existing and proposed mitigation strategies.

By the mid-20th century, studies by the Department of Water Resources identified groundwater overdraft in coastal portions of the basin, meaning that extraction exceeded natural recharge. Despite reservoir operations, groundwater extraction in coastal subbasins continued to exceed recharge in subsequent decades. Declining groundwater elevations reduced hydraulic pressure in the coastal aquifers, allowing inland migration of saline groundwater. Cities and communities relied primarily on groundwater wells for municipal supply, while agricultural production expanded, further increasing demand.

As a result, agricultural ground water demand is central to both the basin’s economic vitality and the scale and cost of long-term mitigation efforts.

History of Seawater Intrusion in the Salinas Valley

Seawater intrusion in the Salinas Valley has been documented since at least the 1930s, when coastal wells were abandoned due to increasing salinity. By the 1940s, the California Department of Water Resources formally identified seawater intrusion associated with groundwater overdraft and evaluated basin conditions through technical

studies. These early findings established the long-term link between groundwater extraction and inland migration of saline water.

Over subsequent decades, groundwater extraction in coastal subbasins continued to exceed recharge. Long-term monitoring data and hydrologic modeling conducted by the U.S. Geological Survey and regional agencies document continued inland migration of saline groundwater in the 180-Foot and 400-Foot Aquifers.

Because seawater contains high chloride concentrations, chloride mapping is commonly used to track the inland movement of saline groundwater. Maps of chloride distribution (Figure 3a and Figure 3b) show that seawater intrusion remains an ongoing condition in portions of the basin.

Critical Impacts of Seawater Intrusion

In the Salinas Valley, seawater intrusion is most pronounced in the confined 180-Foot and 400-Foot Aquifers. Sustained groundwater extraction has reduced hydraulic pressure in these coastal subbasins, allowing saline groundwater to migrate inland and contaminate previously usable wells. The resulting impacts include well abandonment, increased treatment costs, and reduced groundwater availability in affected areas.

Long-term monitoring data document these conditions. Contamination has been documented in wells produced from the 180-Foot and 400-Foot Aquifers (see Figure 4). In the Castroville Seawater Intrusion Project area, the number of supplemental wells has declined from 22 to 9 due to salinity. Municipal and community wells in coastal areas have also experienced salinity impacts.

