

Salinas Valley: Eastside Aquifer Subbasin Groundwater Sustainability Plan Amendment 1

VOLUME 1

Chapter 1. Introduction to the Eastside Aquifer Subbasin

Chapter 2. Communication and Public Engagement

Chapter 3. Description of Plan Area

Chapter 4. Hydrogeologic Conceptual Model

Prepared for:

Salinas Valley Basin Groundwater Sustainability Agency

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ACRONYMS AND ABBREVIATIONS

\$/AF	dollar per acre-foot
AF	acre-foot or acre-feet
AF/yr	acre-feet per year
Alco	Alisal Water Service
ASR.....	Aquifer Storage and Recovery
Basin	Salinas Valley Groundwater Basin
Basin Plan	Water Quality Control Plan for the Central Coastal Basin
BLM.....	U.S. Bureau of Land Management
BMPs.....	Best Management Practices
CalWater	California Water Service Company
Caltrans	California Department of Transportation
CASGEM.....	California Statewide Groundwater Elevation Monitoring
CCC.....	California Coastal Commission
CCGC.....	Central Coast Groundwater Coalition
CCRWQCB....	Central Coast Regional Water Quality Control Board
CCWG.....	Central Coast Wetlands Group
CDFW	California Department of Fish and Wildlife
CEQA.....	California Environmental Quality Act
cfs.....	cubic feet per second
COC	constituents of concern
CPE Actions.....	Communication and Public Engagement Actions
CPUC	California Public Utilities Commission
CSD.....	Community Services District
CSIP	Castroville Seawater Intrusion Project
DACs.....	Disadvantage Communities
DDW	Division of Drinking Water
DEM.....	Digital Elevation Model
DMS.....	Data Management System
D-TAC	Drought Technical Advisory Committee
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EDF	Environmental Defense Fund
EIR	Environmental Impact Report
EPA.....	Environmental Protection Agency
ET.....	evapotranspiration
eWRIMS	Electronic Water Rights Information Management System
GAMA	Groundwater Ambient Monitoring and Assessment Program
GDE	groundwater-dependent ecosystem
GEMS	Monterey County Groundwater Extraction Management System

GISGeographic Information System
 GMPGroundwater Management Plan
 gpmgallons per minute
 GSA.....Groundwater Sustainability Agency/Agencies
 GSP or Plan....Groundwater Sustainability Plan
 HCMhydrogeologic conceptual model
 HCP.....Habitat Conservation Plan
 ILP.....Irrigated Lands Program
 InSARInterferometric Synthetic Aperture Radar
 IRWMPIntegrated Regional Water Management Plan
 ISWinterconnected surface water
 JPAJoint Powers Authority
 LIDlow impact development
 MARmanaged aquifer recharge
 MBARD.....Monterey Bay Air Resources District
 MBNMS.....Monterey Bay National Marine Sanctuary
 MCLsMaximum Contaminant Levels
 MCWRA.....Monterey County Water Resources Agency
 MTBEmethyl-tertiary-butyl ether
 NAVD88North American Vertical Datum of 1988
 NCCAG.....Natural Communities Commonly Associated with Groundwater
 NEPANational Environmental Policy Act
 NMFS.....National Marine Fisheries Service
 NOAANational Oceanic & Atmospheric Administration
 NPDESNational Pollutant Discharge Elimination System
 O&M.....operations and maintenance
 OSWCROnline System for Well Completion Report
 RCDMCResource Conservation District of Monterey
 RMARoutine Maintenance Agreement
 RMSRepresentative Monitoring Sites
 ROWRight of Way
 RWMG.....Greater Monterey County Regional Water Management Group
 SAGBI.....Soil Agricultural Groundwater Banking Index
 SDACsSeverely Disadvantaged Communities
 SGMASustainable Groundwater Management Act
 SMCSustainable Management Criteria
 SMCLsSecondary Maximum Contaminant Levels
 SMP.....Salinas River Stream Maintenance Program
 SRDF.....Salinas River Diversion Facility
 Subbasin.....Eastside Aquifer Subbasin

SVBGSA.....Salinas Valley Basin Groundwater Sustainability Agency
SVIHM.....Salinas Valley Integrated Hydrologic Model
SVOM.....Salinas Valley Operational Model
SWIGSeawater Intrusion Working Group
SWRCB.....State Water Resources Control Board
URCs.....Underrepresented Communities
TAC.....Technical Advisory Committee
TDStotal dissolved solids
USACEU.S.Army Corps of Engineers
USFWSU.S. Fish and Wildlife Service
USGSU.S. Geological Survey
UWMPUrban Water Management Plan
WYWater Year

1 INTRODUCTION TO THE EASTSIDE AQUIFER SUBBASIN GROUNDWATER SUSTAINABILITY PLAN AMENDMENT 1

1.1 Introduction and Purpose

The 2014 Sustainable Groundwater Management Act (SGMA) requires groundwater basins or subbasins that are designated as medium or high priority to be managed sustainably. In general, satisfying the requirements of SGMA requires 4 activities:

1. Forming 1 or more Groundwater Sustainability Agency(s) (GSAs) in the basin
2. Developing a Groundwater Sustainability Plan (GSP, or Plan)
3. Implementing the GSP and managing to measurable, quantifiable objectives
4. Providing regular reports to the California Department of Water Resources (DWR)

DWR has designated the Salinas Valley Eastside Aquifer Subbasin (Eastside Subbasin) as a high priority basin. The Eastside Subbasin—1 of 9 subbasins in the Salinas Valley Groundwater Basin—is located along the northeast edge of the Salinas Valley (Figure 1-1).

With limited recharge and continued groundwater extraction, groundwater conditions in the Eastside Subbasin have declined in recent decades. Extensive groundwater pumping has caused a long-lasting groundwater table depression in the northwestern part of the subbasin. Overall groundwater elevations and storage have also declined. Nitrates have historically and continue to pose groundwater quality concerns, with the average concentration of 69 milligrams per liter (mg/L) NO₃ in 1997, substantially above the drinking water standard of 45 mg/L NO₃ (DWR, 2004). The purpose of this GSP is to outline how the Salinas Valley Basin GSA (SVBGSA) will address the declining groundwater conditions and achieve groundwater sustainability in the Subbasin. Sustainability is the absence of undesirable results for any of the 6 sustainability indicators applicable in the Subbasin: groundwater level declines, groundwater storage reductions, seawater intrusion, degradation of groundwater quality, land subsidence, and interconnected surface water (ISW) depletion. Sustainability must be achieved by 2042 and maintained for an additional 30 years.

In 2022, SVBGSA submitted the GSP for the Eastside Subbasin (original GSP) that outlined how it would adaptively manage groundwater. Also in 2022, SVBGSA submitted GSPs or GSP Amendment for the 5 other Salinas Valley subbasins under its authority. The 6 GSPs are aligned in approach and timing. This GSP Amendment 1 incorporates additional data about the groundwater basin and addresses recommended actions from DWR's review of the original GSP. This GSP Amendment 1 is submitted to DWR according to GSP Regulation § 355.10, and replaces the original GSP. GSP Amendment 1 will be referred to as the GSP or GSP Amendment 1 in this document. It continues to meet all of the GSP regulatory requirements and

is submitted with the 2027 Periodic Evaluation of the original GSP, meeting GSP Regulations § 356.4.

This GSP Amendment 1 first describes the stakeholders, plan area, geologic and hydrogeologic data, groundwater conditions, and water budgets necessary to develop an informed and robust plan. This GSP is based on best available data and analyses. As additional data are collected and analyses are refined, GSP Amendment 1 will be modified to reflect changes in the local understanding.

Following the foundational information, the GSP introduces the current agreed-to sustainability goal for the Subbasin. It also locally defines significant and unreasonable conditions, which underpin the quantifiable minimum thresholds, measurable objectives, and interim milestones for each of the corresponding sustainability indicators. Collectively, the sustainability goal, and how conditions are measured relative to the goal, are referred to as Sustainable Management Criteria (SMC). The final chapters detail projects and actions that could be implemented to achieve sustainability and provide an implementation plan for achieving sustainability. The GSP is intended to include adaptive management that will refine the implementation and direction of this GSP over time.

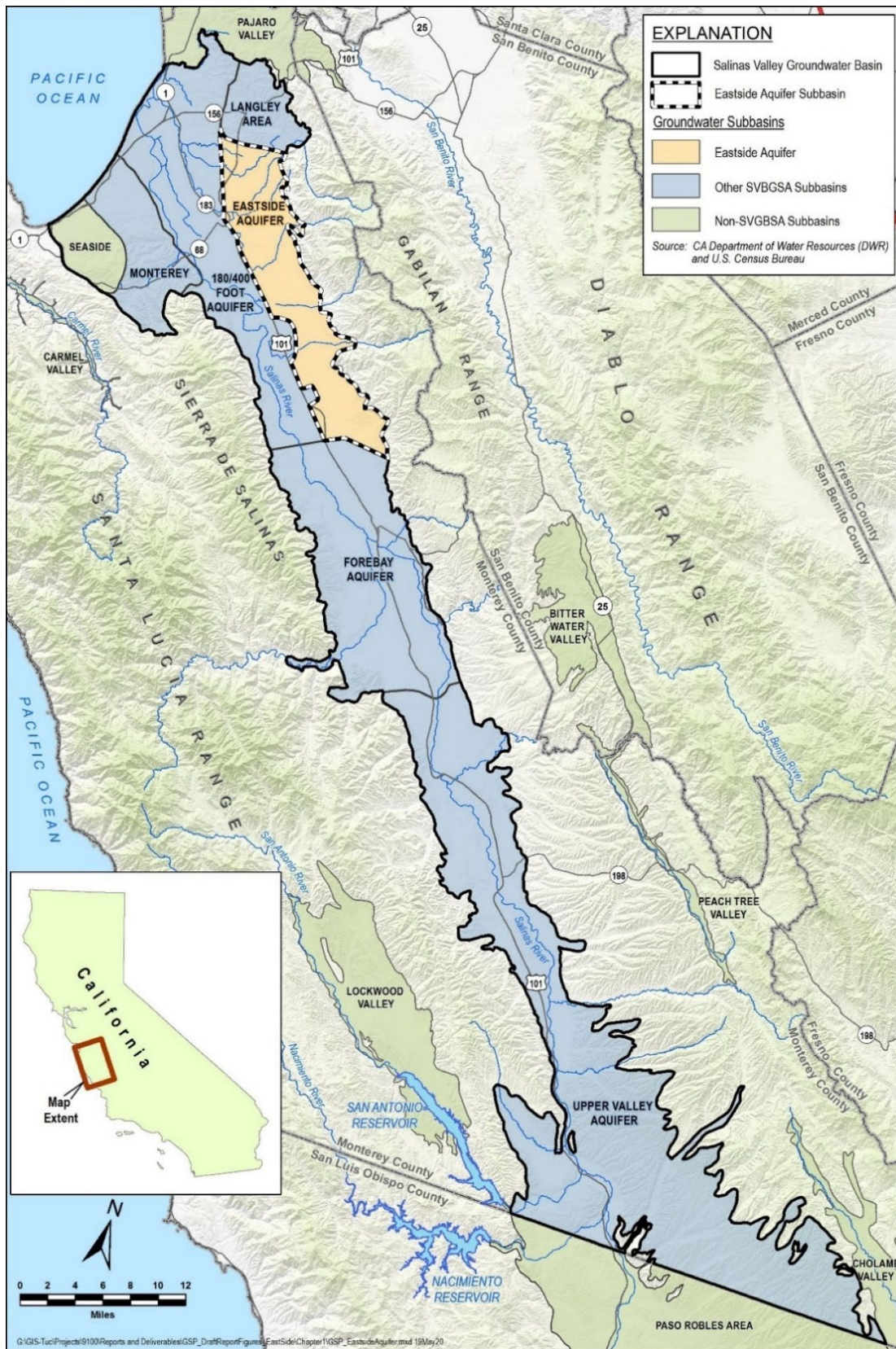


Figure 1-1. Eastside Subbasin Location

1.2 Agency Information

The Eastside Subbasin falls entirely within the jurisdiction of the SVBGSA. The Subbasin boundary is shown on Figure 1-2.

1.2.1 Agency Name, Mailing Address, and Plan Manager

Pursuant to California Water Code § 10723.8, the name and contact information for the SVBGSA are:

Salinas Valley Basin Groundwater Sustainability Agency
Attn.: Piret Harmon, General Manager
1441 Schilling Place
Salinas, CA 93901
<https://svbgsa.org>

The Plan Manager and her contact information are:

Ms. Piret Harmon, General Manager
Salinas Valley Basin Groundwater Sustainability Agency
1441 Schilling Place
Salinas, CA 93901 | (831) 471-7518
harmonp@svbgsa.org
<https://svbgsa.org>

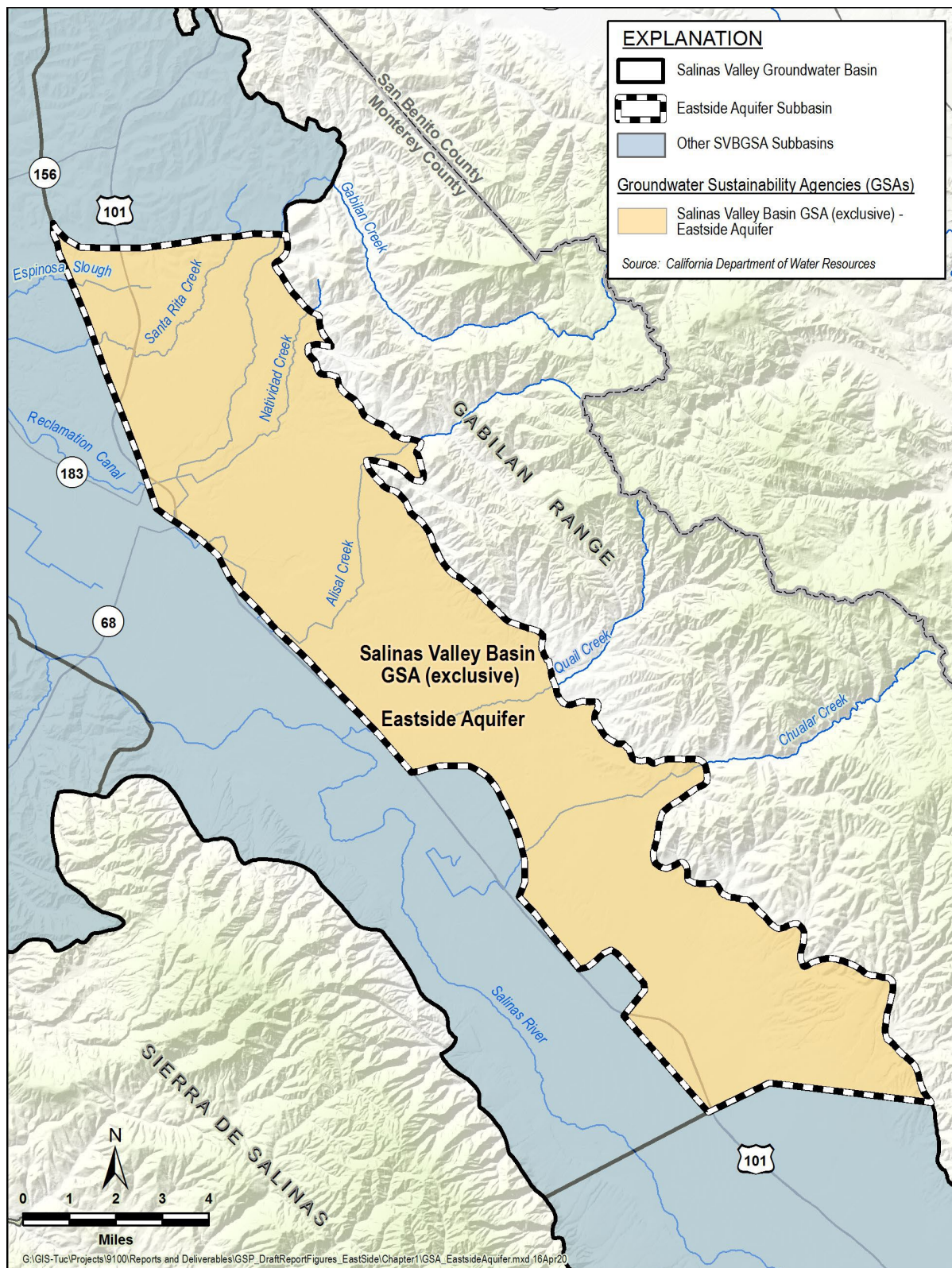


Figure 1-2. Map of Area Covered by the SVBGSA in the Eastside Aquifer Subbasin

1.2.2 SVBGSA

Local GSA-eligible entities formed the SVBGSA in 2017. The SVBGSA represents agriculture, public utility, municipal, county, and environmental stakeholders, and is partially or entirely responsible for developing GSPs in 6 of the Salinas Valley Groundwater Subbasins.

SVBGSA is a Joint Powers Authority (JPA) that was formed for 6 subbasins within the Salinas Valley Groundwater Basin in accordance with the requirements of California Government Code § 6500 *et seq.* The JPA agreement is included in Appendix 1A. In accordance with California Water Code § 10723 *et seq.*, the JPA signatories are all local agencies under California Water Code § 10721 with water or land use authority that are independently eligible to serve as GSAs:

- County of Monterey
- City of Salinas
- City of Gonzales
- City of King
- Monterey County Water Resources Agency (MCWRA)
- City of Soledad
- Monterey One Water (M1W)
- Castroville Community Services District

1.2.2.1 SVBGSA Formation and Authority

The SVBGSA was formed in accordance with the requirements of California Water Code §10723 *et seq.* This section lists its specific authorities for GSA formation and groundwater management. Upon establishing itself as a GSA, the SVBGSA retains all the rights and authorities provided to GSAs under California Water Code § 10725 *et seq.* as well as the powers held in common by the members.

1.2.2.2 SVBGSA Governance

The SVBGSA is governed and administered by an 11-member Board of Directors (Board), representing public and private groundwater interests throughout the Valley, not limited to JPA members. The Board relies on robust science and public involvement for decision-making. Board seats include representatives from the City of Salinas (1), South County Cities (1), DACs/Small Public Water Systems (1), California Public Utility Regulated Water Companies (1), Agriculture (4), Environment (1), and Public Member (1). The Board meets monthly and all meetings are open to the public. The Board is the final decision-making body for adoption and implementation of GSPs completed by the SVBGSA.

SVBGSA governance bodies include a Board of Directors, Budget and Finance Committee consisting of 5 Directors, an Executive Committee consisting of 5 Directors, a Planning Committee consisting of 5 Directors (not currently active), and an Advisory Committee. The SVBGSA's activities are coordinated by a general manager. This section provides an overview of SVBGSA governance.

For Board decision-making, when a quorum is present, a majority vote is required to conduct business. Some business items require a super majority vote or a super majority plus vote. A super majority requires an affirmative vote by 8 of the 11 Board members. A super majority vote is required for:

- GSP approval
- Budget amendment and transfer of appropriations
- Withdrawal or termination of Agency members

A super majority plus requires an affirmative vote by 8 of the 11 Board members, including an affirmative vote by 3 of the 4 agricultural representatives. A super majority plus vote is required for:

- Decisions to impose fees not requiring a vote of the electorate or property owners
- Proposals to submit to the electorate or property owners (as required by law) decisions to impose fees or taxes
- Limitations on well extractions (pumping limits)

In addition to the Board and its committees, SVBGSA has established Subbasin Committees to advise the Board of Directors on each of the 6 subbasins' respective GSPs under its jurisdiction.

Further, SVBGSA coordinates with other GSAs in other subbasins, including Marina Coast Water District GSA (MCWDGSA), Monterey County GSA (MCGSA), and the Arroyo Seco GSA (ASGSA), as shown on Figure 1-3.

Board and Committees

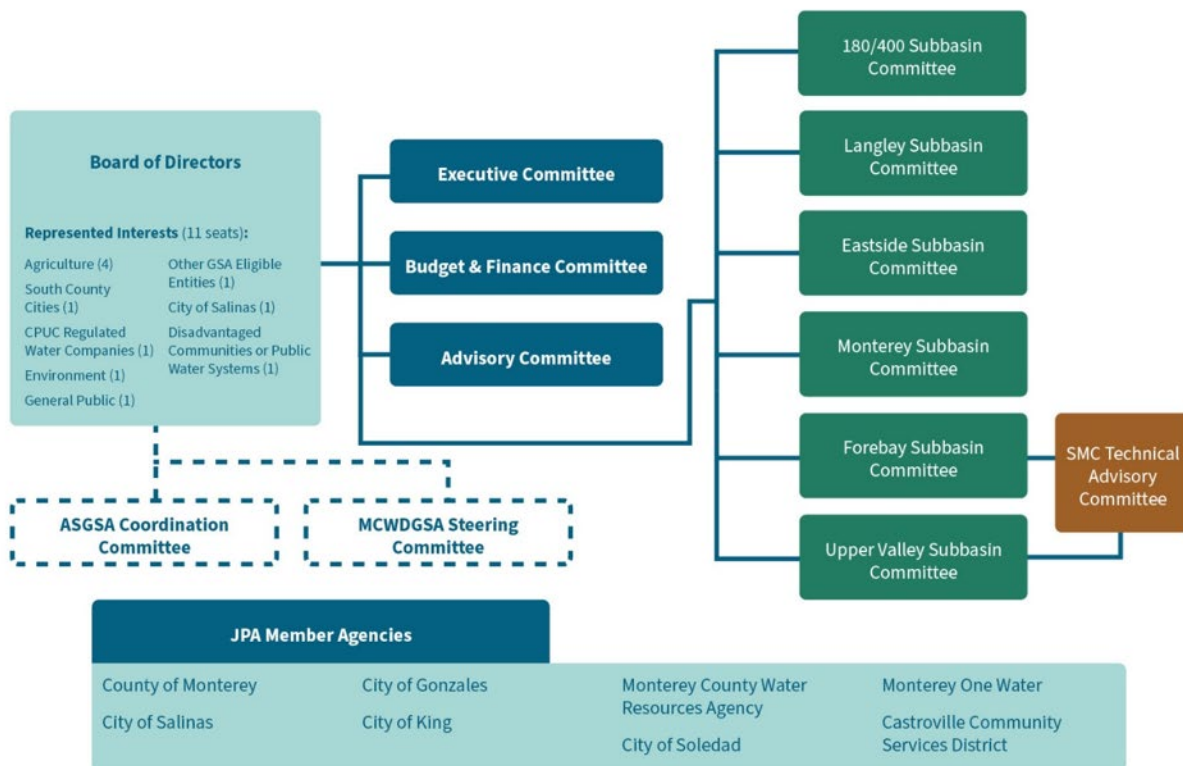


Figure 1-3 SVBGSA Board and Committees

The SVBGSA Advisory Committee provides input and recommendations to the SVBGSA Board. At the request of the Board, the Advisory Committee reviews and provides recommendations to the Board on groundwater-related issues. In 2025, the configuration and role of the Advisory Committee was updated. The Advisory Committee comprises 6 Subbasin Committee seats, 4 Partner Agency seats, and up to 3 of the Board-Designated seats. Collectively, members represent the diverse interests of groundwater users, partner agencies, and subbasin implementation areas. The Advisory Committee strives to include a range of interests in groundwater in the Salinas Valley and outlined in SGMA including:

- Subbasin Committees Representatives – Each subbasin implementation committee (e.g. 180/400, Eastside, Langley, Monterey, Forebay, and Upper Valley) nominates a single individual to serve as its representative on the Advisory Committee. The representative must demonstrate a record of involvement and interest in groundwater management or water-related issues in 1 of the subbasins and be endorsed by the respective subbasin committee.

- Partner Agency/Organization Representatives – The following agencies nominate and endorse 1 representative each:
 - MCWRA
 - Arroyo Seco GSA
 - MCWDGSA
 - M1W
- Board-Designated Appointments – The SVBGSA Board of Directors may appoint up to 3 individuals to serve on the Advisory Committee to fill identified gaps in representation (e.g. environmental, rural residential, tribal, industrial, underserved communities), enhance expertise or geographic balance, and foster collaboration across sectors.

The Advisory Committee was established by Board action and operates according to a Committee Charter that serves as the bylaws of the Advisory Committee. The Committee’s charge emphasizes:

- Reviewing groundwater issues relevant to SGMA implementation in the Salinas Valley
- Developing consensus-based recommendations that incorporate community and stakeholder perspectives
- Supporting the Board by identifying areas of agreement and disagreement and presenting clear, well-considered options

The Board established Subbasin Planning Committees in May 2020 to inform and guide planning for the 5 GSPs submitted in January 2022. In July 2021, the SVBGSA Board voted to create Subbasin Committees following GSP submittal to ensure continued involvement during GSP implementation. GSP Amendment 1, as well as GSP implementation, is guided and reviewed by the Eastside Subbasin Committee, which is composed of local representatives from the Subbasin. The role of the Subbasin Committees as part of SVBGSA’s community and public engagement strategies for GSP preparation and implementation is further discussed in Chapter 2.

Together, the Board, Advisory Committee, and Subbasin Committees are working to implement the 6 GSPs within the SVBGSA jurisdiction and in coordination with other GSAs. For the next phase of GSP implementation, SVBGSA will complete a Salinas Valley-wide Integrated Implementation Strategy (IIS). This strategy will detail project portfolios and groundwater sustainability programs needed to achieve SGMA compliance across all subbasins by 2042 and to maintain sustainability through 2070.

1.2.3 Agency Coordination

1.2.3.1 Coordination Agreements

No coordination agreement is needed for the Eastside Subbasin because the SVBGSA is the only GSA with authority in the Subbasin.

1.2.3.2 Coordination with Other Water Agencies

SVBGSA continues to coordinate with agencies involved in water management within the Eastside Subbasin. SVBGSA has a Memorandum of Understanding with MCWRA related to ongoing coordination and joint activities, as well as a service agreement for data collection under the Groundwater Monitoring Program. Further, MCWDGSA, Arroyo Seco GSA, M1W, and MCWRA have representation on the SVBGSA Advisory Committee.

SVBGSA has also coordinated with the agencies of the basins or subbasins adjacent to the other Salinas Valley subbasins (Pajaro Valley Groundwater Basin, Seaside Basin, and Paso Robles Area Subbasin).

1.2.3.3 Coordination with Land Use Agencies

SVBGSA acknowledges the critical importance of coordinating water management and land use planning. SVBGSA is coordinating with land use authorities within the Subbasin, including the County of Monterey and Cities of Salinas and Gonzales. SVBGSA began coordination with land use agencies through meetings and requesting land use plan information to incorporate into GSP Amendments. SVBGSA will continue to coordinate with the County and cities by convening meetings with each jurisdiction to review the findings of the 5-year periodic evaluations and groundwater conditions, along with the land use plan information provided. This coordination is also described in the Land Use Coordination Program Implementation Action that is included in Chapter 9. This implementation action provides for more robust, ongoing coordination between the GSA and land use agencies during GSP implementation. SVBGSA also solicited input from Monterey County and Cities of Salinas and Gonzales prior to submitting GSP Amendment 1 to DWR, with the periodic evaluation, in January 2027.

1.3 Overview of GSP Amendment 1

The SVBGSA developed this GSP for the entire Eastside Subbasin. This GSP is developed in concert with GSPs for 5 other Salinas Valley Groundwater Subbasins in which SVBGSA serves as a GSA: the 180/400-Foot Aquifer Subbasin (180/400 Subbasin), the Forebay Aquifer Subbasin (Forebay Subbasin), the Upper Valley Aquifer Subbasin (Upper Valley Subbasin), the Langley Area Subbasin (Langley Subbasin), and the Monterey Subbasin. SVBGSA is the sole GSA in the Upper Valley and Langley Subbasins; 3 GSAs share jurisdiction over the 180/400 Subbasin; SVBGSA and the Arroyo Seco Groundwater Sustainability Agency (ASGSA) share

jurisdiction over the Forebay Subbasin, where ASGSA manages the Arroyo Seco Cone Management Area (ASCMA); and in the Monterey Subbasin, SVBGSA manages the Corral de Tierra Area while the Marina Coast Water District GSA (MCWDGSA) manages the Marina-Ord Area. While this GSP is focused on the Eastside Subbasin, the GSP will be implemented in accordance with SVBGSA's role in maintaining and achieving sustainability for all 6 subbasins within the Salinas Valley in its jurisdiction. The Eastside Subbasin is referred to as the Subbasin or Eastside Subbasin throughout this GSP, and the collection of Salinas Valley subbasins that fall partially or entirely under SVBGSA jurisdiction are collectively referred to as the Salinas Valley or Valley. All subbasins within the Salinas Valley Groundwater Basin are referred to as the Basin.

The SVBGSA used a collaborative process to develop this GSP. Chapter 2 details the stakeholders that participated, and process followed, to develop this GSP with amendments. Throughout preparation of the original GSP, stakeholders worked together to review existing information, define SMC for the Subbasin, and develop a list of projects and management actions (PMAs). Throughout preparation of GSP Amendment 1, SVBGSA continued to provide opportunities for public engagement and stakeholder input at its Subbasin Committee, as well as Advisory Committee and Board meetings.

The GSP describes the basin setting, presents the hydrogeologic conceptual model (HCM), and describes historical and current groundwater conditions. It further establishes estimates of the historical, current, and future water budgets based on the best available information. The GSP defines local SMC, details required monitoring networks, and outlines PMAs for reaching sustainability in the Subbasin by 2042.

