Santa Margarita Basin Groundwater Sustainability Plan Water Year 2022 Annual Report

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Scotts Valley Water District

April 13, 2023

Presentation Content

- Overview of Sustainable Groundwater Management Act (SGMA) and Groundwater Sustainability Plan (GSP) Requirements
- Review WY2022 Annual Report (Oct 21 – Sept 22)
  - Precipitation and Water Use
  - Sustainability Indicators
  - Progress on GSP Implementation
- Summarize key take aways for WY2022

SGMA and GSP Overview

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SGMA Basics

- 2014 - SGMA legislation passed
- All high and medium priority groundwater basins required to submit GSP
  - SMGWA manages GSP development and implementation
  - January 2022 – GSP submitted to Department of Water Resources (DWR)
  - DWR is reviewing GSP and should make determination this calendar year
- Basin must be managed sustainably by January 2042
- Allows for State Water Board intervention if sustainability not achieved by 2042

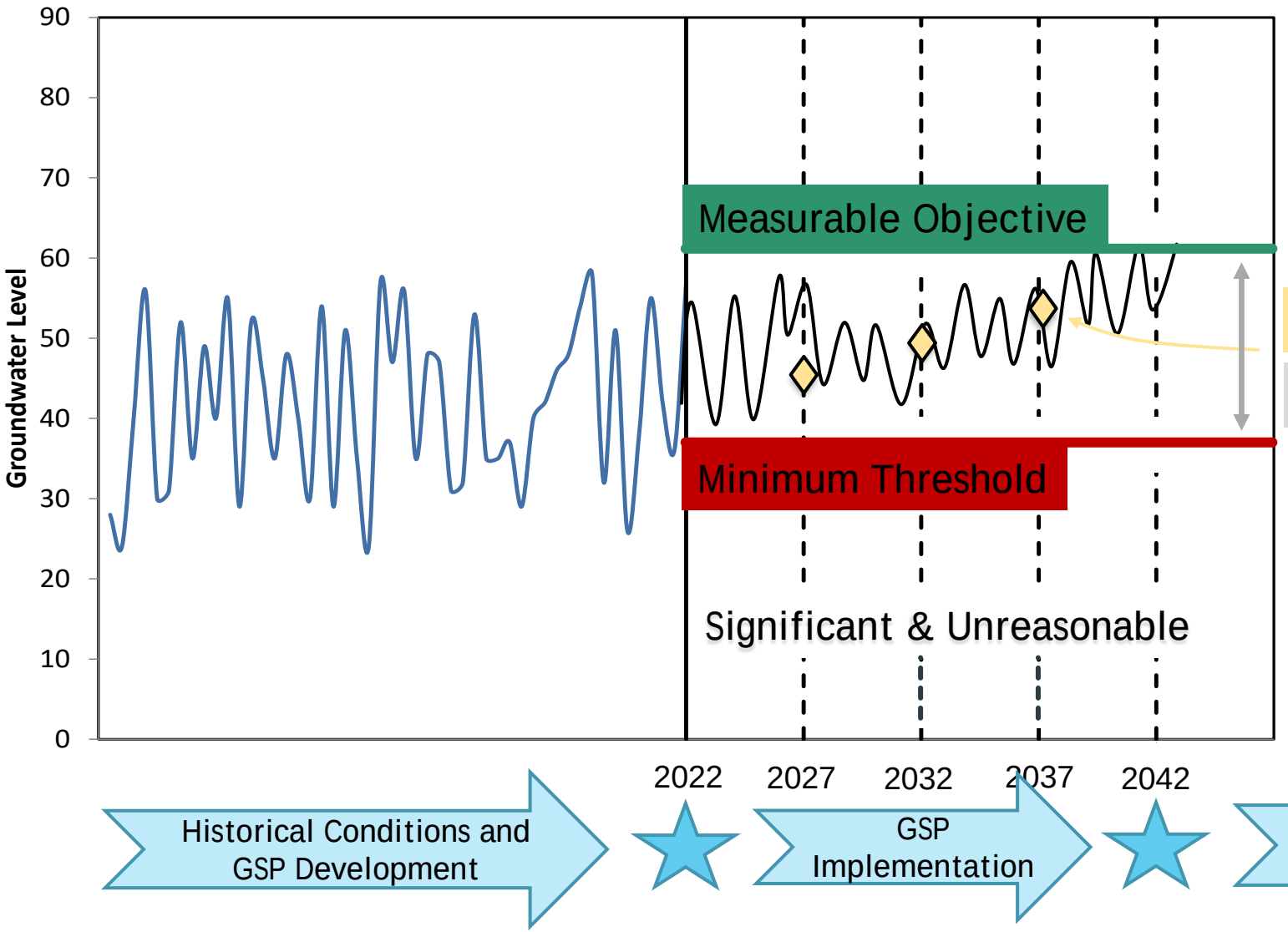
GSP Lays out Path to Sustainability

Sustainability Goals	Desired Basin conditions for all beneficial users
Monitoring Network	Locations for measuring groundwater conditions
Sustainable Management Criteria	Metrics used to measure progress
Projects & Management Actions	Strategies to achieve sustainability

GSP Sustainability Indicators and Metrics

	 Lowering GW Levels	 Seawater Intrusion	 Reduction of Storage	 Degraded Quality	 Land Subsidence	 Surface Water Depletion
Groundwater Levels	✓					Proxy ✓
Volume of Groundwater Extracted			✓			
Concentration in Groundwater				✓		

SGMA Terminology and Timeline



Interim Milestones (5 Years)

Operational Flexibility

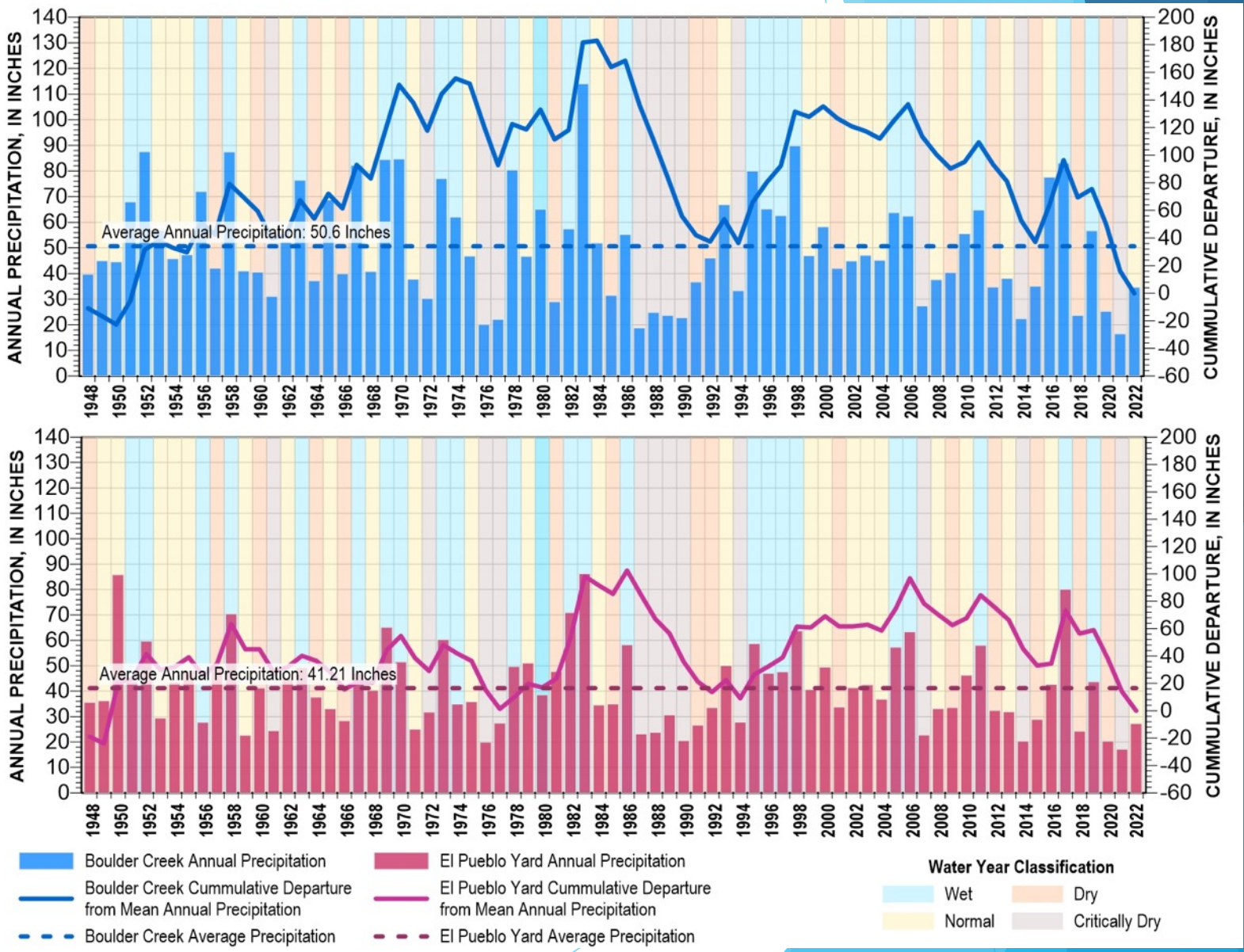
Annual Reports
(Due Apr 1, 2022-2042)

