



SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY FUNDING OPTIONS ASSESSMENT FOR SGMA REGULATORY COMPLIANCE

SCI CONSULTING GROUP

MARCH 20, 2025

OVERVIEW

1. Domestic Groundwater User Workshop – Funding Options Evaluation
2. Domestic Groundwater User Workshop – Attendee Feedback
3. Next Steps



DOMESTIC GROUNDWATER USER WORKSHOP FUNDING OPTIONS EVALUATION

DOMESTIC GROUNDWATER USE FUNDING WORKSHOP

Content

- Background – SGMA, Mid-County Basin, and MGA.
- Long-term funding needs.
- Funding options evaluation.

Attendance

- 24 people registered for in-person.
- ~110 people attended in person.
- ~80 people attended via Zoom.

FUNDING OPTIONS DISCUSSED AT DOMESTIC GW WORKSHOP

Fee Type

- Regulatory Fee (Water Code § 10730)
- Property Related Fee (Water Code § 10730.2)

Fee Methodology

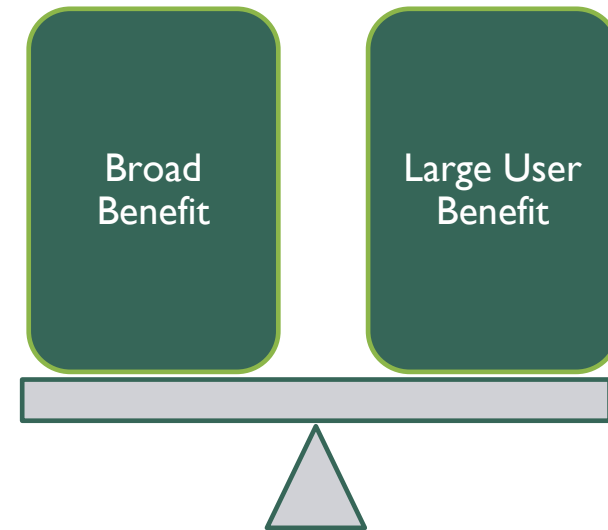
- Volumetric
- Parcel-based
- Hybrid

COMPARING VOLUMETRIC & PARCEL FEES

Volumetric	Parcel-Based
<ul style="list-style-type: none">■ More granular; more complex.■ Accounts for varying benefit based on amount of groundwater used.■ Difficult to account for all groundwater users – extraction amounts for many parcels are not known.	<ul style="list-style-type: none">■ Simpler; less granular.■ Does not account for varying benefit based on amount of groundwater used.■ Effectively accounts for all groundwater users – exact extraction amounts are not necessary.

HYBRID METHODOLOGY APPROACH (I)

- A **hybrid fee** would use multiple methodologies to account for the benefit provided to Basin residents by SGMA regulatory compliance and sustainable management of the Basin.
- MGA costs could be split between multiple charge types, decreasing the rate that either would have on its own.



Advantages	Challenges
<ul style="list-style-type: none">■ Helps to account for benefit provided to a broad range of stakeholders.■ Helps to account for higher degree of benefit provided to larger users.	<ul style="list-style-type: none">■ May create a degree of confusion by using multiple elements / charge types.

HYBRID METHODOLOGY APPROACH (2)

Balancing Costs for Different Groundwater Users

- The split between revenue generated from parcel fees and volumetric groundwater extraction fees could be identified in a manner that addresses questions of equity among Basin stakeholders.

Cost to Domestic Users

- While no fee approach has been selected, preliminary hybrid approach calculations place the cost to domestic groundwater users between \$20 and \$45 per parcel, per year.



DOMESTIC GROUNDWATER USER WORKSHOP ATTENDEE FEEDBACK

DOMESTIC GROUNDWATER USER FEEDBACK (1)

CONCERNS REGARDING FEE IMPLEMENTATION

Need For a Fee & the Funding Approach

- Questions about why private well owners would be charged now when MGA members have previously been paying.
- Comments that domestic well owners did not cause seawater intrusion or other groundwater problems, so why should they have to pay for sustainably managing the Basin.
- Comments that domestic well owners already pay for well installation, maintenance, filtration, and pumping costs and have no impact on basin sustainability, so they should not be subject to a fee.
- Questions asking what the benefits are to domestic groundwater users if they pay a fee.
- Suggestions that domestic users recharge groundwater through septic systems and infiltration of outdoor watering and they should receive credit for those contributions if there was to be a fee.
- Concerns over future rate increases and a lack of accountability.

DOMESTIC GROUNDWATER USER FEEDBACK (2)

GROUNDWATER RIGHTS, LEGAL CONCERNS & COMMUNITY INPUT

Groundwater Rights & Legal Challenges

- Concern that fees infringe on private property and water rights.
- Calls for legal action against MGA with respect to its authority to impose a fee.
- Suggestion that the region oppose or simply not comply with the SGMA mandate.
- Uncertainty about penalties for refusing to pay fees and potential state intervention.

Data Accuracy

- Stakeholders requested clarity on how groundwater usage was estimated, particularly for unmetered wells.
- Concerns over the accuracy of parcel records and how they impact fee assessments.

DOMESTIC GROUNDWATER USER FEEDBACK (3)

FAIRNESS IN WATER USE, GROWTH PLANNING & TRANSPARENCY

Growth & Water Demand

- Concern over new housing developments increasing groundwater use.
- Concern over state-mandated increased housing requirements increasing groundwater use.
- Suggestions that developers should contribute more to groundwater costs.

