Community Workshop

July 18, 2024

Meeting will begin at 6:00 pm or a few minutes after – thank you for joining us!

Instructions for Remote Participants

- Remote access is available as a courtesy for people who may be unable to participate in person.
- Please keep your microphone on mute.
- The room acoustics here in New Cuyama are not ideal. We will do our best to make the audio and slides accessible for remote participants.
- The presentation is available at www.cuyamabasin.org.
- Spanish language interpretation is available here in the room but is not available for remote participants.
- Our focus is on the participants in the room and hearing their comments and input. If feasible, we will allow questions from remote participants. Please put your questions in the chat.

Welcome and Introductions

- Cory Bantilan
  Chair, Cuyama Basin Groundwater Sustainability Agency

- Workshop Team
  - Taylor Blakslee, CBGSA Staff
  - Alex Dominguez, Legal Counsel
  - Brian Van Lienden, Woodard & Curran
  - Charles Gardiner, Catalyst

Purpose and Agenda

- Purpose: Hear community input to inform the 2025 update of the Cuyama Basin Groundwater Sustainability Plan (GSP)
- Agenda:
  - Introduction and overview
  - Cuyama Basin groundwater sustainability and modeling updates
  - Projects and management actions to achieve sustainability
  - Groundwater pumping allocations
  - Next steps

Working Together:
Our agreements for a productive meeting

- Please be concise
- Be straightforward and constructive, build on the ideas of others
- Stay on topic

Cuyama Basin Groundwater Sustainability Agency

Introduction and Overview

Taylor Blakslee

July 18, 2024

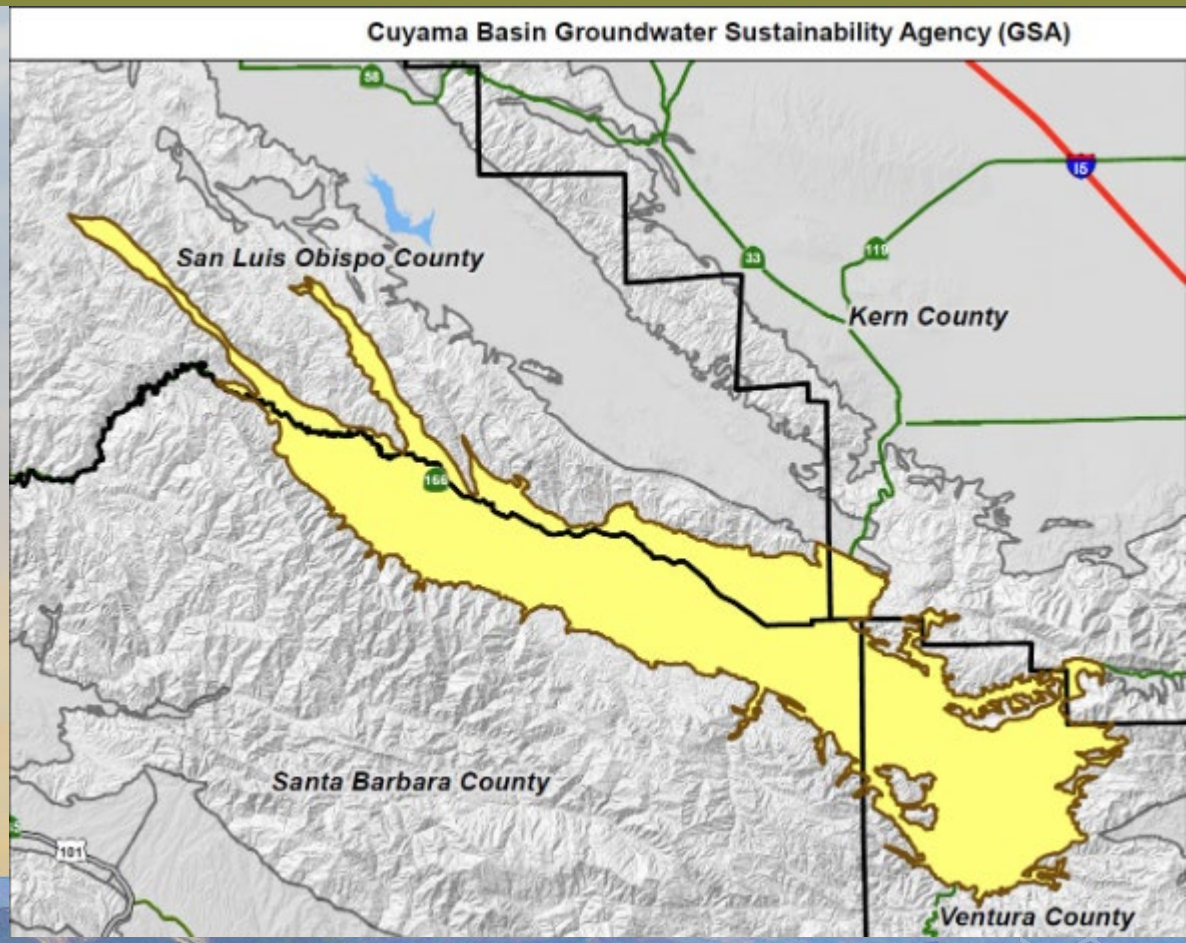
Overview of SGMA
Achieving Sustainability by 2040

