

Groundwater Sustainability Planning

County of Santa Cruz
Water Advisory Commission
August 2, 2023

Rob Swartz, Regional Water Management Foundation

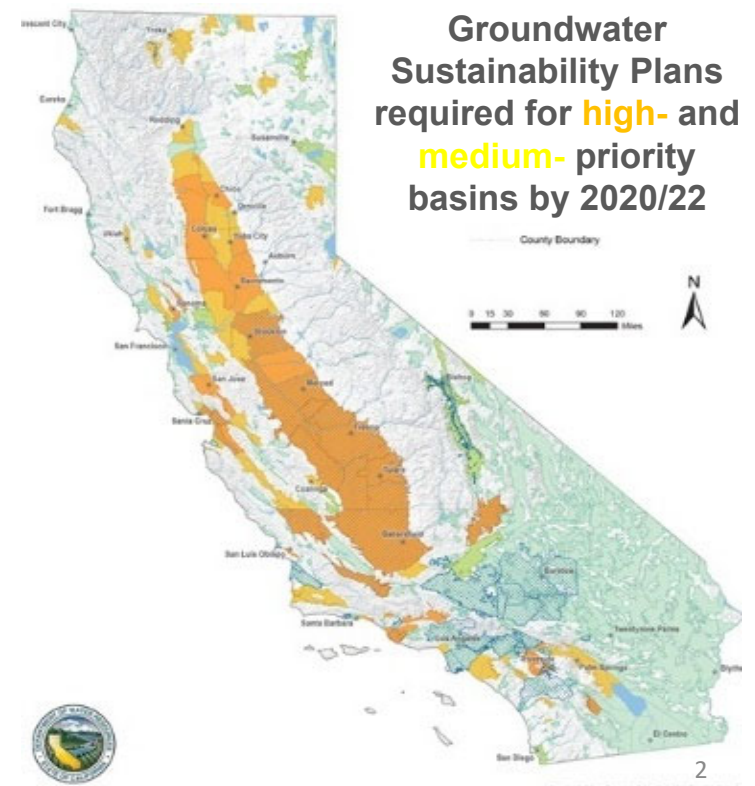
The Sustainable Groundwater Management Act (SGMA) of 2014

Groundwater Basins

Requires

- Form Groundwater Sustainability Agency (GSA) by June 30, 2017
- Develop Groundwater Sustainability Plan (GSP) by January 31, 2020/2022
- Achieve Sustainable Management by 2040/2042 (with interim annual reporting and 5-year evaluation)

Failure results in state intervention



Demonstrating Sustainability under SGMA

Avoidance of *significant and unreasonable* undesirable results for six indicators

- Establish Sustainable Management Criteria to track progress in consideration of beneficial uses and users
- Develop and maintain a representative monitoring network capable of tracking progress
- Report on progress/plan implementation annually
- Evaluate every five years