Community Input

- Concern that private owner well representatives on MGA were not representative of the domestic groundwater user community and the lack of awareness of the process for their appointment to the MGA Board.
- Concern that the domestic groundwater users have no vote in a decision to impose a fee.
- Requests for more public engagement/meetings before finalizing any fees.
- Requests for the Board to continue evaluating funding options and gathering community input.

NEXT STEPS

- Non-De Minimis Groundwater Workshop in coming weeks.
- Broad community meeting to be scheduled in late spring.
- Refinement of potential fee structure options and rate scenarios ongoing.



SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY FUNDING OPTIONS ASSESSMENT FOR SGMA REGULATORY COMPLIANCE

QUESTIONS / DISCUSSION

MARCH 20, 2025

Santa Cruz Mid-County Basin 6th Annual Report Water Year 2024



Presented by: Georgina King, PG, C.Hg

March 20, 2025

Presentation Content

1. Santa Cruz Mid-County GSP Overview
2. Water Year 2024 Annual Report
 - Water Year Type/Water Use
 - Sustainability Indicators Results
 - Progress on GSP Implementation
3. Key takeaways for Water Year 2024

Santa Cruz Mid-County GSP Overview

GSP Overview

- Basin is classified as a high-priority groundwater basin in critical overdraft due to the ongoing threat of further seawater intrusion into Basin groundwater supplies
- 59% of the Basin's water supply to residents, businesses, industry, and agriculture is from groundwater
 - ~ 4,700 – 5,600 AF of groundwater pumped per year in the Basin since 2015
 - ~ 2,900 – 4,000 AF of surface water sourced per year outside of the Basin used to supplement Basin demand since 2015

GSP Summary document:

<https://www.midcountygroundwater.org/sites/default/files/uploads/MGA2019-GSP-Public-final.pdf>

SGMA Sustainability Indicators

GSP addresses applicable sustainability indicators (5 of 6)



Lowering
GW Levels



Seawater
Intrusion



Reduction
of Storage



Degraded
Quality



Land
Subsidence



Surface Water
Depletion

Basin Issues – Chronic Lowering of Groundwater Levels

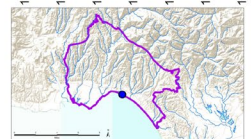
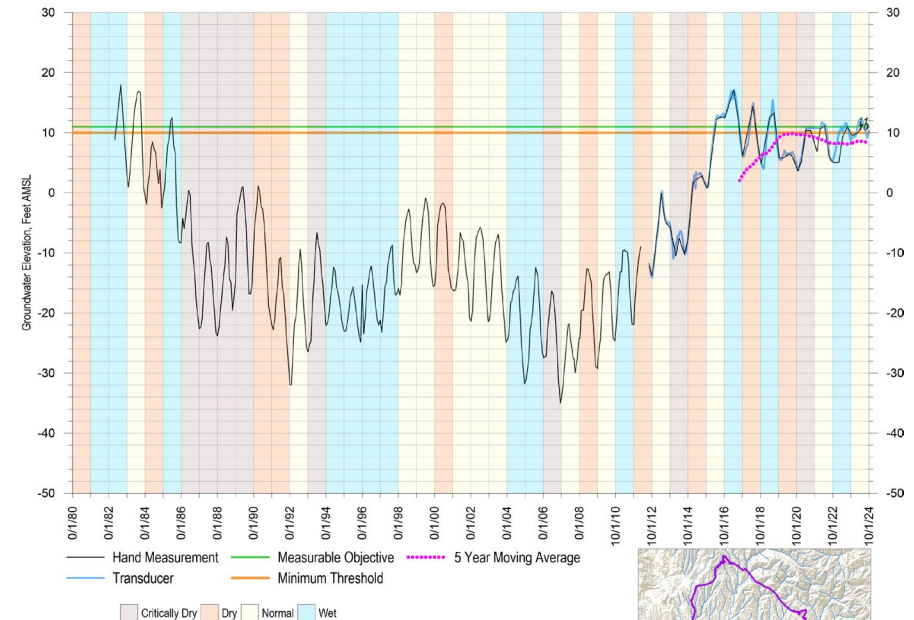


Lowering
GW Levels

- Groundwater levels have not completely recovered even though there have been basin-wide improvements due to increased water conservation and strategic groundwater management
- Need to plan for climate change and its impacts on groundwater recharge
- Additional water supplies are needed to meet demands while also achieving groundwater sustainability

SC-9C & SC-9RC at Seaciff
Aquifer Screened: Purisima BC

FIGURE A-23



Other Basin Issues Resulting from Lowered Groundwater Levels



Depletion of Interconnected Surface Water

- Some creeks in the Basin are partially dependent on inflows from groundwater
- Without those groundwater inflows, some aquatic plants and animals may be impacted, including priority species

Reduction of Groundwater in Storage



- Groundwater in storage needs to be at volumes that can support long-term water use, preserve or enhance ecological resources, and provide for a drought reserve when local rainfall is below normal