- The Sustainable Groundwater Management Act (SGMA)
  - Signed into law in 2014
  - Requires medium- and high-priority basins (areas with greater negative impacts) to develop a plan to achieve sustainability by 2040
  - Establishes local control with state oversight

Overview of SGMA
Achieving Sustainability by 2040

Cuyama Basin Groundwater Sustainability Agency (GSA)

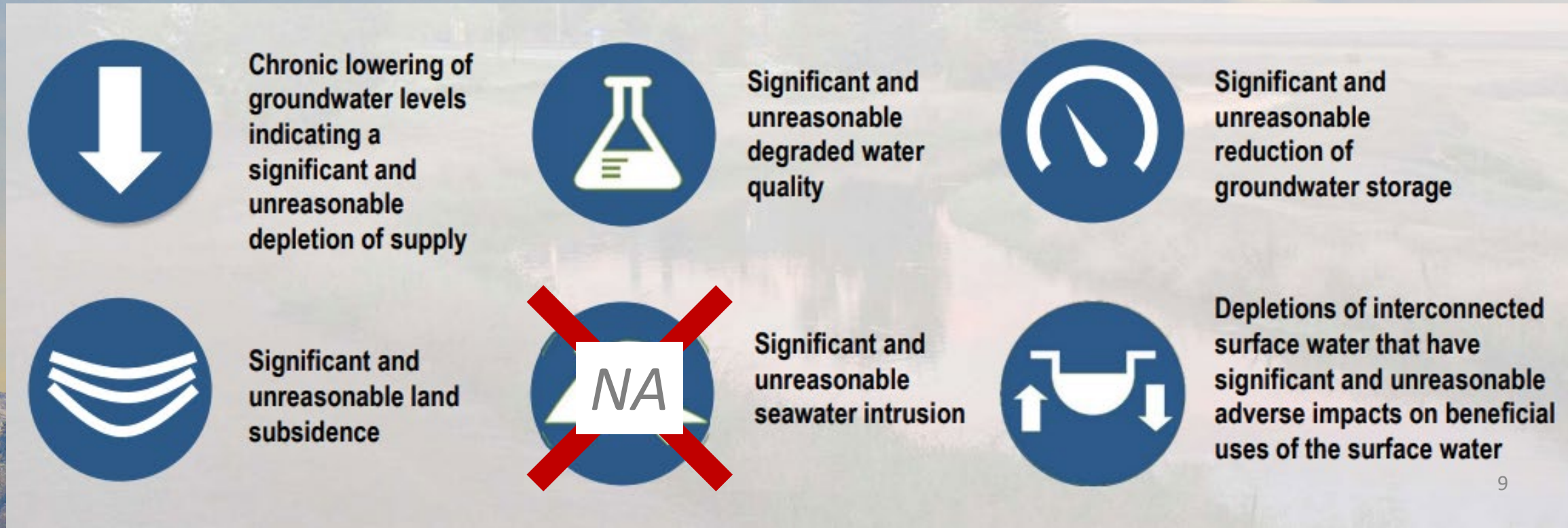
- Plans and manages groundwater in the basin
- Board – 11 members
  - Kern, San Luis Obispo, Santa Barbara, and Ventura counties (5 representatives)
  - Cuyama Basin Water District (5 representatives)
  - Cuyama Community Services District (1 representative)
- Standing Advisory Committee
  - 9 community members



SGMA Focuses on Achieving Groundwater Sustainability While Considering All Beneficial Uses and Users

SGMA has two primary focus areas:

- Balancing the water budget (basin inputs = basin outputs)
- Establish objectives for six sustainability indicators