5-Year GSP Evaluations
(Due Jan 31, 2027 etc.)

WY2022 Precipitation and Water Use

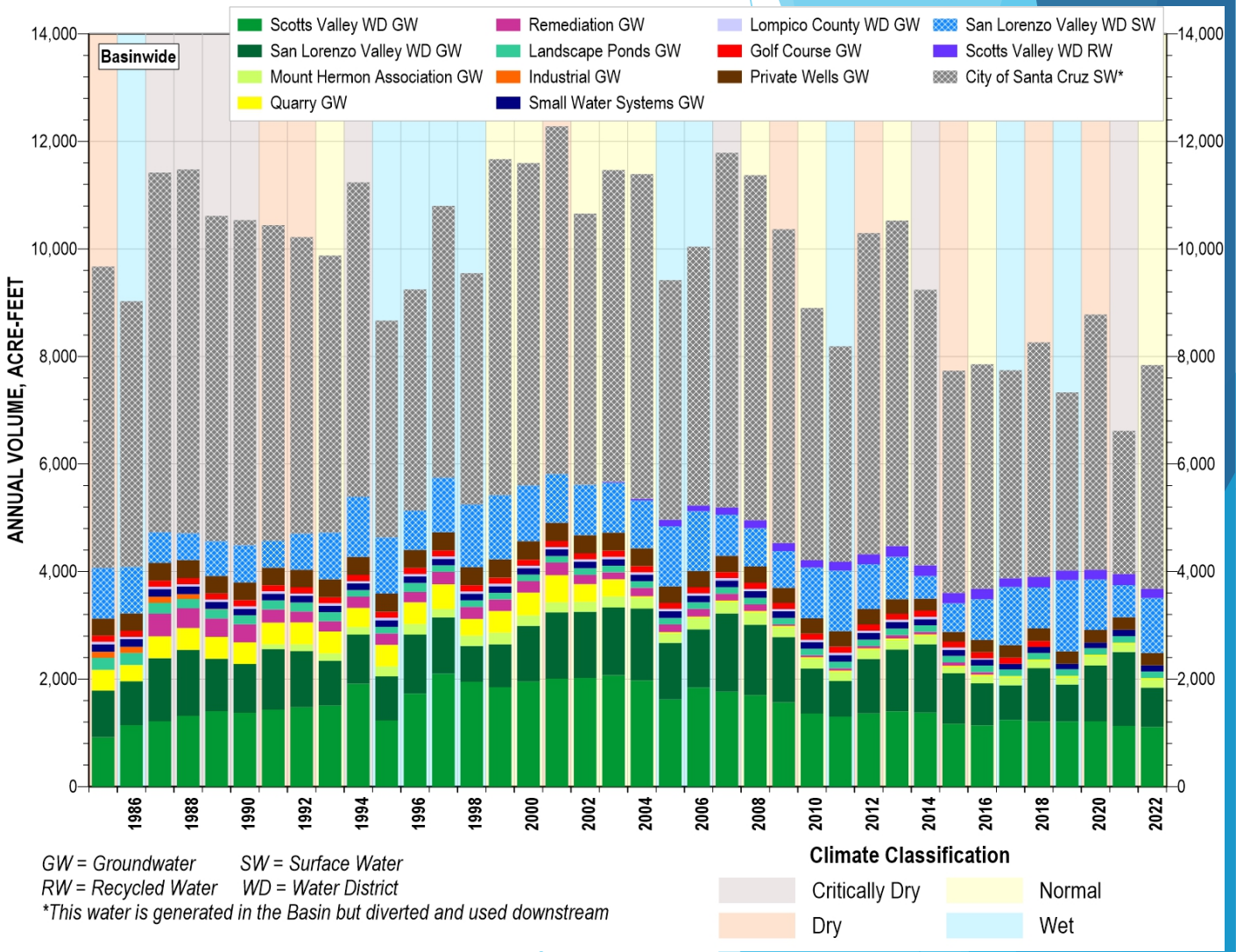
Basin Precipitation

- WY2022 precipitation about 67% of average
- Atmospheric river events in October and December 2021 with little rain thereafter
- Continued longer-term pattern of below average rainfall:
  - 4 of past 5 years
  - 8 of past 11 years



Total Water Use and Trends

- SVWD decreased groundwater extraction 2% in WY2022
- SLVWD decreased groundwater extraction 10% compared to pre-2020 wildfire extraction
- SLVWD increased surface water *in-lieu* conjunctive use
- Other groundwater use stayed about the same