Lowering
GW Levels



Reduction
of Storage



Seawater
Intrusion



Degraded
Quality

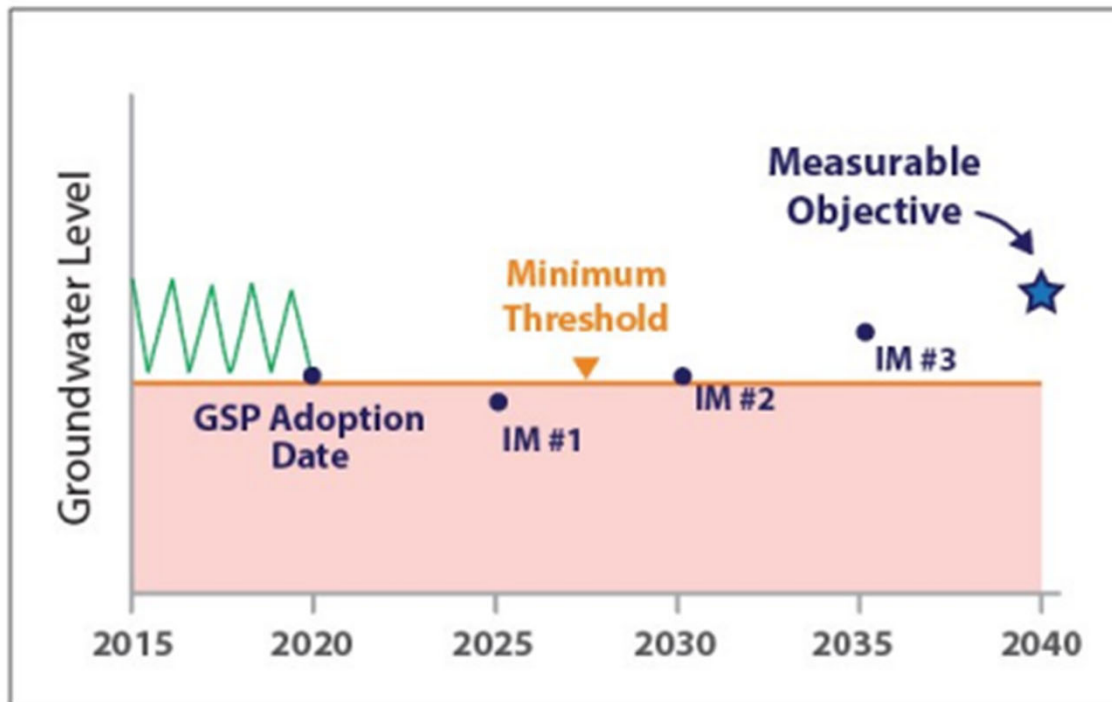


Land
Subsidence



Surface Water
Depletion

Sustainable Management Criteria (SMC)



Source: Department of Water Resources

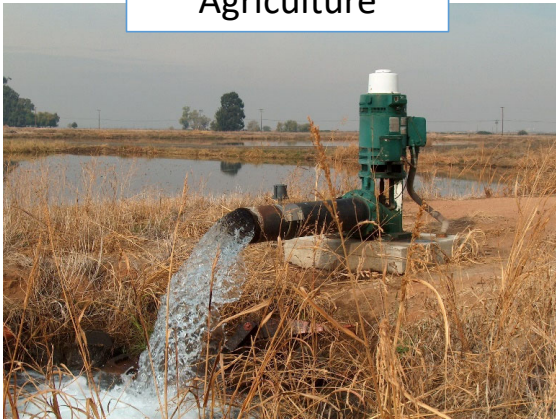
Minimum Threshold = level at a site that when exceeded, either individually or at a combination of sites, may cause undesirable results

Measurable Objective = level that reflects desired conditions...that achieves the sustainability goal for a basin

Interim Milestone (IM) = target value, in increments of five years, that demonstrates progress towards meeting measurable objective