Major Elements of the GSP
Achieving Sustainability by 2040

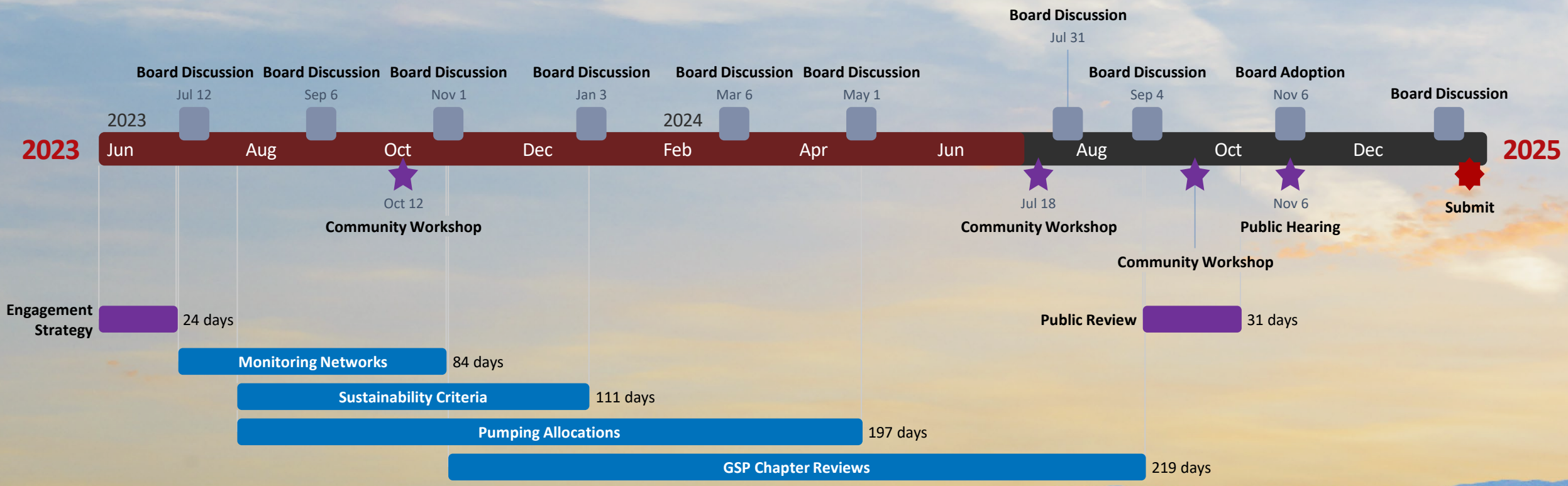
- Groundwater Monitoring and Modeling
  - Measuring and forecasting to achieve balanced water budgets
- Sustainability Criteria
  - Minimum thresholds, measurable objectives, and undesirable results
- Management Actions to Achieve Sustainability
  - Increasing supply and reducing pumping
- Reporting
  - Annual reports and 5-year updates

Tonight

Five-Year Update of the GSP
Adapting the Plan

- Incorporate new information and understanding
  - Monitoring, modeling, investigations
- Update projects and management actions
  - To achieve long-term sustainability goals
- Address State (DWR) comments
  - To improve clarity and address state policy direction
- Submit by the end of January 2025

GSP Update Timeline



Adjudication of the Cuyama Valley Groundwater Basin

- Phase One: Basin Boundaries
  - **Purpose**: Determine the boundaries of the Basin
  - **Progress**: Completed
  - **Result**: The Court determined that the boundaries of the Basin are the same as DWR's Bulletin-118 boundaries.
- Phase Two: Safe/Sustainable Yield
  - **Purpose**: Determine the Safe/Sustainable Yield of the Basin
  - **Progress**: Ongoing
  - **Result**: TBD
- Future Phases: TBD

Cuyama Basin Groundwater Sustainability Agency

Sustainability and Modeling Update

Brian Van Lienden

July 18, 2024

Activities and Updates Since 2020 GSP

- Administration of the GSP
- Expanded monitoring network and data collection
  - 5 years of data at 62 wells and 9 new well sites (grant-funded)
- Investigated the geology of the basin
  - New state information on the geology of the basin
  - Improved understanding of water movement across the Russell Fault and the Santa Barbara Canyon Fault
- Updated the groundwater model
  - Incorporated new data and recalibrated to match actual conditions