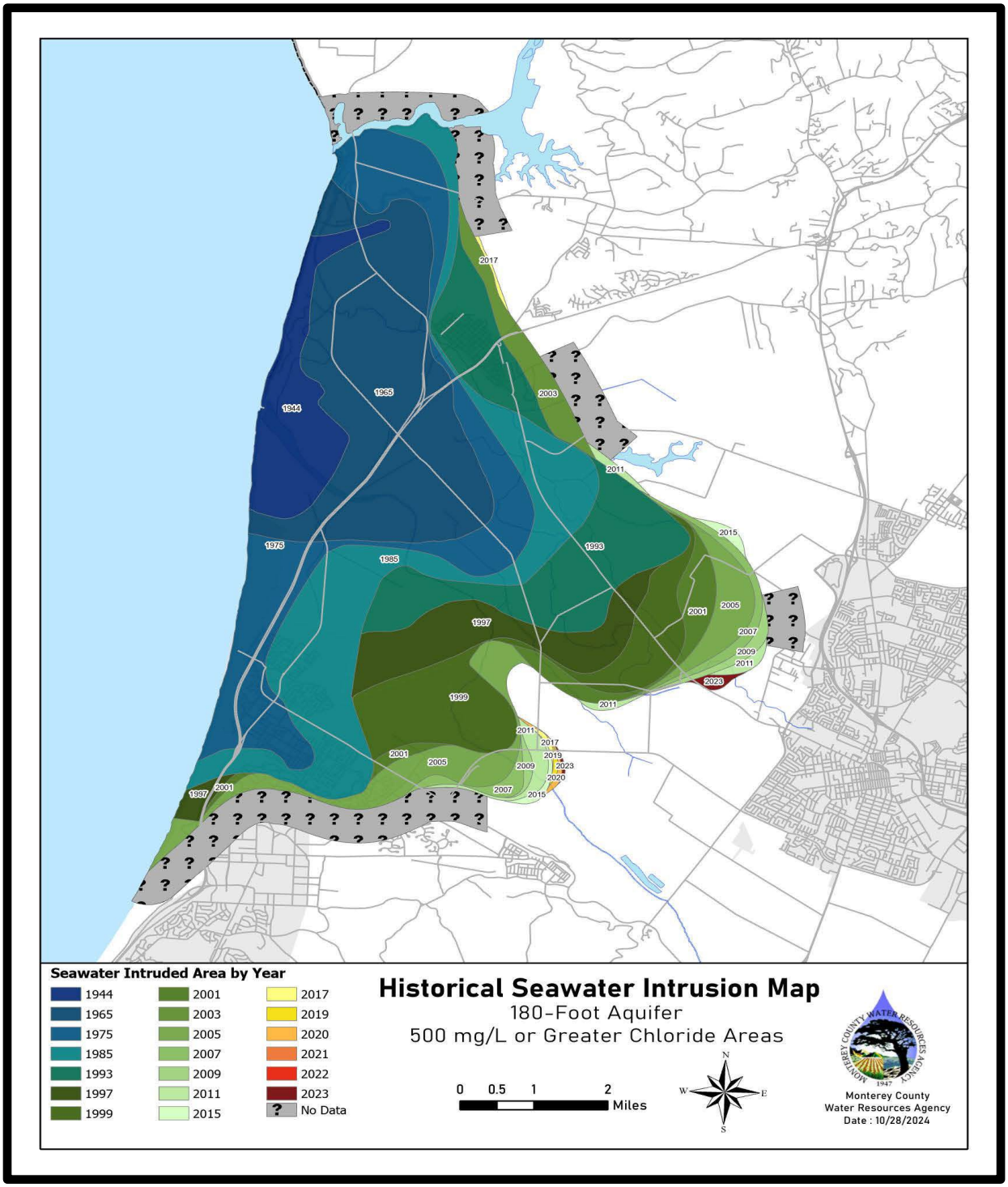

Figure 3a – Historical Seawater Intrusion Map, Pressure 180-Foot Aquifer

Source: Monterey County Water Resources Agency, 2024.
Historical Seawater Intrusion Map – 180-Foot Aquifer.