- Slight increase in groundwater in storage

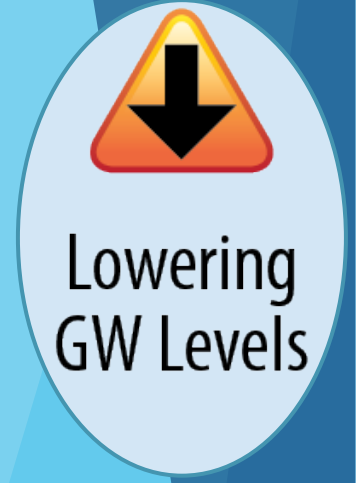


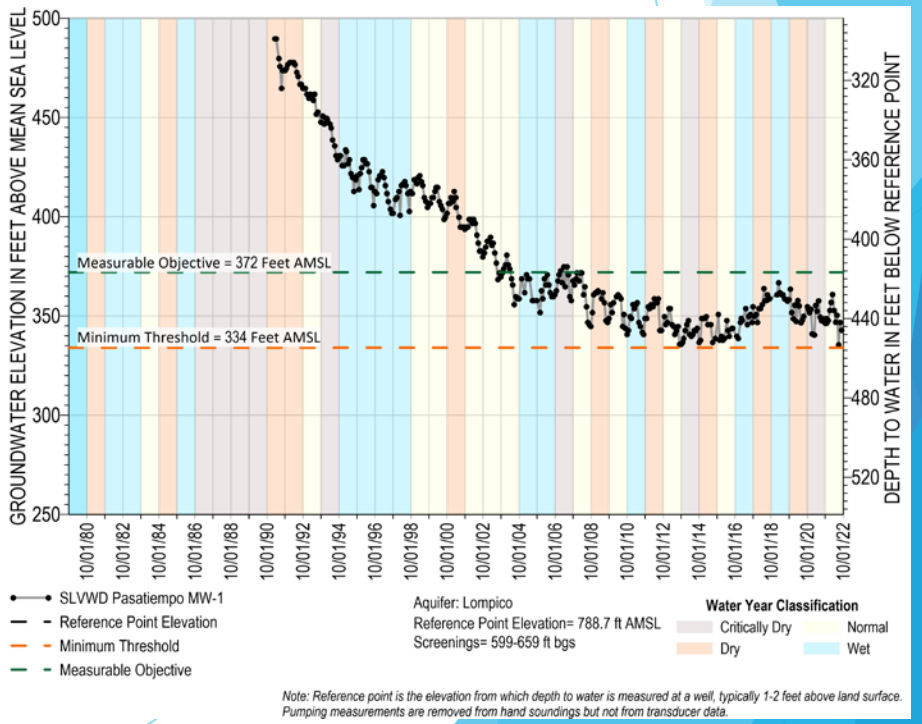
WY2022 Sustainability Indicator Comparisons

Chronic Lowering of Groundwater Levels

MO:	MT:	Undesirable Result:
Santa Margarita Aquifer: WY2004 groundwater elevation Other Aquifers: 2016-2020 avg groundwater elevation + modeled benefit of 540 AFY conjunctive use project	Average of the 5 lowest measured groundwater elevations at an RMP	Groundwater elevation in any RMP falls below the minimum threshold in 2 or more consecutive non-drought years
MO met at 4/12 RMP	No MT exceedances	No Undesirable Results