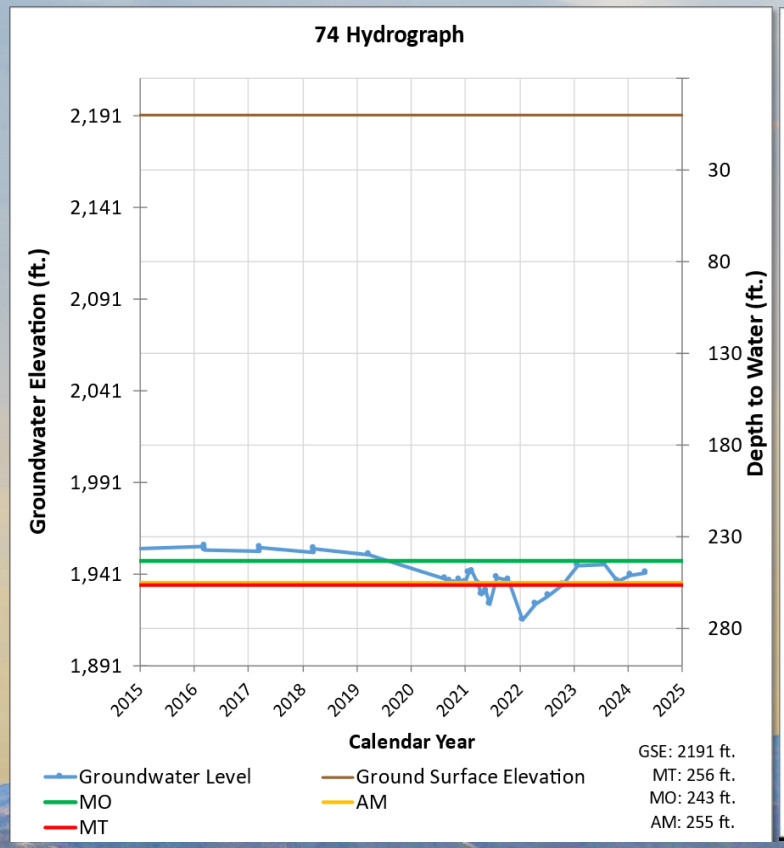
Summary of New Data Included in Model

- Geology:
  - Airborne Electromagnetic (AEM) survey data collected by the Department of Water Resources
  - Fault investigation
  - Well log data from the newly installed monitoring wells
- Land use:
  - Updated land use data from Land IQ and local landowners
- Pumping:
  - Metered pumping for 2022 and 2023
  - Detailed information about well locations and service areas from the well survey and pumping reports
- Calibration:
  - Groundwater level and streamflow measurements from CBGSA monitoring program

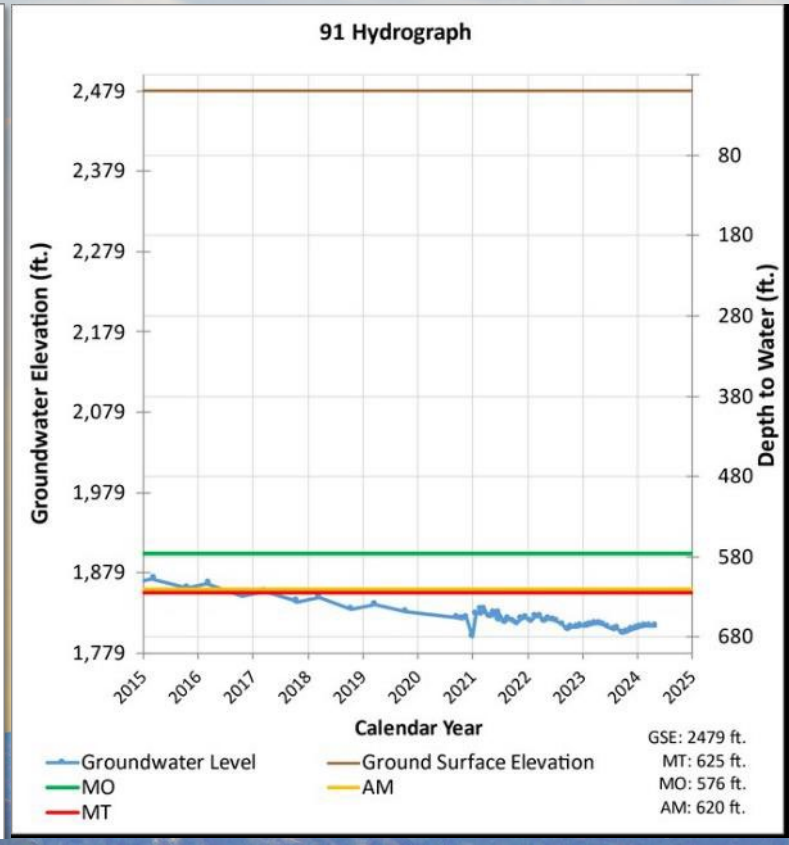
Summary of Groundwater Level Trends Central Basin

- During drier years (2020-2022) groundwater levels continued to decline
- During wetter years (2023-2024) groundwater levels rebounded in some areas of the basin
- Groundwater allocations initiated in 2023 (to be discussed later)