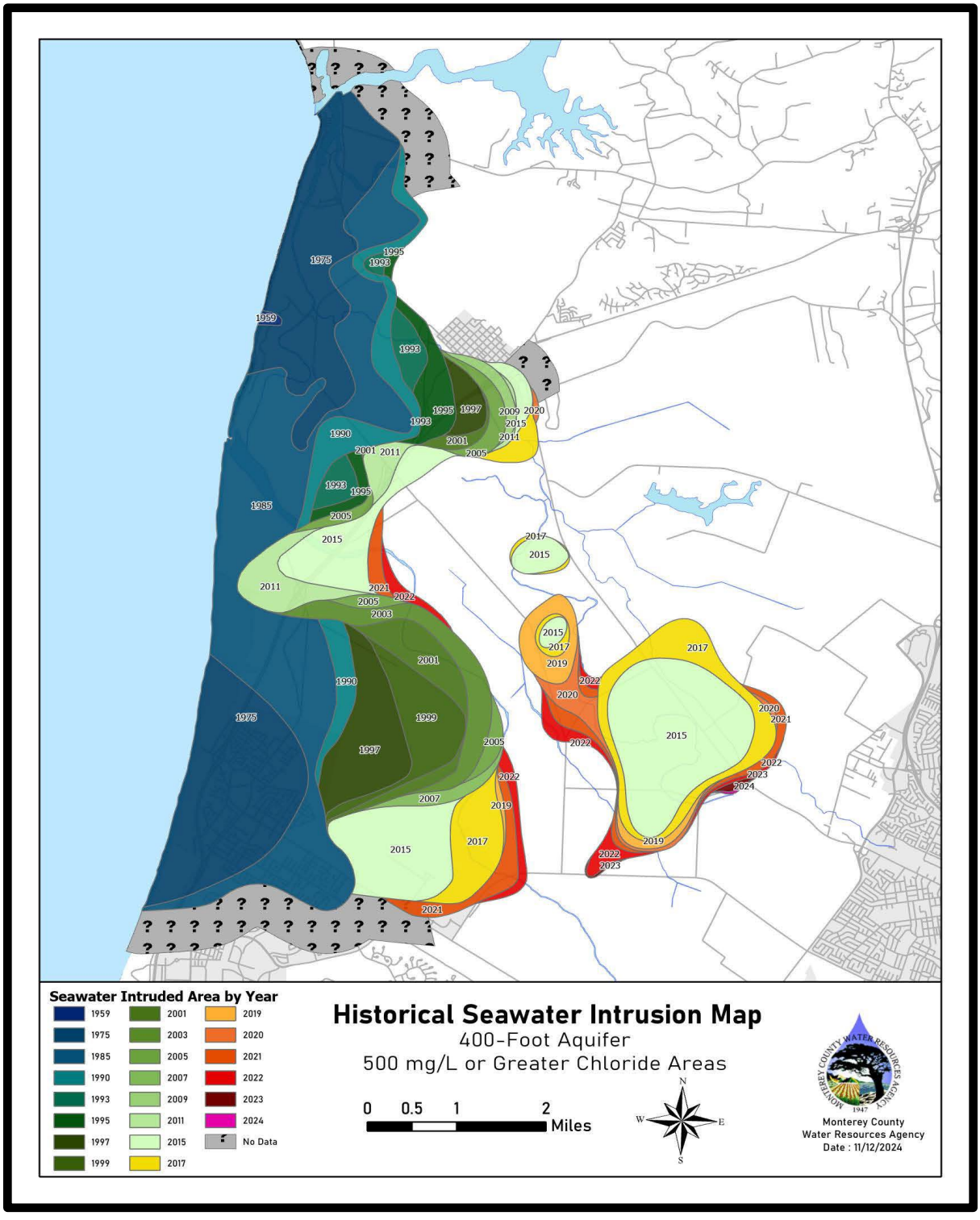

Figure 3b – Historical Seawater Intrusion Map, Pressure 400-Foot Aquifer

Source: Monterey County Water Resources Agency. 2024. Historical Seawater Intrusion Map – 400-Foot Aquifer.