Beneficial Uses and Users

Agriculture



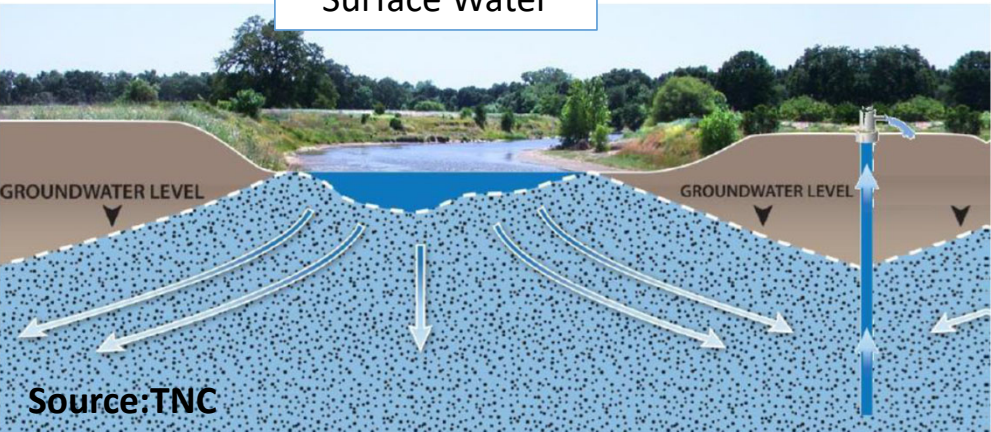
Municipal



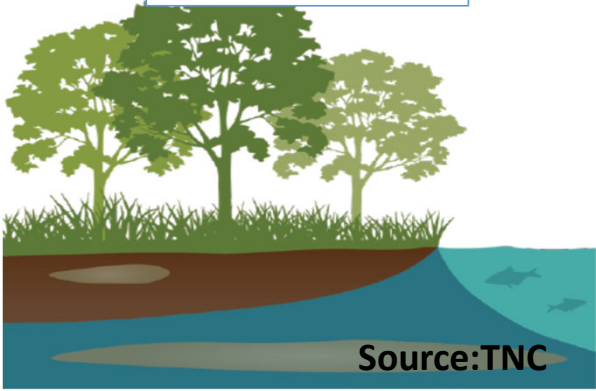
Domestic

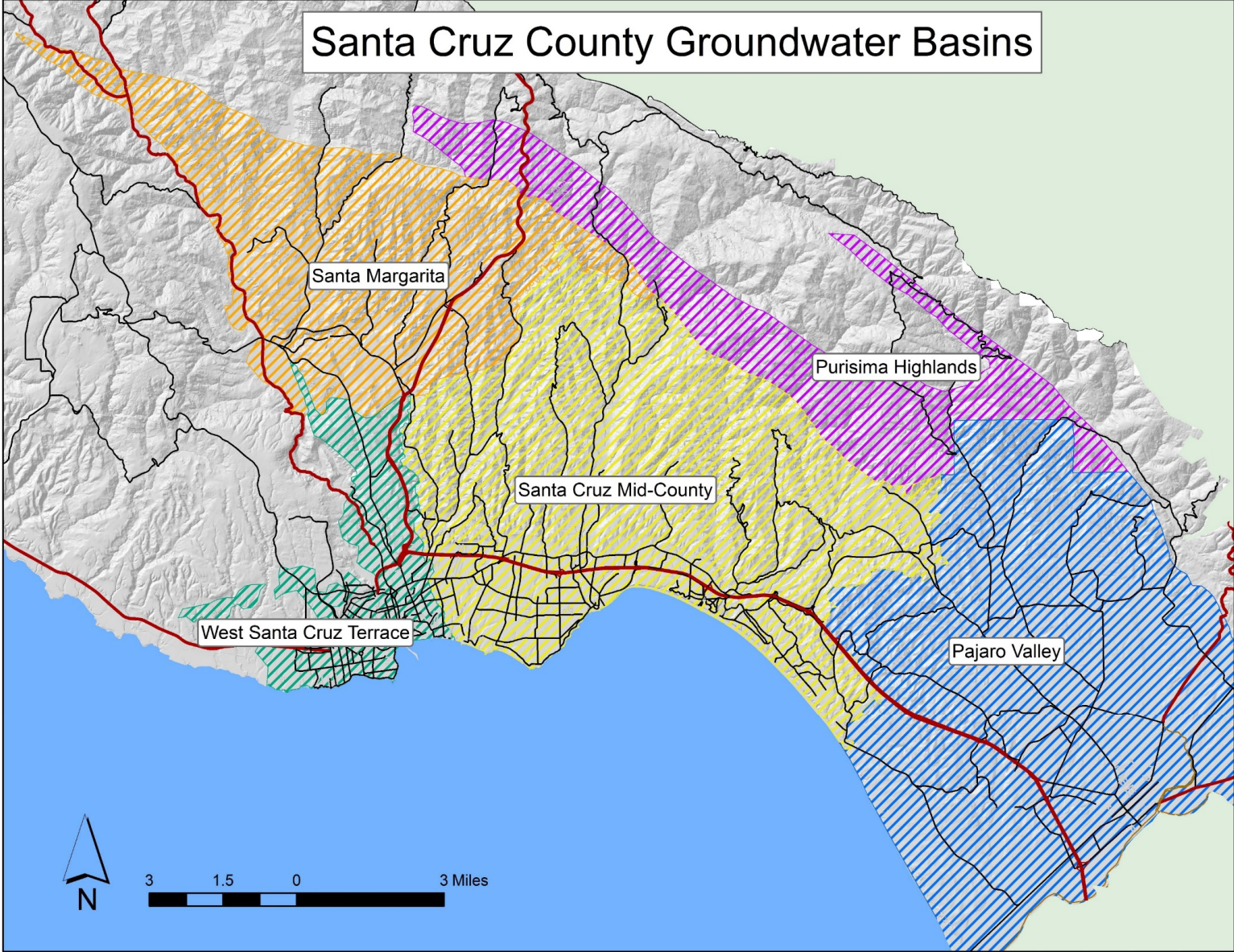


Surface Water



Environment





Basins the RWMF is Assisting

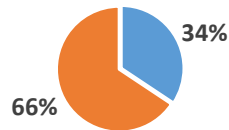
Mid-County Basin

92,000 residents

57 square-miles

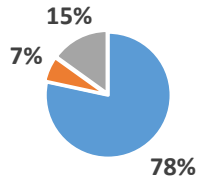
2021 Total Water Use =
8,670 acre-feet

2021 Water Sources

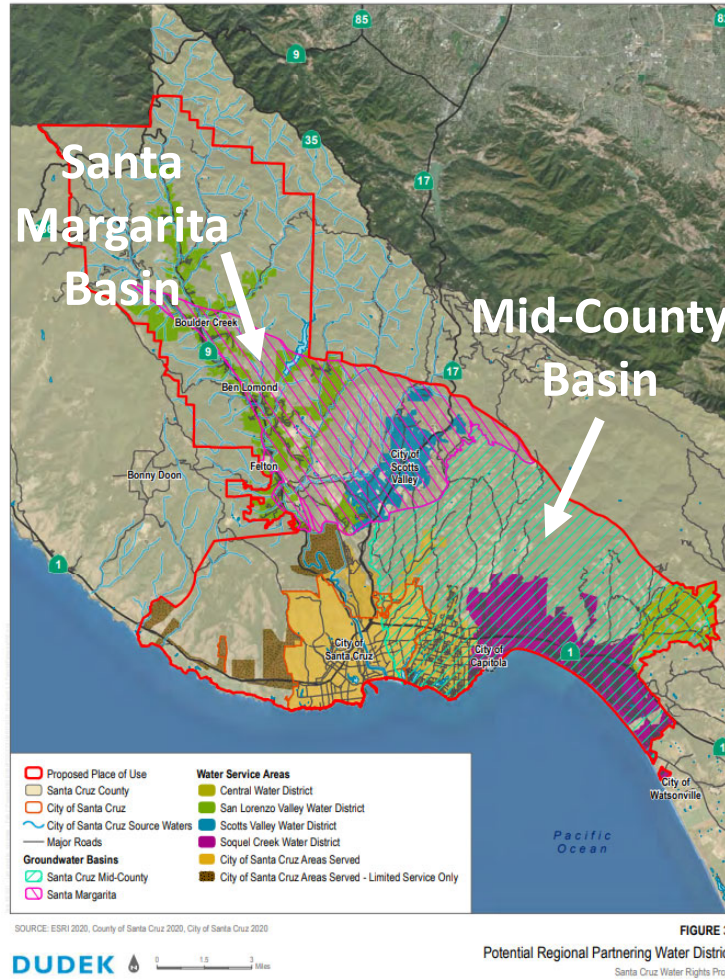


■ Surface Water ■ Groundwater

2021 Groundwater Uses



■ Urban ■ Ag/Industrial ■ Other



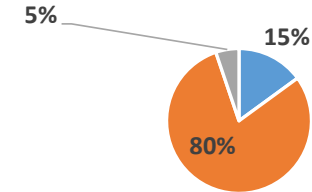
Santa Margarita Basin

29,000 residents

35 square-miles

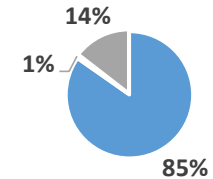
2021 Total Water Use =
3,993 acre-feet