KEY FINDING:
Groundwater levels in operational range and increased slightly in WY2022 despite drier than average conditions



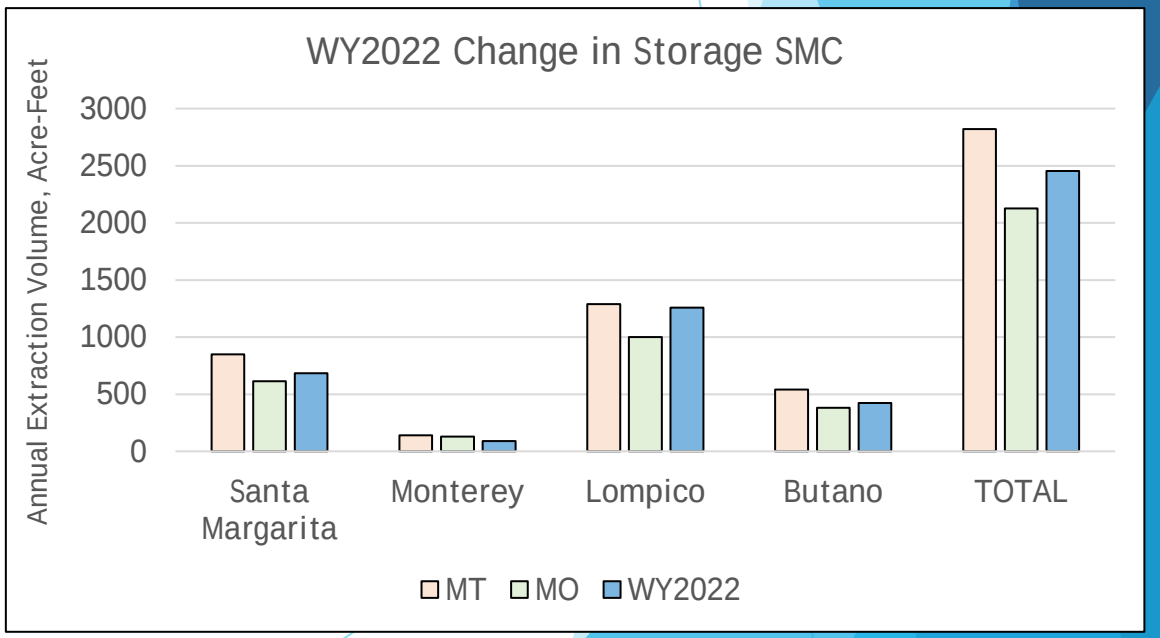


Measurable Objective (MO): goal for each sustainability indicator
Minimum Threshold (MT): indicator of potential concern
Undesirable Result: combination of MT exceedances that cause significant and unreasonable conditions
✓: achieving goals; —: in progress towards achieving goals; ✗: not achieving goals

Reduction of Groundwater in Storage

MO:	**MT:**	**Undesirable Result:**
Avg extraction with 540 AFY conjunctive use project	Sustainable yield defined in GSP: avg projected pumping + 5%	Extraction volumes exceed MT in 1 or more aquifers
Only Monterey met MO, but Butano and Santa Margarita were close to achieving	No MT exceedances	No Undesirable Results

KEY FINDING:
Groundwater extraction is within the operational range and will decrease with planned expansion of conjunctive use



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Groundwater Quality

MO:
2010-2019 avg concentrations

MT:
Based on drinking water standards for several constituents of concern

Undesirable Result:
Any RMP exceeds MT as a result of a SMGWA project or management action

KEY FINDINGS:

- Iron and manganese are naturally above standards but reduced in drinking water, either through treatment of raw water or by blending
- Arsenic found at concentration approaching health-based drinking water standard

Results consistent with recent conditions, except 1 arsenic anomalous result

Some RMPs routinely exceed MT for iron and manganese; Arsenic nearly exceeded in 1 anomalous sample