GSP Lays out Path to Sustainability

Sustainability Goals

Desired Basin conditions for all beneficial uses and users

Monitoring Network

To measure basin conditions in response to groundwater management and use

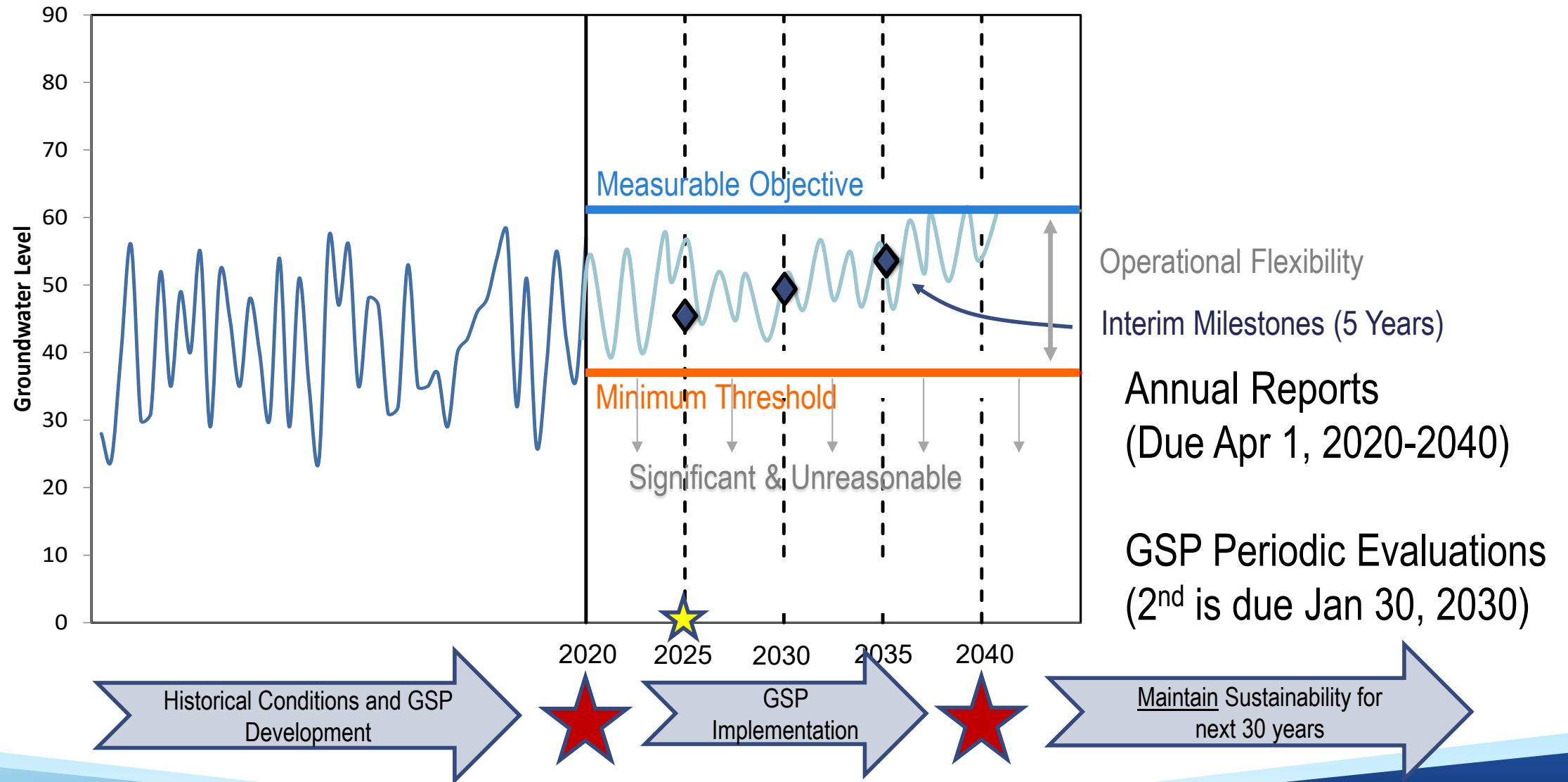
Sustainable Management Criteria

Metrics against which to measure progress of groundwater management and implementing projects & management actions