The SVBGSA developed this GSP Amendment 1 as part of an adaptive management process using improved data, models, and analysis of PMAs to achieve sustainability since preparation of the original GSP. This amended GSP replaces the original GSP. It may be updated and adapted, and further amended if needed, as new information and even more refined models become available. This includes updating SMC and PMAs to reflect updates and future conditions. Adaptive management will be reflected in the required GSP 5-year periodic evaluation and annual reports.

2 COMMUNICATIONS AND PUBLIC ENGAGEMENT

2.1 Introduction

The SVBGSA was formed in 2017 to implement SGMA locally within the Salinas Valley. GSA formation and coordination took place from 2015 through 2017. The process included completing a Salinas Valley Groundwater Stakeholder Issues Assessment and resulted in recommendations for a transparent, inclusive process for the local implementation of SGMA and the formation of the SVBGSA. Through the development and implementation of the GSPs, SVBGSA is committed to following the requirements for stakeholder engagement as defined by SGMA:

- Consider the interests of all beneficial uses of water and users of groundwater (§ 10723.2).
- Encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin (§ 10727.8).
- Establish and maintain a list of persons interested in receiving notices regarding plan preparation, meeting announcements and availability of draft plans, maps, and other relevant documents (§ 10723.4).
- Make available to the public and DWR a written statement describing the manner in which interested parties may participate in the development and implementation of the GSP (§ 10723.2).

2.2 Defining and Describing Stakeholders for Public Engagement

The SVBGSA stakeholders are highly diverse. Groundwater supports economic activities from small domestic scale to large industrial scale and is an important supply for over 400,000 people living within the Salinas Valley. Beneficial users in the Valley are the key stakeholders targeted for robust public engagement for GSP development and implementation. Beneficial users in the Valley include the following:

Agriculture. Includes row crops, field crops, vineyards, orchards, cannabis, and rangeland. The Salinas Valley agricultural region supports a \$5 billion dollar production value and produces a large percentage of the nation's produce and healthy foods. Agriculture is the largest user of groundwater in the Valley accounting for over 200,000 irrigated acres and 94% of pumping in the Valley.

Domestic Water Users. Includes urban water use and related non-agricultural water uses in the cities and census-designated places and rural residential wells used for drinking water. Urban

water use includes small local water systems, small state water systems, and small and large public water systems.

Industrial Users. Includes industrial water users, such as coolers, agricultural wash facilities, quarries, and oil production.

Environmental Users. Environmental users include the habitats and associated species maintained by conditions related to surface water flows such as steelhead trout and groundwater dependent ecosystems (GDE) including brackish and freshwater marsh and riparian habitats. Environmental users include native vegetation and managed wetlands.

Stakeholders associated with these beneficial users and uses are listed below. These users are in many cases also represented on the SVBGSA Board and Advisory Committees as described in Section 1.2.

- **Environmental organizations.** Environmental organizations that are stakeholders include, but are not limited to, Sustainable Monterey County, League of Women Voters of Monterey County, Landwatch Monterey County, Friends and Neighbors of Elkhorn Slough, California Native Plant Society Monterey Chapter, Trout Unlimited, Surfriders, the Nature Conservancy, Carmel River Steelhead Association, Central Coast Wetlands Group, and the Elkhorn Slough Foundation
- **Underrepresented communities (URCs) and Disadvantaged Communities (DACs).** URCs and DACs and organizations that represent them include, but are not limited to, the Cities of Gonzales, Greenfield, King, Salinas, and Soledad, Castroville Community Services District, San Jerardo Cooperative, San Lucas, San Vicente Mutual Water Company (DWR, 2026), Environmental Justice Coalition for Water, and Community Water Center
- **City and county government.** Cities of Greenfield, Gonzales, King, Marina, Salinas, and Soledad, County of Monterey
- **Land use organizations.** Sustainable Monterey County, League of Women Voters of Monterey County, Landwatch Monterey County, and Friends and Neighbors of Elkhorn Slough
- **Residential well owners.** Represented by public members and members of mutual water companies and local small or state small water systems.
- **Water agencies.** MCWRA, Marina Coast Water District, Arroyo Seco Groundwater Sustainability Agency, Castroville Community Services District, M1W, Seaside Groundwater Basin Watermaster, and Monterey Peninsula Water Management District (MPWMD)

- **California Public Utilities Commission (CPUC) regulated water companies.** Alisal Water Service (Alco), California Water Service Company (Cal Water), and California American Water

2.3 Eastside Subbasin GSP Preparation and GSP Amendment

Given the importance of the groundwater and the development of the Eastside Subbasin GSP to the communities, residents, landowners, farmers, ranchers, businesses, and others, inclusive stakeholder input was a primary component of the Eastside Subbasin GSP process. To encourage ongoing stakeholder engagement, SVBGSA deployed the following strategies in the preparation of the Eastside Subbasin GSP and GSP Amendment 1:

- Conducted an inclusive outreach and education process that best supports the success of a well-prepared GSP that meets SGMA requirements.
- Kept the public informed by distributing accurate, objective, and timely information.
- Invited input and feedback from the public at every step in the decision-making process.
- Established the Eastside Subbasin Planning Committee and completed a comprehensive planning process with this Committee, including engagement on key items with the Board and Advisory Committee. The Subbasin Committee continues to provide input on GSP implementation, including ongoing SGMA compliance and development of PMAs.
- Followed consistent stakeholder outreach for GSP amendments.
- Publicly noticed drafts of the Eastside Subbasin GSP and allowed for required public comment periods as required by SGMA. Public comments received and responses are included in Appendix 2A.

This process ensured that stakeholders had opportunities to review and comment on the development of the chapters.

2.4 Eastside Subbasin Committee

Subbasin committees consist of local stakeholders and Board members and are appointed by the Board of Directors following a publicly noticed application process by SVBGSA. The Eastside Subbasin Planning Committee was convened in June and July 2020 and completed the original GSP submitted in January 2022; SVBGSA subsequently convened the Eastside Subbasin Committee to guide GSP implementation and amendment. In 2024, the Board approved a Subbasin Committee Program that clarified and refined their roles. Subbasin committees do the comprehensive work of reviewing annual reports and monitoring data, providing input on PMAs,

general GSP implementation, and review of plan updates and amendments, with assistance and information provided by SVBGSA staff and technical consultants.

These committees include constituencies who are considered important stakeholders to implementing comprehensive subbasin plans for the Salinas Valley. A list of the Eastside Subbasin Committee members at the time of Amendment 1 is included in the Acknowledgements section.

Subbasin committee meetings are Brown Act meetings and noticed publicly on the SVBGSA website and at the meeting locations. Public comment is taken on all posted agenda items. Subbasin committees have been engaged in an iterative planning process that combines education about pertinent technical topics through presentations and agenda packets and receiving GSP chapters for review and comment.

Community engagement and public transparency on SVBGSA decisions is paramount to building a sustainable and productive solution to groundwater sustainability in the Salinas Valley.

2.5 Communication and Public Engagement Actions

SVBGSA is focused on communication and public engagement targeted at the public, including beneficial users, regarding the development of the SVBGSA's GSP for the Eastside Subbasin. Communication and public engagement actions (CPE actions) that took place during GSP development continue during implementation of all SVBGSA GSPs. Communication and public engagement actions provide the SVBGSA Board and staff a guide to ensure consistent messaging about SGMA requirements and other related information. CPE actions provide ways for beneficial users and other stakeholders can provide timely and meaningful input into the GSA decision-making process. CPE actions also ensure beneficial users and other stakeholders in the Salinas Valley are informed of milestones and offered opportunities to participate in GSP implementation and plan updates. Appendix 2B includes the SVBGSA's marketing and communications plan.

Notice and communication, as required by GSP Regulations § 354.10, was focused on providing the following activities during the development of the Eastside Subbasin GSP:

- Clear decision-making process on GSP approvals and outcomes
- Robust public engagement opportunities
- Encouragement of active involvement in GSP development

2.5.1 Goals for Communication and Public Engagement

Ultimately, the success of the Eastside Subbasin GSP will be determined by the collective action of every groundwater user. To meet ongoing water supply needs for both drinking water, and for agricultural and other economic livelihoods, the Subbasin must achieve and maintain sustainability into the future. This outreach strategy engages the public early and frequently, and keeps the internal information flow seamless among staff, consultants, committee members, and the SVBGSA Board regarding the goals and objectives of the Eastside Subbasin GSP and associated monitoring and implementation activities.

Critical to the success of the Eastside Subbasin GSP implementation will be public understanding of the PMAs planned for sustainability, as well as sustainability implementation actions and other groundwater management activities. These important actions are specifically described in Chapters 9 & 10 of the Eastside Subbasin GSP.

The required Annual Report due by April 1 every year for the Eastside Subbasin is an important and ongoing GSP implementation activity. It covers data collected each water year (WY) from October 1 through September 30. The Annual Report provides an annual benchmark for SVBGSA to provide to the public and stakeholders to assess progress towards sustainability. The Annual Report also includes assessment of the 6 SMC for the subbasin. The Annual Report provides an important opportunity to reengage the Eastside Subbasin Committee in its review and to discuss sustainability status and goals.

The 5-year periodic evaluations also present an important opportunity for public engagement. These evaluations assess plan performance and inform adaptive management by reviewing conditions over the previous 5 years, analyzing progress toward sustainability goals, and recommending adjustments as needed.

CPE actions provide outreach during the Subbasin planning and implementation efforts and assist SVBGSA in being receptive to stakeholder needs through communication tools. The CPE actions also forecast how SVBGSA communicates during GSP implementation.

The goals of the CPE actions are to expand audience reach, increase engagement and GSP awareness, and track efforts. Specific objectives include the following:

1. Keep stakeholders informed through the distribution of accurate, objective, and timely information while adhering to SGMA requirements for engagement (noted above).
2. Articulate strategies and create communications channels that foster an open dialogue and increase stakeholder engagement during the planning process.
3. Invite input from the public at every step in the decision-making process and provide transparency in outcomes and recommendations.

4. Ensure that the Board, staff, consultants, and committee members have up-to-date information and understand their roles and responsibilities.
5. Engage the public on GSP implementation progress, especially for PMAs and Annual Reports.

2.5.2 Communication and Outreach Objectives

The following are the communications and outreach objectives of the CPE Actions:

- Expand Audience Reach
 - Maintain a robust stakeholder list of interested individuals, groups, and/or organizations.
 - Secure a balanced level of participants who represent the interests of beneficial uses and users of groundwater.
- Increase Engagement
 - Keep interested stakeholders informed and aware of opportunities for involvement through email and/or other preferred method of communication.
 - Publish meeting agendas, minutes, and summaries on the SVBGSA website (www.svbgsa.org).
 - Inform and obtain comments from the general public through GSP online comment form and hybrid public meetings.
 - Facilitate productive dialogue among participants throughout the GSP planning and amendment process.
 - Seek the input of interest groups during the planning and implementation of the GSP and any future planning efforts.
- Increase GSP Awareness
 - Provide timely and accurate public reporting of planning and implementation milestones through the distribution of outreach materials and posting of materials on the SVBGSA website for the GSP.
 - Seek quality media coverage and create opportunities for SVBGSA staff to author articles.
 - Share information with interested persons through monthly email newsletters.
 - Utilize social media to engage with and educate the public.
 - Create partnerships with local organizations, elected officials and others to share SVBGSA information with their unique audiences.

- Track Efforts
 - Maintain an active communications tracking tool to capture stakeholder engagement and public outreach activities and to demonstrate the reporting of GSP outreach activities.

2.5.3 Target Audiences and Stakeholders

SVBGSA stakeholders consist of other agencies and interested parties including all beneficial users of groundwater or their representatives. Under the requirements of SGMA, all beneficial uses and users of groundwater must be considered in the development of GSPs, and GSAs must encourage the active involvement of diverse social, cultural, and economic elements of the population.

There are a variety of audiences targeted within the Salinas Valley whose SGMA knowledge varies from high to little or none. Given this variance, SVBGSA efforts are broad and all-inclusive. Target audiences include:

- SVBGSA Board, Advisory Committee, and Subbasin Committees
- SVBGSA Groundwater Sustainability Fee payers
- Partner agencies including other GSAs, County of Monterey, MCWRA, and other agency participants in the Greater Monterey County Regional Water Management Group (RWMG)
- Municipal and public water service providers
- Private and local or state small water system providers
- Local municipalities and communities
- Elected officials within the Salinas Valley
- Beneficial uses and users of groundwater including, agriculture, domestic wells, and environmental uses such as wetlands, including non-profit organizations and industry groups that represent them
- Diverse social, cultural, and economic segments of the population within the Salinas Valley, including URCs
- The general public

Stakeholder involvement and public outreach is critical to the GSP development because it helps promote the plan based on input and broad support. The following activities summarize involvement opportunities and outreach methods to inform target audiences and stakeholders. It is important to note that levels of interest will evolve and shift according to the GSP's implementation opportunities and priorities.

2.5.4 Stakeholder Database

SVBGSA maintains a database of persons and organizations that includes stakeholders who represent the region's broad interests, perspectives, and geography. It is developed and maintained by leveraging existing stakeholder lists and databases and by conducting research of potential stakeholders that may be interested in 1 or all of the following categories: municipal users and groundwater users including agricultural, urban, industrial, commercial, institutional, rural, environmental, URCs, state lands and agencies, and integrated water management.

2.5.5 Key Messages and Communications

SVBGSA develops its communications and key messages focused on getting to know your GSA, providing overviews of groundwater sustainability planning for our community, and continued outreach through implementation. These messages are guided by the underlying statements:

- The GSP process, both planning and implementation, is transparent and direct about how the GSP will impact groundwater users.
- SVBGSA represents the groundwater interests of all beneficial uses/users of the basin equitably and transparently to ensure that the basin achieves and maintains sustainable groundwater conditions.
- SVBGSA is committed to working with stakeholders using an open and transparent communication and engagement process.
- As the overall GSP process is comprehensive with an engaged group of stakeholders providing useful information, SVBGSA creates as many opportunities as possible to educate stakeholders and obtain their feedback on the GSP implementation and plan updates.

These messages are the basis for effective engagement and communication with audiences (Appendix 2C).

2.5.6 Engagement Strategies

SVBGSA uses a variety of tactics to achieve broad, enduring, and productive involvement with stakeholders during the development and implementation of the GSPs. Below are activities that SVBGSA uses to engage the public:

- Develop and maintain a list of interested parties.
- Hold Board, Advisory Committee, Subbasin Committees and other Committee Meetings
 - Publish regular public notices and updates (Brown Act compliance)

- Offer public informational sessions and subject-matter workshops
- Provide hybrid meeting access online via Zoom or other appropriate platform.
- Provide SVBGSA website resources for topics including SGMA, SVBGSA, GSPs, Projects and Management Actions, annual reports, groundwater models, hydrogeology and educational resources, and annual budget and Groundwater Sustainability Fee information, including:
 - SVBGSA web map: provides access to visualize, search and export data
 - StoryMaps include how water moves through the Salinas Valley, groundwater challenges, sustainability goals and the current status
 - Utilize social media platforms, including Facebook, Instagram and YouTube to share information, communicate with stakeholders and grow engagement
- Publish email newsletters to communicate directly with interested parties
- Garner earned media coverage through the use of press releases, media pitching and relationship-building with local reporters (appendix 2D includes SVBGSA's media policy)
- Publish op-eds in local newspapers
- Create and share engaging video content
- Place advertising in local media (including digital, print, radio and audio streaming)
- Post fliers/posters in public locations to share key initiatives
- Utilize co-promotional opportunities and existing channels with agencies, committees, and organizations including email newsletters, social media, board meetings and mailings to key audiences
- Provide talks and presentations to various stakeholder groups, associations, community organizations, and educational institutions
- Host workshops on key topics
- Make materials bilingual and provide interpretation services

2.5.7 CPE Actions Timeline and Tactics

CPE Actions and GSP milestone requirements by phase include:

- Prior to initiating plan development: Share how interested parties may contact the GSA and participate in development and implementation of the plan submitted to DWR. (23 California Code of Regulations § 353.6)
- Prior to GSP development: Establish and maintain an interested persons list. (California Water Code § 10723.4)
- Prior to and with GSP submission:
 - Record statements of issues and interests of beneficial users of basin groundwater including types of parties representing the interests and consultation process
 - Lists of public meetings
 - Inventory of comments and summary of responses
 - Communication section in GSP (23 California Code of Regulations § 354.10) that includes: agency decision-making process, identification of public engagement opportunities and response process, description of process for inclusion, and method for public information related to progress in implementing the plan (status, projects, actions)
- Supporting tactics to be used to communicate messages and supporting resources available through GSP development and GSP implementation described in section 2.6.6.

2.5.8 CPE Actions – Annual Evaluation and Assessment

Annually SVBGSA will summarize annual conditions and GSA activities to gather input for annual reports. A summary of CPE actions will be included within annual reports. Development of the subsequent fiscal year work plan happens in parallel with annual reporting. The GSA reviews community outreach activities and their effectiveness and considers the appropriate CPE actions for the upcoming year in its annual work plan and budget.

2.6 Underrepresented Communities and Disadvantaged Communities Strategic Engagement and Communications

During development of the 2022 GSPs, SVBGSA scoped an engagement strategy for URCs and DACs that provided both an assessment of how URCs and DACs may be engaged with the GSA and how to develop GSA materials that are accessible and culturally responsive (visual and in Spanish). These materials communicate impacts of groundwater management on local water conditions to engage URCs and DACs in GSA plan reviews and develop pathways for future involvement.

2.6.1 Underrepresented Communities and Disadvantaged Communities in the Salinas Valley

In this GSP, URCs and DACs are considered communities that currently have little or no representation in water management, or who historically have had disproportionately less representation in public policy decision making. URCs and DACs are inclusive of Severely Disadvantaged Communities (SDACs), Economically Distressed Areas (EDAs) and other communities that are traditionally underrepresented.

The Salinas Valley has well documented DAC designations encompassing 50 Census Block Groups, 18 Census Tracts and 5 Cities or Census Designated Places, including Gonzales and Chualar, according to 2019-2023 5-Year American Community Survey (ACS) data published on the Climate Bond S(DAC) Tool and CA DWR's DAC Mapping Tool websites (DWR, 2026; CNRA, 2026). The Salinas Valley's EDAs are inclusive of these DACs and further encompass Greenfield and Boronda and parts of Marina, Soledad, and Prunedale.

A proportional analysis of the area and population of Census Blocks suggests that roughly 29.5% of the population of the Eastside Subbasin live in a DAC, 10.3% live in an SDAC, and 38.4% live in an EDA. Considering Census Tracts, this analysis suggests that roughly 44% of the Subbasin's population live in a DAC, 4.7% live in an SDAC; and 47.5% live in an EDA.

Figure 2-3 shows where DACs, SDACs, and EDAs are located within the Salinas Valley, and Appendix 2E further describes DACs and EDAs. Census block groups were not included in the map because they are excluded from the newer Climate Bond (Proposition 4) (S)DAC Mapping Tool due to high margins of error and data privacy concerns.

SVBGSA seeks to constructively engage with URCs and DACs in the subbasin planning processes and GSP implementation. During development of the original GSP, SVBGSA hired the Consensus Building Institute (CBI) to conduct an assessment with URC and DAC community leaders via formal interviews. The purpose of the assessment was to capture insights and recommendations to inform an engagement strategy for URCs and DACs. CBI conducted 14 interviews and summarized findings from the assessment to identify initial strategic steps for work with URCs and DACs for GSP planning and implementation. These actions continue to be a focus of community engagement activities with residents in DAC or URCs during implementation of the GSP. The Spectrum of Community to Ownership is one guide in further shaping SVBGSA work with URCs and DACs communities in the Basin in consultation with community leaders. In 2025 and 2026, SVBGSA co-sponsored the Salinas Valley Water Leadership Institute with the Environmental Defense Fund and others, focused on local water education and leadership and skill development for participating in the public processes for water management and decision making.

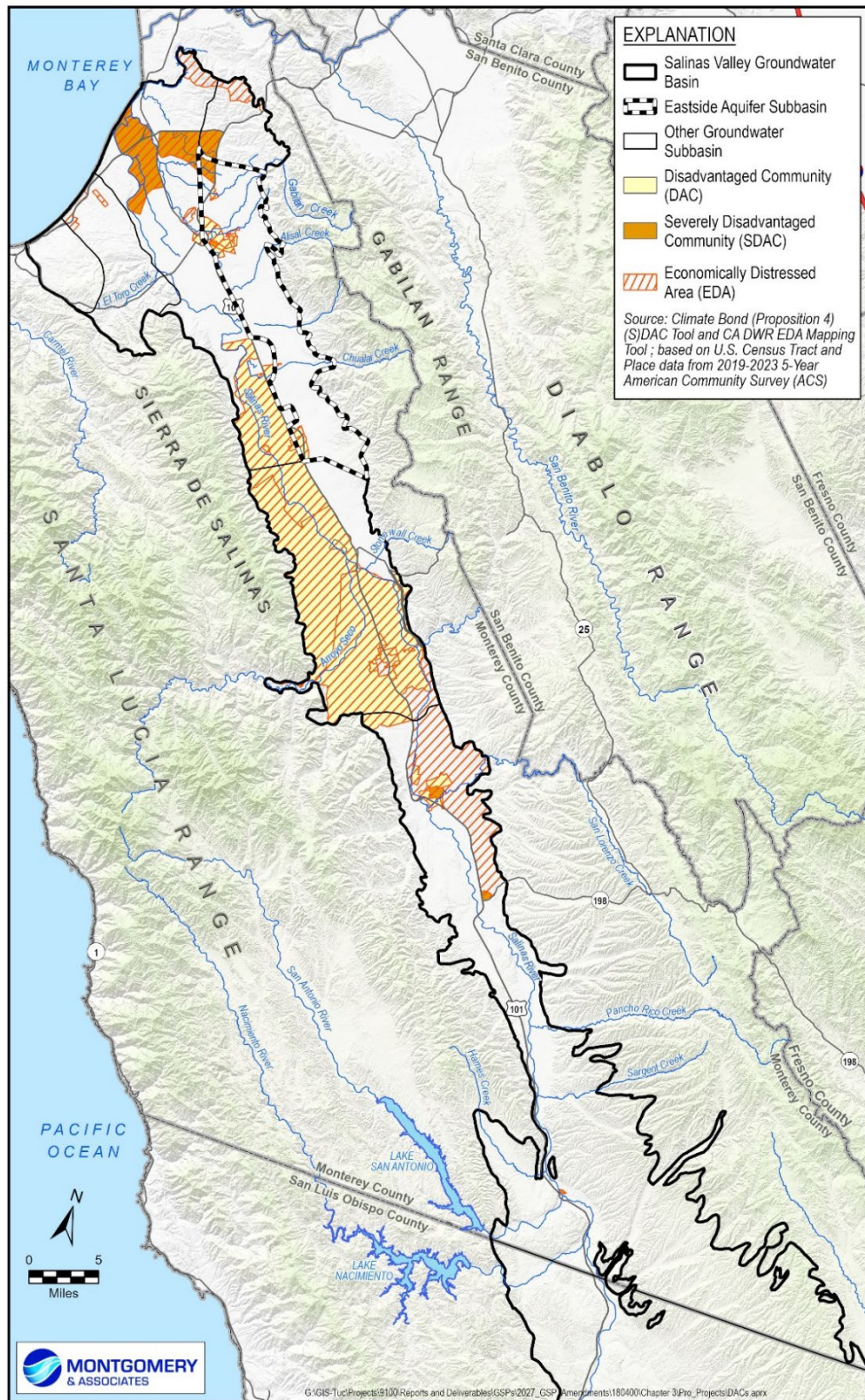


Figure 2-1. Disadvantaged Communities in the Salinas Valley Activities for engagement of Underrepresented Communities and Disadvantaged Communities

Activities for engagement of URCs and DACs include:

- Conducting workshops with partners on importance of water and groundwater sustainability
- Identifying URC and DAC concerns and needs for engagement
- Planning listening sessions around GSA milestones
- Coordinating with partner organizations to develop a “resource hub” where people can go for support
- Identifying community allies in groundwater engagement work and reduce barriers for participation
- Considering particular URC and DAC impacts during routine GSA proceedings
- Convening a working group on domestic water, including URCs and DACs

3 PLAN AREA

This GSP covers the entire Eastside Subbasin, as shown on Figure 3-1. The Eastside Subbasin lies in northeastern Monterey County. The Subbasin encompasses an area of approximately 57,500 acres, or 90 square miles (DWR, 2004). The Eastside Subbasin lies along the east side of the Salinas Valley Groundwater Basin. It is bounded by the Gabilan Range to the east, the Forebay Subbasin (DWR subbasin number 3-004.05) to the south, the 180/400 Subbasin (DWR subbasin number 3-004.01) to the west, and the Langley Subbasin (DWR subbasin number 3-004.09) to the north. The Eastside Subbasin is generally coincident with MCWRA's Eastside Subarea, although minor differences exist between the extent of the 2 areas.

The Eastside Subbasin has several tributaries that drain from the western slopes of the Gabilan Range and flow westward across the Subbasin. Most tributaries drain into the Salinas River, which is located in the adjacent 180/400 Subbasin. The Eastside Subbasin contains portions of the municipalities of Salinas and Gonzales. A small portion of Chualar, a census-designated place, is also located in the Subbasin. United States Highway 101 runs generally north-south along the western border of the Subbasin. Rivers and streams, urban areas, and major roads are shown on Figure 3-1.

This description of the GSP area has been prepared in accordance with the GSP Regulations § 354.8. Information from existing water resource monitoring, management, and regulatory programs have been incorporated into this GSP to inform the development of the sustainability goal, SMC, and PMAs. This GSP is designed to align with the principles outlined in existing local plans, programs, and policies, and will build on them during GSP implementation.

3.1 Summary of Adjudicated and Jurisdictional Areas

3.1.1 Adjudicated Areas, Other GSAs, and Alternatives

The Eastside Subbasin is not adjudicated. The only adjudicated area in the Salinas Valley Groundwater Basin is the Seaside Subbasin (DWR subbasin number 3-004.08), which is not adjacent to the Eastside Subbasin.

No alternative plans have been submitted for any part of the Subbasin or for any other Salinas Valley subbasins.

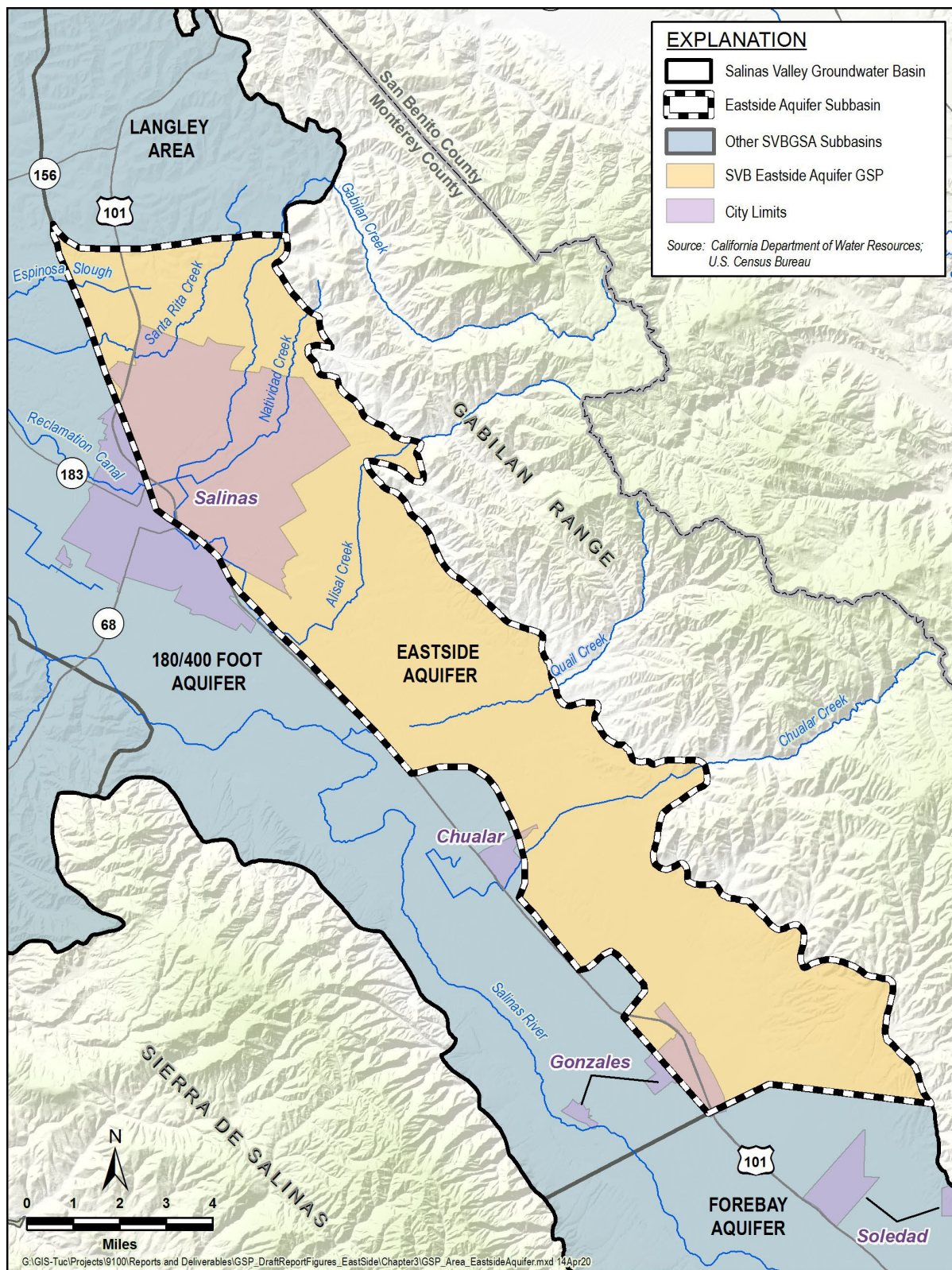


Figure 3-1. Eastside Aquifer Subbasin Area Covered by GSP

3.1.2 Jurisdictional Areas

3.1.2.1 Federal and State Jurisdictional Areas

Maps of federal and state jurisdictional areas are based on data from the U.S. Bureau of Land Management National Surface Management Agency National Geospatial Data Asset (BLM, 2020). There are no areas of federal or state jurisdiction over water management authority in the Subbasin. Although the Subbasin does not contain any federal tribal-owned lands, several recognized Tribes represent the area, and contacts are maintained through California's Native American Heritage Commission.