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

Aquifer	Well Name	Concentration milligrams per Liter (mg/L)										
		TDS	Chloride	Iron	Manganese	Arsenic	Nitrate as Nitrogen	Methyl-tert-butyl-ether	Chlorobenzene	Trichloroethylene	Tetrachloroethylene	1,2-Dichloroethylene
Minimum Threshold		*1,000*	*250*	*0.3*	*0.05*	*0.01*	*5*	*0.013*	*0.07*	*0.005*	*0.005*	*0.07*
Santa Margarita	SLVWD Quail Hollow #5A	NS	NS	ND	NS	NS	2.3	NS	ND	ND	ND	NS
	SLVWD Olympia #3	NS	NS	0.31	0.15	ND	ND	NS	NS	NS	NS	NS
Monterey	SVWD Well #9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lompico	SLVWD Pasatiempo #7	NS	NS	0.39	0.10	0.0097	0.29	NS	NS	NS	NS	NS
	SVWD #10A	300	32	0.79	0.099	ND	ND	ND	ND	ND	ND	ND
	SVWD #11A	520	29	0.26	ND	0.0037	ND	ND	0.0005	ND	ND	ND
	SVWD #11B	340	22	0.68	0.076	0.0086	ND	ND	ND	ND	ND	ND
Lompico/ Butano	SVWD #3B	730	12	0.44	0.12	ND	ND	ND	ND	ND	ND	ND
	SVWD Orchard Well	490	54	0.010	0.003	ND	ND	ND	ND	ND	ND	ND

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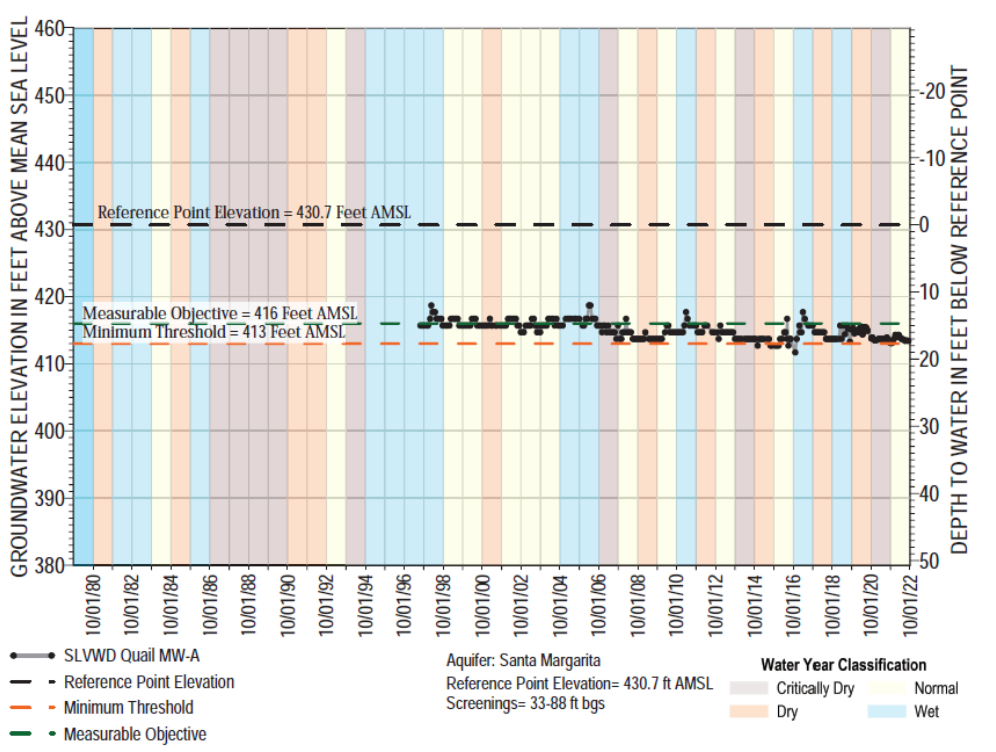
Interconnected Surface Water

MO: Minimum groundwater elevation from fall 2004	**MT:** Average of the 5 lowest measured groundwater elevations at an RMP	**Undesirable Result:** Groundwater elevation in any RMP falls below the minimum threshold in 2 or more consecutive non-drought years
MO met at 1/2 RMPs	No MT exceedances	No Undesirable Results

KEY FINDING:
No undesirable results, though monitoring network is sparse and will be expanded in WY2023