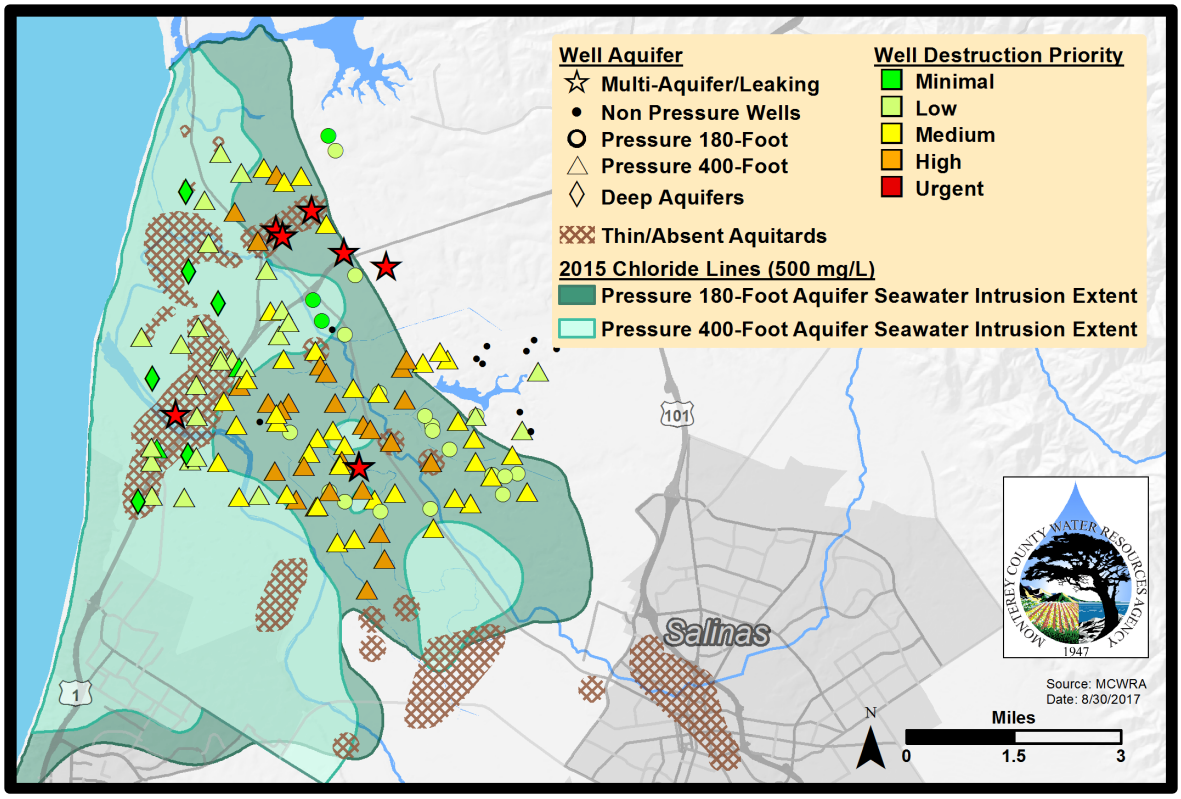

Figure 4 – Wells Prioritized for Destruction in Zone 2B

Source: Monterey County Water Resources Agency. 2017. Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin.

APPENDIX B – EXISTING MITIGATION INFRASTRUCTURE

This appendix describes existing infrastructure projects currently used to reduce groundwater pumping and mitigate seawater intrusion in the northern Salinas Valley.

Castroville Seawater Intrusion Project

The CSIP, developed in the late 1990s as part of the Salinas Valley Reclamation Project, was designed to reduce groundwater pumping in the Castroville area by delivering recycled water for agricultural irrigation. Treated wastewater from Monterey One Water (formerly Monterey Regional Water Pollution Control Agency) is purified to a standard suitable for crop application and distributed within the CSIP service area. The project began operations in 1998 and has supplied recycled water in lieu of groundwater pumping within its designated area.

Salinas Valley Water Project

The Salinas Valley Water Project was developed to reduce seawater intrusion and support groundwater sustainability by supplementing natural recharge. Phase I of the project relies on controlled releases from the Nacimiento and San Antonio reservoirs to maintain river flows that enhance groundwater recharge in the Salinas Valley. The project is intended to help balance groundwater extraction with available recharge under projected demand conditions.

Salinas River Diversion Facility

The Salinas River Diversion Facility (commonly referred to as the “Rubber Dam”) is a component of the Salinas Valley Water Project and was completed in 2010. The facility diverts river flows near Blanco Road, treats the water, and delivers it for agricultural irrigation within its service area. By supplying surface water during periods of sufficient flow, the project reduces reliance on groundwater pumping; however, its operation depends on river conditions and available releases.

APPENDIX C – PROPOSED MITIGATION PROJECTS

This appendix summarizes major mitigation projects that have been proposed or evaluated to address seawater intrusion in the Salinas Valley Basin.

Brackish Groundwater Restoration Project

The Brackish Groundwater Restoration Project is a proposed basin-scale mitigation project intended to address seawater intrusion in the critically overdrafted 180/400-Foot Aquifer Subbasin. The project concept includes installation of extraction wells between Marina and Moss Landing to pump brackish groundwater, treatment of that water through desalination, and reinjection of treated water inland to create a hydraulic barrier intended to slow or reverse inland migration of saline groundwater.

As proposed, extraction wells would reduce saline groundwater concentrations in the coastal zone while treated water would be reinjected near Castroville and Salinas to restore groundwater pressure. Figure 5 illustrates the conceptual layout of extraction, treatment, and reinjection facilities.