3.1.2.2 County Jurisdiction

Pursuant to Article XI, section 7 of the California Constitution, the County of Monterey has authority to adopt and enforce ordinances and regulations not in conflict with state laws to protect and promote the public health, safety, and welfare of its citizens. Specifically, with regard to the Subbasin, the County has authority over well permitting and land use authority in the unincorporated areas outside of city limits. There are no County conservation areas or parks within the Subbasin (BLM, 2020).

3.1.2.3 Monterey County Water Resources Agency

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. MCWRA's jurisdiction covering countywide and includes the entire Eastside Subbasin, as shown on Figure 3-2.

Pursuant to MCWRA's enabling legislation, the MCWRA Act (Agency Act, California Water Code App. § 52-1, *et seq*), MCWRA has broad authority regarding groundwater regulation. This is specifically called out in Sections 8, 9(n), 21 and 22 of the Agency Act. Section 8 states the purposes of the MCWRA Act, which includes control of groundwater extractions as required to prevent or deter the loss of usable groundwater. Likewise, Section 9 covers the powers of MCWRA and subsection (n) states that MCWRA may "Develop and distribute water to persons in exchange for ceasing or reducing groundwater extractions, and prevent groundwater extractions which are determined to be harmful to the groundwater basin." Section 21 allows MCWRA to seek injunctive relief against the export of water from the Salinas Valley Groundwater Basin. Section 22 of the Agency Act explicitly provides MCWRA with the ability to prohibit groundwater extraction when appropriate studies determine a portion of the groundwater basin to be threatened by loss of usable supply as a result of seawater intrusion after a noticed public hearing by the Board of Supervisors. The Agency Act was enacted prior to the development of SGMA, which requires groundwater sustainability to be achieved according to 6 sustainability criteria.

Key assessment zones that provide revenues for capital, operations, and maintenance of various projects and programs administered by MCWRA are shown on Figure 3-3. MCWRA is governed by a 9-member Board of Directors who are appointed by the 5-member MCWRA Board of Supervisors. The Board of Supervisors of the County is ex officio of the Board of Supervisors of MCWRA (MCWRA Act, Sec. 15).

3.1.2.4 City and Other Local Jurisdictions

The jurisdictional boundaries of cities are shown on Figure 3-2 (U.S. Census Bureau, 2018). Part of the cities of Salinas and Gonzales are located within the Subbasin and have water management authority. The City of Salinas is served by 2 private water suppliers: Cal Water and Alco. In Gonzales, the City supplies drinking water.

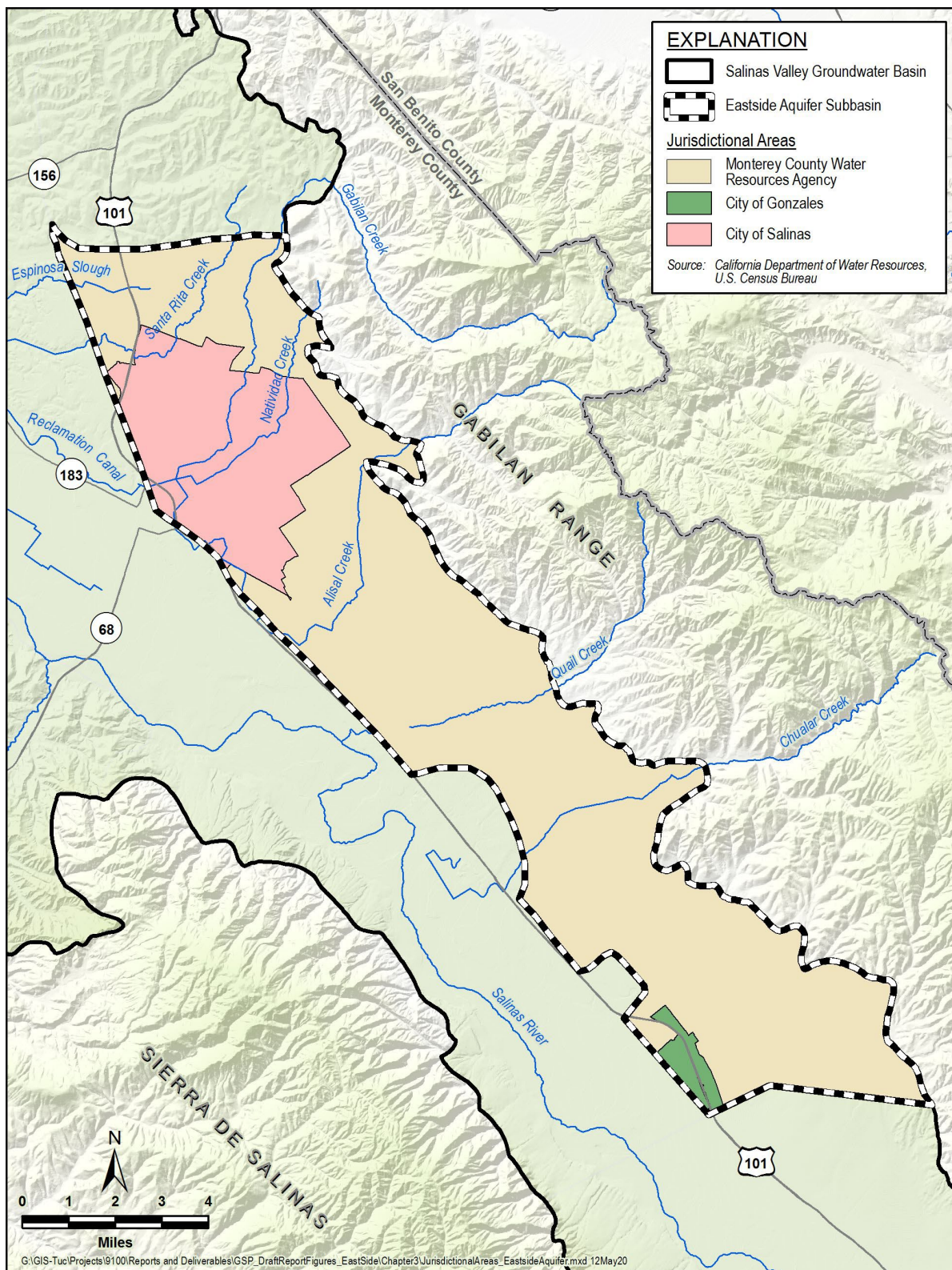


Figure 3-2. Local, City, and Water District Jurisdictional Areas

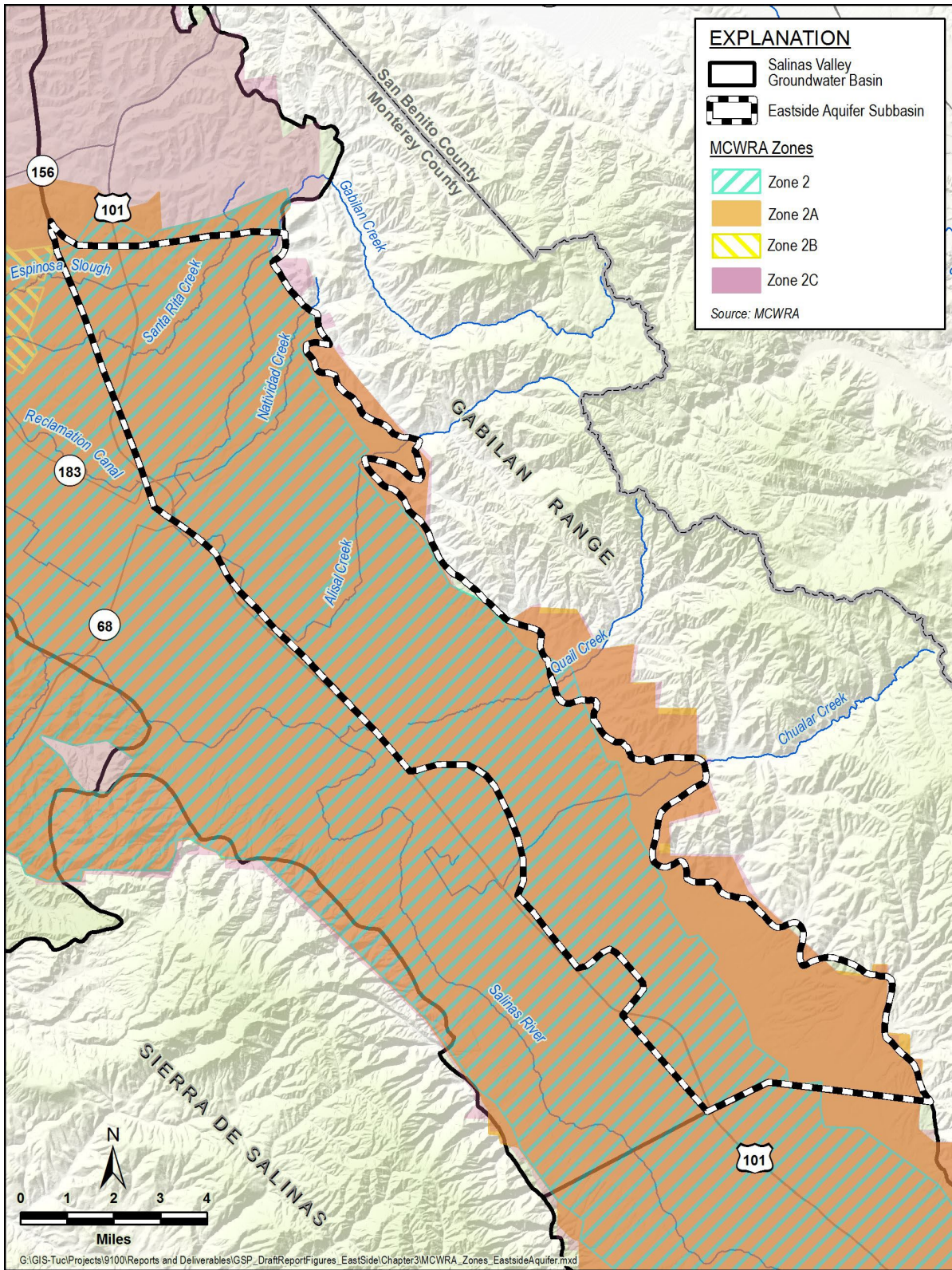


Figure 3-3. MCWRA Zones in the Eastside Aquifer Subbasin

3.2 Land and Water Use

3.2.1 Overview of Land Uses

The Monterey County Assessor’s Office maintains a Geographic Information System (GIS) database of land use at the parcel level. Land use in the Eastside Subbasin, as classified by the Assessors’ land use codes in 2024, is shown on Figure 3-4 and summarized by major category in Table 3-1. The difference between the land use area in Table 3-1 and the total Subbasin area of 57,500 acres is the result of: 1) some parcels having null land use values; and 2) small gaps between parcels that are not counted.

Table 3-1. Land Use Summary

Category	Area in Subbasin (acres)
Agriculture (Irrigated)	34,492
Agriculture (Dry)	7,174
Commercial	986
Industrial	529
Institutional	2,862
Miscellaneous	572
Multi-Family	826
Residential (Urban)	3,355
Rural	4,227
Not Classified	24
Total	55,047

Source: Monterey County Assessor’s Office 2024 parcel data

Actual land uses may vary from year to year. The County Assessor parcel database is periodically updated, and current Assessor’s land use data may be utilized in periodic evaluations and/or updates to the SVBGSA Web Map. SVBGSA annually estimates cropped acreage as reported by DWR’s most recent crop mapping, rather than relying on the Assessor’s coding for irrigated acreage for its annual fee development. City and County general plans and planned land uses and zoning designations may also differ from the Assessor’s land use codes in some cases.

The majority of land in the Subbasin is used for agriculture; the top 3 crops by value in Monterey County in 2025 were strawberries, leaf lettuce, and head lettuce (Monterey County Agriculture Commissioner, 2025). Vineyards have been a major irrigated agriculture land use in Monterey County.

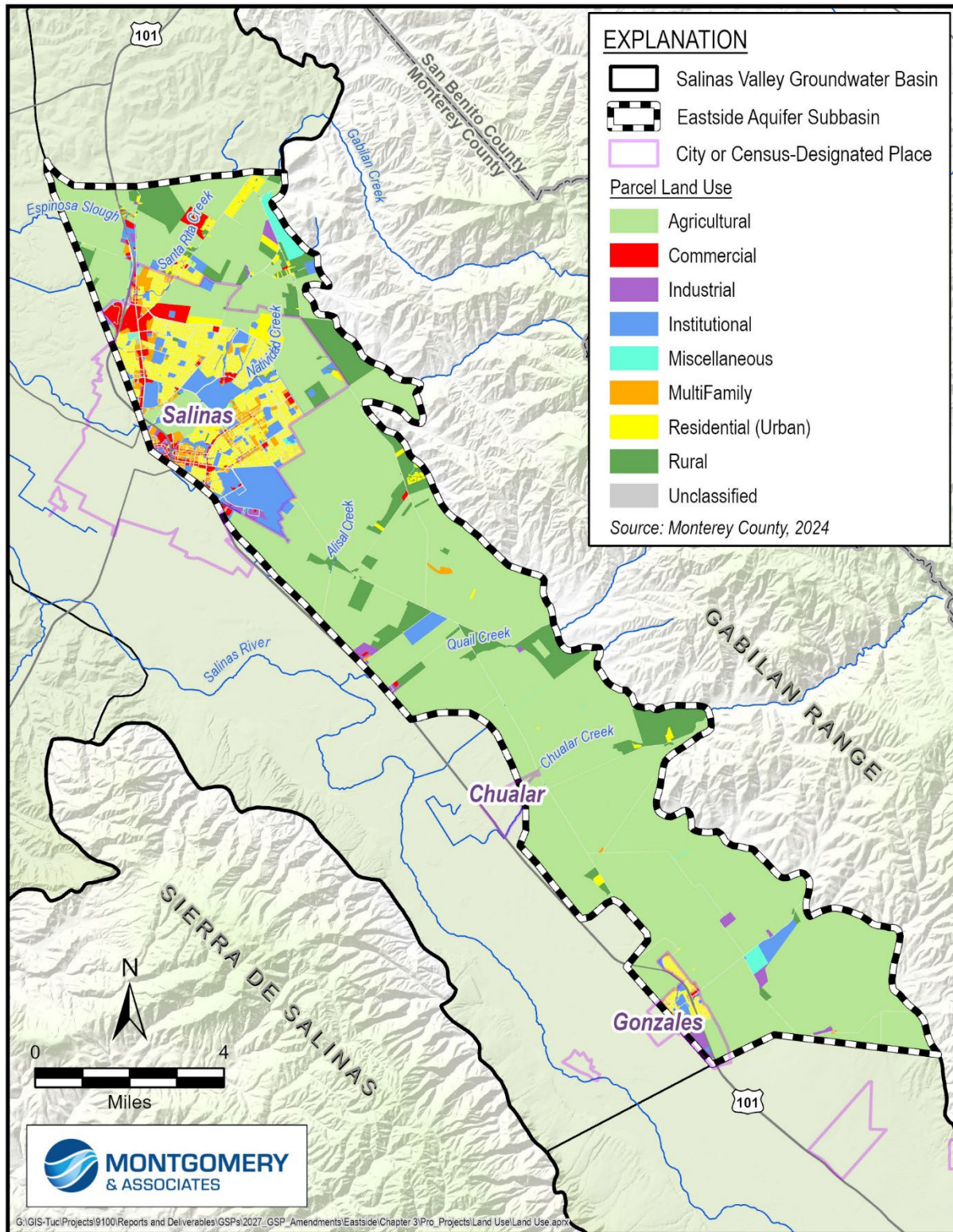


Figure 3-4. 2024 Land Use

3.2.2 Land Use Planning

Under SGMA, GSPs do not supersede the land use authority of cities and counties, including a city or county general plan, within the overlying basin. However, the GSA will coordinate with the cities and the County on general plans and land use planning/zoning as needed when implementing GSPs. SGMA also calls for processes to review land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity. Planning agencies must review and consider GSPs, groundwater management plans, or groundwater management court order, judgment, or decree.

Land use is an important factor in water management. Monterey County and the cities of Salinas and Gonzales have land use authority over portions of the Eastside Subbasin. Each of these entities has adopted a general plan that guides land use within the Subbasin, along with other types of specific plans or community plans within their jurisdictional areas. General descriptions of these land use plans and how implementation may affect groundwater management in the Eastside Subbasin are included in Appendix 3A.

The County of Monterey 2010 General Plan was prepared and adopted prior to SGMA and includes policies related to water supplies and well construction. The Public Services Element includes a goal for long-term water supply and related policies considered in the review of discretionary development permits. The policies include, but are not limited to, requiring proof of a long-term supply (PS-3.1); criteria for that proof for discretionary permits for new development (PS-3.2); criteria for the adequacy of domestic wells (PS-3.3); assessments for high-capacity wells (PS-3.4); wells in areas of known saltwater intrusion (PS-3.5); coordination with other water management agencies (PS-3.6); and a program to eliminate overdraft of basins, with strategies including water banking, groundwater and aquifer recharge and recovery, desalination, pipelines to new supplies, and/or a variety of conjunctive use techniques (PS-3.7).

The County faced litigation after adoption of its 2010 General Plan. As part of General Plan-related settlement agreement made prior to the statewide adoption of SGMA, the County conducted a Salinas Valley Basin Investigation pursuant to Policy PS-3.1. to develop a study of the groundwater basin within MCWRA's Zone 2C which largely overlaps the Salinas Valley subbasins and includes, among other items:

- An assessment of whether the total water demand for all uses designated in the General Plan for the year 2030 are likely to be reached or exceeded
- An evaluation and conclusions regarding future expected trends in groundwater elevations
- An evaluation and conclusions regarding expected future trends in seawater intrusion

The study finds that water demand trends in Zone 2C have diverged significantly from earlier 2010 General Plan Environmental Impact Report (EIR) projections. Instead of declining by 2030 as originally expected, total water demand has already increased, driven primarily by higher-than-anticipated agricultural use. Estimates at the time of the study (around 2017–2020), total demand reached about 485,000 acre-feet (AF)—exceeding both the EIR baseline and its projected 2030 level—and is expected to rise further to roughly 518,000 AF by 2030 under a medium-growth scenario. Urban demand has remained relatively stable, while agricultural demand has grown substantially, reversing assumptions about land contraction, crop shifts, and efficiency gains.

Based on data through 2021, these higher demands have led to increased groundwater pumping, resulting in measurable declines in groundwater levels and continued seawater intrusion. Declines have been most pronounced in coastal subareas that overlap with the 180/400, Eastside, Monterey, and Langley Subbasins. Looking ahead to 2030, the study projected additional declines under average conditions.

The study also projected that seawater intrusion was expected to persist at rates comparable to the past decade, particularly in the area overlapping with the 180/400 and Monterey Subbasins, affecting about 210–240 acres per year through 2030. While some localized improvements have occurred—such as near Castroville due to recharge projects—overall basin conditions are projected to worsen under continued demand pressures.

The study concludes that without further intervention, groundwater depletion and seawater intrusion will continue, though impacts will vary by location. It highlights the importance of coordinated groundwater management, conservation, and land use planning to mitigate these trends. The study recommends the County support groundwater sustainability efforts already underway associated with SGMA implementation.

In response to the study, the County Board of Supervisors directed County staff to coordinate with groundwater sustainability agencies on appropriate amendments to the 2010 General Plan and other regulatory actions. The County’s implementation actions in response to the study and GSP implementation are parallel efforts, and the results of the County’s response to the study will be considered during GSP implementation.

The County chose to retain the USGS to develop the Salinas Valley Integrated Hydrologic Model (SVIHM) and Montgomery & Associates to develop the Salinas Valley Seawater Intrusion Model. A provisional version of the SVIHM was used for the Basin Investigation, and the USGS subsequently published the model in 2025.

Updated versions of these models are used for the development of this GSP Amendment. The projected baseline modeling in Chapter 6 includes population growth in the cities and some unincorporated communities, based on projections by the Association of Monterey Bay Area Governments.

3.2.3 Effects of GSP Implementation on Water Supply Assumptions

Implementation of this GSP Amendment may affect water supply assumptions of relevant land use plans over the planning and implementation horizon. Implementation of GSP PMAs is needed to avoid undesirable results and mitigate overdraft, including the potential for demand management if needed. Changes in the cost of groundwater may affect whether surface water or groundwater is used. Land use changes may occur as a result of these activities and based on financial decisions by individual growers or landowners.

3.3 Water Use

3.3.1 Source

No recycled water is used within the Subbasin.

Surface water diversions within the Salinas River watershed are reported to the State Water Resources Control Board (SWRCB). The Electronic Water Rights Information Management System (eWRIMS) was replaced by the California Water Accounting, Tracking, and Reporting System (CalWATRS). Elsewhere in the Salinas Valley Groundwater Basin, water use is reported to the SWRCB as surface water diversions and is also reported to MCWRA as groundwater extractions, but double reporting does not exist in Eastside Subbasin. With the intention of preventing double counting of surface water and groundwater, starting in WY 2025, MCWRA asked GMP extraction reporters if groundwater extractions were also reported as surface water diversions.

As described further in section 3.4, MCWRA operates 2 reservoirs with consideration of multiple factors, one of which is groundwater recharge. Groundwater resources reflect a mix of recharged surface water and groundwater, generally referred to as groundwater in this GSP. Groundwater is the primary water source for all water use sectors in the Subbasin. Communities that depend on groundwater are shown on Figure 3-5. The large public water systems shown on this figure are derived from data provided by Tracking California (2020). These boundaries were confirmed and, where needed, revised by the large water systems in the Eastside Subbasin. Water system boundaries include water system deliveries to both urban and agricultural areas. Monterey County provided the boundaries for the small public water systems and the local small or state small water systems shown on Figure 3-5. More information on these water systems can be found on SVBGSA's Web Map, accessible at <https://portal.elmontgomery.com>. Groundwater is also used for rural residential areas, small community systems, and small commercial operations such as wineries and schools. The complete list of water systems and their number of connections, where available, are listed in Appendix 3B.

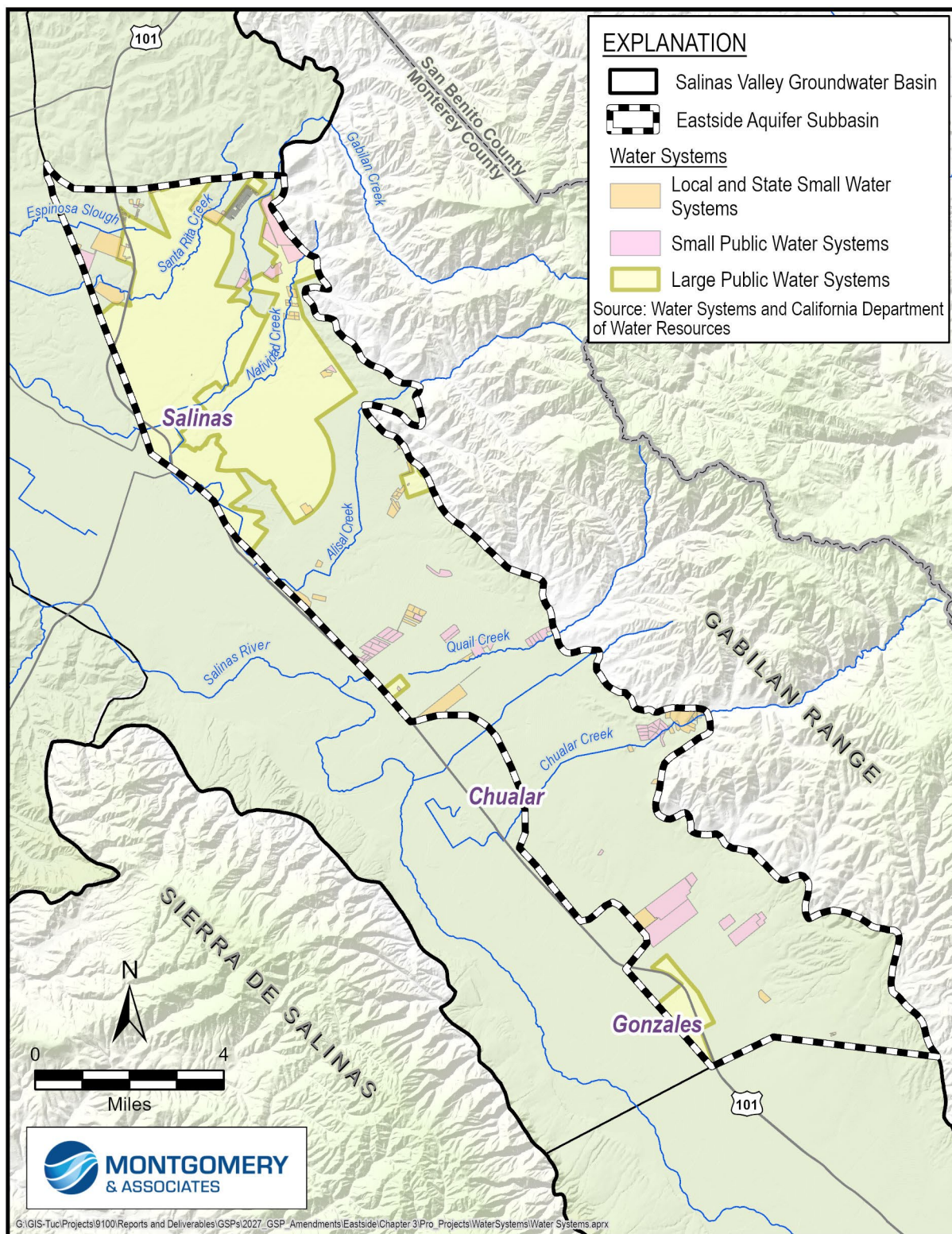


Figure 3-5. Communities Dependent on Groundwater

3.3.2 Water Use Sectors

Groundwater demands in the Subbasin are classified into the 6 water use sectors identified in the GSP Regulations. The water use sectors are shown on Figure 3-6. Groundwater demand categories include:

- **Urban.** Urban water use is assigned to non-agricultural water uses in the cities and census-designated places. Domestic use outside of census-designated places is not considered urban use.
- **Industrial.** There is limited industrial use in the Subbasin.
- **Agricultural.** This is the largest water use sector in the Subbasin.
- **Managed recharge.** There is no managed recharge in the Subbasin.
- **Native vegetation.** Groundwater use by native vegetation is minimal. Potential groundwater dependent ecosystems are mapped and described in Section 4.4.5.2.
- **Other.** This includes rural residential water use and any water use not captured in the other water use sectors.