2021 Water Sources



■ Surface Water ■ Groundwater ■ Recycled Water

2021 Groundwater Uses

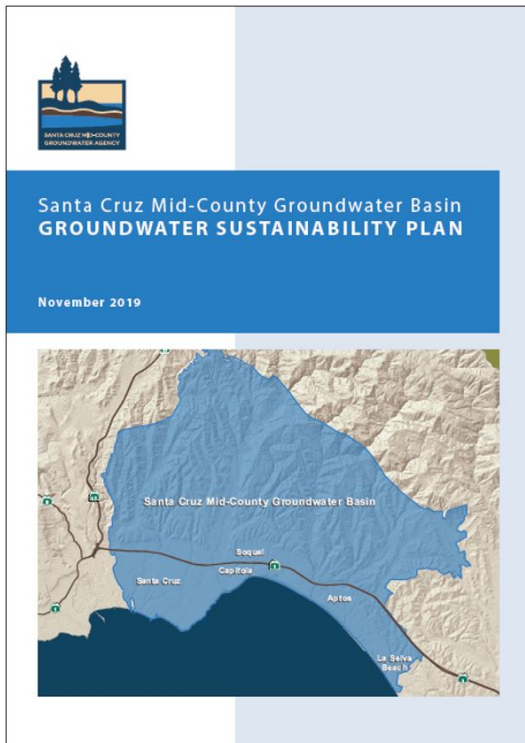


■ Urban ■ Ag/Industrial ■ Other

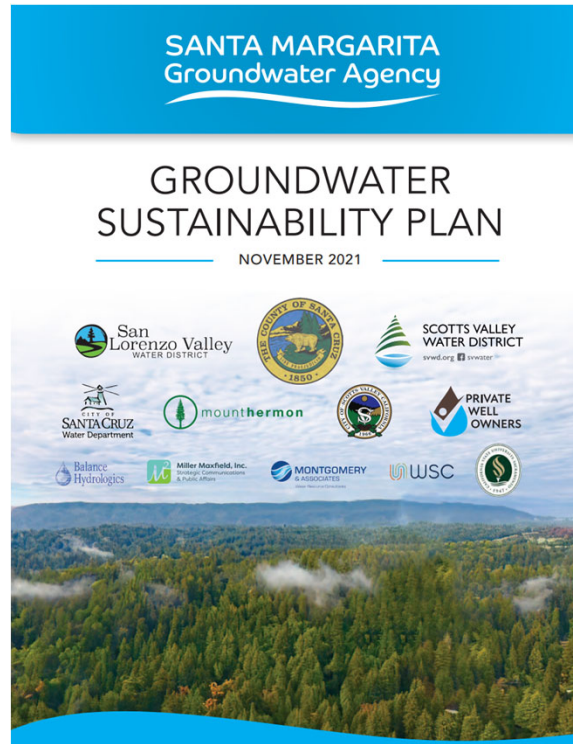
Agency Composition

Mid-County Groundwater Agency	Santa Margarita Groundwater Agency
Formed by Joint Exercise of Powers Agreement (JPA) on March 17, 2016	Formed by JPA on June 1, 2017
<p>Members:</p> <ul style="list-style-type: none"> Central Water District City of Santa Cruz County of Santa Cruz Soquel Creek Water District 	<p>Members:</p> <ul style="list-style-type: none"> San Lorenzo Valley Water District Scotts Valley Water District County of Santa Cruz