Example Central basin well



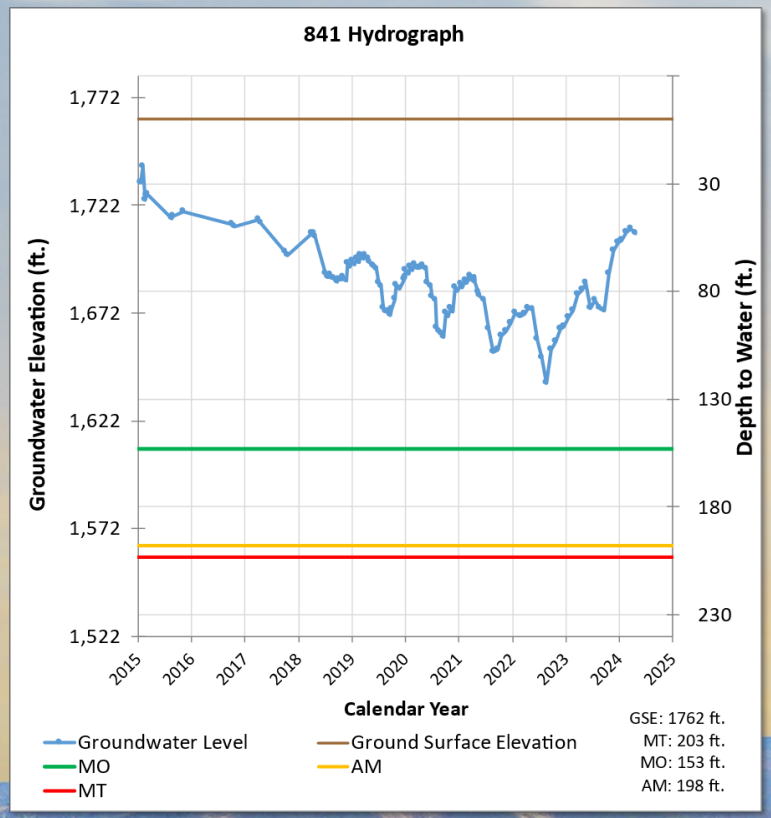
Example Central basin well



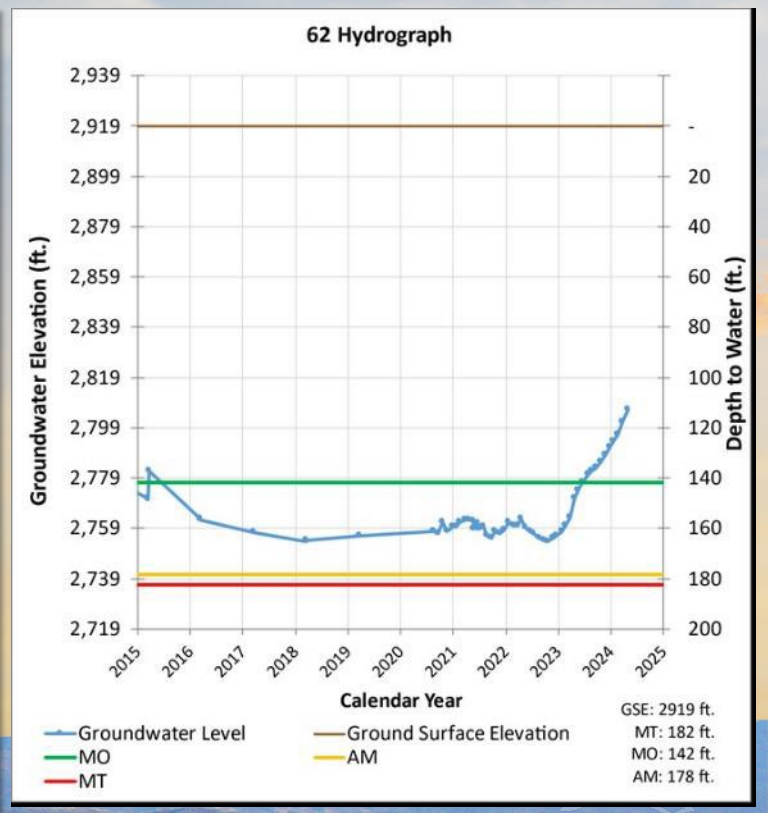
Summary of Groundwater Level Trends Western and Eastern Basin

- During drier years (2020-2022) groundwater levels continued to decline
- During wetter years (2023-2024) groundwater levels rebounded in some areas of the basin