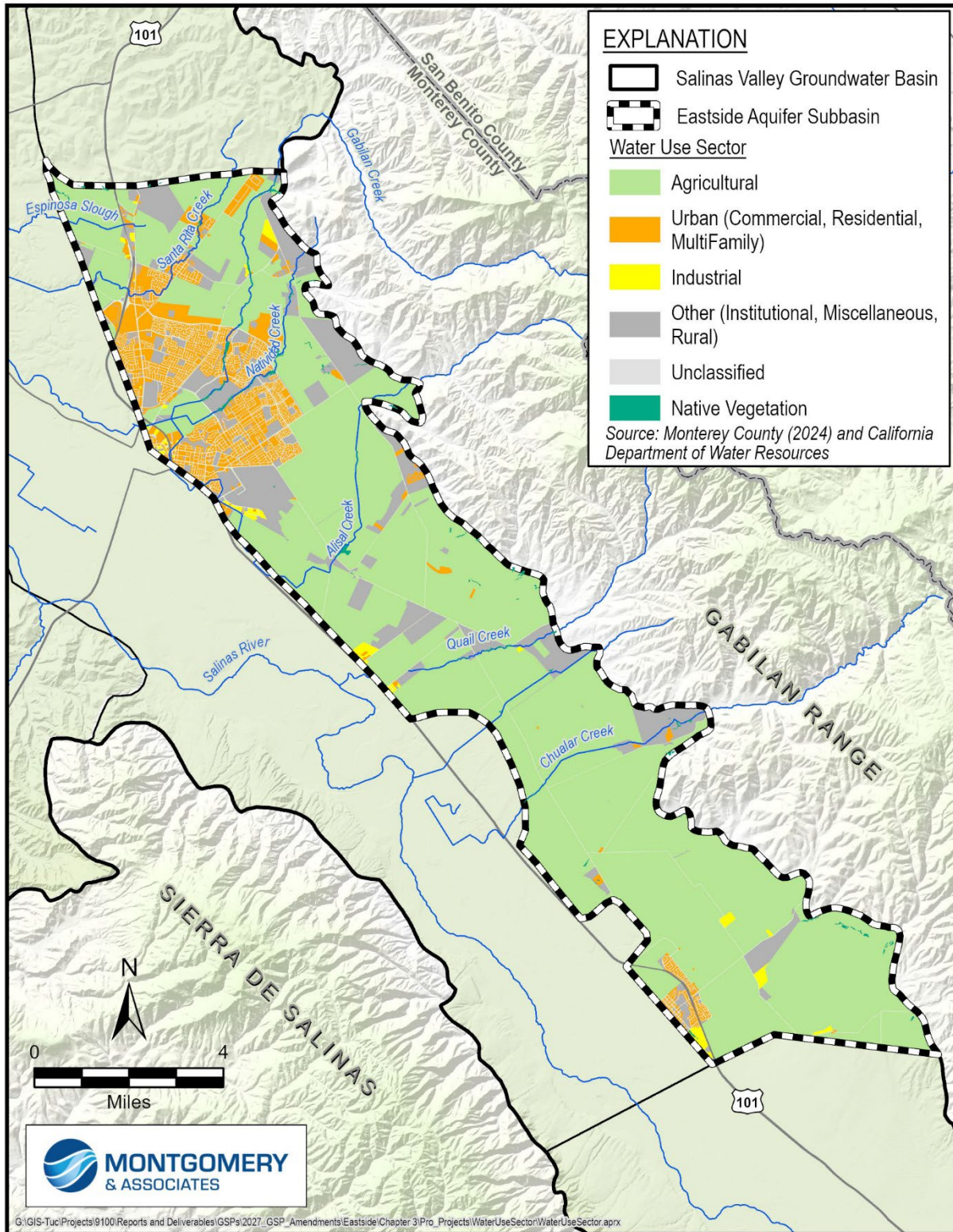


Figure 3-6. Map of Water Use Sectors

3.4 Conjunctive Uses

There are currently no conjunctive use programs in the Eastside Subbasin.

Groundwater, surface water, and recycled water management in the Salinas Valley is fundamentally shaped by a long history of groundwater overdraft and seawater intrusion, as formally documented in California's 1946 Bulletin 52. In addition, flood control was needed. In response, MCWRA constructed the Nacimiento and San Antonio Reservoirs, which formed the basis for operation of a conjunctive management system.

Nacimiento Reservoir (License 7543, priority date November 4, 1954) and San Antonio Reservoir (License 12624, priority date December 2, 1955) form the backbone of this system. Nacimiento is authorized to collect up to 350,000 AF annually, with a maximum annual withdrawal of 180,000 AF based on storage change, supplemented by an additional 27,900 AF under Permit 21089. San Antonio holds up to 335,000 AF, and MCWRA is allowed annual withdrawals of up to 210,000 AF. Both reservoirs are operated to meet water rights requirements, environmental compliance requirements, and settlement agreements, while also meeting flood control requirements regulated by California Division of Safety of Dams and Federal Energy Regulatory Commission. Additional operational considerations include public safety, infrastructure limitations, dam safety and incidental hydropower generation.

As part of the Salinas Valley Water Project (SVWP), MCWRA constructed and began to operate the Salinas River Diversion Facility (SRDF) in 2010. SVWP also resulted in reoperation of the reservoirs to release additional stored water during the summer when it is needed for irrigation and re-diversion at SRDF. The SVWP represents the primary conjunctive use program integrating reservoir operations with groundwater and surface water supplies.

MCWRA operates the reservoirs with consideration of multiple factors including groundwater, re-diversion of surface water at the SRDF, recreational use at the reservoirs, and incidental power generation. Reservoir operations also consider flood control and environmental considerations such as fish and wildlife habitat and migration. Releases are highly variable—ranging from 70 cubic feet per second (cfs) to roughly 550 cfs, or about 4,100 to 33,000 AF per month, with even larger releases when there is a storm event—reflecting hydrologic conditions and the need to respond to system demand.

MCWRA adjusts releases dynamically to meet flow targets associated with environmental bypass requirements at downstream compliance points, using the river as a managed recharge conveyance system. These releases support stream infiltration and recharge into the groundwater basin, directly linking surface water operations with groundwater conditions. MCWRA is currently developing the Salinas River Operations Habitat Conservation Plan (SROHCP) to obtain federal Endangered Species Act (ESA) permits for its water management activities.

Together, the multiple subbasins that comprise the Salinas Valley represent a highly managed, conjunctive use framework in which surface water infrastructure, groundwater extraction, and recycled water supplies are closely integrated to mitigate long-term basin impacts and sustain agricultural productivity. No dedicated conjunctive-use facilities are located within the Eastside Subbasin; however, reservoir releases support stream infiltration and managed recharge along the Salinas River within the Salinas Valley.

3.5 Existing Well Types, Numbers, and Density

Well density data in the original GSP came from DWR's Online System for Well Completion Report (OSWCR) Map Application (DWR, 2020a). However, the OSWCR database contains many well records with missing information and does not consistently reflect well abandonment, replacement, or destruction. Other data sources are available from MCWRA or other sources, and they may result in different well densities that are not reflected in DWR's OSWCR database. However, the DWR data were used for simplicity and consistency with other DWR data used in this GSP.

To develop a more accurate and complete dataset of active wells in the Salinas Valley, MCWRA conducted a desktop analysis and established a well registration program under Ordinance 5426, which requires all wells to be registered with MCWRA. As part of the desktop analysis, MCWRA reviewed well records from OSWCR, the Monterey County Environmental Health Bureau and its own records. Through the registration program, well owners now submit or verify well information via an online portal or form.

The registration process collects general information on well ownership, construction specifications, location and well status. Location and depth data, in particular, support analysis of the relationship between wells and groundwater conditions.

The data used in GSP Amendment 1 reflect the first 6 months of well registration. Table 3-2 and summarizes the number and types of wells, including those identified through the desktop analysis and registration process with sufficient information (location, depth, and ownership). MCWRA will continue the registration program, assess spatial data to determine where there may be missing registrations, and continue outreach to well owners. Table 3-2 includes the well count numbers from the OSWCR database for comparison. DWR's Well Completion Report Map Application classifies wells as domestic, production, and public supply; production wells include wells that are designated as irrigation, municipal, public, or industrial and only exclude those designated as domestic. For OSWCR well counts, public supply wells are subtracted from the production category to avoid double counting. Some domestic wells may be classified as *de minimis* extractors, defined as pumping less than 2 acre-feet per year (AF/yr) for domestic purposes.

As of the first GSP Amendment, 458 wells in the Eastside Subbasin have sufficient information. Production and public supply well counts are similar to those reported in the OSWCR database in the original GSP; however, domestic well counts are much lower than the 214 wells included in the OSWCR database. Some of the domestic wells identified by DWR may not be reflective of active wells in the Subbasin, because some wells may have been abandoned or are inactive. Alternatively, some of the domestic wells may not have adequate location information to be considered registered for MCWRA's purposes. However, this discrepancy suggests that future registration efforts may be most effective if focused on domestic well owners. Figure 3-7, Figure 3-8, and Figure 3-9 show the density of domestic, production, and public supply wells, respectively, in the Subbasin according to the MCWRA dataset.

Table 3-2. Well Count Summary

Category	MCWRA Well Count	OSWCR Well Count
Domestic	27	214
Production	394	468
Public Supply	37	24
Total	458	706

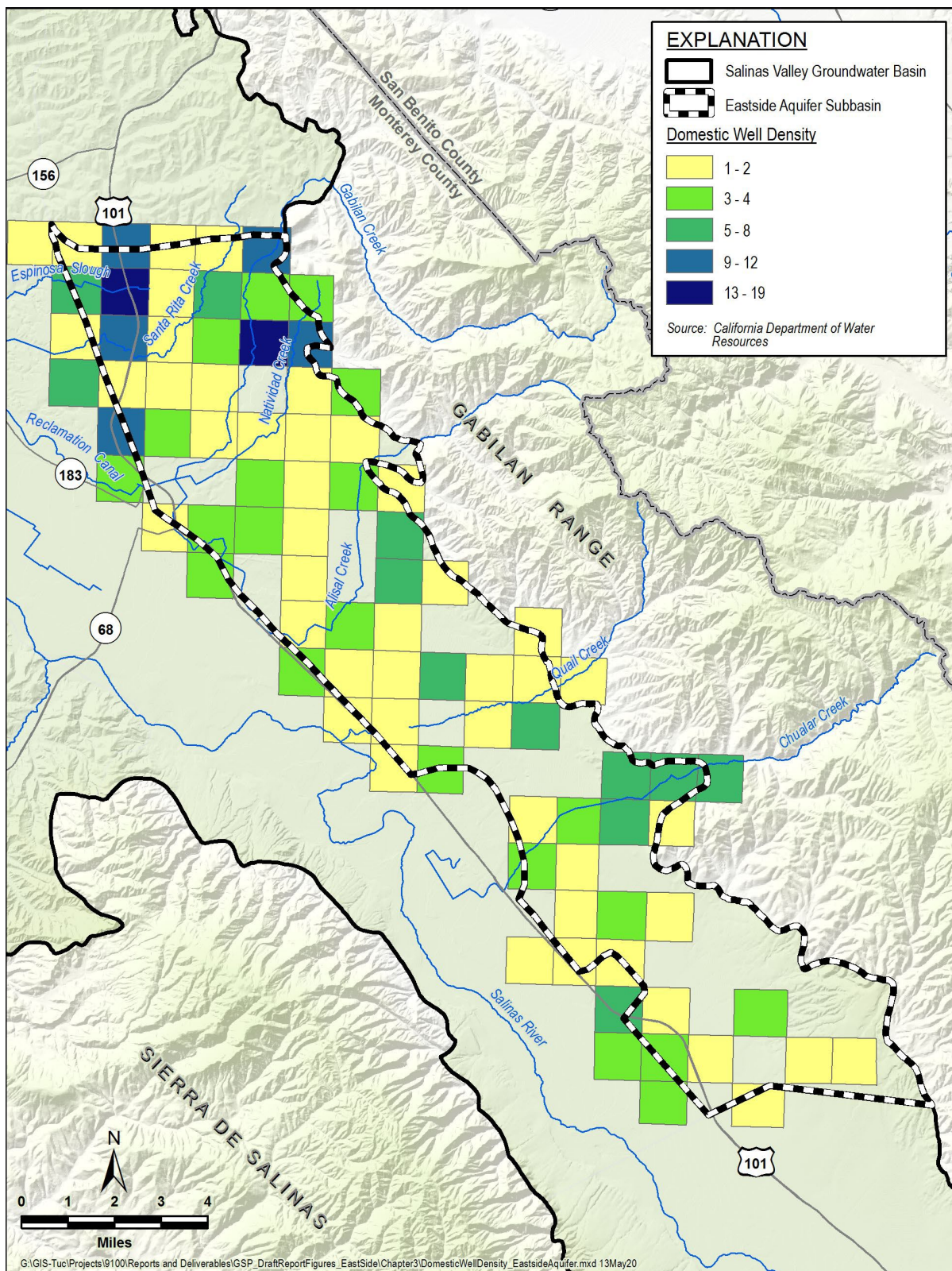


Figure 3-7. Density of Domestic Wells (Number of Wells per Square Mile)

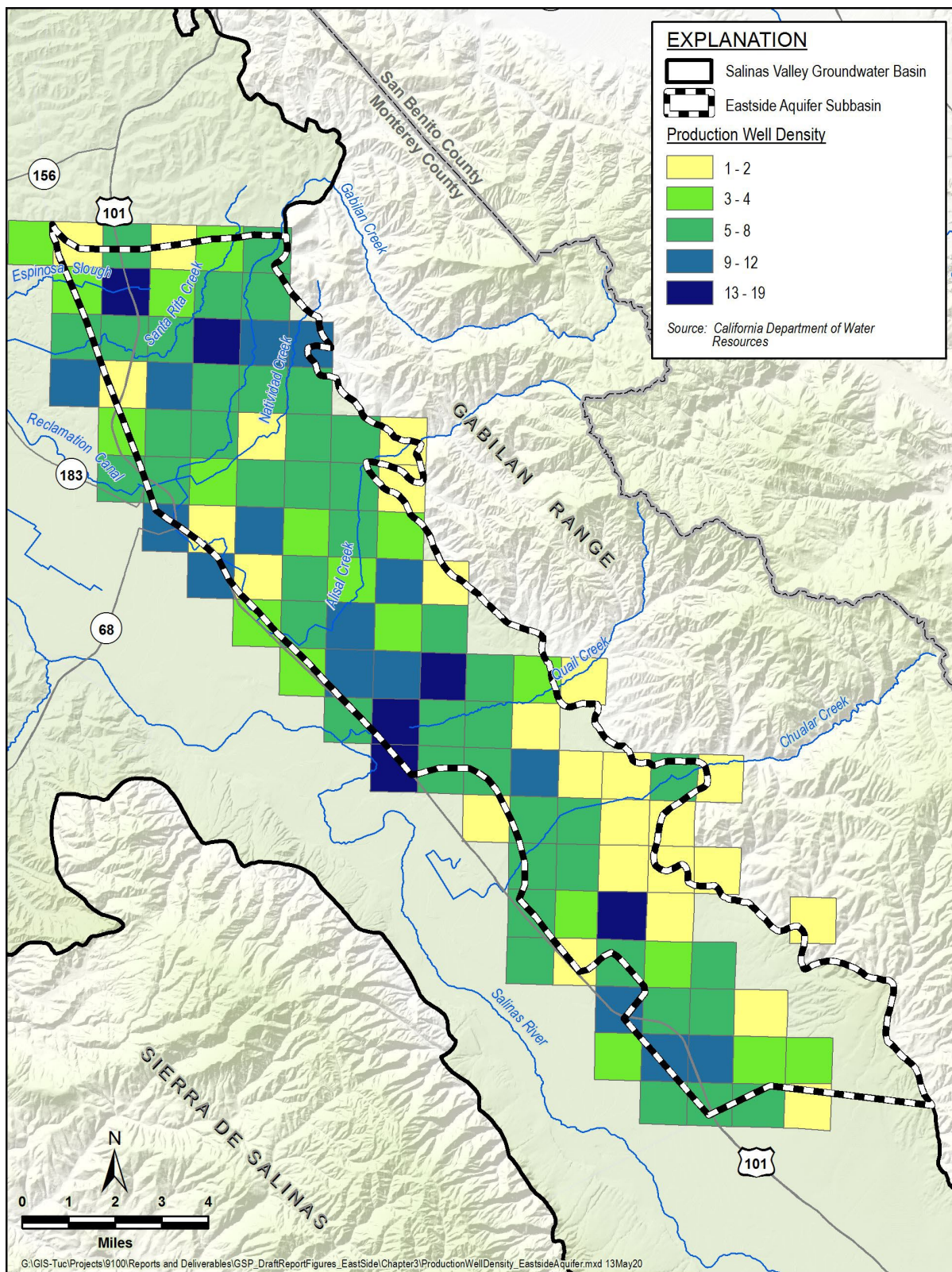


Figure 3-8. Density of Production Wells (Number of Wells per Square Mile)

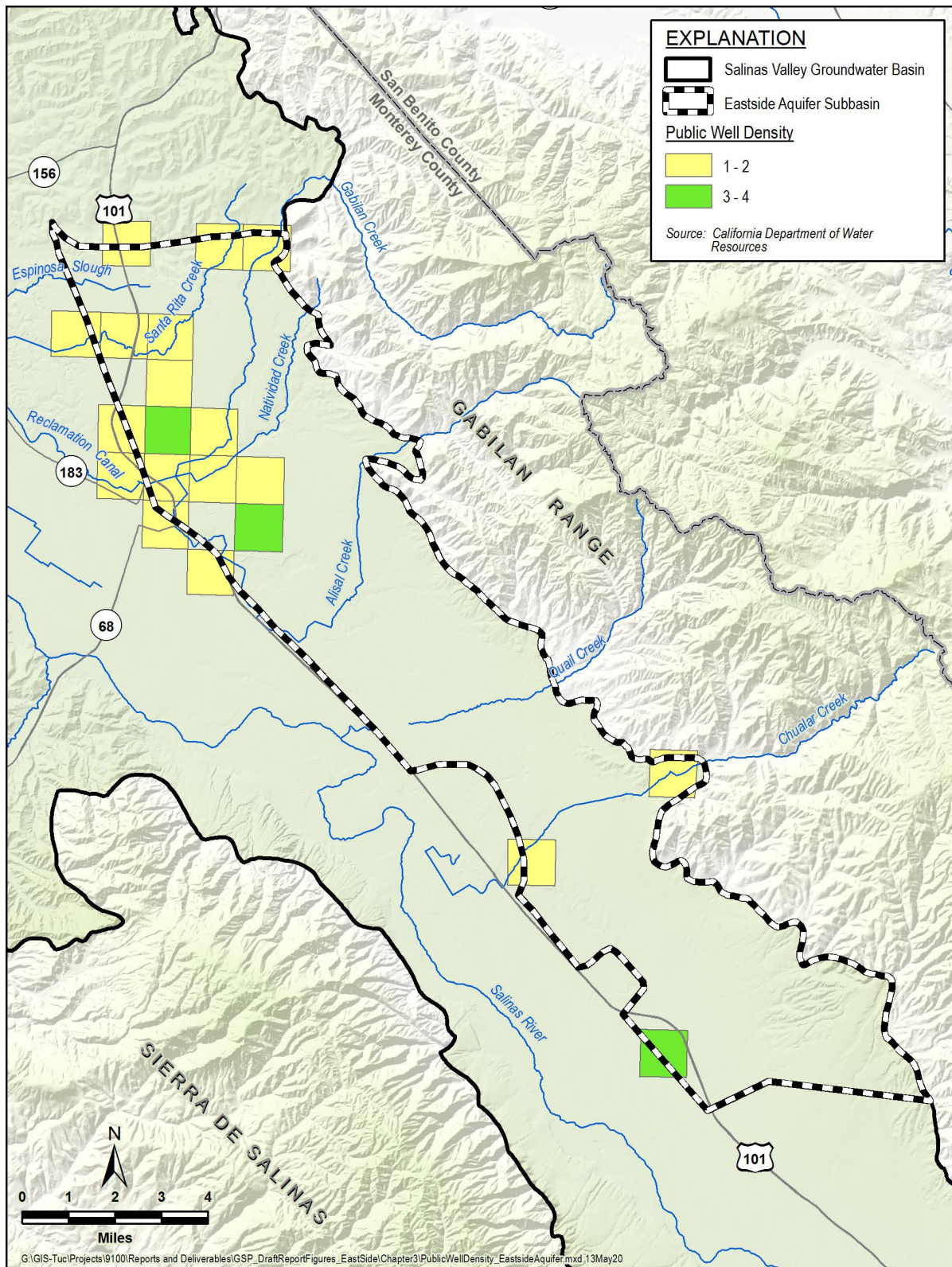


Figure 3-9. Density of Public Supply Wells (Number of Wells per Square Mile)

3.6 Existing Monitoring Programs

3.6.1 Groundwater Monitoring Program

In 2024, SVBGSA and MCWRA established a Groundwater Monitoring Program (GMP) for the Salinas Valley Groundwater Basin, adopted by MCWRA under MCWRA Ordinance No. 5426. The GMP integrates well registration, groundwater level monitoring, groundwater extraction reporting, and groundwater quality monitoring into a single coordinated program. The GMP also incorporates a Deep Aquifers Monitoring Plan to monitor conditions in the deeper aquifers of the Salinas Valley. The existing monitoring programs described below are being incorporated into and expanded under the GMP.

3.6.2 Groundwater Elevation Monitoring

MCWRA operates existing and expanded groundwater elevation monitoring programs in the Salinas Valley, which are incorporated into the monitoring plan of this GSP Amendment as appropriate. MCWRA has annual fall (November/December), August, and monthly groundwater elevation monitoring programs. The groundwater elevation monitoring programs document the avoidance of undesirable results in the principal aquifer in the Subbasin.

MCWRA historically monitored 7 wells within the Eastside Subbasin as part of the CASGEM network. The CASGEM wells were migrated to the SGMA monitoring network and are supplemented with additional wells that are also monitored by MCWRA. In 2024, MCWRA shifted the monitoring of these wells to the GMP with MCWRA Ordinance No. 5426. MCWRA monitors groundwater elevations. Groundwater elevation data from all wells in the monitoring network are publicly available through the SVBGSA Web Map. This network is used for groundwater elevation monitoring under this GSP, as described further in Chapter 7.

3.6.3 Groundwater Extraction Monitoring

MCWRA collects groundwater extraction information from non-*de minimis* extractors within Zone 2C and/or the 180/400, Eastside, Forebay, Langley, Monterey, and Upper Valley Subbasins. The Groundwater Extraction Monitoring System (GEMS) was established in 1993 and updated in 2024 as part of the GMP to meet SGMA requirements.

The GMP is used for groundwater extraction reporting under this GSP, as described in Chapter 7.

3.6.4 Groundwater Quality Monitoring

3.6.4.1 MCWRA Seawater Intrusion Monitoring

Seawater intrusion has not been observed in the Eastside Subbasin; however, seawater has already intruded the adjacent 180/400 Subbasin and could reasonably threaten the Subbasin in the future. MCWRA monitors seawater intrusion with a network of monitoring wells, most wells located within the 180/400 Subbasin. The seawater intrusion monitoring network comprises a combination of production wells and dedicated monitoring wells. This network is used for seawater intrusion monitoring under this GSP, as described in Chapter 7.

3.6.4.2 Other Groundwater Quality Monitoring

Groundwater quality is monitored under several different programs and by different agencies including the following:

- Municipal and community water purveyors must collect water quality samples on a routine basis for compliance monitoring and reporting to the SWRCB Division of Drinking Water (DDW). These purveyors include municipal systems; community water systems; non-transient, non-community water systems; and non-community water systems that provide drinking water to at least 15 service connections or serve an average of at least 25 people for at least 60 days a year.
- Local small or state small water system wells are regulated by the Monterey County Department of Public Health. Local small water systems serve 2 to 4 service connections and state small water systems serve 5 to 14 connections.
- To fulfill the groundwater quality regulatory requirements of the Irrigated Lands Program (ILP), the Central Coast Regional Water Quality Control Board (CCRWQCB) requires monitoring of both on-farm domestic wells and agricultural wells for irrigation and livestock supply.
- In addition to the ILP, the CCRWQCB conducts groundwater quality monitoring at multiple sites as part of investigation or compliance monitoring programs. These sites are discussed further in Chapter 5.

For this GSP, groundwater quality data is downloaded and reviewed from SWRCB's DDW for municipal public water system supply wells and the ILP irrigation supply wells and on-farm domestic wells monitored under the CCRWQCB's Agricultural Order.

3.6.5 Surface Water Monitoring

There are no known active streamflow gauges monitoring surface flow in the Subbasin. One streamflow gauge operated by the U.S. Geological Survey (USGS) within the Eastside Subbasin: the Gabilan Creek gage near Salinas (USGS Site #11152600) was operational until 2014.

The SWRCB CalWATRS is used to collect surface water rights data in the Salinas River watershed. This includes monthly surface water diversions from the Salinas River and its tributaries. Starting in WY 2025, MCWRA asked GMP extraction reporters if groundwater extractions were also reported as surface water diversions.

3.7 Existing Water Management Plans

3.7.1 Monterey County Groundwater Management Plan

MCWRA developed a Groundwater Management Plan that is compliant with AB3030 and SB1938 legislation (MCWRA, 2006). This Groundwater Management Plan exclusively covered the Salinas Valley Groundwater Basin in Monterey County. The original 2022 GSP succeeded the Groundwater Management Plan as the management plan for the Subbasin, and this GSP Amendment replaces the original GSP.

The Groundwater Management Plan identified 3 objectives for groundwater management:

Objective 1: Development of Integrated Water Supplies to Meet Existing and Projected Water Requirements

Objective 2: Determination of Sustainable Yield and Avoidance of Overdraft

Objective 3: Preservation of Groundwater Quality for Beneficial Use

To meet these 3 objectives, the Groundwater Management Plan identified elements that should be implemented by MCWRA. These included groundwater monitoring; monitoring of surface water storage, flow, and quality; determination of basin yield and overdraft; continuation of conjunctive use operations; water quality management; identification of well construction, abandonment, and destruction policies; and public education. Since the GSP replaces the Groundwater Management Plan as the management plan for the Subbasin, the GSP incorporates and refines the elements of the Groundwater Management Plan to comply with SGMA.

3.7.2 Integrated Regional Water Management Plan

The Integrated Regional Water Management (IRWM) Plan for the Greater Monterey County Region was developed by the RWMG, which consists of government agencies, nonprofit

organizations, educational organizations, water service districts, private water companies, and organizations representing agricultural, environmental, and community interests.

The Eastside Subbasin falls within the IRWM Plan area. The IRWM Plan consists of a set of goals and objectives that were identified by the RWMG as being critical to address water resource issues related to the following topics:

- Water Supply
- Water Quality
- Flood Protection and Floodplain Management
- Environment
- Regional Communication and Cooperation
- Disadvantaged Communities
- Climate Change

The IRWM Plan includes more than 25 projects that could assist regional groundwater management (RWMG, 2018).

3.7.3 Urban Water Management Plans

This section describes the urban water management plans (UWMPs) developed by Cal Water and Alco Water Service for parts of the City of Salinas. The City of Gonzales is not required to have a UWMP.

3.7.3.1 California Water Service (Salinas District) Urban Water Management Plan

Cal Water provides water service to portions of the City of Salinas and surrounding communities through its Salinas District in the 180/400, Eastside, and Langley Subbasins. Its 2025 UWMP (California Water Service, 2026) describes the service area; reports historical and projected population; identifies historical and projected water demand by category such as single-family, multi-family, commercial, industrial, institutional/government, and other; and describes the distribution system and identifies system losses and water supply reliability. The UWMP projects water demands through 2050 and evaluates water supply reliability under normal, single dry-year, and multiple dry-year conditions.

The UWMP describes the system's reliance on groundwater and Cal Water's support for the development and implementation of GSPs. Cal Water maintains an active well maintenance program to identify wells requiring replacement and intends to maintain sufficient wells and distribution facilities to accommodate future demand. To maintain system reliability and accommodate future growth, the UWMP describes supply-augmentation projects to reactivate 1

existing inactive well and bring three new wells online to extract an additional 7,090 AF/yr by 2050. Cal Water also identifies groundwater sustainability considerations under SGMA as a driver for its ongoing conservation planning and resource management.

The UWMP recognizes that GSAs have authority under SGMA to implement projects and management actions. It states that the applicable GSPs contain various PMAs, and that if future actions such as groundwater pumping allocations or pumping fees are adopted, Cal Water will consider them in future supply planning.

Cal Water has and intends to take an active role in the local and state-wide management of groundwater resources over the next 5 to 25+ years by fully supporting and participating in the principal edicts of SGMA. Cal Water has had active participation with the SVBGSA, the SVBGSA Board, the SVBGSA technical advisory committees, and the subbasin committees.

The 2025 UWMP addresses groundwater quality as a factor in water supply reliability. Cal Water routinely monitors its wells and treated water for regulated constituents and tracks changes in constituent concentrations to proactively address potential water quality issues. Where source-water constituents are detected at concentrations requiring treatment, Cal Water may take affected wells offline and implement appropriate treatment. Cal Water also evaluates groundwater contamination when siting new wells and avoids areas of known contamination. Based on these monitoring and management practices, the UWMP concludes that water quality is not expected to affect the reliability of Cal Water's supplies through 2050.

Cal Water's UWMP notes that groundwater will continue to remain as its sole supply. The 2025 UWMP incorporates climate change into its reliability analyses and concludes that available supplies are expected to remain sufficient to meet projected demands, including during a 5-year drought and under projected climate change conditions.

3.7. Alisal Water Service (Salinas District) Urban Water Management Plan

Alco provides water service to portions of the City of Salinas and adjacent unincorporated areas. Its 2025 UWMP (Alco Water Service, 2026) describes Alco's service area and customer base; presents historical and projected population and water demands; and evaluates its groundwater supplies, distribution system, water conservation programs, and water supply reliability. The UWMP projects water demands through 2050 and evaluates the adequacy of Alco's groundwater supply under normal, single dry-year, and multiple dry-year conditions.

The UWMP describes Alco's reliance on groundwater from the Eastside Subbasin of the Salinas Valley Groundwater Basin. Alco operates 6 wells, with 3 additional wells on standby, and has sufficient production capacity to meet current average-day and maximum-day demands. To improve groundwater supply reliability, Alco is implementing 2 projects: the Bardin Well, which had been drilled but was not yet online when the UWMP was prepared, and the Laurel Heights

well replacement. The UWMP concludes that groundwater supplies are expected to be sufficient to meet projected demands through 2050.

The UWMP describes Alco's active participation in SGMA implementation and the Eastside Subbasin GSP. Alco participates in the SVBGSA through an alternating seat shared with Cal Water and coordinates with public and regulatory agencies regarding groundwater management. Other activities include 100 percent metering of service connections and deliveries, participation in GSP implementation, and incorporation of groundwater management principles and data into technical studies, facility master plans, UWMPs, General Rate Case filings, and grant applications.