Surface Water Depletion



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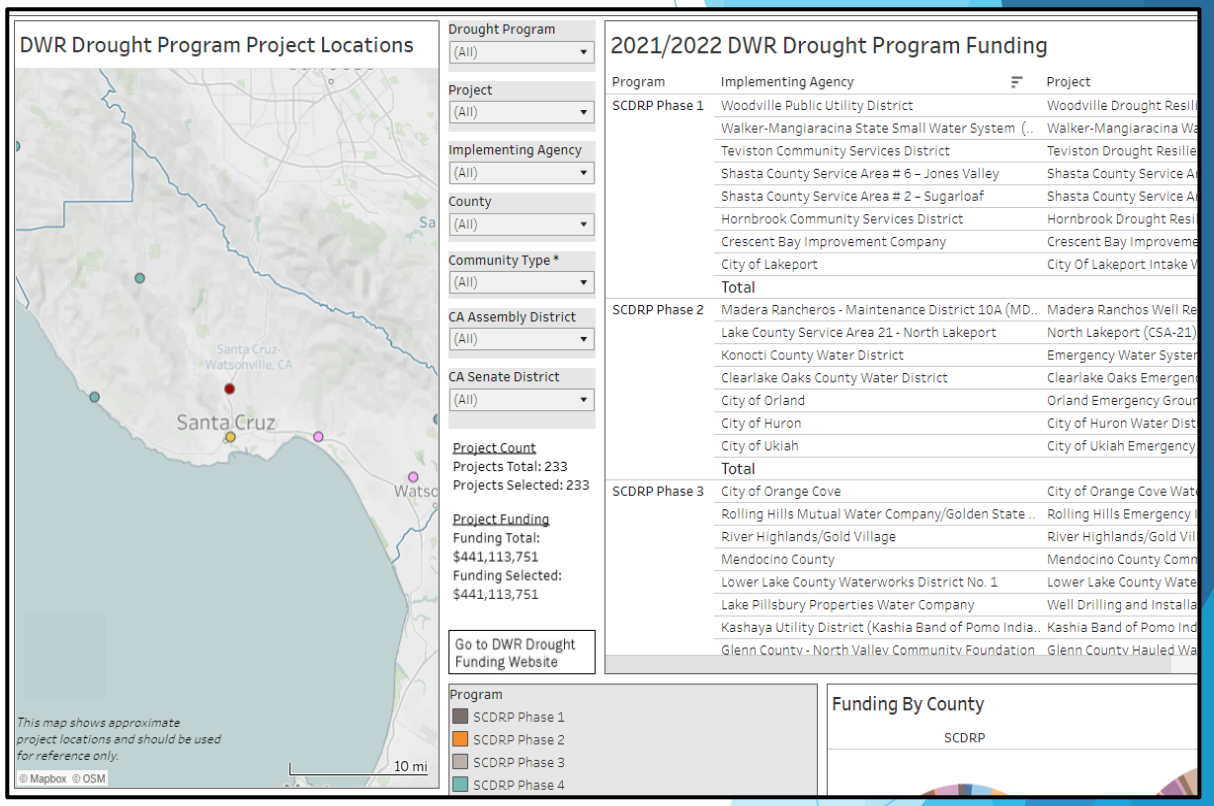
WY2022 Implementation Progress

Projects and Management Actions

- SLVWD
  - Utilized district-wide conjunctive use for ~60 days to maximize surface water use and decrease groundwater extraction
  - Replaced 4 redwood storage tanks
  - Made progress on water meter upgrades
- SVWD
  - 174 AF of recycled water to offset groundwater extraction
  - LID recharge of at least 16 AF of stormwater
  - System wide leak detection audit