<p>Board (11 seats):</p> <ul style="list-style-type: none"> 2 Reps from each member agency 3 Reps from private well owners 	<p>Board (11 seats):</p> <ul style="list-style-type: none"> 2 Reps from each member agency 1 Rep from City of Santa Cruz 1 Rep from City of Scotts Valley 1 Rep from Mt Hermon Association 2 Reps from private well owners

Groundwater Sustainability Plans



DWR Approved June 2021



DWR Approved April 2023

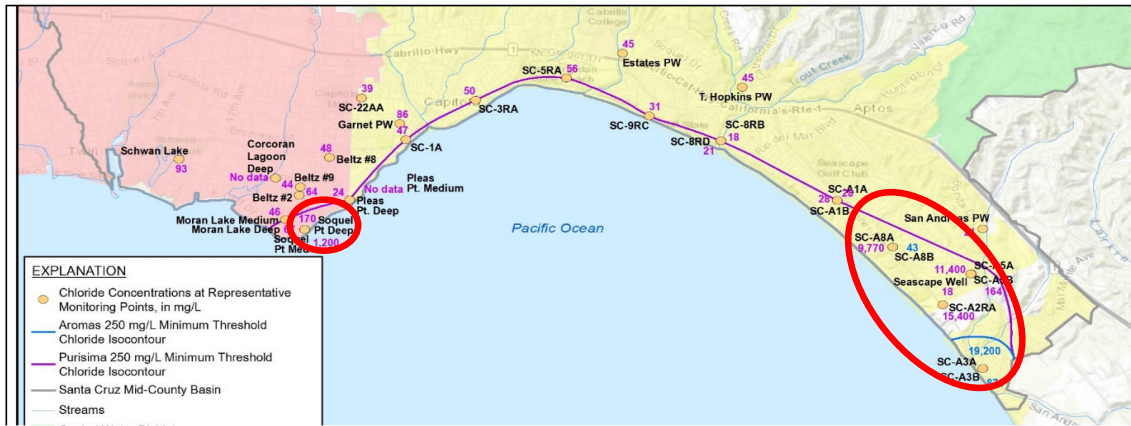
Plan Content

- Plan Area and Basin Setting
- Monitoring Network, including gaps
- Sustainable Management Criteria
 - Sustainability Goal
 - Undesirable Results
 - Minimum Thresholds
 - Measurable Objectives
- Projects and Management Actions
- Plan for Implementation

Mid-County Priority SMC Issue

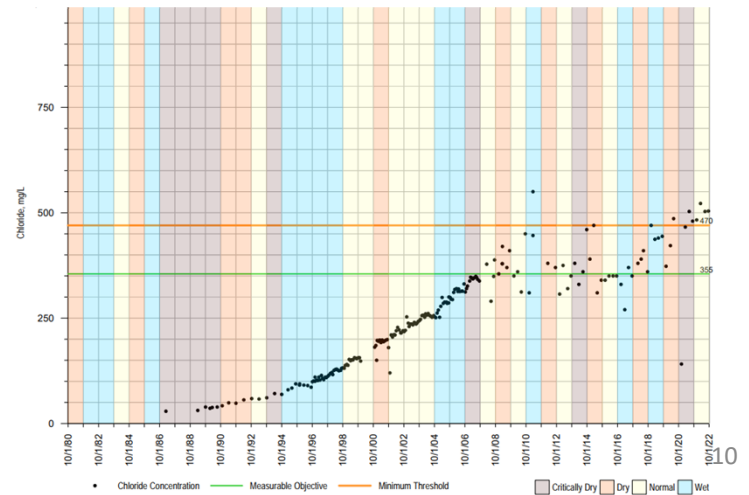
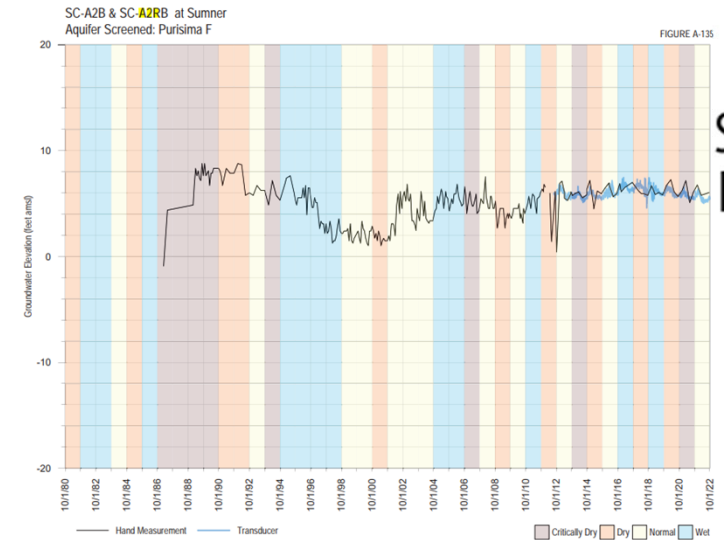