The UWMP recognizes that SGMA may affect future water supply reliability through management actions such as groundwater pumping allocations, restrictions on new wells, or pumping fees. Alco states that it will support appropriate management actions to address Undesirable Results and consider future SGMA requirements in its water supply planning.

The UWMP also addresses groundwater quality. Alco routinely monitors wells and treated water for regulated constituents, tracks water quality trends, and may take wells offline or implement treatment when necessary. Alco also considers groundwater contamination when siting new wells. The UWMP concludes that water quality is not expected to affect supply reliability through 2050.

Alco's groundwater supply is its sole water source; the UWMP does not identify current or planned use of recycled water, surface water, stormwater, or other alternative supplies. The UWMP incorporates climate change into its demand and supply reliability analyses and concludes that groundwater supplies are expected to remain sufficient to meet projected demands under normal and dry-year conditions through 2050.

3.8 Existing Water Regulatory Programs

3.8.1 Well Permitting

The Monterey County Code Chapter 15.08 contains the County's regulations for the construction, repair, destruction, and reconstruction of all water wells. The Chapter sets forth certain technical requirements that appear to be purely ministerial in their application; however, the Chapter also refers to DWR Bulletin Nos. 74-81 and 74-1 and gives the Health Officer discretion to impose unspecified conditions on a permit, grant variances, and deny an application if in his/her judgment it would defeat the purposes of the Chapter. Permit review considers whether a well would be located in an area where groundwater quality programs are known to exist or where a well will intersect more than 1 aquifer, among other things.

On August 29, 2018, the State Third Appellate District Court of Appeal published an opinion in *Environmental Law Foundation v. State Water Resources Control Board* (26 Cal. App.5th 844), a case that may impact future permitting of wells near navigable surface waters to which they may be hydrologically connected. The Court of Appeal found that while groundwater itself is not protected by the public trust doctrine, the doctrine does protect navigable waters from harm caused by extraction of groundwater if it adversely affects public trust uses. Further, it found that Siskiyou County, as a subdivision of the State, shares responsibility for administering the public trust. Similarly, the County is responsible for well permitting. Therefore, it has a responsibility to consider the potential impacts of groundwater withdrawals on public trust resources when permitting wells near areas where groundwater may be interconnected with navigable surface waters.

Moreover, California Supreme Court's decision in *Protecting Our Water and Environmental Resources v. County of Stanislaus* (10 Cal.5th 479 (2020)) held that Stanislaus County could not categorically classify its issuance of groundwater well construction permits as ministerial decisions exempt from environmental review under the CEQA. The Monterey County Health Department, Environmental Health Bureau issues well permits and does inhouse CEQA review on all well application in consultation when need with County Counsel. If the well application is in conjunction with a building permit, EHB receives input from the County of Monterey Housing and Community Development. Although the Monterey County Code has not yet been amended in response to these cases, discretionary well permit review, where determined to be needed, may require analyses of the effects of pumping from new wells, including factors such as both the total volume and seasonal timing of extraction, how the new wells may affect nearby wells and regional groundwater levels, and whether the wells are located in area with overdraft conditions. GSPs have established SMC that provide quantifiable minimum thresholds that can be used in these evaluations.

As in the land use discussion, the Public Service element of the County's 2010 General Plan addresses permitting of individual wells. Table 3-3 summarizes the Monterey County General Plan's water supply guidelines for the creation of new residential or commercial lots (County of Monterey Housing and Community Development, 2010, Table PS-1). Table 3-4 depicts the decision matrix from the Monterey County General Plan for permitting new residential or commercial wells for existing lots (County of Monterey Housing and Community Development, 2010, Table PS-2).

Table 3-3. County of Monterey Water Supply Guidelines for the Creation of New Residential or Commercial Lots

Major Land Groups	Water Well Guidelines
Public Lands	Individual Wells Permitted in Areas with Proven Long-Term Water Supply
Agriculture Lands	Individual Wells Permitted in Areas with Proven Long-Term Water Supply
Rural Lands	Individual Wells Permitted in Areas with Proven Long-Term Water Supply
Rural Centers	Public System; Individual Wells Allowed in limited situations
Community Areas	Public System

Table 3-4. County of Monterey Well Permitting Guidelines for Existing Residential and Commercial Lots

Characteristics of Property	Water Connection Existing or Available from the Water System	Not Within a Water System or a Water Connection Unavailable
Greater than or equal to 2.5 Acres connected to a Public Sewage System or an on-site wastewater treatment system	Process Water Well Permit	Process Water Well Permit
Less than 2.5 Acres and connected to a Public Sewage System	Process Water Well Permit	Process Water Well Permit
Less than 2.5 Acres and connected to an on-site wastewater treatment system	Do not Process Water Well Permit	Process Water Well Permit

3.8.2 Groundwater Export Prohibition

The MCWRA Act, § 52.21 prohibits the export of groundwater for uses outside the Salinas Valley Groundwater Basin from any part of the Basin, including the Eastside Subbasin. In particular, the Act states:

For the purpose of preserving [the balance between extraction and recharge], no groundwater from that basin may be exported for any use outside the basin, except that use of water from the basin on any part of Fort Ord shall not be deemed such an export. If any export of water from the basin is attempted, the Agency may obtain from the superior court, and the court shall grant, injunctive relief prohibiting that exportation of groundwater.

3.8.3 Agricultural Order

In 2021, the CCRWQCB issued Agricultural Order No. R3-2021-0040, the Proposed General Waste Discharge Requirements for Discharges from Irrigated Lands (CCRWQCB, 2021). The permit requires that growers implement practices to reduce nitrate leaching into groundwater and improve receiving water quality. Specific requirements for individual growers are structured into 3 phases based on the relative risk their operations pose to water quality. Each of the 3 phases encompass a different area of the Central Coast Basin. Monitoring results from this new Agricultural Order (Ag Order 4.0) will be incorporated into this GSP's groundwater quality network.

3.8.4 Water Quality Control Plan for the Central Coast Basins

The Water Quality Control Plan for the Central Coastal Basin (Basin Plan) was most recently updated in June 2019 (SWRCB, 2019). The objective of the Basin Plan is to outline how the quality of the surface water and groundwater in the Central Coast Region should be managed to provide the highest water quality reasonably possible. Water quality objectives for both groundwater and surface water are provided in the Basin Plan.

The Basin Plan lists beneficial users, describes the water quality that must be maintained to allow those uses, provides an implementation plan, details SWRCB and CCRWQCB plans and policies to protect water quality, and describes statewide and regional surveillance and monitoring programs. Present and potential future beneficial uses for waters in the Basin are municipal supply; agricultural supply; groundwater recharge; recreation; sport fishing; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species habitat; and spawning, reproduction, and/or early development of fish.

3.8.5 Title 22 Drinking Water Program

The SWRCB DDW regulates public water systems in the State to ensure the delivery of safe drinking water to the public. A public water system is defined as a system for the provision of water for human consumption that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. Private domestic wells, wells associated with drinking water systems with fewer than 15 residential service connections, industrial, and irrigation wells are not regulated by the DDW.

The DDW enforces the monitoring requirements established in Title 22 of the California Code of Regulations for public water system wells, and all the data collected must be reported to the DDW. Title 22 also designates the Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs) for various waterborne contaminants, including volatile organic compounds, non-volatile synthetic organic compounds, inorganic chemicals, radionuclides, disinfection byproducts, general physical constituents, and other parameters.

3.8.6 County Ordinance Nos. 5302 and 5303 Regarding Deep Aquifer Wells

Due to identified concerns regarding the risk of seawater intrusion into the Deep Aquifers the County of Monterey Board of Supervisors adopted Ordinance No. 5302 in May 2018, pursuant to Government Code Section 65858. The ordinance was an interim urgency ordinance, which took effect immediately upon adoption. The ordinance prohibited the acceptance or processing of any applications for new wells beneath areas impacted by seawater intrusion and in the Deep Aquifers of the Salinas Valley, with stated exceptions including municipal wells and replacement wells. The ordinance was originally only effective for 45 days, but at the June 26, 2018, County

of Monterey Board of Supervisors meeting, the Board of Supervisors extended the ordinance to May 21, 2020, by adoption of Ordinance No. 5303. The ordinance also required that all new wells in the Deep Aquifers meter groundwater extractions, monitor groundwater elevations and quality, and all data submitted to MCWRA and SVBGSA. Ordinances Nos. 5302 and 5303 have expired.

In December 2020, County Ordinance No. 5339 was adopted and placed a 90-day moratorium on new well construction permit applications. The moratorium was adopted so the County could study the impact of the California Supreme Court's decision on 27 August 2020 in the case *Protecting Our Water and Environmental Resources et al., v. County of Stanislaus, et al.*, (10 Cal.5th 479 (2020); "Protecting Our Water").

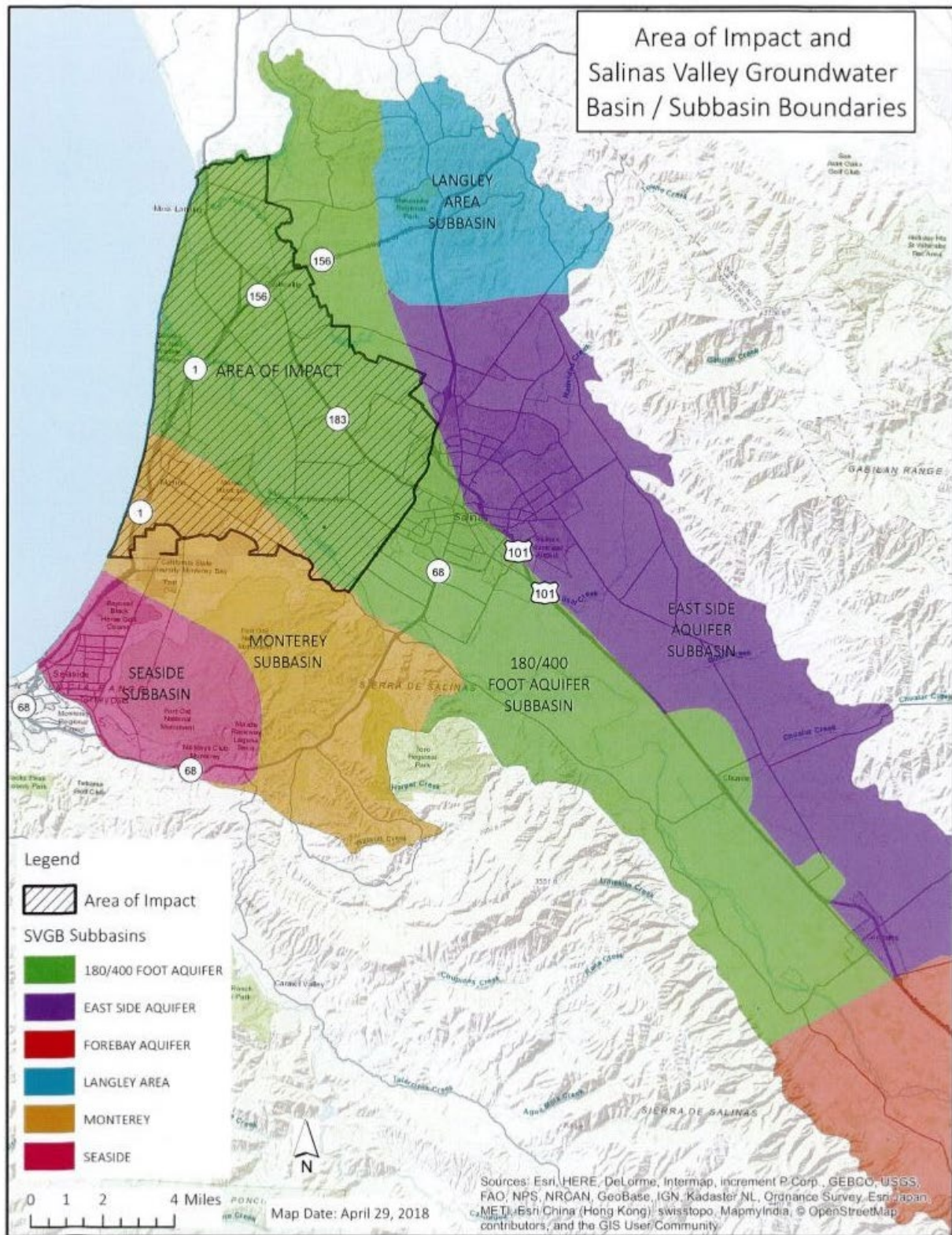


Figure 3-10. Map of Ordinance No. 5302 Area of Impact (Monterey County Board of Supervisors, 2018)

3.8.7 Monterey County Water Resources Agency Ordinance No. 3709

MCWRA Ordinance No. 3709, adopted in 1993 by the MCWRA Board of Supervisors of the Water Resources Agency, prohibits groundwater extractions and the drilling of new extraction wells in certain portions of the 180-Foot Aquifer after January 1, 1995. The ordinance pertains to portions of the Pressure 180-Foot Aquifer in MCWRA's Pressure Area, which includes portions of the northern 180/400 Subbasin and portions of the Monterey Subbasin, defined in the ordinance boundary delineation as Territory A and Territory B, and the latter extends slightly into the Eastside Subbasin. and as shown on Figure 3-12 (MCWRA, 1995).

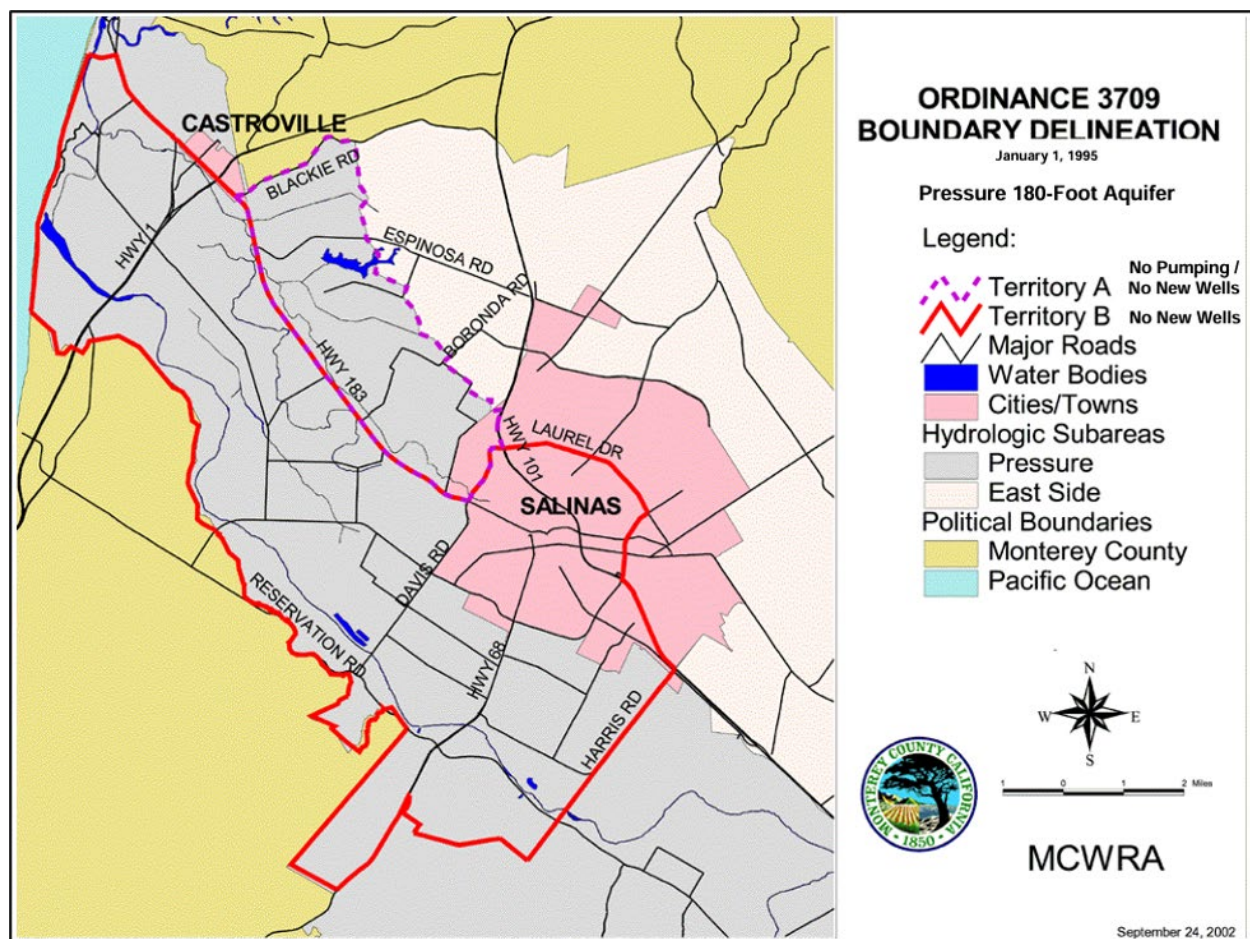


Figure 3-12. Territory A and Territory B of MCWRA Ordinance No. 3709

3.8.8 Monterey County Water Resources Agency Ordinance No. 3790

Adopted in 1994, MCWRA Ordinance No. 3790 establishes regulations for the classification, operation, maintenance, and destruction of groundwater wells in the Castroville Seawater Intrusion Project area, also known as Zone 2B.

3.8.9 County Public Policy of Safe and Clean Water

In December 2018, the Board of Supervisors adopted Resolution No. 18-385 recognizing the human right to safe and clean drinking water. The resolution established a public policy recognizing that all residents of Monterey County have the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes, including disadvantaged individuals and groups and communities in rural and urban areas. The intent of the policy is to inform the County when implementing policies and regulations affecting water supply and usage and to help the County focus on the issue of drinking water pollution in certain Monterey County domestic wells and water systems. The policy also serves to identify potential future threats due to drought and a lack of available drinking water without impacting water rights or expanding or creating new County obligations.

3.9 Incorporating Existing Programs into the GSP and Limits on Operational Flexibility

Information from existing water resource monitoring, management, and regulatory programs have been incorporated into this GSP. They are taken into consideration during the preparation of the sustainability goal, when establishing SMC, and when developing PMAs. This GSP has been developed to reflect the principles outlined in those existing local plans and builds on existing plans during GSP implementation. Some of the existing management plans and ordinances may limit operational flexibility. These potential limits to operational flexibility have already been incorporated into the PMAs included in this GSP. Examples of limits on operational flexibility include:

- The groundwater export prohibition included in the MCWRA Act prevents export of water out of the Salinas Valley Groundwater Basin. This prohibition is not expected to adversely affect SVBGSA's ability to reach sustainability.
- The Basin Plan and the Title 22 Drinking Water Program restrict the quality of water that can be recharged into the Subbasin.
- The Habitat Conservation Plan (HCP) being developed by MCWRA on the Salinas River will guide operations for Nacimiento and San Antonio reservoir releases which provide for groundwater recharge, among other purposes.

The other monitoring, management, and regulatory programs do not limit the operational flexibility in this Subbasin.

4 HYDROGEOLOGIC CONCEPTUAL MODEL

The HCM characterizes the geologic and hydrologic framework of the Subbasin in accordance with the GSP Regulations § 354.14. It is based on best available data, technical studies, and qualified maps that characterize the physical components and surface water/groundwater interaction in the Subbasin. This HCM provides comprehensive written descriptions and illustrated representations of subsurface conditions. The chapter describes the Subbasin characteristics and processes that govern the flow of water across the Subbasin boundaries and outlines the general groundwater setting that may be encountered in the subsurface environment. Current and historical groundwater conditions are discussed in greater detail in the subsequent chapter. This current HCM in this GSP will be part of an iterative process where current conditions and data gaps are described, investigated, and then updated accordingly.

Since the original 2022 GSP, this HCM has been updated with newly available data and technical part of the Periodic Evaluation (Montgomery & Associates, 2026a). The updated HCM strengthens the historical understanding of the Subbasin presented in the original GSP to guide SGMA implementation with greater accuracy. This HCM update focuses on key areas where new data indicated a revised interpretation was needed. Key updates to this HCM include:

- Updated the bedrock surface that delineates the bottom of the groundwater basin
- Refined the extents and character of the alluvial fans
- Incorporated the 400/Deep Aquitard that separates the 400-Foot Aquifer from the Deep Aquifers in relation to the alluvial fans
- Explored potential recharge pathways for future implementation projects

4.1 Subbasin Setting and Topography

The Eastside Subbasin is at the northern, downgradient end of the Salinas Valley Groundwater Basin, an approximately 90-mile-long alluvial basin underlying the elongated, intermountain valley of the Salinas River. The Subbasin is oriented southeast to northwest, with several streams draining the Gabilan Range and flowing into the Salinas River, which then drains toward the northwest into the Pacific Ocean at Monterey Bay (Figure 4-1).

The colored bands on Figure 4-1 show the topography of the Subbasin, derived from the USGS Digital Elevation Model (DEM). The Subbasin slopes at an average grade of approximately 100 feet/mile, generally from the northeast to the southwest toward the Salinas River. Land surface elevations in the Subbasin range from approximately 900 feet above sea level along its border with the Gabilan Range to approximately 20 feet above sea level where it meets the 180/400 Subbasin along State Highway 101 near the City of Salinas.

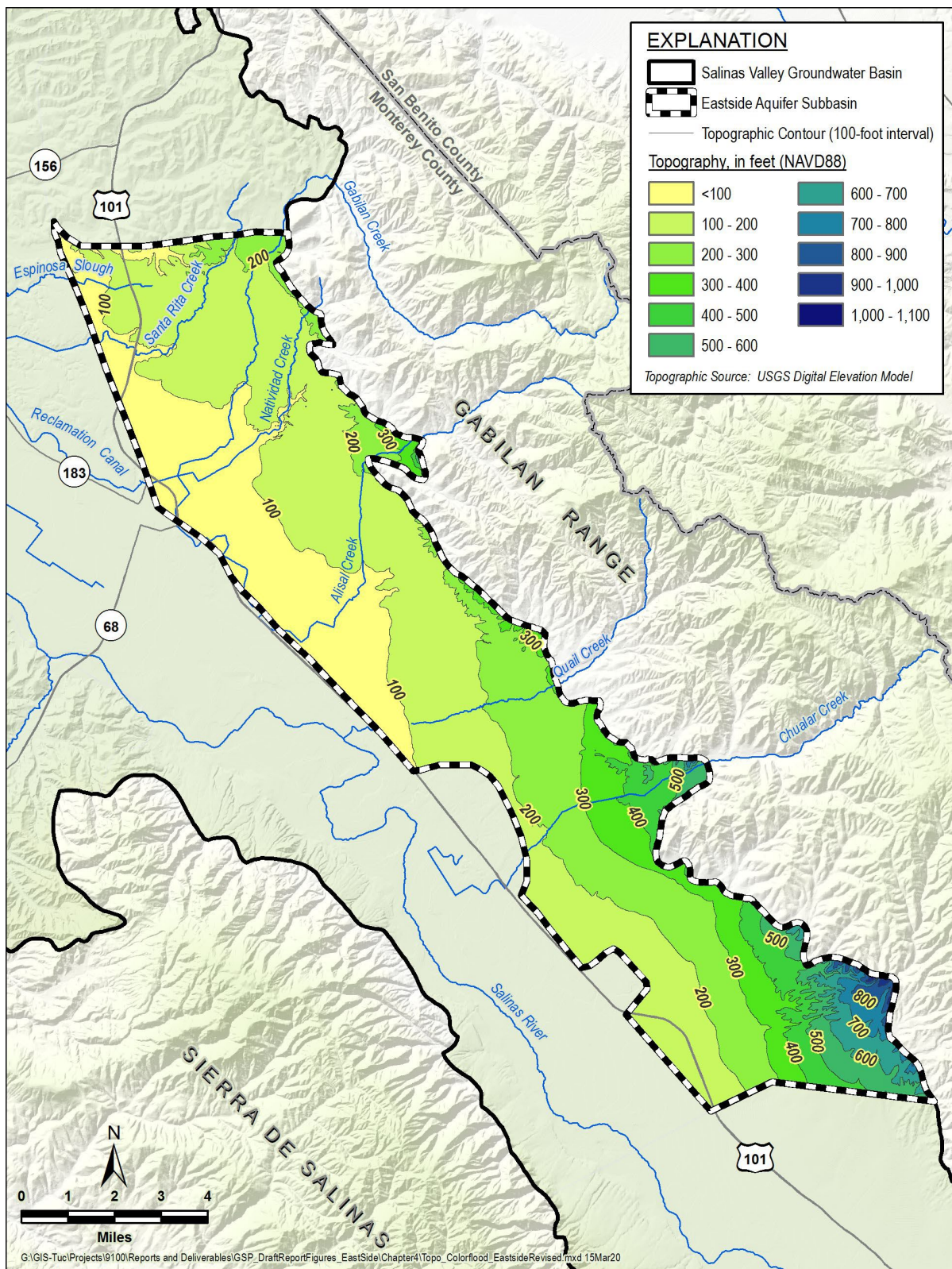


Figure 4-1. Eastside Aquifer Subbasin Topography

4.2 Subbasin Geology

The subbasin geology describes the physical framework in which groundwater occurs and moves. The geology of the Subbasin controls the locations and depths of aquifers and aquitards, as well as the subbasin boundaries. The geologic descriptions described here are derived from previously published scientific reports and from investigations conducted by the USGS, State of California, and academic institutions.

The Subbasin was formed through periods of structural deformation and periods of marine and terrestrial sedimentation in a tectonically active area on the eastern edge of the Pacific Plate. Figure 4-2 presents a geologic map of the Subbasin and vicinity. This geologic map was adopted from the California Geologic Survey's 2010 statewide geologic map and the surface geology map of Monterey County (Jennings, *et al.*, 2010; Rosenberg, 2001). The locations of cross sections used to define the principal aquifer in Section 4.4 are also shown on Figure 4-2. The legend on Figure 4-2 presents the age sequence of the geologic materials from the youngest unconsolidated Quaternary sediments to the oldest pre-Cambrian basement rock.

The geology of the Eastside Subbasin is dominated by alluvial fan deposits. Surface-water drainages originating in the Gabilan Range deposited a series of interconnected alluvial fans that extend from the Gabilan Range in the northeast to the fluvial deposits that define the 180/400 Subbasin in the southwest. The alluvial fans are deposited atop the bedrock, generally mirroring their southwesterly downward dip, and—as identified through AEM data—extend to halfway across the basin in most locations. These alluvial fans are demarcated by the lowest electrical resistivity values from the AEM surveys used in the HCM updates and generally align with high clay content. This clay content is likely the result of chemical decomposition of the feldspars found in the granite of the Gabilan Range.

FIGURE 4-2. EXPLANATION

QUATERNARY

Qa	Aromas Sand, undifferentiated
Qal	Alluvial deposits, undifferentiated
Qb	Basin deposits
Qc	Colluvium
Qe	Eolian deposits
Qfp	Flood-plain deposits, undifferentiated?
Qfpl	Alluvial fans, late Pleistocene
Qfpm	Alluvial fans, middle Pleistocene
Qhf	Alluvial fan deposits, Holocene
Qls	Landslide deposits
Qt	Fluvial terrace deposits, undifferentiated
Qtmp	Fluvial terrace deposits, middle Pleistocene

PRE-CRETACEOUS

pKms	Mica schist (Gabilan Range)
pKm	Marble

CRETACEOUS

Kgdg	Granodiorite of Gloria Road
Kgdn	Granodiorite of Natividad
Kgj	Granite of Jacks Hill
Kqdj	Quartz diorite-granodiorite of Johnson Canyon
Kqmf	Quartz monzonite of Fremont Peak

4.2.1 Geologic Formations

Major geologic units present in the Eastside Subbasin are described below, starting at the surface and moving through the geologic layers from youngest to oldest. Geologic descriptions are derived from a combination of sources (Jennings *et al.*, 2010; Clark *et al.*, 2000; Johnson *et al.*, 1988; DWR, 2004). The corresponding designations on Figure 4-2 are provided in parentheses.

Quaternary Deposits

- *Alluvium in streambeds and small drainages* (Qal, Qb, and Qfp) – Streambeds and other drainages are filled with loose, moderately sorted silt and sand with lenses of clay and some areas of gravel (Qal). Clays mixed with silt, sand, and organic material have collected at the bottoms of past and present basins (Qb). A floodplain deposit in the northeast corner of the Subbasin contains loose sand and silt where Gabilan Creek has overflowed its banks (Qfp).