Projects & Management Actions

Needed to achieve Sustainability Goals

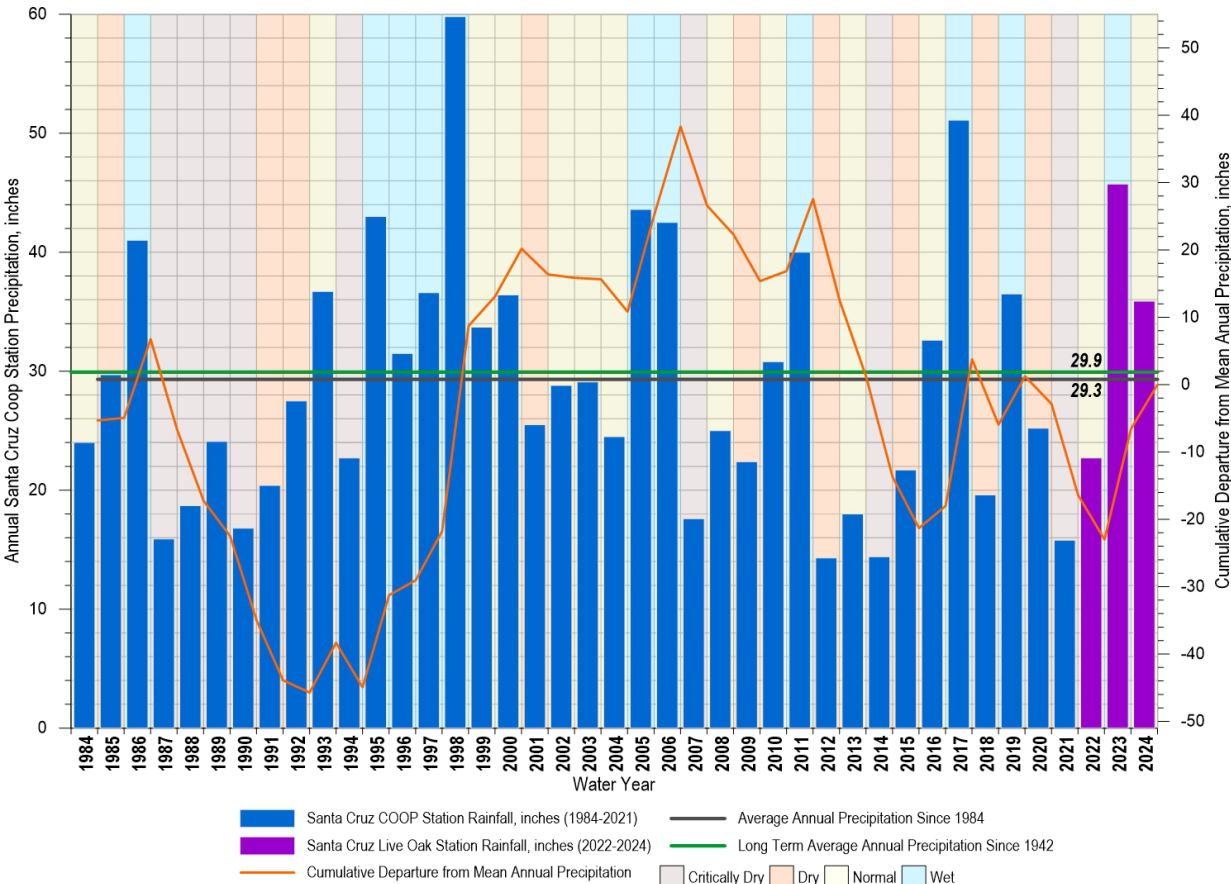
MGA's SGMA Timeline



Water Year 2024 Annual Report

Precipitation

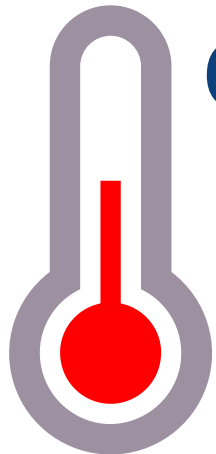
- October 1, 2023 to September 30, 2024
- Average precipitation (about 30 inches)
- Normal water year classification



Water Use

- Groundwater is 56% of basin supply (4,688 AF)
- Lowest groundwater usage on record (WY2019 was previous low at 4,726 AF)

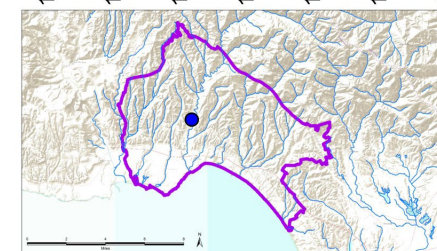
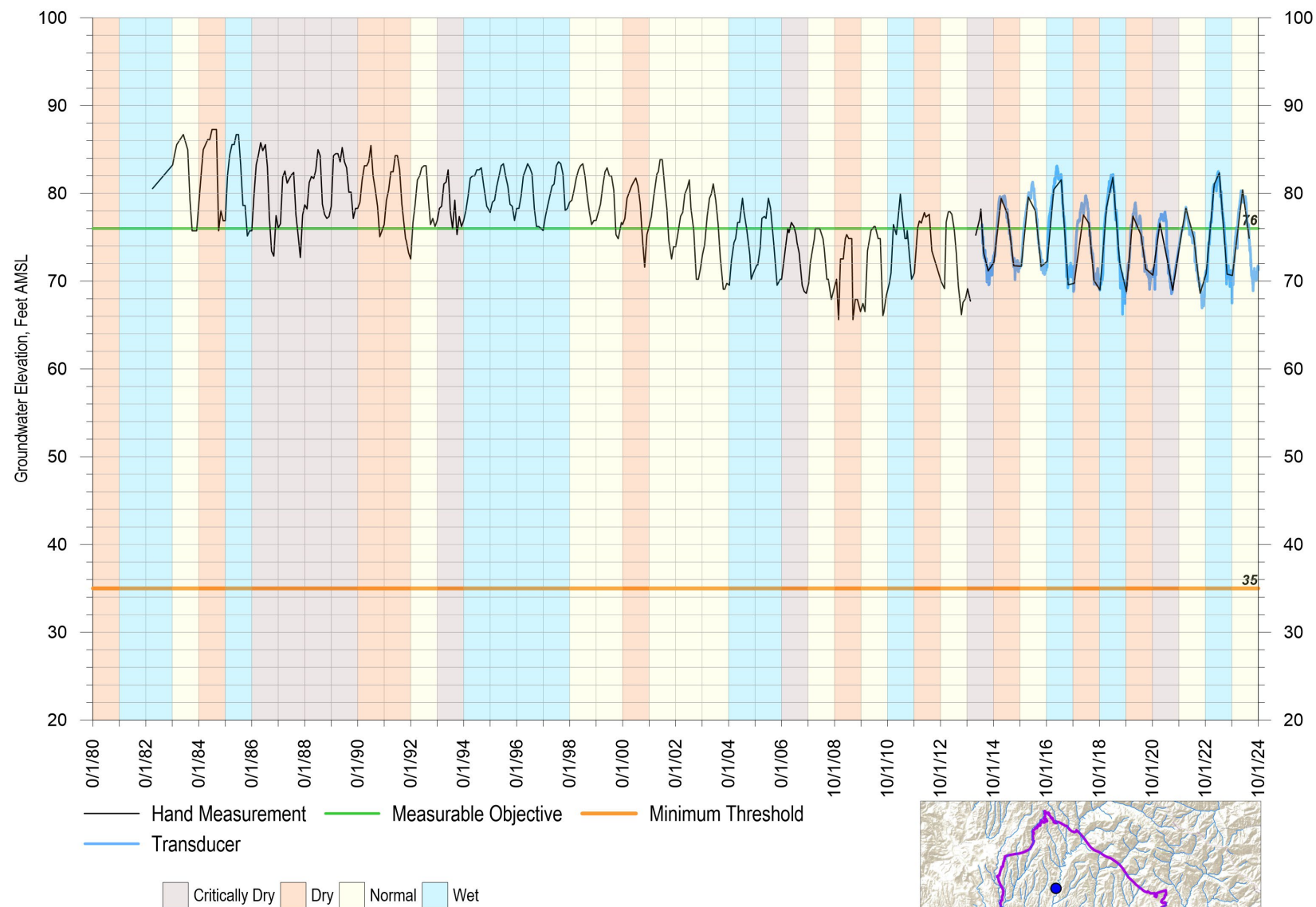
Water Use Sector	Groundwater Use ^f	Surface Water Use ^a	Total Water Use	Percentage of Basin Water Use
	AFY			
Private Domestic ^b	591	Unknown but minimal	591	7%
Agricultural ^c	315	0	315	4%
Institutional ^d	276	0	276	3%
Municipal ^e	3,506	3,694	7,200	86%
Total	4,688	3,694	8,382	
Percentage	56%	44%		