Example Western basin well



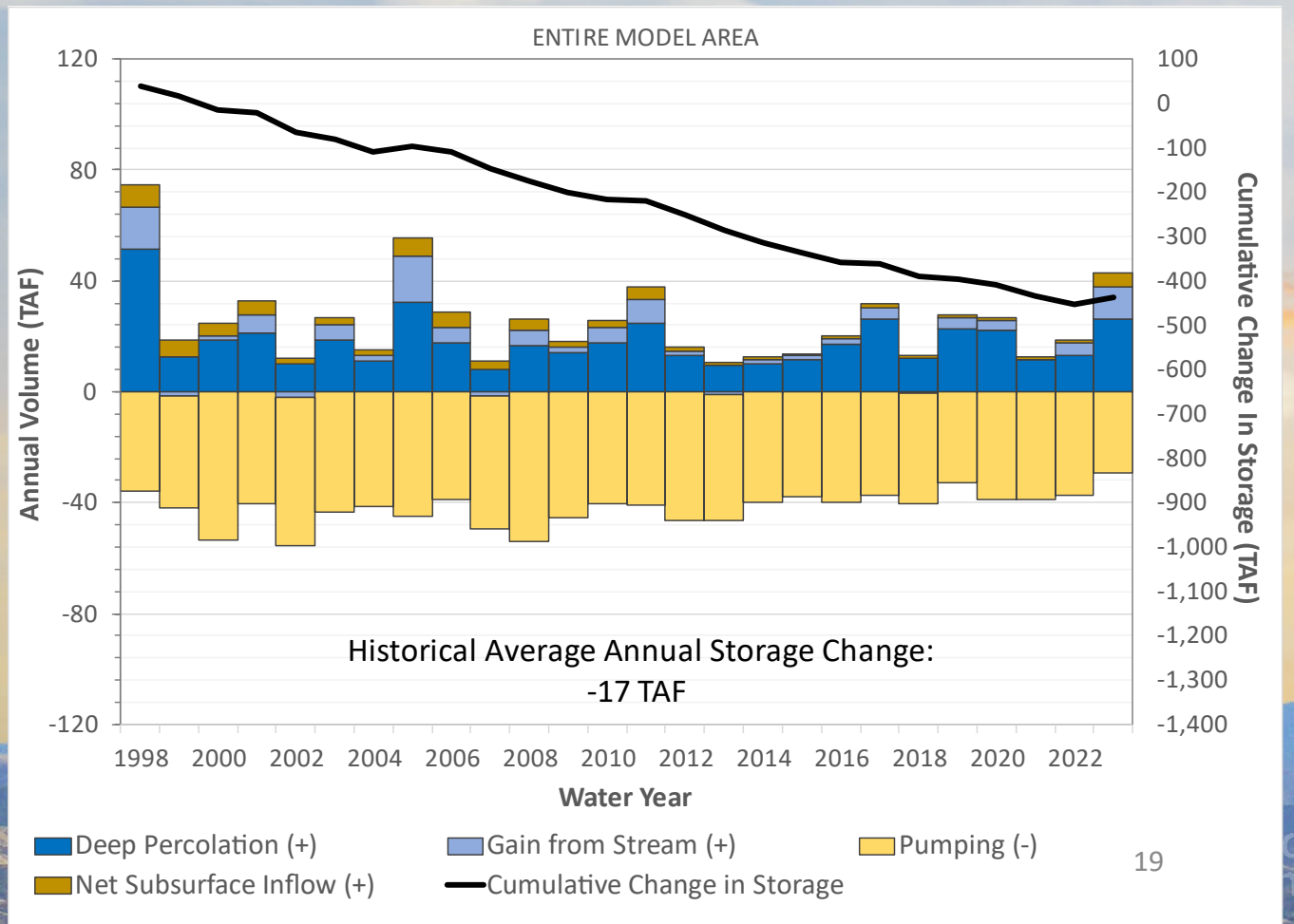
Example Eastern basin well



Updated Basin-Wide Conditions
Historical Groundwater Budget

Water years 1998-2023

Component	GSP model (1998-2017) AF/Yr	Updated Model (1998-2023) AF/Yr
Inflow		
Deep Percolation	28,000	18,100
Stream Seepage	3,000	4,000
Subsurface Inflow	5,000	2,800
Total Inflow	*36,000*	*24,900*
Outflow		
Groundwater Pumping	59,000	41,700
Total Outflow	*59,000*	*41,700*
Annual GW Storage Deficit	**23,000**	**16,800**