Seawater
Intrusion



Seawater Intrusion (as measured at 33 representative monitoring points)

Minimum Threshold	Undesirable Result	Measurable Objective
Historical maximum concentration for intruded wells, 250 mg/L for unintruded coastal wells, 150 mg/L for unintruded inland wells	Consecutive Minimum Threshold exceedances at any representative monitoring point	2013-2017 average chloride concentration for all intruded wells, 100 mg/L for unintruded inland wells



Santa Margarita Priority SMC Issue

Reduction of Groundwater in Storage (as measured at each of the 4 primary subsurface units)

Minimum Threshold	Undesirable Result	Measurable Objective
Average model-projected groundwater extraction without implementing projects and management actions	Extraction volumes exceed Minimum Threshold in 1 or more aquifers	Average model-projected groundwater extraction with 540 acre-feet per year conjunctive use project



Reduction of Storage

Aquifer/ Formation	Minimum Threshold (acre-feet)	Measurable Objective (acre-feet)	WY 2021 Extraction (acre-feet)	WY 2022 Extraction (acre-feet)
Santa Margarita	850	615	1,250	683
Monterey	140	130	92	91
Lompico	1,290	1,000	1,510	1,258
Butano	540	380	268	423

GSP Projects and Management Actions

Mid-County Groundwater Agency	Santa Margarita Groundwater Agency
<p>Group 1</p> <ol style="list-style-type: none"> 1. Water Conservation and Demand Management 2. Redistribution of Municipal Groundwater Pumping 	<p>Group 1</p> <ol style="list-style-type: none"> 1. Existing Water Use Efficiency 2. SVWD Low-Impact Development 3. SLVWD Conjunctive Use 4. SVWD Recycled Water Program
<p>Group 2</p> <ol style="list-style-type: none"> 1. Pure Water Soquel 2. Aquifer Storage and Recovery 3. Water Transfers / In Lieu Groundwater Recharge 4. Distributed Storm Water Managed Aquifer Recharge 	<p>Group 2</p> <p><u>Tier 1 (Existing Within Basin Water Sources)</u></p> <ol style="list-style-type: none"> 1. Additional Water Use Efficiency 2. SLVWD Existing Infrastructure Expanded Conjunctive Use (Phase 1) 3. SLVWD and SVWD Inter-District Conjunctive Use with Loch Lomond (Phase 2) <p><u>Tier 2 (Using Surface Water Sources Outside the Basin)</u></p> <ol style="list-style-type: none"> 1. Transfer for Inter-District Conjunctive Use 2. Aquifer Storage & Recovery Project in Scotts Valley Area of the Basin <p><u>Tier 3 (Using Purified Wastewater Sources)</u></p> <ol style="list-style-type: none"> 1. Purified Wastewater Recharge in Scotts Valley Area of the Basin (710 – 1,500 AFY from Outside of Basin) 2. Purified Wastewater Recharge in Scotts Valley Area of the Basin (3,500 AFY Inside of Basin) 3. Purified Wastewater Augmentation at Loch Lomond

Recent Mid-County Groundwater Agency Activities

- Installed network of 6 stream gages and 6 shallow monitoring wells in 2022
- Completed a study of private wells that may require meters in 2022
- Working on program to provide assistance for installing meters
- Preparing to begin first 5-year assessment of GSP – due January 2025
- Awarded \$7.6 million Sustainable Groundwater Management Implementation Grant in 2022 from Department of Water Resources