- *Hillslope deposits* (Qc and Qls) – These small Holocene deposits were transported by a combination of runoff and gravity, not streamflow. Colluvium collects gradually over time (Qc). Landslides happen suddenly (Qls). There is 1 colluvium deposit high in the foothills near Alisal Creek and there is 1 landslide deposit on the south bank of Natividad Creek.
- *Alluvial fans* (Qhf, Qfpl and Qfpm) – Alluvial fans are sediments deposited in a distributary manner at the base of mountain fronts where streams emerge (Kennedy/Jenks, 2004). They are the dominant feature of Eastside Subbasin’s surface geology, often stretching across the width of the Subbasin. They consist of moderately to poorly sorted sand, silt, and gravel, although recent data have shown them to have higher clay content than previously understood. This clay content is likely the result of chemical decomposition of the feldspars found in the granite. Holocene alluvial fans (Qhf) are unconsolidated. Late and middle Pleistocene alluvial fans (Qfpl and Qfpm, respectively) can be weakly to moderately consolidated.
- *Aromas Red Sands and similar* (Qa and Qe) – The Aromas Red Sands Formation marks the northern border of the Subbasin. It is composed of lower fluvial sand units and upper aeolian sand units locally separated by interbedded clays and silty clays (DWR, 2004). They include partly consolidated, moderately to poorly sorted, silty clay, sand, and gravel (Qa). Sand matching that of the Aromas Red Sands is also found in windblown deposits (Qe). Some sources refer to the windblown deposits as the Upper Aromas Red Sands.
- *Terrace deposits* (Qt and Qtmp) – Terrace deposits are the remains of ancient floodplains. In the Eastside Subbasin, they can be found near the lower stretches of most creeks. They are partially consolidated and consist mostly of sand mixed with silt and gravel. Some are known to be from the middle Pleistocene (Qtmp). Others are of indeterminate age (Qt).
- Older Igneous and Metamorphic Rocks

The eastern border of the Subbasin is defined by the contact between the Quaternary sedimentary units described above and the Cretaceous igneous and pre-Cretaceous metamorphic rocks of the Gabilan Range. Hard rocks like these also form the basement below the aquifer.

4.2.2 Restrictions to Flow

There are no known structural features that restrict groundwater flow within the Eastside Subbasin, such as geologic folds or faults. However, groundwater flow from the Eastside Subbasin to various other subbasins may be restricted due to lack of continuous sediments. This lack of continuity is associated with different geologic depositional environments. For example, the transition from relatively layered fluvial and marine deposits in the 180/400 Subbasin to the alluvial fan deposits in the Eastside Subbasin may impact groundwater flow between the 2 subbasins. More locally, there is a groundwater depression northeast of Salinas, as

shown in Chapter 5, Figures 5-1 through 5-4. Usually, groundwater flow follows the topography of the valley northwest toward Monterey Bay, but groundwater near the depression instead flows toward that low point in the water table. Some data suggest that the bedrock may be shallow under the City of Salinas close to the groundwater depression. However, without additional bedrock data under the City of Salinas, the Durbin *et al.* (1978) bedrock surface is the best information.

4.2.3 Soils

The soils of the Subbasin are derived from the underlying geologic formations and influenced by the historical and current patterns of climate and hydrology. Soil types can influence groundwater recharge and the placement of recharge projects. Productive agriculture in the Subbasin is supported by deep, dark, fertile soils. The arable soils of the Subbasin historically are classified into 4 groups (Carpenter and Cosby 1925): residual soils, old valley-filling soils, young valley-filling soils, and recent-alluvial soils.

More recent surveys classify the soils into categories based on detailed soil taxonomy (U.S. Department of Agriculture, 2018). Figure 4-3 is a composite soil map of soils in the Subbasin from the USDA Natural Resources Conservation Service (NRCS) and the Gridded Soil Survey Geographic (SSURGO) Database that is produced by the National Cooperative Soil Survey (NCSS).

The Subbasin is dominated by 4 soil orders: mollisols, entisols, vertisols, and alfisols. Minor soils include histosols and isceptisols. The 4 major soil orders are described below.

- **Mollisols** are the most widespread soil order in the Eastside Subbasin. Mollisols are characterized by a dark surface horizon, indicative of high organic content. The organic content often originates from roots of surficial grasses or similar vegetation. They are highly fertile and often alkaline rich (calcium and magnesium). Mollisols can have any moisture regime, but enough available moisture to support perennial grasses is typical.
- **Alfisols** are present along portions of the Subbasin. Alfisols are known to have natural fertility both from clay accumulation in the subsurface horizons and from leaf litter when under forested conditions. This order of soils is commonly associated with high base minerals such as calcium, magnesium, sodium, and potassium.
- **Vertisols** are present in some areas on the Subbasin lowlands. Vertisols are predominantly clayey soils with high shrink-swell potential. Vertisols are present in climates that have distinct wet and dry seasons. During the dry season these soils commonly have deep, wide cracks. During the wet season these soils trend to have water pooling on the surface due to the high clay content.

- **Entisols** are relatively rare in the Subbasin. Entisols are mineral soils without distinct soil horizons because they have not been in place long enough for distinct horizons to develop. These soils are often found in areas of recent deposition such as active flood plains, river basins, and areas prone to landslides. These soils may be found near active tributaries in the Subbasin.

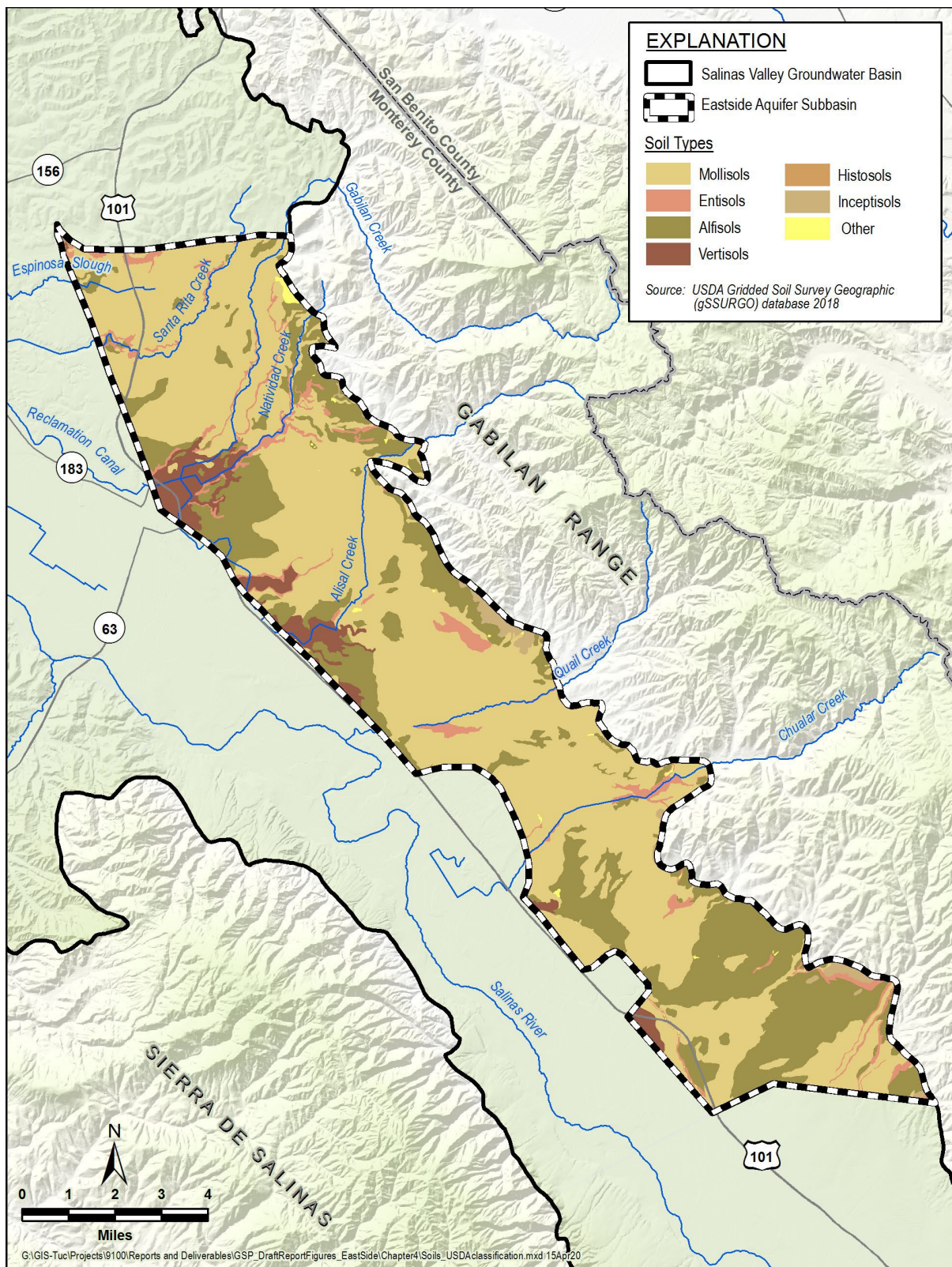


Figure 4-3. Composite Soils Map

4.3 Subbasin Extent

The subbasin extents describe both the lateral and vertical extents of the Subbasin. The Subbasin extents are defined by the DWR and are documented in Bulletin 118, (DWR, 2003; DWR, 2016a). Figure 4-1 illustrates the extent of the Subbasin.

4.3.1 Lateral Subbasin Boundaries

The Eastside Subbasin is laterally bounded by a combination of subbasin boundaries and physical boundaries of the Salinas Valley Groundwater Basin, all shown on Figure 1-1.

4.3.1.1 Boundaries with Adjacent Subbasins

The Eastside Subbasin is bounded by the following subbasins:

- **The Forebay Subbasin.** The southern boundary with the adjacent Forebay Subbasin is near the town of Gonzales (DWR, 2004). It is extended from the approximate southern limit of the regional marine clay layers that are the defining characteristic of the southern extent of the 180/400 Subbasin. There may be some hydraulic connectivity with the Forebay Subbasin, as the eastern boundary of the Forebay Subbasin shares the same alluvial fan depositional environment as the Eastside Subbasin.
- **The 180/400 Subbasin.** The western boundary with the adjacent 180/400 Subbasin generally follows the trace of Highway 101 and coincides with the northeastern limit of shallow confining conditions in the 180/400 Subbasin resulting from the deposition of marine clays. An analysis of stratigraphic correlations concluded that the depositional facies near this boundary begin to change from alluvial fan deposits on the east to fluvial and marine deposits on the west (Kennedy/Jenks, 2004). Previous studies of groundwater flow across this boundary indicate that there is restricted hydraulic connectivity between the subbasins. Newly acquired data in combination with existing studies indicate that this restricted hydraulic connectivity may be due to the abundance of fine-grained materials that define the farther extents of the alluvial fans.
- **The Langley Subbasin.** The northern boundary with the Langley Subbasin generally coincides with the presence of Pleistocene Aromas Red Sands indicative of the Langley Subbasin (DWR, 2004). Although the Langley Subbasin is not on the valley floor, there are no reported or observed hydraulic barriers separating these subbasins. However, similar to the boundary with the 180/400 Subbasin, the difference in sediments and depositional environments may restrict hydraulic connectivity.

4.3.1.2 Physical Basin Boundaries

The Eastside Subbasin is bounded by the following physical feature:

- **The Gabilan Range.** The eastern boundary of the Subbasin is the contact between the unconsolidated alluvial fan deposits and the Gabilan Range, which consists mostly of granitic rocks. Groundwater flow across this boundary has not been studied extensively, and many reports indicate groundwater recharge for this subbasin is primarily through the stream channels originating in the Gabilan Range. There are no published mapped faults or significant fracture sets that could contribute to mountain block recharge for the Subbasin.

4.3.2 Vertical Subbasin Boundaries

The base, or bottom, of the Subbasin is the contact between the alluvial fans and the underlying granitic rocks that exist near the Gabilan Range, and has been revised based on newly available AEM data. Closer to the boundary with the 180/400 Subbasin, this contact is joined with the modeled basin bottom, which represents the usable portion of the Salinas Basin and is based on the work of Durbin *et al.* (1978). Previous investigations have estimated that the entire sedimentary sequence in the Salinas Valley Groundwater Basin might range between 10,000 and 15,000 feet thick. However, the productive freshwater principal aquifer in this Subbasin is encountered at shallower depths.

This GSP Amendment 1 adopts the bottom of the aquifer, which is a combination of the sharp contact with the granite closer to the Gabilan Range and the basin bottom defined by the USGS (Durbin *et al.*, 1978), closer to the 180/400 Subbasin boundary. Durbin *et al.*, (1978) defined the usable portion of the Basin as a combination of freshwater-producing geologic formations and the reasonable depth of potential production wells. Figure 4-4 is an updated map of elevation contours of the bottom of the Subbasin, which joins these 2 surfaces. Figure 4-5 shows a contour map of depth to the bottom of the Subbasin prepared using the extrapolated bottom elevation and ground surface elevation.

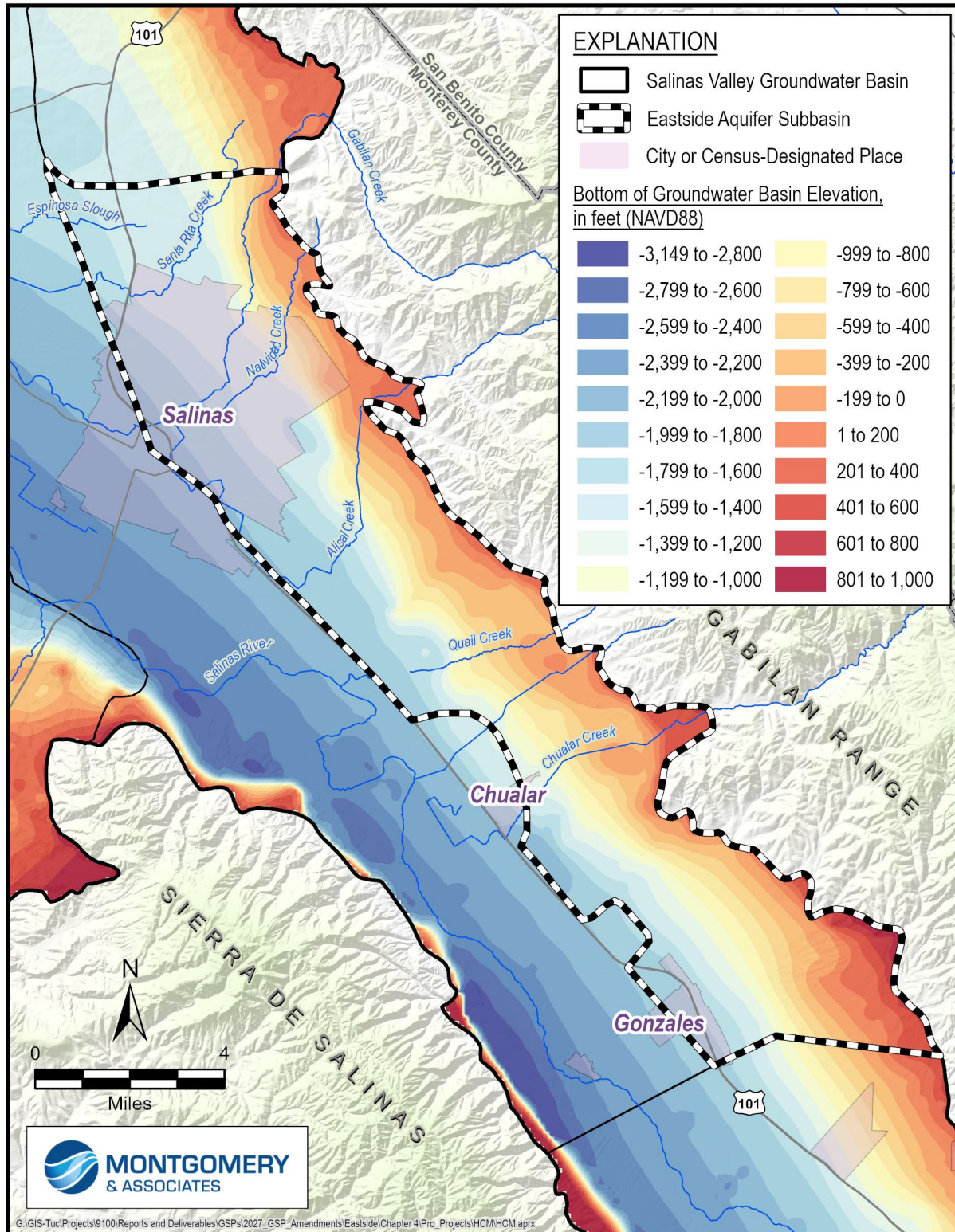


Figure 4-4. Elevation of the Bottom of the Eastside Aquifer Subbasin

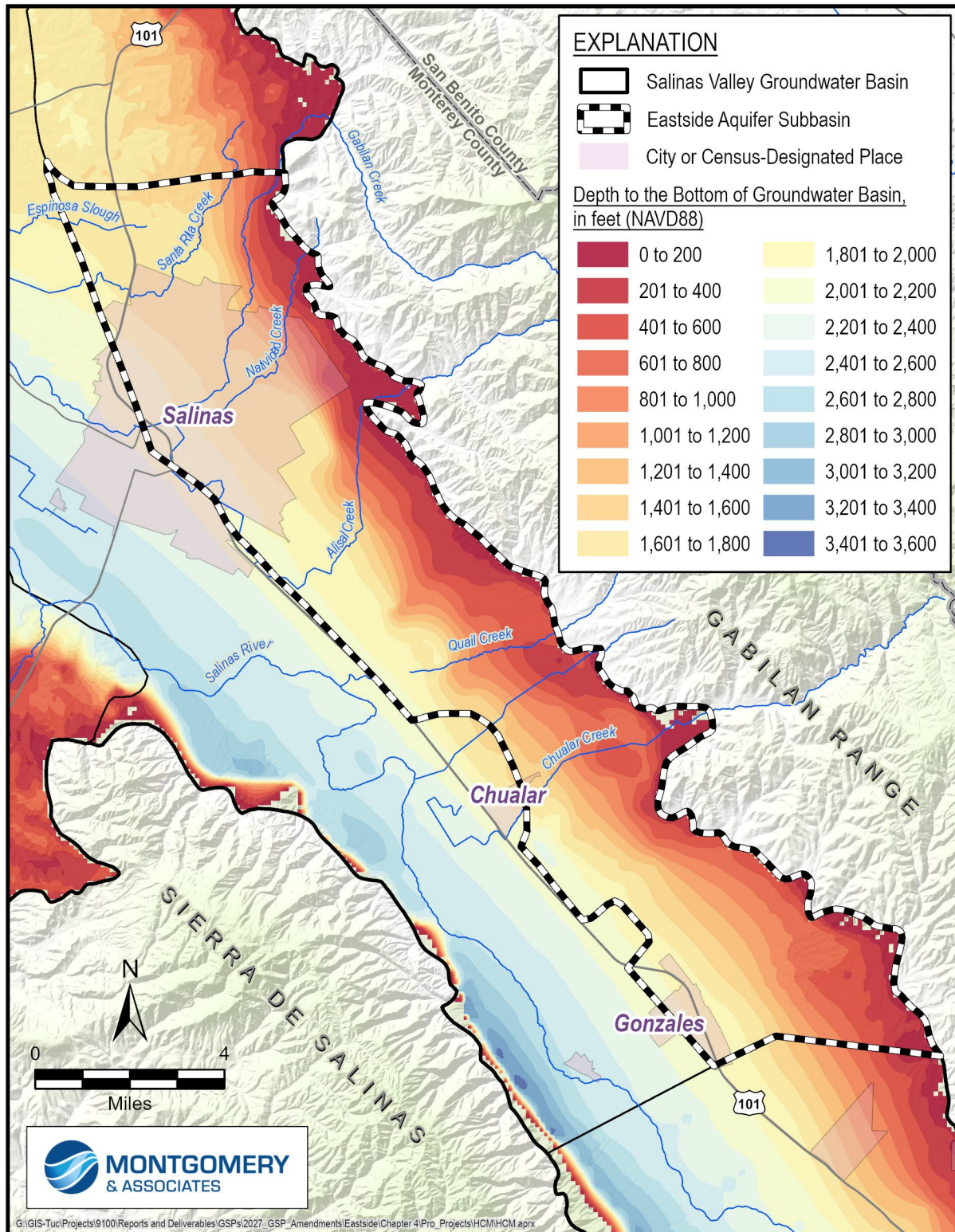


Figure 4-5. Depth to Bottom of the Eastside Aquifer Subbasin

4.4 Subbasin Hydrogeology

The Subbasin hydrogeology details the principal aquifers and aquitards that occur in the subbasin, inventories known aquifer properties, and identifies naturally occurring groundwater inputs and outputs which will be incorporated into the groundwater budgets described in Chapter 6. This section also includes cross-sections which give graphical representations of what is described in the following subsections.

Groundwater in the Eastside Subbasin is primarily produced from alluvial fan deposits, which belong to 2 geologic units: the Holocene Alluvium and the Quaternary Older Alluvium. Although these 2 geologic formations differ slightly in age, they have similar distributions of sediment type and layering, and are very difficult to distinguish during drilling. For the purpose of groundwater development in the Subbasin, these geologic units are collectively referred to as Alluvium or alluvial fans. In this subbasin, given the lack of an extensive, consistent aquitard, the alluvial material is considered to be 1 principal aquifer with multiple productive zones that generally correlate to the adjacent 180/400 Subbasin principal aquifers. The geometry of the alluvial fans dips to the southwest, following the surface of the Gabilan granite, and well completion depths may not be easily correlated with their previous aquifer designations that mirrored the 180/400 Subbasin principal aquifers.

4.4.1 Principal Aquifers and Aquitards

Although groundwater can be found throughout most of the Holocene Alluvium and the Quaternary Older Alluvium, not all groundwater is part of a principal aquifer. SGMA defines a principal aquifer as “...aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems” (23 California Code of Regulations § 351 (aa)). All the groundwater encountered in the Subbasin is a part of the overall groundwater system, but the focus of this GSP is on the 1 principal aquifer, the Basin Fill Aquifer. Since the Basin Fill Aquifer, which extends through Langley, Forebay, and Upper Valley Subbasins, the Basin Fill Aquifer specifically in the Eastside Subbasin is sometimes referred to as the Eastside Aquifer. The Salinas Valley Aquitard and shallow alluvial clays extend into the Subbasin, as shown on Figure 4-6; which may inhibit surface water and groundwater connection in these areas.

The most recent, detailed hydrostratigraphic analysis of the Eastside Subbasin was conducted in 2024 as part of the HCM update effort for the 2027 GSP amendments (Montgomery & Associates, 2025a). Additional data collection for the Deep Aquifers Study (Montgomery & Associates, 2024) and the California DWR AEM surveys were used to update the HCM and develop improved geologic cross-sections along and across the Subbasin. These cross-sections are shown on Figure 4-6 and Figure 4-7. The location of these cross-sections is depicted on Figure 4-2. Cross-section A-A' extends down the length of the Eastside Subbasin, and cross-

section B-B' extends across the width of the Subbasin, including the neighboring 180/400 Subbasin. The layers shown are the representative model layers that are shared with adjacent subbasins and amalgamate fines and coarse sediments for groundwater flow modeling purposes. Finer layers include both alluvial and Salinas River depositions into one layer, primarily to convey how sediments from different depositional environments can intersect and create a unified impact. Within the Eastside Subbasin, these layers are all a part of the singular Basin Fill Aquifer and are generalized zones of lower or higher conductivity. The finer sediments are shown in darker colors representing clay-rich zones, whereas the coarser sediments are shown in lighter colors, representing sand or gravel rich zones. The cross-sections show generalized layers, but in the Eastside Subbasin specifically, the sediments are more heterogeneous and highly variable. Further, the resistivity data from the AEM surveys showed higher incidence of the clay-rich alluvial fans in the subsurface, and these are denoted with dashed lines. The clay-rich areas are the result of both clay deposition and granitic decomposition to clay.

The updated geologic cross-sections are based on the AEM data collected from the DWR Survey Area 1, 2020 (DWR, 2020b), and the Deep Aquifers Survey, 2023 (Montgomery & Associates, 2024), as well as key geologic logs provided in DWR Water Well Drillers Reports. AEM data are useful for filling gaps between known data points such as wells. AEM data were the principal data source for this HCM update. The generalized relationships of finer or coarser sediments identified through resistivity data and between boreholes should be interpreted with caution and an understanding that alluvial fan deposits are mixed and distributary in character.

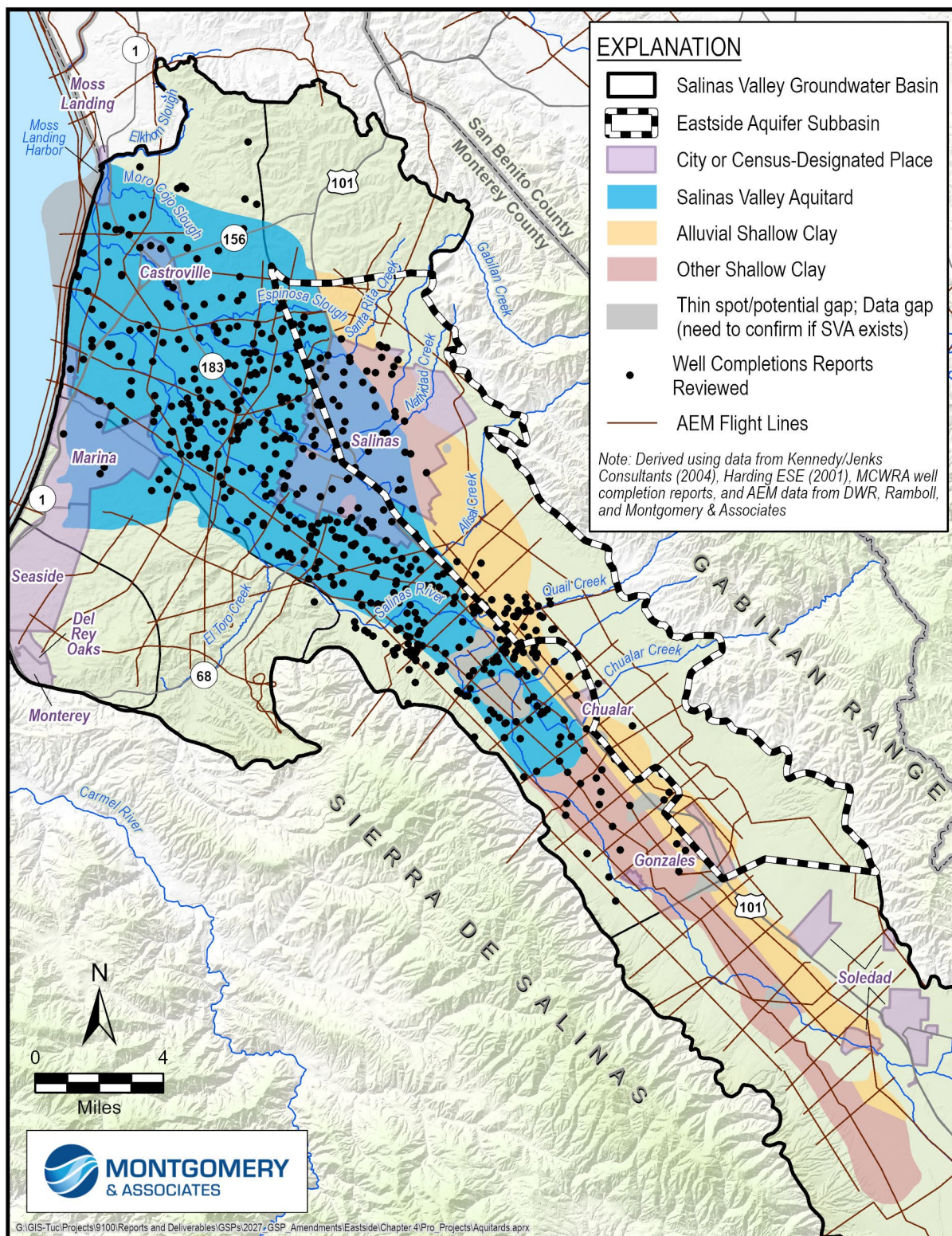


Figure 4-6. Identified Shallow Clays from HCM

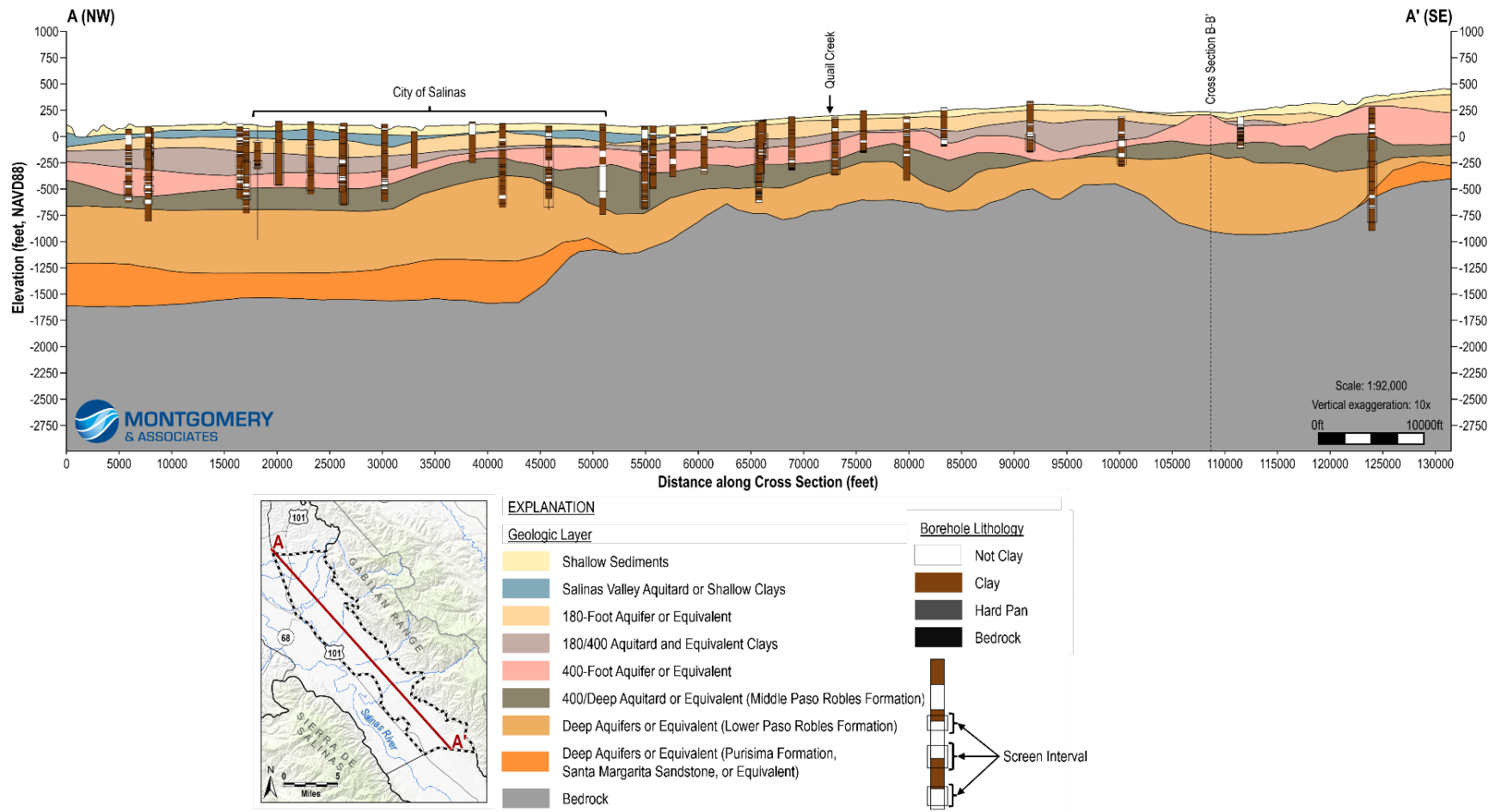


Figure 4-7. Cross-Section A-A'