Compare Basin Conditions to Sustainable Management Criteria at Representative Monitoring Points

SC-10AA & SC-10RAA at Cherryvale
Aquifer Screened: Purisima AA

FIGURE A-14



Seawater Intrusion – Chloride Concentrations

Measurable Objective

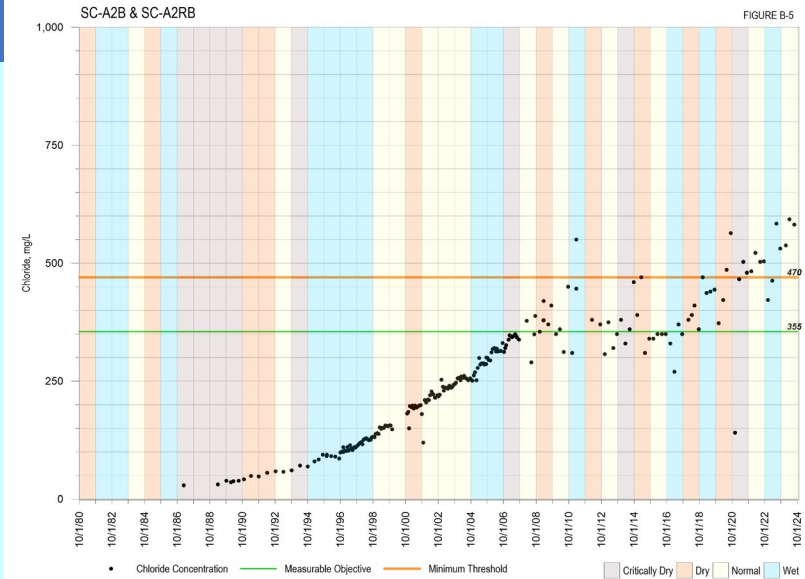
2013-2017 average chloride concentration for all intruded wells, 100 mg/L for unintruded coastal and inland wells

Minimum Threshold

Historical maximum concentration for intruded wells, 250 mg/L for unintruded coastal wells, 150 mg/L for unintruded inland wells

Undesirable Result

MT exceedances in 2 or more of the last 4 consecutive samples at any RMP well



Seawater
Intrusion



Many wells have concentrations below MOs (27/36)



6 RMP exceed MT:
SC-A2RA
SC-A2RB, SC-A5A,
SC-A5B, SC-A8A &
SC-A3A in the
Seascape area



There are
Undesirable Results
occurring at
SC-A2RB, SC-A5A,
& SC-A5B

KEY FINDING:

Undesirable results (UR)
continue to occur:
SC-A2RB & SC-A5B (4 or
more consecutive years)
SC-A5A (2 consecutive
years)

Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

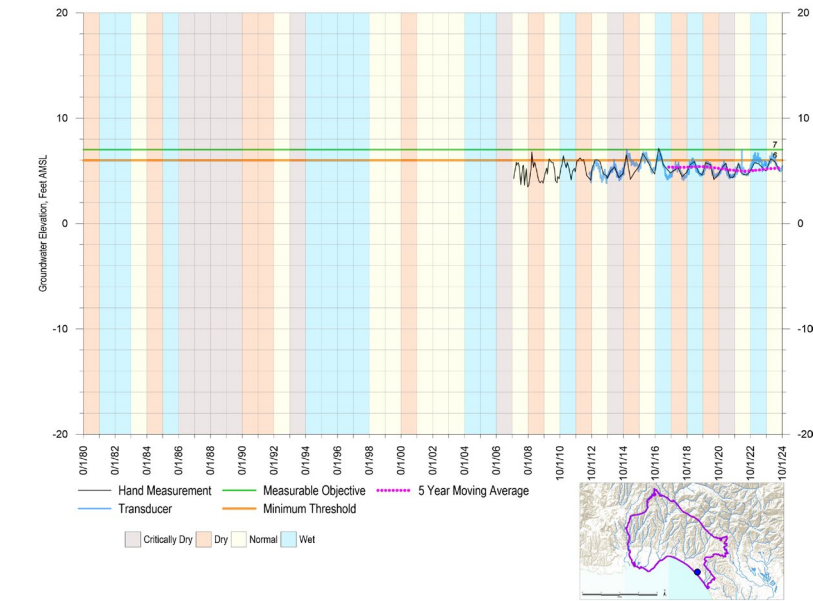
Seawater Intrusion – Proxy Groundwater Elevations