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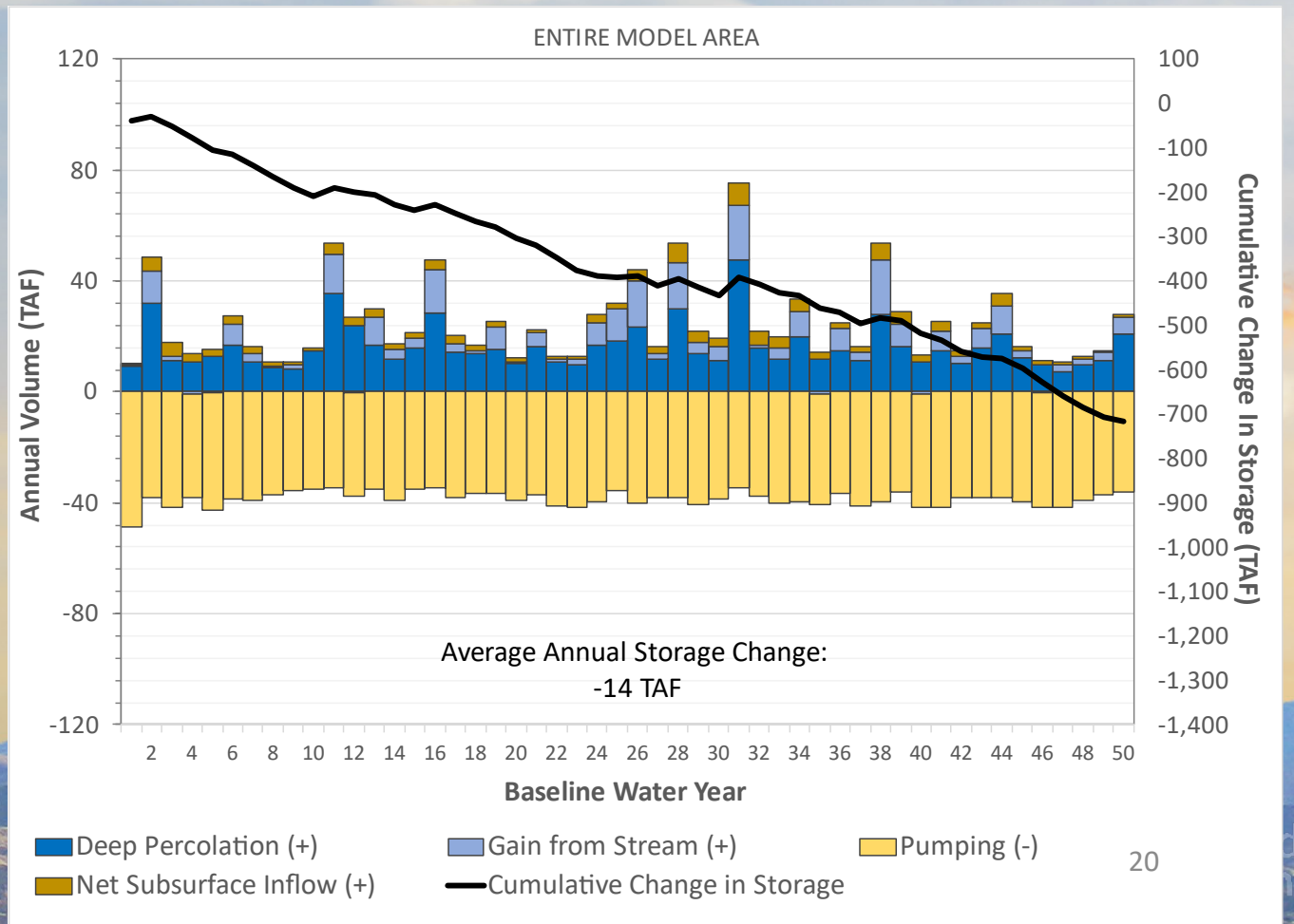
Updated Basin-Wide Conditions
Projected Groundwater Budget

Based on the 50-year hydrology (WY 1968-2017)

Component	GSP Model Projected AF/Yr	Updated Model Projected AF/Yr
Inflow		
Deep Percolation	25,000	16,100
Stream Seepage	5,000	5,500
Subsurface Inflow	5,000	2,800
Total Inflow	*35,000*	24,400
Outflow		
Groundwater Pumping	60,000	38,500
Total Outflow	*60,000*	38,500
GW Storage Deficit	**25,000**	**14,100**



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Updated Sustainable Yield Estimate

Basin-Wide Groundwater Budget

Component	Updated Model Projected Baseline AF/Yr	Updated Model Sustainable Conditions AF/Yr
Inflow		
Deep Percolation	16,100	9,600
Stream Seepage	5,500	5,400
Subsurface Inflow	2,800	2,800
Total Inflow	24,400	17,800
Outflow		
Groundwater Pumping	**38,500** *(GSP: 59,000)*	**17,800** *(GSP: 20,000)*
Total Outflow	38,500	17,800