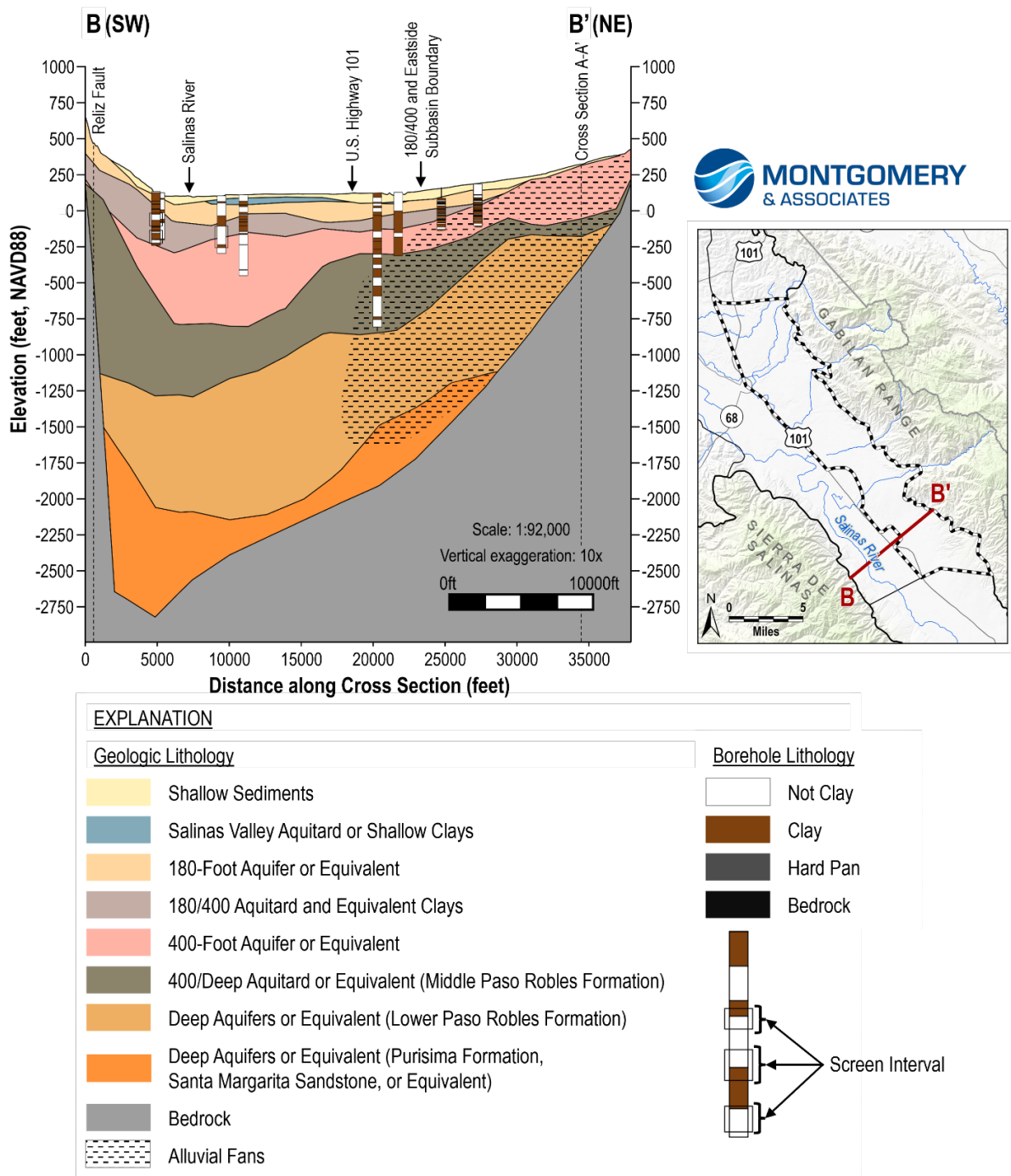


Figure 4-8. Cross-Section B-B'

The 2 cross-sections show the model layer interpretation of an otherwise discontinuous and interbedded alluvial fan environment. The cross-sections show both vertically and horizontally generalized areas where coarser and finer materials are prevalent, represented by the 180-Foot, 400-Foot, and Deep Aquifers equivalents and the Shallow Clay, 180/400, and 400/Deep Aquitard equivalents, respectively. These are overlain on the cross-sections with well completion report lithology that shows higher clay content in brown. The well completion report lithology correlates closely with the AEM data, and differences in “aquifer” and “aquitard” material are more determined by the differences in resistivity, which is an average of materials’ electrical properties as the data are collected. It is important to remember that individual layers of fine or coarse material are not traceable over long distances and do not correlate well between boreholes (Kennedy/Jenks, 2004). While the designated model layers may visually indicate continuous aquifer or confining materials, no evidence exists for a discrete confining layer in the Subbasin (Brown and Caldwell, 2015). Rather, these designated model layers should be interpreted as the best approximation of sediment layering for regional groundwater modeling and water budget purposes rather than a confident interpretation of the subsurface composition and sequencing. This Amendment 1 still assigns the alluvial material in the Eastside Subbasin to a single aquifer, which is best represented by wells with long screened intervals that serve to increase transmissivity over a larger area capturing small, discrete productive lenses throughout the alluvial fans.

Within the Eastside Subbasin, 2 generalized water-bearing zones have been recognized within the alluvial fan aquifer system: the Eastside Shallow Zone and the Eastside Deep Zone. While these designations of deep and shallow have been useful for hydrostratigraphic organization of the Subbasin, they are not identified as distinct aquifers. They are only generalized zones of water-bearing sediments with time-correlated depositions to the 180- and 400-Foot Aquifers in the 180/400 Subbasin, and follow historical well-designations by both well drillers and the MCWRA. The single aquifer in the Eastside Subbasin appears to be somewhat hydraulically connected to the 180-Foot and 400-Foot Aquifers in the 180/400 Subbasin, despite noted facies changes discussed in Section 4.3.1.1 above. This connectivity is generally observable in the east-west AEM resistivity transects and the eastwardly decreasing groundwater elevations near the City of Salinas, which are shown in the annual reports. Despite these data suggesting connection, the hydraulic relationship between the 180/400 Subbasin and the Eastside Subbasin is limited. The seawater intrusion that is occurring in the 180/400 Subbasin has not been observed in the Eastside Subbasin, despite the eastward groundwater gradient from the coastal areas.

The results of the Deep Aquifers Study (Montgomery & Associates, 2024) indicate that the Deep Aquifers, as defined by the presence of the continuous 400/Deep Aquitard, are only marginally within the boundaries of the Eastside Subbasin. The delineation between the clay-rich 400/Deep Aquitard, and the clay-rich alluvial fans rested on the presence of denoted “Salinas Valley Gravels” or “chert,” because these descriptions indicate fluvial deposition from eroded tertiary rocks farther south in the Basin rather than the granite-derived alluvial sediments close to the

Gabilan Range. Additionally, the delineation between these 2 clay-rich depositions was determined by evaluating AEM transects and the resistivity values of different depositions. Along the Gabilan Range and as indicated by lower resistivity values, the alluvial fans were generally more clay-rich than the 400/Deep Aquitard. The resistivity values of the 400/Deep Aquitard were generally an order of magnitude greater than those of the alluvial fans.

In the 180/400 Subbasin, the 400-Foot Aquifer, which is usually encountered between 270 and 650 feet below ground surface, is separated from the Deep Aquifers by a blue marine clay layer called the 400-Foot/Deep Aquitard. This aquitard can be several hundred feet thick, and overlies and confines the Deep Aquifers, which are historically referred to as the 900-Foot and 1,500-Foot Aquifers (Kennedy/Jenks, 2004). The extents of the alluvial fans that define the Eastside region near the City of Salinas are defined by resistivity values of 10 ohm-m or less to provide a clearer delineation of sediments for definition in a very interbedded and distributary environment. Within the small area of the Eastside Subbasin where the Deep Aquifers is present, there is no distinct pumping from it as a separate unit. Accordingly, the Deep Aquifers are included in the Deep Zone of the broader Basin Fill Aquifer definition, consistent with the lack of an extensive aquitard separating the 2 elsewhere in the Subbasin.

4.4.2 Aquifer Properties

Aquifer properties define how groundwater is stored and how groundwater moves in the subsurface. This information is needed to understand current groundwater conditions, to predict future groundwater conditions, and to assess strategies for achieving sustainability.

The values and distribution of aquifer properties in the Eastside Subbasin have not been well characterized and documented. The relatively sparse amount of measured aquifer properties throughout the Subbasin is considered a data gap that can be addressed during implementation of the GSP.

Although hydrogeologic properties have not been measured at many specific locations in the Subbasin, the aquifer properties have been estimated through the process of numerical model calibration. Aquifer property calibration has been completed for numerous published modeling studies including studies by Durbin (1974), Yates (1988), WRIME (2003), and the SVIHM (Henson *et al.*, 2025; Montgomery & Associates 2025b) that is used to develop this GSP.

There are 2 general types of aquifer properties relevant to groundwater management:

- **Aquifer storage properties.** These properties control the relationship between the volume of groundwater stored in the aquifer and the groundwater elevations measured in the aquifer.
- **Groundwater transmission properties.** These properties control the relationship between hydraulic gradients and the rate of groundwater flow.

4.4.2.1 Aquifer Storage Properties

The aquifer properties that characterize the relation between groundwater elevation and amount of water stored in an aquifer are specific yield for unconfined aquifers and specific storage for confined aquifers. Storativity, or storage coefficient, is equal to specific storage multiplied by the thickness of the aquifer for confined aquifers. Both specific yield and specific storage are measured in units of cubic feet of water per cubic feet of aquifer material. These ratios are often expressed as a percentage.

- **Specific yield** is the amount of water that drains from pores when an unconfined aquifer is dewatered. Often, specific yield values range from 8% to 20%. Estimated specific yield values compiled by DWR for the adjacent 180/400-Foot Aquifer Subbasin range from 6% to 16% (DWR, 2004). No estimated specific yield values are published for the aquifer in the Eastside Subbasin.
- **Specific storage** is the amount of water derived from a unit volume of a confined aquifer due to a unit decline in pressure change in the aquifer. No estimated specific storage values are published for the aquifer in the Eastside Subbasin.
- **Storativity** was calculated from 2 aquifer tests conducted in spring 2023 for the Deep Aquifers Study in deeper completed wells within or very near to the Eastside Subbasin boundary. These wells were later determined to be outside of the Deep Aquifers, but still represent the alluvial fan aquifer environment that defines the Eastside. The storativity calculated from these 2 aquifer tests conducted by the SVBGSA range from 0.0002 to 0.0009.

Detailed aquifer property values specific to the Subbasin will continue to be filled during implementation as more monitoring wells are installed and water budget models require more calibration data.

4.4.2.2 Groundwater Transmission Properties

Hydraulic conductivity measures the ability of an aquifer to transmit water. Hydraulic conductivity is expressed in units of length per unit time, such as feet per day. Materials with higher hydraulic conductivities, such as sands and gravels, transmit groundwater more readily than units with lower hydraulic conductivities like clay. Transmissivity is equal to the hydraulic conductivity multiplied by the aquifer thickness. The updated and calibrated SVIHM (Montgomery & Associates, 2025a) estimated hydraulic conductivities between less than 1 to about 240 feet per day (feet/day) with average of about 20 feet/day for the shallow alluvial fan deposits, and between less than 1 to about 290 feet/day with average of on the order of 15 feet/day for the Deep Zone. Few measurements of either hydraulic conductivity or transmissivity exist for the Subbasin. The SVBGSA conducted 2 constant rate tests in the adjacent subbasins near the Eastside Subbasin boundary. These tests provide an estimated

hydraulic conductivity range on the order of 30 to 45 feet/day and are considered to be representative for the deep zone of the Eastside alluvial fan deposits. The SVBGSA also conducted 4 slug tests, resulting in the following estimates of hydraulic conductivity: about 62 feet/day for the 180-Foot Aquifer, about 75 feet/day for the 400-Foot Aquifer, and about 6 to 13 feet/day for the Deep Aquifers. Estimates from slug tests are often smaller than estimates from pumping tests. Specific capacity of a well is sometimes used as a surrogate for estimating aquifer transmissivity. The specific capacity of a well is the ratio between the well pumping rate in gallons per minute (gpm), and the drawdown in the well during pumping measured in feet. Specific capacity is moderately well correlated, and approximately proportional to, aquifer transmissivity. Durbin *et al.* (1978) reported that the granitic fragments that comprise the alluvial fans along the Gabilan Range weather rapidly, and the pores of the unconsolidated sediments are plugged with clay minerals. This results in a reported specific capacity of 20 gpm per foot in the alluvial fan emanating from Gabilan Creek (Durbin *et al.*, 1978). However, clay content—and subsequently aquifer properties—will vary across the Subbasin as subsurface sediments also vary across the Subbasin.

4.4.3 Primary Aquifer Uses

The primary uses of groundwater from this single aquifer include domestic, irrigation, and municipal water supply uses (DWR, 2004).

4.4.4 Natural Recharge Areas

Natural recharge areas allow rainfall, local runoff, and streamflow to replenish aquifers by percolating through the subsurface. Identifying areas of potentially significant natural recharge can inform water budgets and help government planners promote good groundwater management by incorporating recharge areas into land use plans. This section only identifies areas of natural recharge; Chapter 6 provides quantitative information about all natural and anthropogenic (man-made) recharge.

Natural groundwater recharge occurs through the following processes:

- Recharge of surface water from the streams originating in the Gabilan Range
- Deep percolation of infiltrating precipitation
- Subsurface inflow from the adjacent subbasins

Recharge of surface water and deep percolation of precipitation are both surficial sources of natural groundwater recharge. An area's capacity for surficial groundwater recharge is dependent on a combination of factors, including steepness of grade, soil surface conditions such as paving or compaction, and ability of soil to transmit water past the root zone. To assist agricultural communities in California with assessing groundwater recharge potential, a consortium of

researchers at University of California Davis developed a Soil Agricultural Groundwater Banking Index (SAGBI) and generated maps of recharge potential in agricultural areas of California (O'Geen *et al.*, 2015). Figure 4-8 presents the SAGBI index map for the Eastside Subbasin. This map ranks soil suitability for groundwater recharge based on 5 major factors: deep percolation, root zone residence time, topography, chemical limitations, and soil surface condition. Areas with excellent recharge properties are shown in green, and those with poor recharge properties are shown in red. Not all land is classified, but this map provides helpful guidance on where natural recharge likely occurs.

Areas with the highest potential for recharge are along tributary streams. Many of the other soils are classified as moderate, which means some water applied at the surface might make it to the Eastside Shallow Zone, or perched zones. Although Figure 4-8 shows some areas of good potential recharge in the Eastside Subbasin, actual recharge to the productive zones of the Subbasin could be limited because the discontinuous sediments of the alluvial fans may not provide a continuous path for recharge, and the interfingering clay lenses may delay or prevent deep recharge. This demonstrates the limited utility of potential recharge maps that are solely based on surficial soil properties. This map should not be used exclusively to identify recharge areas that will directly benefit the aquifers in the Eastside Subbasin. Rather, it should be used in conjunction with additional research and investigation tools.

Subsurface recharge is primarily from inflow from the adjacent Forebay and 180/400-Foot Aquifer Subbasins to the south and west, respectively (DWR, 2004). This inflow is estimated to be 17,000 AF on an annual basis. Total natural recharge is estimated to be 41,000 AF (DWR, 2004).

To increase recharge opportunities during implementation, AEM data were used to look past surficial conditions and identify better locations in the subsurface where applied water could more readily infiltrate and boost the water table. Figure 4-8 shows the Subbasin from an oblique angle and outlines in gray several AEM transects with yellow and orange (25-45 ohm-m) resistivity data that correspond to coarser sediments in the subsurface. These areas may be more readily accessible from the surface and could potentially provide good groundwater storage. These areas identified in the AEM data align well with the “good” recharge locations as indicated on the SAGBI map indicating potentially good connectivity between the surface and the subsurface.

Additionally, water samples taken in the Subbasin were analyzed for tritium to identify faster recharge pathways during the Deep Aquifers Study. Tritium is a younger isotope, and its presence can indicate a fast groundwater relationship with precipitation. Figure 4-8 shows tritium isotope sample locations within the Subbasin. The youngest water identified, represented by the blue markers, is along Quail Creek. This sample represents groundwater within the coarse sediment areas identified from AEM data and coincides with the “good” recharge locations shown on the SAGBI map. Together, these 3 key points of data indicate the Quail Creek area as the most suitable location for a recharge project within the Eastside Subbasin.

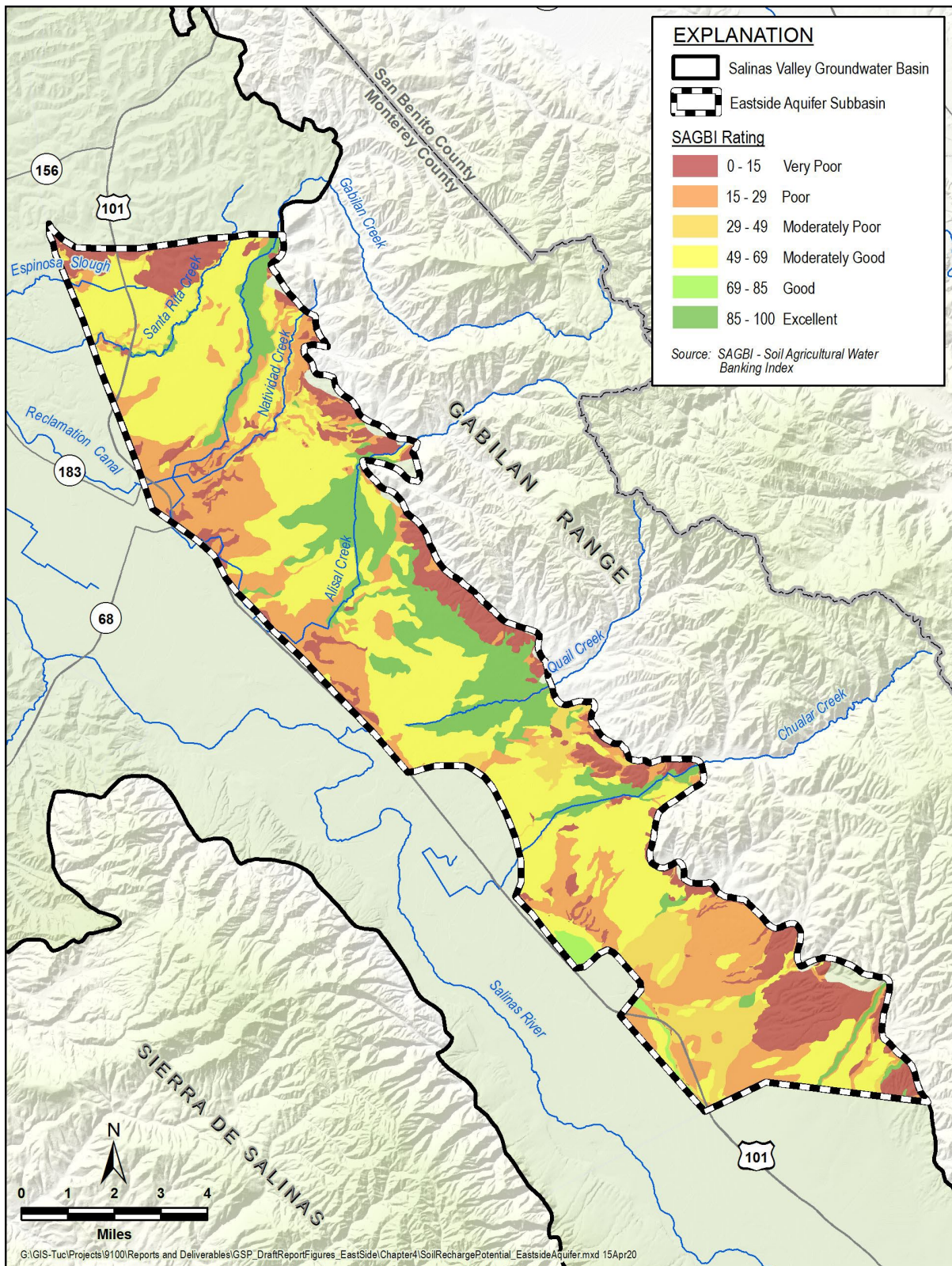


Figure 4-9. SAGBI Soils Map for the Eastside Aquifer Subbasin

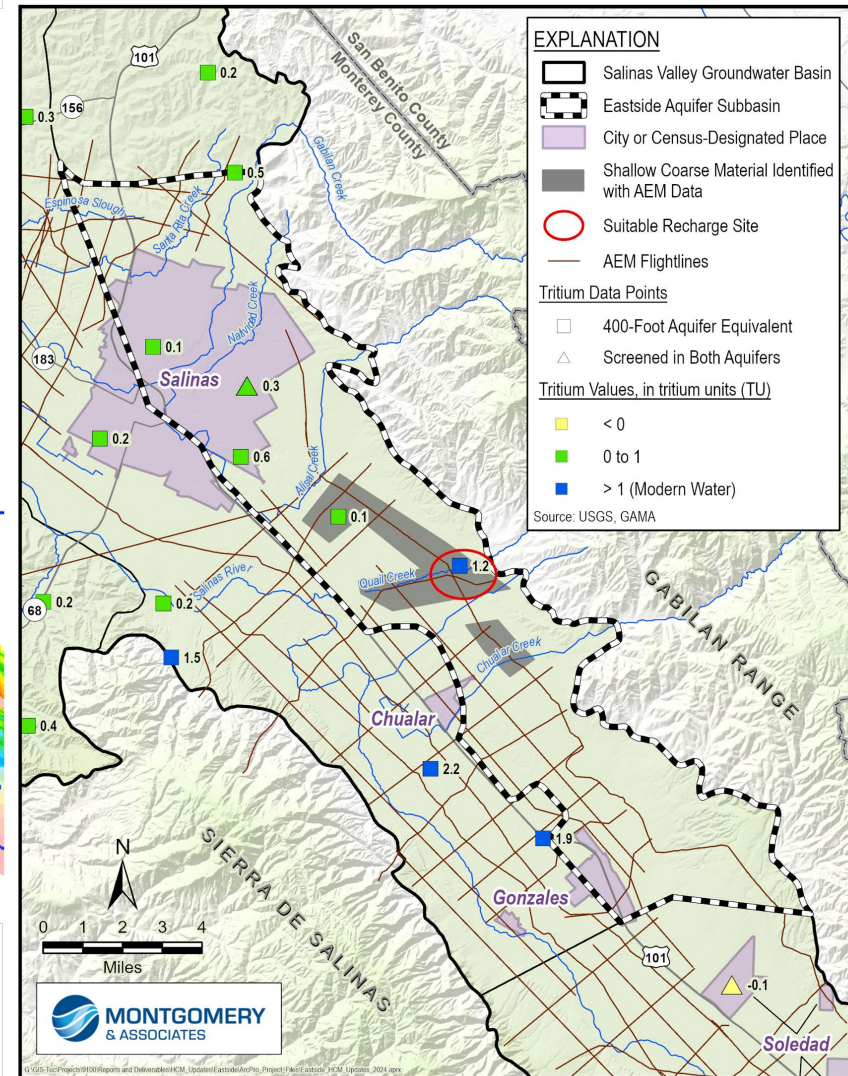
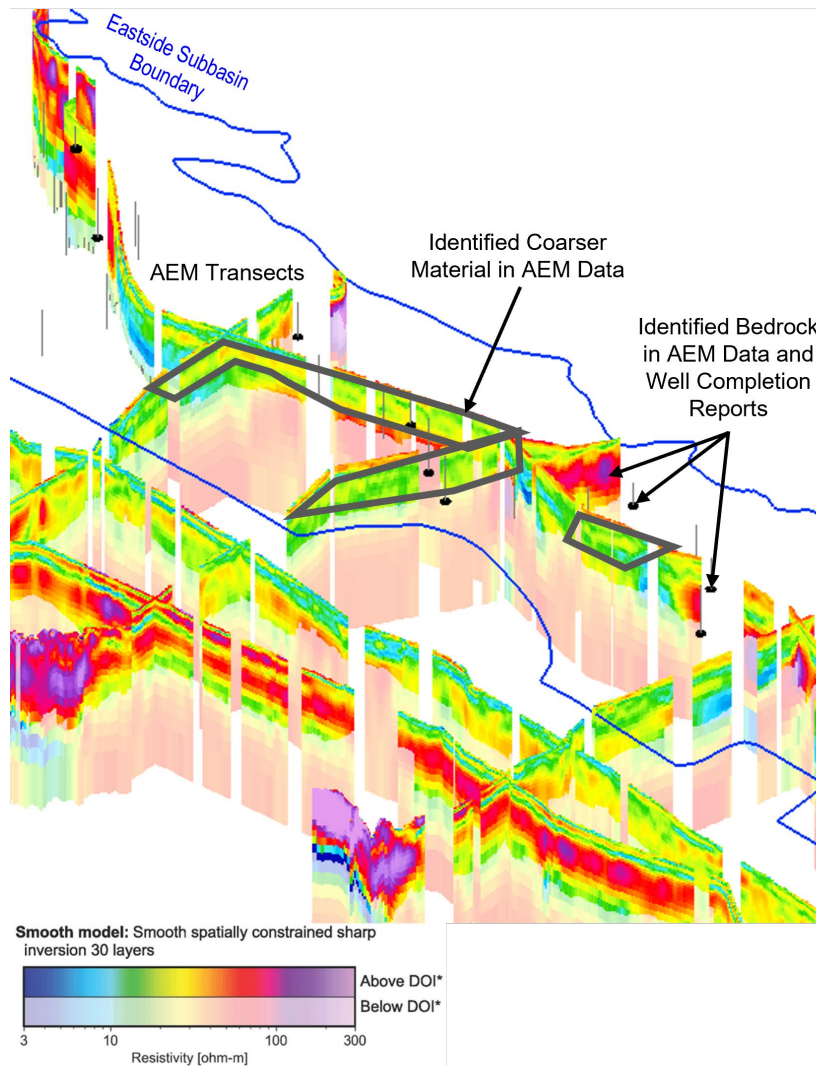


Figure 4-10. Potentially Suitable Location for a Recharge Project with Supporting Data

4.4.5 Natural Discharge Areas

Natural discharge areas are areas where groundwater naturally leaves aquifers through flow to adjoining basins or percolation to the ground surface. Identifying areas of potentially significant natural discharge can inform water budgets and help locate important environmental uses of groundwater. Quantitative information about all natural and anthropogenic discharge is provided in Chapter 6.

Natural groundwater discharge areas within the Subbasin include wetlands and other surface water bodies that receive groundwater discharge to surface water bodies and evapotranspiration (ET) by vegetation types commonly associated with the sub-surface presence of groundwater. There are no springs and seeps in the Subbasin as identified in the National Hydrology Dataset (NHD). Natural groundwater discharge to streams has not been mapped to date.