<p>Measurable Objective</p> <p>Conservative groundwater elevation proxies for seawater intrusion prevention</p>	<p>Minimum Threshold</p> <p>Groundwater elevation proxy for protection against seawater intrusion</p>	<p>Undesirable Result</p> <p>Any RMP wells have 5-year moving average elevations below MT</p>
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<p>✓</p> <p>MO are met at several RMPs screened in the Purisima F, DEF, and A units.</p>	<p>✗</p> <p>8 of 19 RMP have 5-year moving average elevations below MT</p> <p>Purisima F (1/3), Purisima BC (2/2), Purisima A (2/6), Purisima AA (1/4) Tu (2/2)</p>	<p>✗</p> <p>There are Undesirable Results because some elevations are below MT</p>
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Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

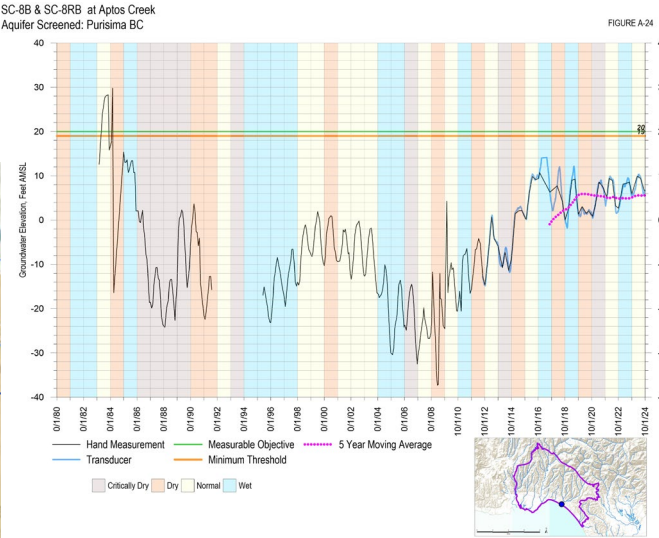
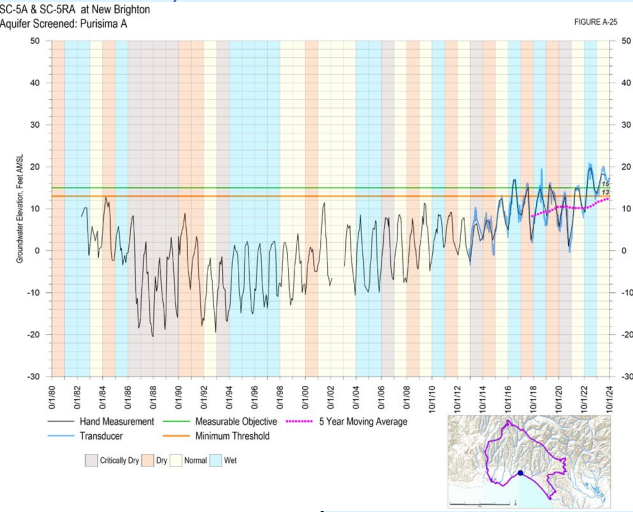
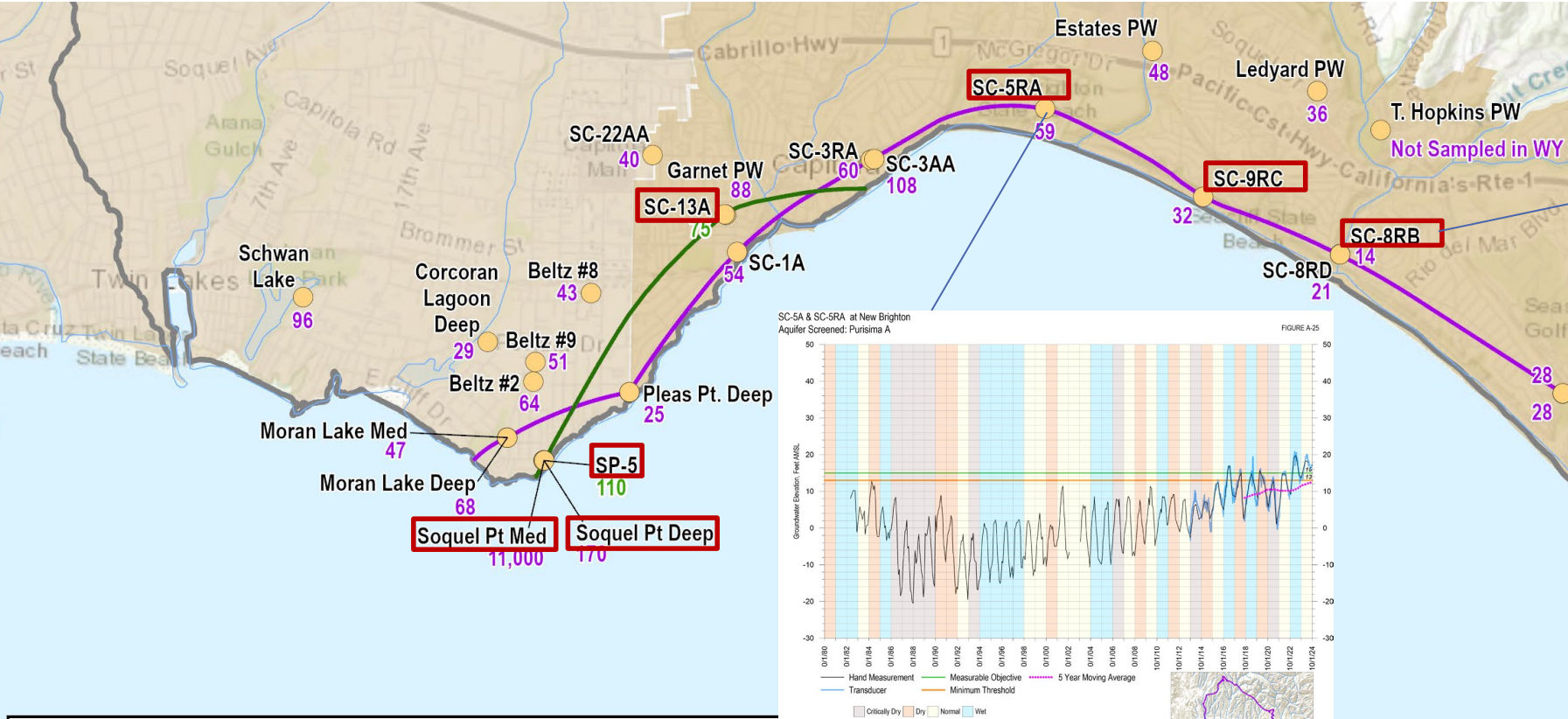
SC-A8A at Dolphin
Aquifer Screened: Purisima F