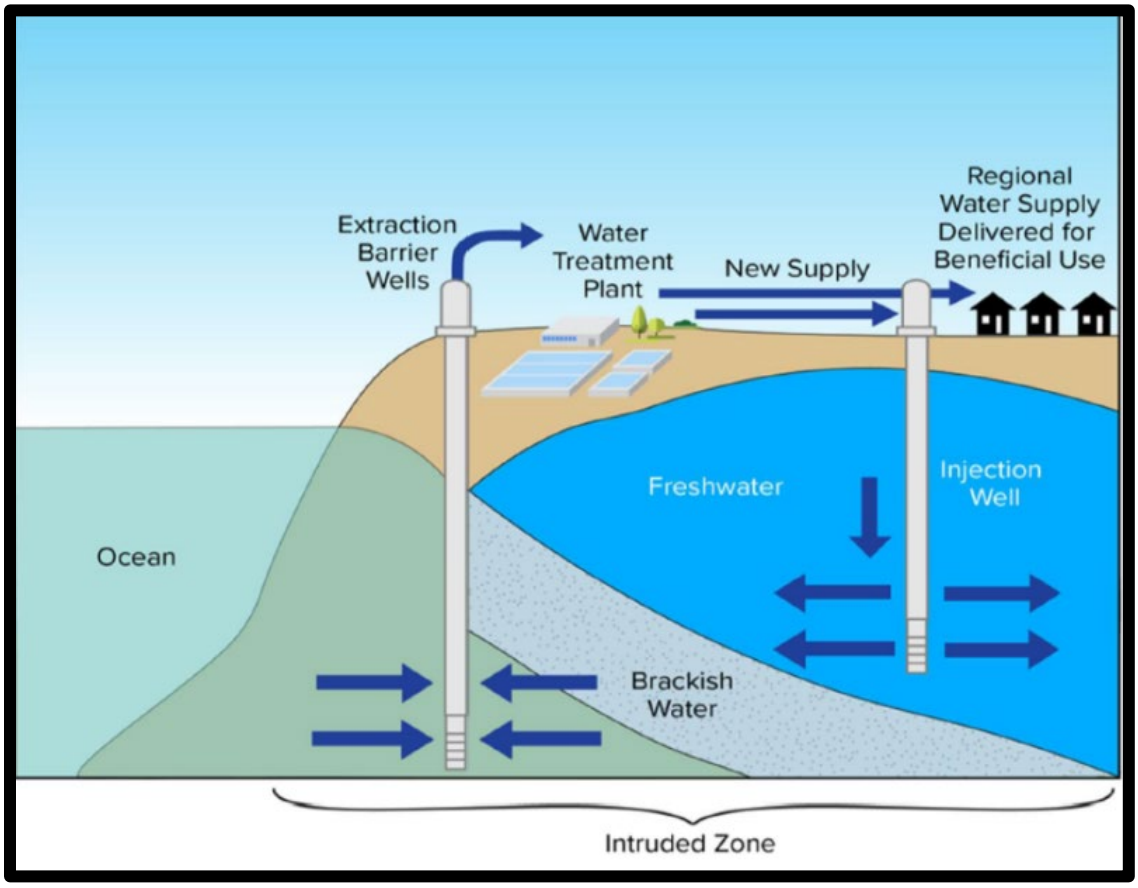

Figure 5 – Brackish Groundwater Restoration Project Concept

Source: Courtesy of SVBGSA.

The project is currently in feasibility evaluation, including engineering design, permitting requirements, projected capital cost, operating cost, and effectiveness modeling. Any advancement beyond feasibility would require formal approval by the SVBGSA Board and identification of long-term funding sources.

Castroville and Eastside Canal Project

The Castroville & Eastside Canal and Alternatives Feasibility Study, Phase 1 (C&E Study) has evaluated potential diversion of Salinas River flows to supplement groundwater recharge and reduce pumping in the 180/400-Foot, Eastside, and Langley subbasins. The concept involves diverting excess natural river flows and conveying

them through existing or expanded canal systems for agricultural use or aquifer recharge.

An existing State diversion permit authorizes diversion of up to 400 cubic feet per second (cfs), subject to availability of excess natural flows. Diverted water does not include reservoir releases and is constrained by hydrologic conditions and regulatory requirements. Petitions for permit modification and time extension are pending to allow for environmental review and additional analysis under the California Environmental Quality Act.

As currently envisioned, diversion facilities near Chualar would convey water by pipeline to storage basins for direct irrigation use or groundwater injection in designated subbasins. The next phase of the project feasibility evaluation will look at scenarios including engineering design, permitting, environmental review, and cost assessment.