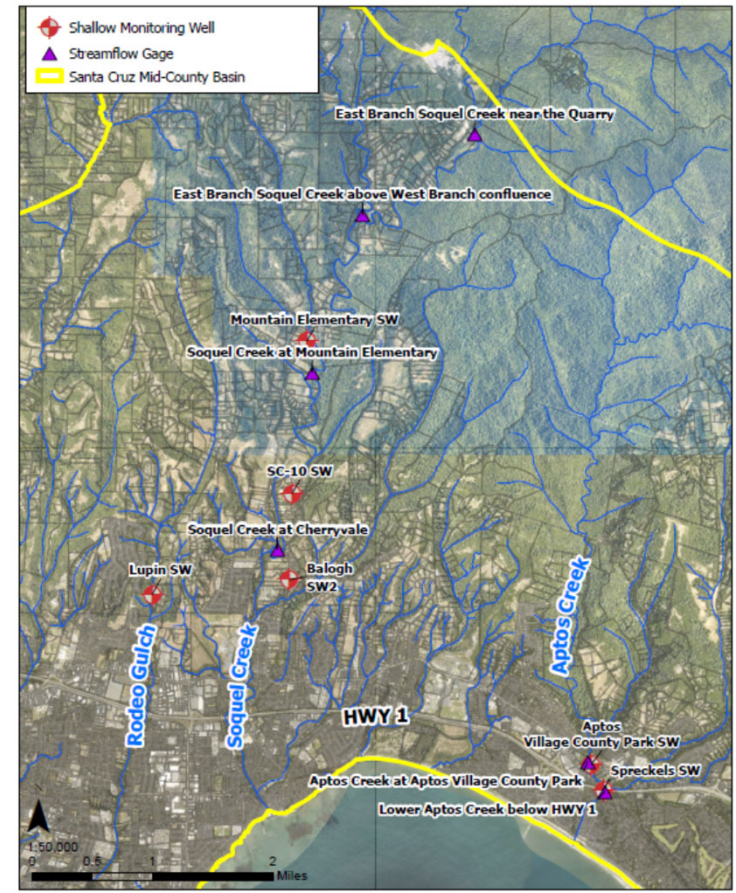


Figure 1. Map of shallow monitoring wells installed, Santa Cruz Mid-County Groundwater Basin (3-001), Santa Cruz County, California

Mid-County Member Agency Activities

SGMI Grant-Funded Projects to be Completed within 2 Years

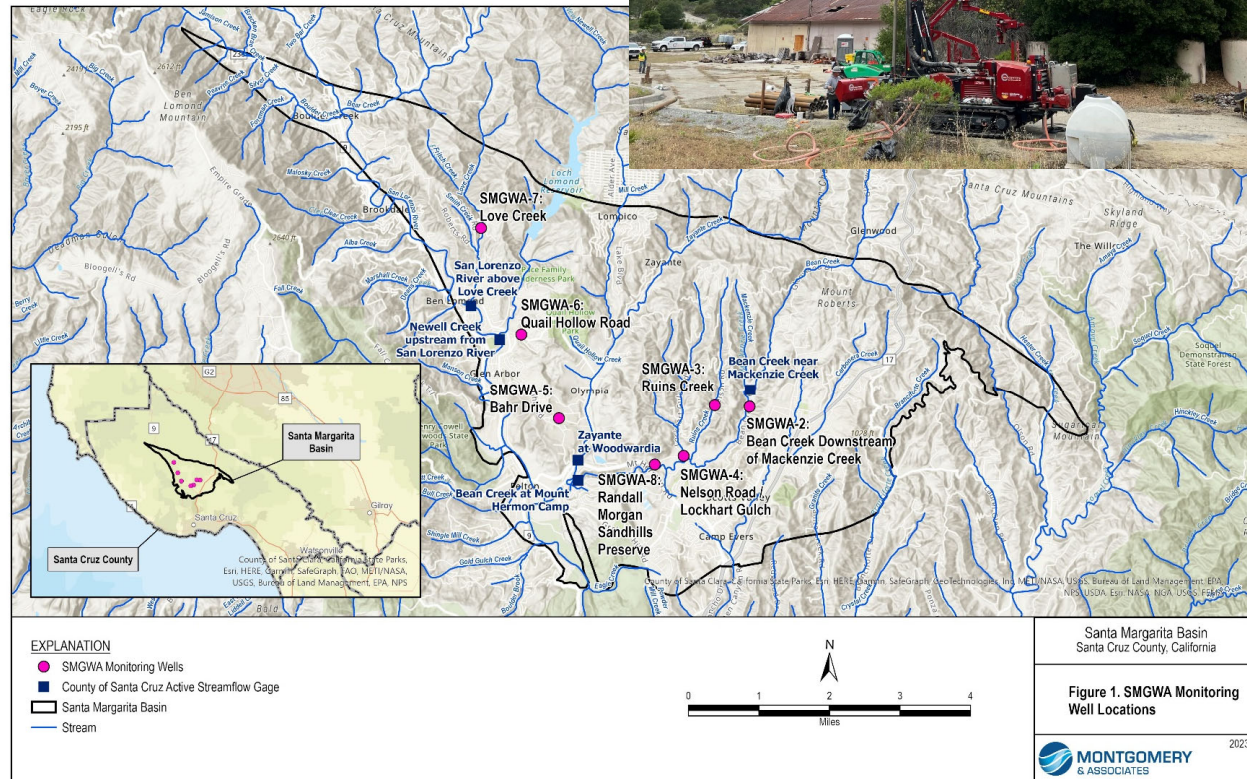
- Cunnison Lane Groundwater Well
 - Redistribute 400 acre-feet per year pumping further inland
- Beltz ASR Well
 - Inject 100-200 acre-feet per year nearer coast
- Park Avenue Bottleneck Improvements
 - Replace 1,380 feet of 8-inch pipeline with 12-inch pipeline
- System Optimization Study
 - Santa Cruz and Soquel Creek evaluating range of infrastructure and operational changes to improve regional water reliability