Seawater
Intrusion

KEY FINDING:
Undesirable results continue to occur. All aquifers, accept for the Aromas Red Sands and the Purisima DEF unit have at least 1 RMP with 5-year average elevations below MT

Undesirable Results Occurring Because Groundwater Levels at the Coast are Still Too Low



EXPLANATION

- Chloride Concentrations at Representative Monitoring Points, in mg/L
- Aromas 250 mg/L Minimum Threshold Chloride Isocontour
- Purisima 250 mg/L Minimum Threshold Chloride Isocontour
- Tu 250 mg/L Minimum Threshold Chloride Isocontour
- Streams
- ▭ Santa Cruz Mid-County Basin
- ▭ City of Santa Cruz Water Department
- ▭ Soquel Creek Water District
- ▭ Central Water District

8 of 19 Representative Monitoring Points with 5-Year Moving Average Below Minimum Thresholds (Protective Elevations)

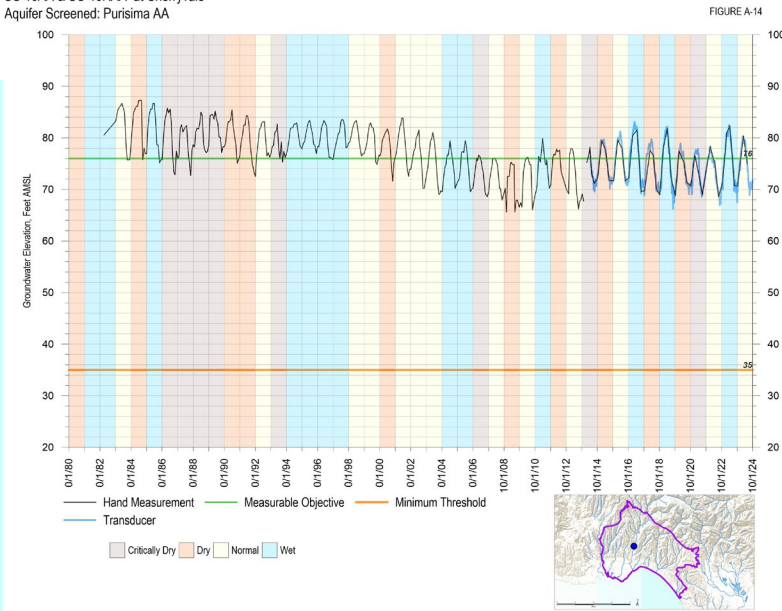
Chronic Lowering of Groundwater Levels

Measurable Objective
75th percentile
historical groundwater
elevation

Minimum Threshold
Based on levels that
sufficiently supply
overlying land use

Undesirable Result
Any RMP's average
monthly elevation falls
below MT

SC-10AA & SC-10RAA at Cherryvale
Aquifer Screened: Purisima AA



Lowering
GW Levels



MO was met at 2
RMP



No RMP wells
exceeded MT



There are no
Undesirable Results
as no RMP has
elevations below MT

KEY FINDING:
Groundwater elevations
remain above MTs

Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

Reduction of Groundwater in Storage

Measurable Objective

Net extraction that allows for 4 subsequent years of maximum projected extraction without causing undesirable results

Minimum Threshold

Pumping volumes that avoid undesirable results in projected Basin simulations

Undesirable Result

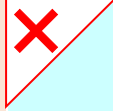
5-year net extraction exceeds sustainable yield (MT) in any aquifer group

Aquifer Unit Group	Minimum Threshold	Interim Milestone 2025	WY 2020-2024
	Five-Year moving average Net Extraction AFY		
Aromas Red Sands and Purisima F	1,740	1,930	1,959
Purisima DEF, BC, A and AA	2,280	2,110	2,269
Tu	930	720	866

None of the 3 aquifer groups met MOs



1 of 3 aquifer groups exceeded their MTs
Aromas Red Sand & Purisima F group



There are Undesirable Results as pumping was greater than MT for 1 aquifer group

KEY FINDING:

Undesirable results continue to occur.
WY 2024 is the first year Net Extraction in the Purisima DEF, BC, A, and AA units did not exceed MT
This is due to record low pumping