4.4.5.1 Potential Interconnected Surface Water

Figure 4-9 shows that the updated SVIHM did not identify any locations of ISW in the Eastside Subbasin. This evaluation was completed over a monthly basis over the entire SVIHM model period from 1968 to 2022. This analysis includes the full year. The conservation release period (from April 1 to October 31) and non-release period (from November 1 to March 31) were compared and were not substantially different. During the conservation release period, the majority of flow in Salinas River is from conservation releases from the reservoirs. The blue cells on Figure 4-9 indicate areas where surface water is connected to groundwater for more than 10% of the number of months in the model period and are designated as areas of ISW. The orange cells indicate areas where surface water is connected to groundwater for less than 10% of the number of months in the model period. The clear cells represent areas classified as not connected to groundwater based on spatial, physical, and hydrogeologic constraints. These disconnected reaches include locations outside the SVBGSA boundary, areas just outside the groundwater model boundary, regions underlain by the Salinas Valley Aquitard, and artificial conveyances (canals, drains, or connectors) identified in the 2022 GSP. The extent of the interconnection between surface water and groundwater, which can vary both in time and space, is evaluated in Chapter 5 and is not shown on Figure 4-9. These ISW locations are based on simulated results from the updated SVIHM, which is calibrated to measured groundwater levels and stream flows. Although seepage along the ISW reaches is based on assumed channel and aquifer parameters as model inputs, the SVIHM is the best available tool to estimate ISW locations. The model construction and uncertainty are described in Chapter 6 of this GSP and in a model summary report by Montgomery & Associates (2025). See Appendix 4a for more information on the ISW location analysis.

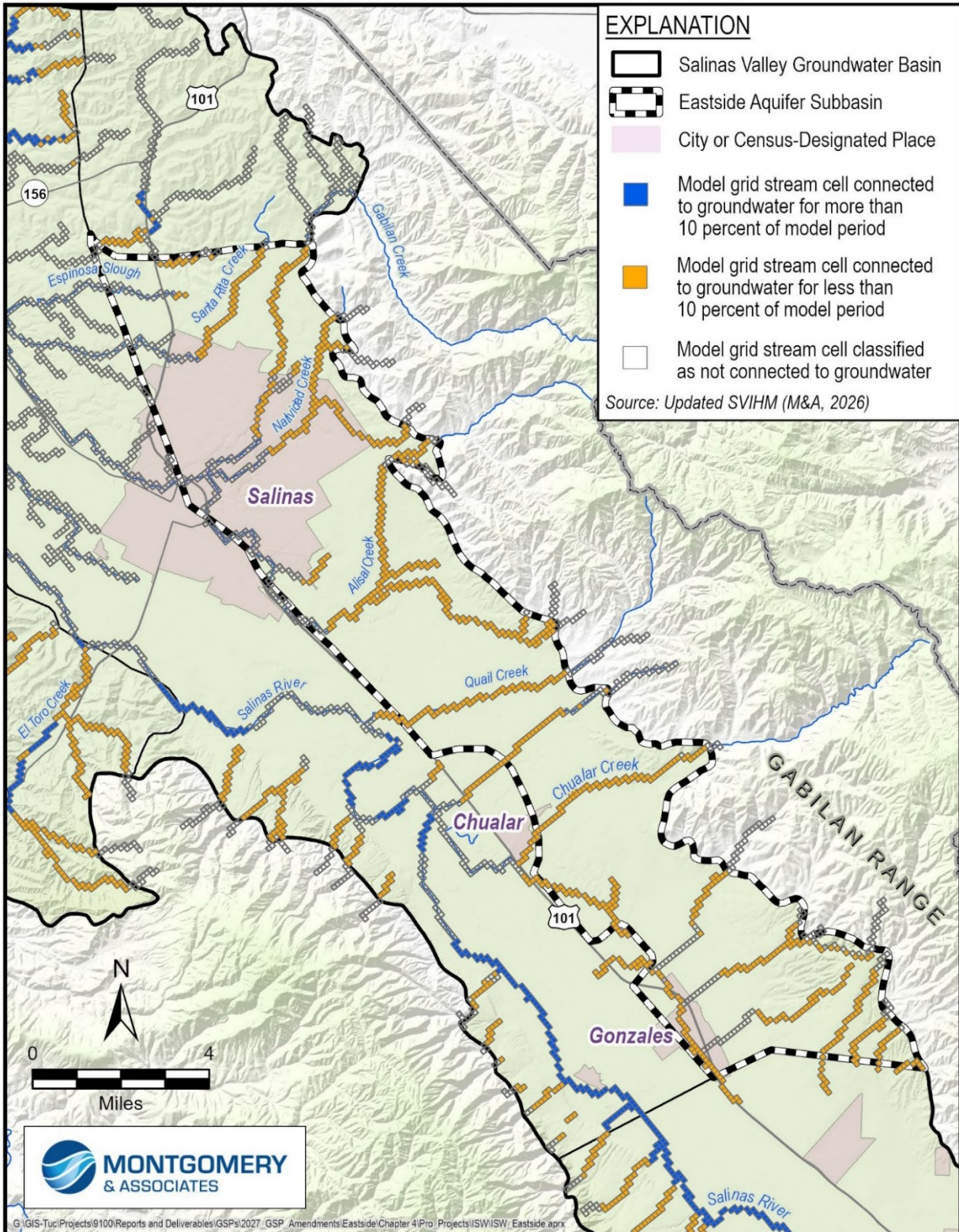


Figure 4-11. Locations of Interconnected Surface Water from SVIHM analysis

4.4.5.2 Groundwater Dependent Ecosystems

GDEs refer to ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. Two main types of ecosystems are commonly associated with groundwater: wetlands associated with the surface expression of groundwater and vegetation that typically draws water from a shallow water table.

GDEs may provide critical habitat for threatened or endangered species. Areas designated as critical habitat for threatened or endangered species contain the physical or biological features that are essential to the conservation of these species, and may need special management or protection (USFWS, 2017). A list of threatened and endangered species that might rely on GDEs in the Subbasin was compiled using information from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and The Nature Conservancy (TNC). Several steps were taken to determine which threatened and endangered species could be found in the Subbasin and of those, which could potentially rely on GDE habitat. A list of threatened and endangered species for Monterey County was downloaded from the USFWS website and cross-referenced to species identified in the CDFW California Natural Diversity Database. The threatened and endangered species for Monterey County was further cross-referenced with the TNC Critical Species LookBook to identify which species are likely to directly depend on groundwater, as indicated in Table 4-1. Species with an indirect potential dependence on groundwater were not included.

One threatened species—the California Red-legged Frog—was identified as likely to rely directly on groundwater and could be present in the Eastside Subbasin. While the species might rely directly on groundwater, the identification of potential GDEs in the Salinas Valley does not distinguish between groundwater and surface water sources. One species identified has an unknown dependence on GDEs or groundwater.

Table 4-1. Federal and State Listed Threatened and Endangered Species, and Respective Groundwater Dependence for Eastside Subbasin

Groundwater Dependence*	Common Name	Habitat	Federal Status	State Status
Direct	California red-legged frog	Quiet pools of streams, marshes, and occasionally ponds	Threatened	
Unknown	California tiger salamander	Tiger salamanders breed and lay eggs primarily in vernal pools and other temporary rainwater ponds	Threatened	Threatened

* Groundwater Dependence as defined by TNC is related to species type. The distinction between groundwater and surface water dependence is not determined in the Salinas Valley GDE identification where the groundwater level is close enough to the ground surface to reasonably support the overlying ecosystem.

The process for identifying and mapping potential GDEs in the Salinas Valley was developed by Central Coast Wetlands Group (CCWG) with guidance from documents developed by The Nature Conservancy (TNC) (Rhode et al. 2018, Rhode et al. 2020), TNC staff and San Francisco Estuary Institute (SFEI) staff with subject matter expertise, and Dr. Melissa Rhode. Additionally, feedback from local stakeholders was incorporated from the Groundwater Dependent Ecosystem Working Group. The goal of the identification and mapping process was not to identify endangered animal species, or every plant and waterbody dependent on groundwater, but rather ensure there was representative identification of potential GDEs across the Eastside Subbasin. GDE identification provides the basis for monitoring and assessment.

Figure 4-12 (left) shows the distribution of potential GDEs within the Subbasin based on the Natural Communities Commonly Associated with Groundwater (NCCAG) Dataset (DWR, 2020b) where the depth to groundwater table is high enough to support the above ecosystems (CCWG, 2026). The NCCAG dataset maps vegetation, wetlands, springs, and seeps in California that are commonly associated with groundwater. These include: 1) wetland features commonly associated with the surface expression of groundwater under natural, unmodified conditions; and 2) phreatophytes. NCCAG data need to be verified for accuracy. If the groundwater table is greater than 30 feet (9.14 meters) below the ground surface, the ecosystem at the surface is likely not reliant on groundwater. This is because most vegetation does not have roots deep enough to reach the water table below 30 feet (9.14 meters) (Rhode et al. 2018). Oak trees are an exception to this generalized rule, as oak trees have been shown to have roots that reach up to 80 feet (24.38 meters) below the ground surface (Howard 1992). For this reason, in areas mapped as having oak trees as the dominant plant species, the depth to groundwater cutoff for including the ecosystem as a potential GDE was 80 feet (24.38 meters). For all other areas, the cutoff was 30 feet. Once the data for the depth to groundwater table is added, the analysis shows the groundwater table is not high enough to support the mapped potential GDEs (Figure 4-12 right). There were no potential GDEs identified within the Eastside Subbasin (CCWG, 2026).

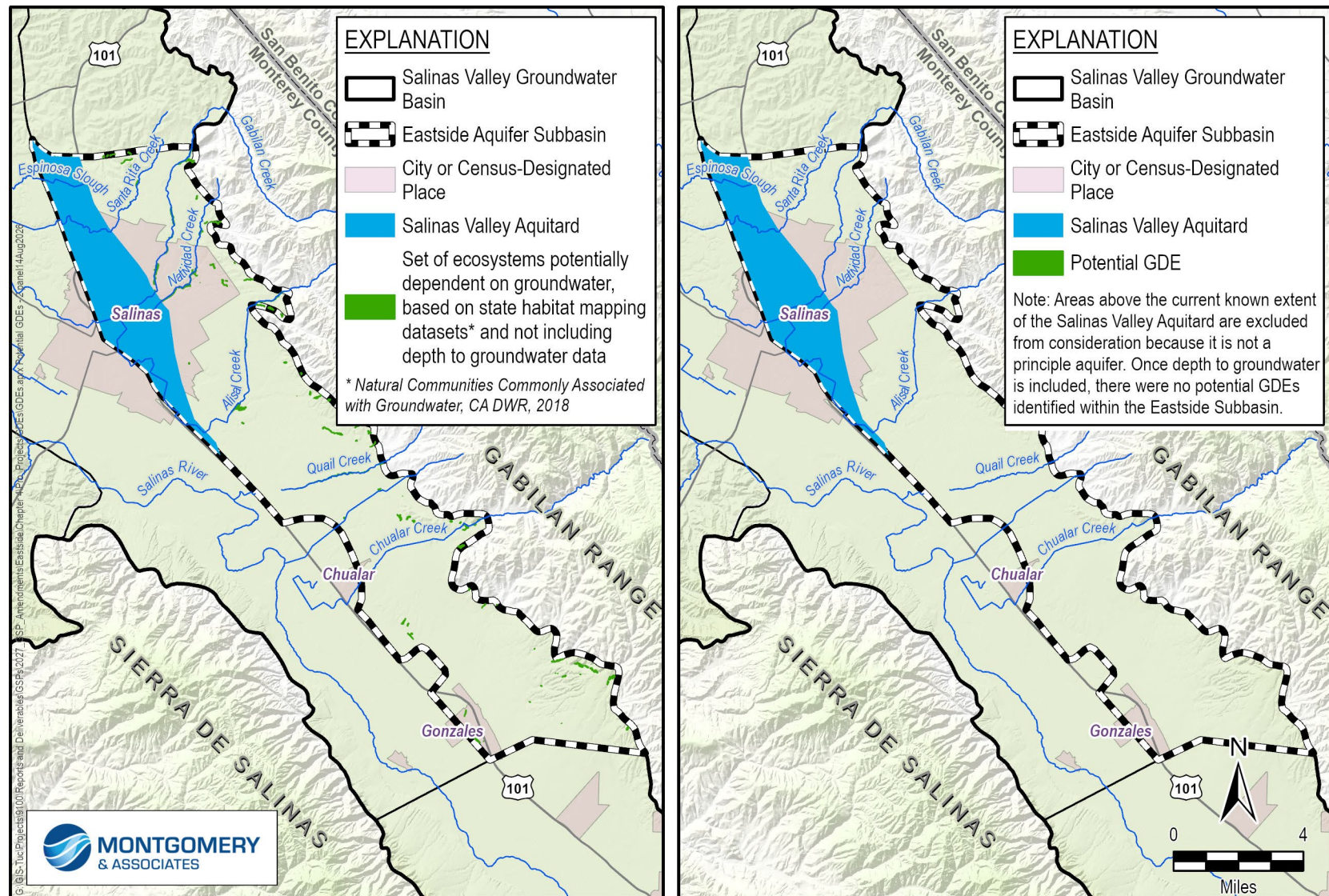


Figure 4-12. Potential Groundwater Dependent Ecosystems

4.5 Surface Water Bodies

The primary surface water bodies in the Subbasin are tributaries to the Salinas River (Figure 4-11). Significant, named tributaries in the Eastside Subbasin include the following intermittent streams that drain the Gabilan Range and contribute to the Salinas River:

- Chualar Creek
- Quail Creek
- Alisal Creek
- Natividad Creek
- Gabilan Creek
- Santa Rita Creek

Two reservoirs are located outside of the Eastside Subbasin but are important controls on the rate and timing of Salinas River flows in adjacent Subbasins.

- Nacimiento Reservoir, in San Luis Obispo County, was constructed in 1957 and has a storage capacity of 377,900 AF (MCWRA, 2015a).
- San Antonio Reservoir, in Monterey County, was constructed in 1967 and has a storage capacity of 335,000 AF.

Carr Lake and Smith Lake are ephemeral lakes that only contain appreciable surface water during wet seasons. Stormwater that accumulates in these lakebeds is drained by the Reclamation Canal (Figure 4-13).

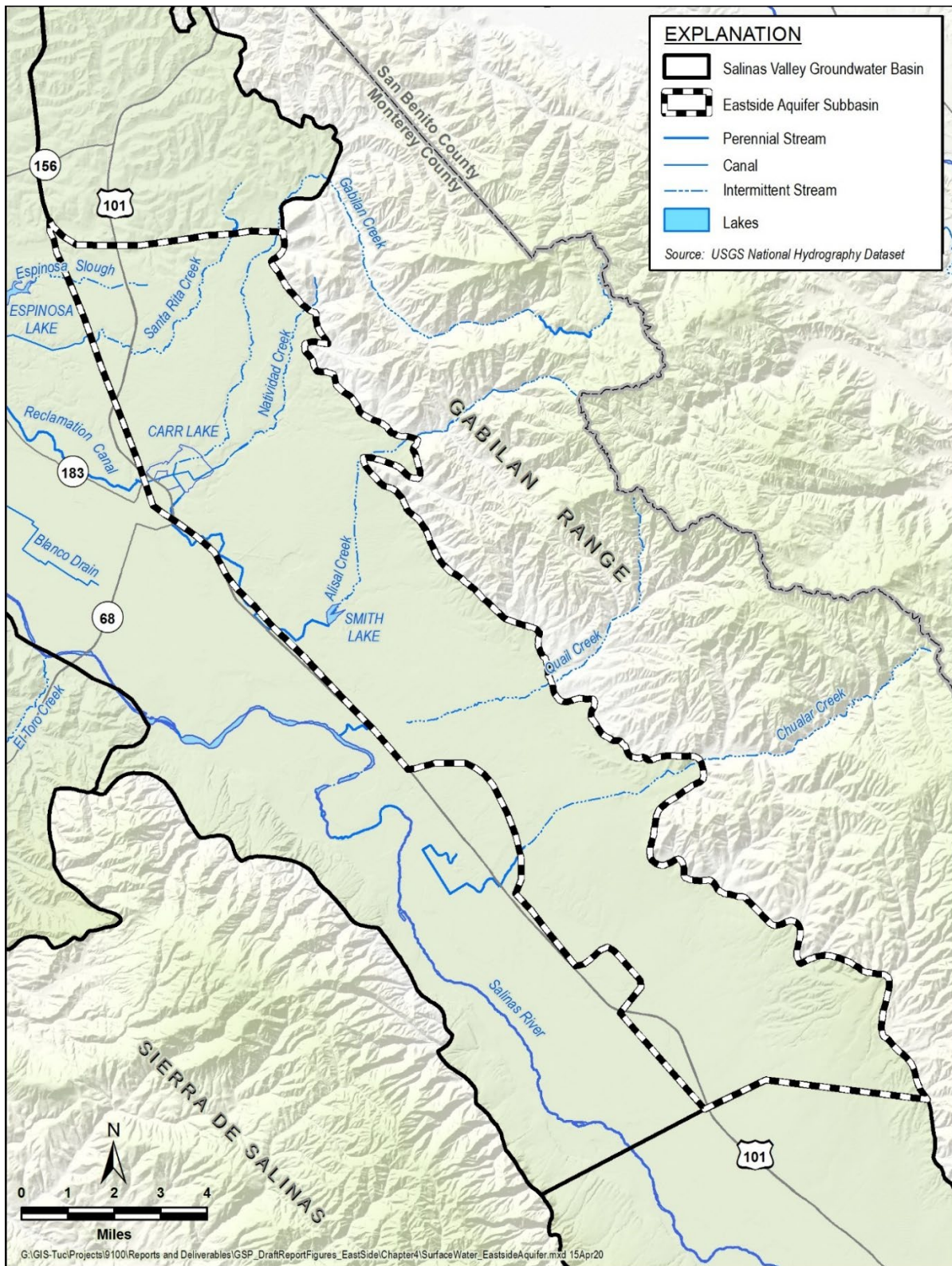


Figure 4-13. Surface Water Bodies in the Eastside Aquifer Subbasin

4.5.1 Watersheds

Figure 4-12 shows several watersheds that contribute small tributary streams to the Salinas River in the Eastside Subbasin. From the boundary with the Forebay Subbasin to the Langley Subbasin, the HUC12 watersheds within the Eastside Subbasin are as follows:

- McCoy Creek-Salinas River
- Limekiln Creek-Salinas River
- Johnson Creek
- Chualar Creek
- 180600051507-Salinas River
- Quail Creek
- Alisal Creek-Salinas River
- Natividad Creek-Gabilan Creek
- Alisal Slough-Tembladero Slough

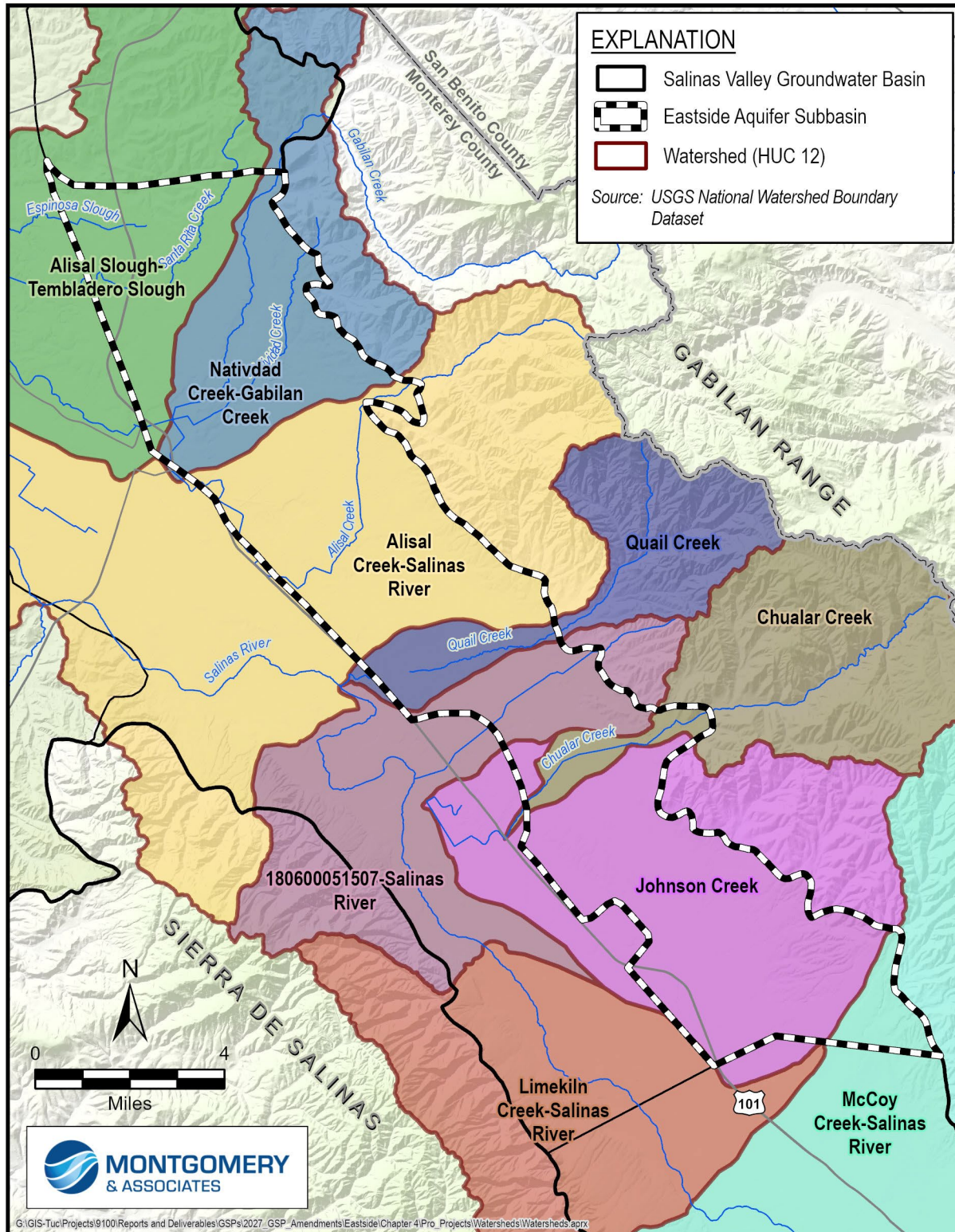


Figure 4-14. HUC12 Watersheds within the Eastside Aquifer Subbasin

4.5.2 Imported Water Supplies

There is no water imported into the Eastside Subbasin.

4.6 Water Quality

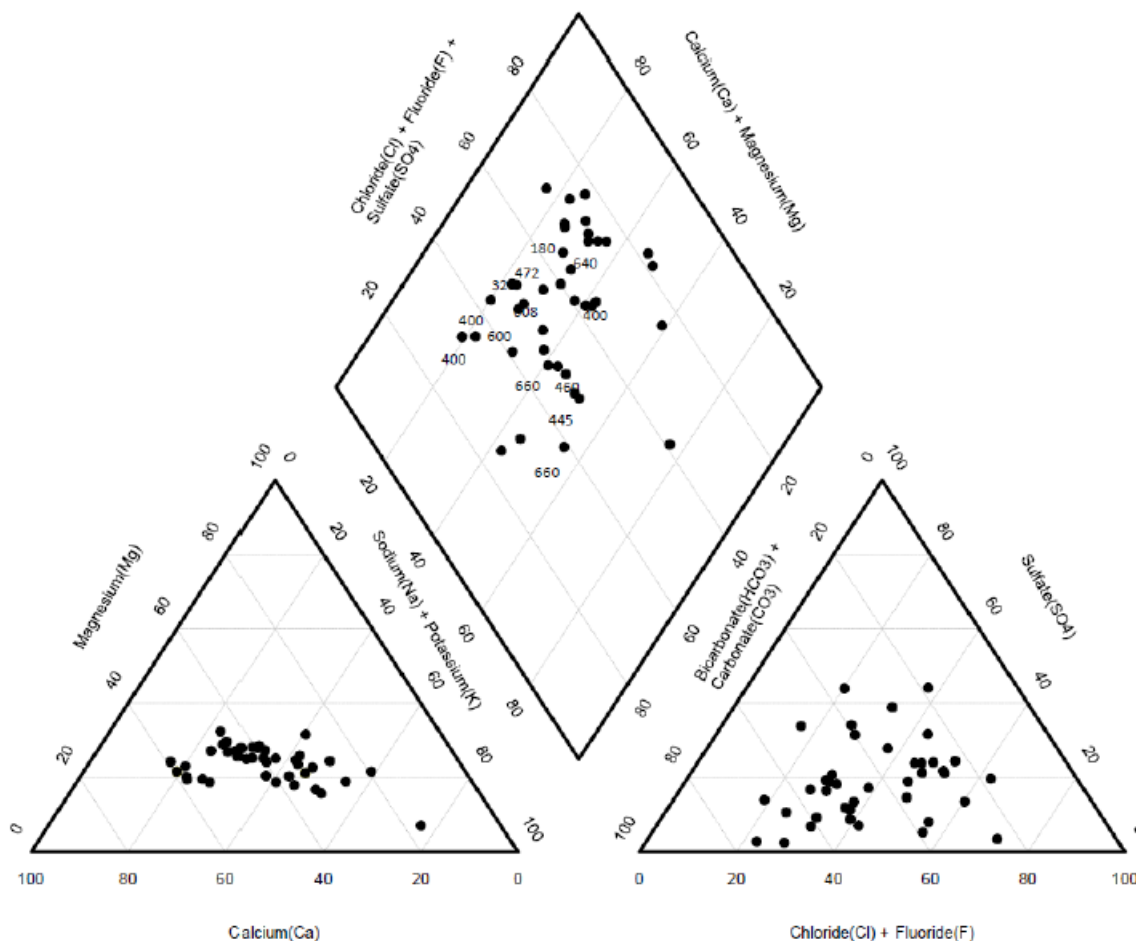
Natural groundwater quality can determine how much treatment may be needed before being used for municipal uses and how the water may impact crop production. This chapter presents a discussion based on data from previous reports of the natural groundwater quality in the Subbasin, focusing on general minerals. The distribution and concentrations of specific constituents of concern (COC) are discussed in Chapter 5.

4.6.1 General Mineral Chemistry

The major ion chemistry of the Salinas Valley Groundwater Basin groundwater is summarized on the Distribution of Groundwater Nitrate Concentrations, Salinas Valley, California, report, prepared for the Central Coast Groundwater Coalition (CCGC) (HydroFocus, 2014). This report was a response to the CCRWQCB requirement for monitoring elevated nitrate concentrations near drinking water supply wells. The report included the results of extensive groundwater quality sampling and thus provided a good characterization of the Subbasin's general mineral water quality.

General water chemistry provides a baseline of understanding of the water by showing major ions that are dissolved in the groundwater. The major ions that are dissolved can inform users if the water is more alkaline or more acidic. In many areas with more alkaline water, which has more dissolved cations such as calcium, magnesium, and sodium, many users report their water as being 'hard'.

Figure 4-13 presents a Piper diagram from the CCGC report that plots major ion data from within and near the Subbasin. The diagram provides a means of representing the proportions of major anions and cations in water samples. The lower left triangle of the piper diagram plots the relative abundance of cations in groundwater samples. The lower right triangle of the piper diagram plots the relative abundance of anions in groundwater samples. The diamond in the middle of the diagram combines the cation and anion abundances into a single plot. Groundwater samples with similar general mineral chemistries will group together on these diagrams. The data plotted on Figure 4-13 show that most groundwater samples are of a similar type and plot in a single cluster. The samples are generally of a magnesium bicarbonate type, which is a more alkaline type of water. However, there are outlier samples that are higher in sodium and potassium than the other samples and are most noticeable in the dots that plot in the middle and right portions of the cation triangle. Piper diagrams do not provide spatial information about groundwater samples, and therefore it is difficult to illustrate the source of the sodium and/or potassium in the outlier samples.



Note: Well depths indicated when available.

(Source: CCGC, 2015)

Figure 4-15. Piper Diagram of Eastside Aquifer Subbasin Representing Major Anions and Cations in Water Samples

4.6.2 Seawater Intrusion

There is no recorded seawater intrusion in the Eastside Subbasin. Even though it is adjacent to the 180/400 Subbasin where seawater intrusion is occurring, seawater intrusion has not reached the Subbasin, which is approximately 7 miles from the coastline. However, there is a potential for seawater intrusion into the Subbasin. The most recent seawater intrusion contours in the 180-Foot Aquifer place the 500 mg/L chloride isocontour within 1 mile of the Eastside Subbasin. The most recent seawater intrusion contours in the 400-Foot Aquifer place the 500 mg/L chloride isocontour leading edge within 5 miles, and the isolated patches of elevated chloride within 2 miles of the Eastside Subbasin. Furthermore, the groundwater elevations in the northwestern portion of the Eastside Subbasin (near the City of Salinas) are chronically below sea level, creating a groundwater gradient away from the coast and toward the Eastside Subbasin. Seawater

intrusion into this subbasin may be slowed or inhibited where there are clay-rich alluvial fan sediments, such as described in Section 4.3.2 above.

The current seawater intrusion conditions are described more fully in Chapter 5.

4.7 Uncertainty of the HCM

The HCM in the Eastside Subbasin has been updated, and previous data gaps have been addressed. Further analyses and site-specific investigations will be completed as needed during GSP implementation and incorporated into future amendments. While opportunities for conducting additional aquifer testing were limited by well availability, landowner participation, and construction constraints, the data collected represent a meaningful step toward reducing uncertainty and informing future groundwater modeling and groundwater management decisions.

One area that would benefit from further study is the location of the bedrock underneath the City of Salinas. The chronically depressed groundwater elevations in this location, along with nearby AEM transects indicate a potential groundwater flow boundary condition. As of drafting GSP Amendment 1, SVBGSA had contracted a survey with stationary time-domain electromagnetics to investigate this.

As described in Chapter 7, the GSP will include ongoing data collection and monitoring recommendations that will allow continued refinement and quantification of the groundwater system.