Planning and Implementation Grants

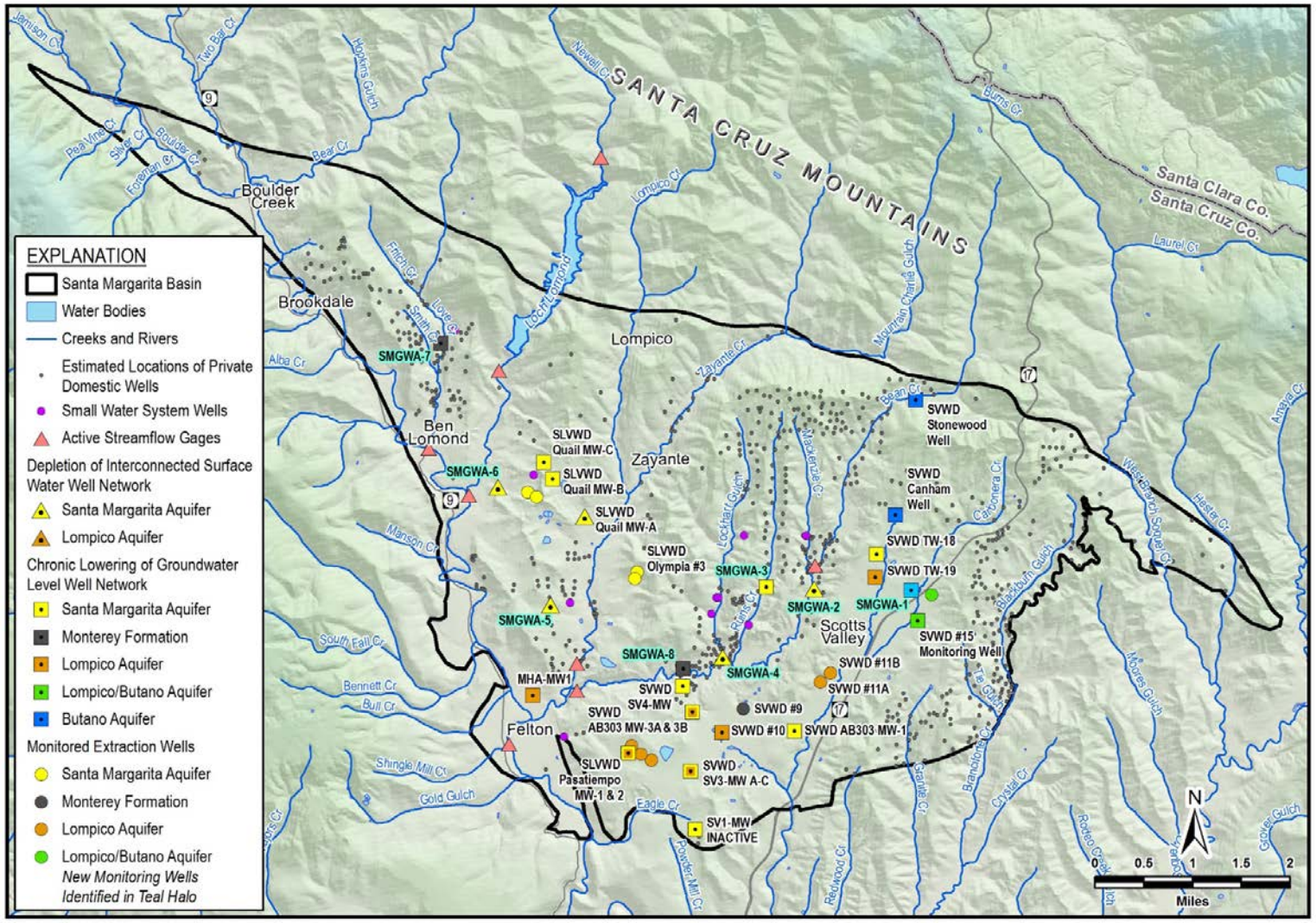
- SVWD - Urban and Multibenefit Drought Relief grant
  - Received $9.5 million for design and construction of 1 production well and water transfer infrastructure between SVWD and the City of Santa Cruz
  - Work should be completed by 2026
- SMGWA – DWR Round 2 SGMA Implementation Grant
  - Application submitted in December 2022 requested $2.6 million
  - Requested funds to prioritize projects, fill data gaps, implement GSP, and support private well owners



DWR Drought Program Funding Webmap

Monitoring Network Improvements

- Confirmed sites for new monitoring wells to improve groundwater and interconnected surface water monitoring networks and fill other data gaps
- Prepared well specifications and acquired site access
- Plan to install 7 new monitoring wells in WY2023



Main Take Aways

- Groundwater levels are stable despite drier than average conditions for 3 consecutive years
- SLVWD emergency conjunctive use allowed the District to maximize surface water sources and decrease groundwater extraction
- SVWD continues to decrease groundwater extraction
- Agencies sought funding to advance projects and management actions that help achieve sustainability

Questions?