Reduction of Storage

Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

Degradation of Groundwater Quality

Measurable Objective
2013-2017 average
concentrations

Minimum Threshold
Based on drinking
water standards for
several constituents of
concern

Undesirable Result
Any RMP exceeds MT
as a result of an MGA
project or
management action

Aquifer	Representative Monitoring Point	Total Dissolved Solids mg/L	Chloride mg/L	Iron µg/L ^a	Manganese µg/L ^a	Arsenic µg/L	Chromium (Total) µg/L	Nitrate as Nitrogen mg/L	Organic Compound Detects µg/L
	Minimum Threshold	1,000	250	300	50	10	50	10	
Water Year 2023 Maximum Concentration									
Purisima A	Aptos Creek PW	NA	NA	NA	NA	NA	NA	NA	NA
	Ledyard PW	362.0	36.0	77.0	11.0	0.9	1.1	ND	ND
	SC-23A	254.0	20.1	ND	ND	NA	NA	ND	NA
	SC-8RB	508.0	14.0	23.0	ND	NA	NA	ND	NA
	SC-9RC	418.0	32.0	ND	ND	NA	NA	ND	NA
	30th Ave Shallow	770.0	53.0	120.0	1,300.0	NA	NA	ND	NA
	Pleasure Point Shallow	260.0	34.0	86.0	100.0	NA	NA	ND	NA
	Estates PW	470.0	48.4	200.0	98.0	0.6	0.8	ND	ND
	Garnet PW	672.0	87.8	1,460.0	446.0	0.9	1.1	ND	ND
	Tannery 2 PW	560.0	63.0	239.0	154.0	0.7	0.8	ND	ND
	Rosedale 2 PW	486.0	46.5	736.0	284.0	0.6	0.9	ND	0.6 (MTBE)
	Beltz #8 PW	NA	43.0	980.0	270.0	2.0	ND	ND	ND
	Beltz #9 PW	490.0	51.0	88.0	140.0	0.8	ND	ND	ND
	SC-3RC	420.0	48.9	181.0	35.0	NA	NA	ND	NA
	SC-5RA	590.0	59.0	66.0	176.0	NA	NA	ND	NA
	SC-9RA	374.0	15.2	209.0	10.0	NA	NA	ND	NA
Purisima A/AA	SC-10RA	540.0	47.9	736.0	780.0	NA	NA	ND	NA
	SC-22A	368.0	18.0	419.0	556.0	NA	NA	ND	NA
Purisima A/AA	Beltz #10 PW	NA	82.0	1,300.0	390.0	2.9	ND	NA	NA



MO are met at
several RMPs



Several RMPs
exceeded MT for
iron, manganese,
TDS, and chloride



There are no
Undesirable Results
because these MT
exceedances result
from preexisting
conditions

KEY FINDING:
While concentrations above
drinking water standards
exist, they are not a result of
Basin management



**Degraded
Quality**

Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

Depletion of Interconnected Surface Water

Measurable Objective

Groundwater elevations higher than the creek bed

Minimum Threshold

Highest seasonal-low groundwater elevation during below-average rainfall years from the start of monitoring through 2015

Undesirable Result

Any RMP has minimum monthly groundwater elevation below MT

RMP	Minimum Average Monthly Groundwater Elevation, feet amsl
Balogh	28.7
Main St. Shallow	23.9
Wharf Road	12.7
Nob Hill	9.2
SC-10RA	69.3



Surface Water Depletion



One RMP (Wharf Road) met its MO



One RMP (Balogh) has groundwater elevations below MT



There are Undesirable Results because there are groundwater elevations below MT

KEY FINDING:

While Undesirable Results continue, only 1 RMP has elevations below MT

Measurable Objective (MO): goal for each sustainability indicator | **Minimum Threshold (MT):** indicator of potential concern | **Undesirable Result:** combination of MT exceedances that cause significant and unreasonable conditions

Summary of Sustainability Status for Water Year 2024



Lowering
GW Levels



Seawater
Intrusion



Reduction
of Storage



Degraded
Quality



Surface Water
Depletion



MGA has until January 2040 to Achieve Sustainability

Progress on GSP Implementation in Water Year 2024

1. Completed filling monitoring data gaps in interconnected surface water
2. Performed 1st Periodic Evaluation – submitted to DWR in Jan 2025
3. Continued water conservation & demand management
4. Pure Water Soquel construction – completion anticipated in WY 2025
5. City of Santa Cruz Aquifer Storage & Recovery (ASR)
 - Waiting for state action on water rights petition
 - Pilot testing at Beltz # 9 completed in WY 2024
 - Modifications to be made to existing production wells to become ASR wells

Key Take Aways for Water Year 2024

Chloride Increases in Seascape Area

- Coastal monitoring well SC-A2RB & inland SC-A5B near Seascape production well



Seawater
Intrusion

Coastal Protective Groundwater Elevations

- Coastal groundwater levels remained similar or only slightly increased
- Undesirable results occurring in 8 of 19 representative monitoring wells with 5-year moving average groundwater elevations below MTs
- A project, like Pure Water Soquel, is needed to raise coastal groundwater levels to reduce the risk of seawater intrusion



Seawater
Intrusion

Groundwater Extraction Lowest since 1985

- Water Year 2024 was a normal water year (rainfall 120% of average)
- Net groundwater extraction remains greater than sustainable yield in Aromas/Purisima F
- Net groundwater extraction in Tu unit and Purisima DEF, BC, A, and AA extraction are below sustainable yield



Reduction
of Storage

Questions