CSIP Expansion and Aquifer Storage and Recovery

An expansion of the CSIP has been proposed to increase recycled water delivery beyond its current approximately 12,000-acre service area by an additional 10,000 to 12,000 acres. The expansion, referred to as the New Castroville Seawater Intrusion Project (NSIP), would utilize recycled water produced by Monterey One Water, including supplies associated with the Pure Water Monterey project. Supplemental environmental review was completed in 2021. The proposed expansion is intended to further reduce groundwater pumping in coastal subbasins by increasing the availability of non-potable recycled water for agricultural irrigation.

In addition to service-area expansion, Aquifer Storage and Recovery is being evaluated as a related component. This strategy involves injecting treated water into an aquifer for storage and later extraction. This approach is currently implemented in the Seaside Basin using highly treated recycled water and is under consideration for the 180-Foot and 400-Foot Aquifer Subbasin. As modeled, these wells would be located between Castroville and Salinas near the inland extent of seawater intrusion. Injected water

would create a localized hydraulic mound intended to slow or prevent further inland migration of saline groundwater.

Both the NSIPand Aquifer Storage and Recovery components remain subject to engineering analysis, permitting, and funding determinations prior to implementation.

APPENDIX D – DEMAND MANAGEMENT

This appendix outlines the demand management framework adopted under SGMA and potential measures that could be implemented if basin conditions require pumping reductions.

In addition to infrastructure projects, the SVBGSA has adopted a Demand Management Framework as a planning tool to address groundwater sustainability if basin conditions warrant. The framework establishes staged response levels based on groundwater conditions, ranging from sustainable operation to probation risk under SGMA. Triggers include long-term basin performance metrics and short-term indicators such as groundwater level declines and reservoir supply conditions.

The framework outlines potential administrative, economic, and operational measures that could be implemented if required to meet SGMA objectives. These measures include efficiency programs, pumping limits, water use accounting systems, and demand management fees. The framework does not automatically activate restrictions but provides a structure for implementation should basin conditions deteriorate or SGMA compliance be at risk.

APPENDIX E – WATER MANAGEMENT ENTITIES

Water management in Monterey County involves numerous public agencies, special districts, municipal utilities, private companies, and joint powers entities. These organizations perform functions that include groundwater management, water supply, and development of regional infrastructure. State and federal agencies also play regulatory and oversight roles affecting water management within the County.

The entities listed below demonstrate the number and variety of organizations involved in water collection, management, monitoring, treatment, and distribution within the County. The list focuses primarily on local and regional entities and is provided to illustrate the complexity of the local water management structure. It is not intended to be an exhaustive inventory of every entity involved in water governance.

Groundwater Sustainability Agencies

- Arroyo Seca Groundwater Sustainability Agency
- Marina Coast Water District (Groundwater Sustainability Agency)
- Monterey County Groundwater Sustainability Agency
- Salinas Valley Basin Groundwater Sustainability Agency

Regional Water Management Authorities

- Monterey County Water Resources Agency
- Pajaro Valley Water Management Agency
- Monterey Peninsula Water Management District
- Seaside Groundwater Basin Watermaster

Municipal and Private Water Utilities

Cities and utilities operate drinking water systems that supply residents, businesses, and agriculture throughout Monterey County. Many municipalities maintain water departments or public works divisions responsible for water production, treatment, and distribution within their jurisdictions.

Examples include:

Municipal water systems

- Greenfield Municipal Water
- Gonzales Municipal Water
- Seaside Municipal Water
- Soledad Water Division
- City of Salinas Water Services

Other cities in the County also operate municipal water systems through their public works or utilities departments.

Private water utilities and mutual water companies

- California American Water Company
- California Water Service
- ALCO Water Service
- Moss Landing Mutual Water Company

Special Districts and Joint Powers Authorities

- Castroville Community Services District

- Marina Coast Water District (Joint Powers Agency)

Regional Water Infrastructure Projects

Several large infrastructure projects have been developed or proposed to improve water supply reliability and address seawater intrusion in coastal aquifers. These projects typically involve partnerships among multiple local and regional agencies.

- Salinas Valley Water Project
- Pure Water Monterey
- Castroville Seawater Intrusion Projects
- Sand City Desalination Plant

The number and variety of organizations involved in water management reflects the complex institutional structure governing groundwater, water supply, and related infrastructure in Monterey County.