Recent Santa Margarita Groundwater Agency Activities

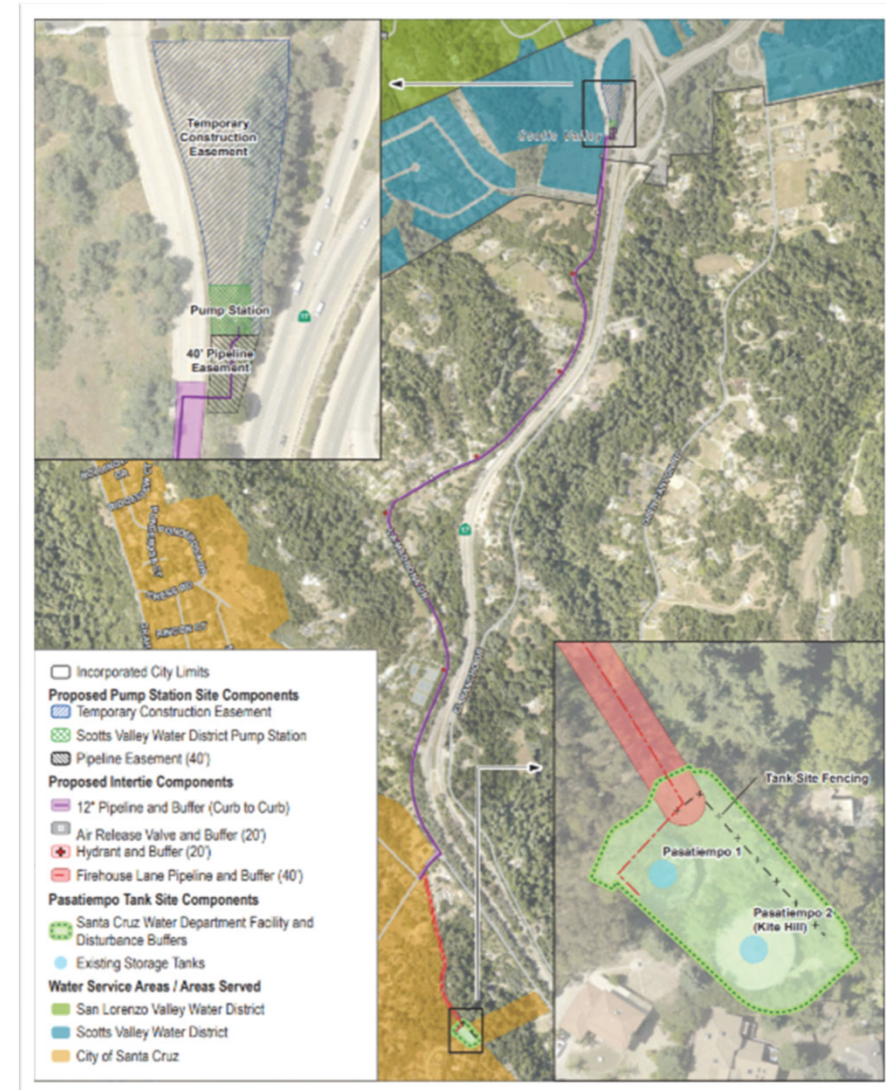
Focus primarily on filling data gaps and surface water/groundwater interaction (DWR grant funded)

- Installed 5 stream gages in 2021
- Currently installing 7 monitoring wells in basin



Santa Margarita Member Agency Activities

- Scotts Valley WD Intertie #1 with City of Santa Cruz
 - 9,600 feet of 12-inch, bi-directional pipeline
 - Potential benefits in drought/emergency or in broader, long-term conjunctive use program
- San Lorenzo Valley WD Conjunctive Use Project
 - Expect to issue a notice of intent (NOI) for an Environmental Impact Report later this year for expanding surface water use within the District's jurisdiction and potentially with SVWD
 - Expect to release Request for Proposals this month to begin Feasibility Study to determine the best utilization of the District's 313 acre-foot Loch Lomond allotment



County Interests and Involvement

- GSPs included in County:
 - Sustainability Update to the General Plan
 - Climate Action and Adaptation Plan
 - Drought Response and Outreach Plan
- Ongoing involvement of staff and Supervisors
 - Contracts
- Fees
- Well Permitting
 - Metering/reporting
 - Well standards

Questions/ Discussion