The Sustainable Yield is the long-term average annual pumping amount that results in the Basin being in balance on average

Updated Sustainable Pumping estimate corresponding to the current Central Management Area + Farming Unit area is 10,500 AF/Yr

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Cuyama Basin Groundwater Sustainability Agency

Projects and Management Actions

Brian Van Lienden

July 18, 2024

Projects and Management Action Options

Projects and Management Actions Included in the 2020 GSP

1. Flood and Stormwater Capture
2. Water supply transfers/exchanges
3. Precipitation Enhancement
4. Improve Reliability of Water Supplies for Local Communities
5. Basin-Wide Economic Analysis – ***completed***
6. Groundwater Allocations in Central Management Area (discussed later)
7. Adaptive Management

New Projects for Consideration

7. Flow Meter Recalibration Program
8. Rangeland and Forest Management

1. Flood and Stormwater Capture

- **Flood and stormwater capture** was described in **GSP Section 7.4.1**: *Flood and stormwater capture would include infiltration of stormwater and flood waters to the groundwater basin using spreading facilities (recharge ponds or recharge basins) or injection wells.*
- Technical Analysis performed for the 2020 GSP:
  - Assumed that there would be sufficient flows for recharge, with an average of 14,700 AF/year available in 3 out of 10 years
  - Estimated benefits: ~4,000 AF/year on average
  - Estimated cost: $600-800 per AF
- A water rights analysis is currently underway to estimate how much water could be available for recharge

2. Precipitation Enhancement

- **Precipitation enhancement** was described in **GSP Section 7.4.2**: *Implementation of a cloud seeding program to increase precipitation in the Basin. Cloud seeding would target the upper Basin, southeast of Ventucopa, and would include introduction of silver iodide into clouds to increase precipitation.*
- Technical analysis performed for the 2020 GSP:
  - Assumed cloud seeding would increase precipitation by 10% from November through March each year
  - Estimated benefits: ~1,500 AF/year on average
  - Estimated cost: $25 per AF
- An updated cloud seeding study by Desert Research Institute is currently underway, with results expected in July 2024

3. Improve Reliability of Water Supplies for Local Communities

- **The Improve Reliability of Water Supplies for Local Communities project** was described in **GSP Section 7.4.4**: *Consider opportunities to improve water supply reliability for Ventucopa and within the CCSD service area. Potential projects include a replacement well for CCSD Well 2, which has been abandoned, and improvements to Ventucopa Water Supply Company's (VWSC's) existing well.*
- The GSP also supported a potential project for the town of Cuyama (GSP page 7-19)
- Since submittal of the GSP, CCSD has received grant funding to install a new well

7. Flow Meter Recalibration Program (new)

- Flow meter recalibration program would require all flow meters to be tested for accuracy once every three years to demonstrate accuracy within +/- 5%
  - Testing would be performed by a qualified flow meter testing company or other person approved by the GSA
  - Testing methods would also be approved by the GSA
- A similar program has been implemented by Fox Canyon GSA
- **Current Board direction**: Include this project in the revised GSP

8. Rangeland and Forest Management (new)

- Description: Removal of native vegetation in forest or rangeland areas through controlled burning could reduce water consumption by decreasing evapotranspiration
- Potential Benefit: Reduction in ET consumption from native vegetation
- Potential Implementation Issues: potential adverse effects on wildlife habitat; air quality concerns from smoke and dust; potential increase in flood flows due to reduced water interception
- Estimated Cost: $500-600 per AF
- Project was considered for 2020 GSP but was not included
- **Current Board direction**: this project should **NOT** be included in the revised GSP

Projects Summary

- Combined, these projects could increase precipitation and groundwater recharge approximately 1,500 to 5,500 AF per year
  - Pending further analysis of constraints and costs
  - Current analysis indicates that there are substantial constraints and potentially higher costs
- ~21,000 AF of supply increase or demand reduction (pumping reductions) are needed to achieve sustainability
  - Pumping allocation program discussion coming up soon
- Other projects would improve the accuracy of pumping information and support community water needs

Questions and Input

- SGMA and Sustainability Forecast
  - Any clarifying questions regarding SGMA and the sustainability forecast?
- Projects and Management Actions
  - What projects do you see as most important for achieving sustainability?
  - What additional projects should the Board consider to achieve sustainability?

Cuyama Basin Groundwater Sustainability Agency

Approach for Groundwater Allocations

Taylor Blakslee / Alex Dominguez

July 18, 2024

Key Elements of a Groundwater Allocation Program

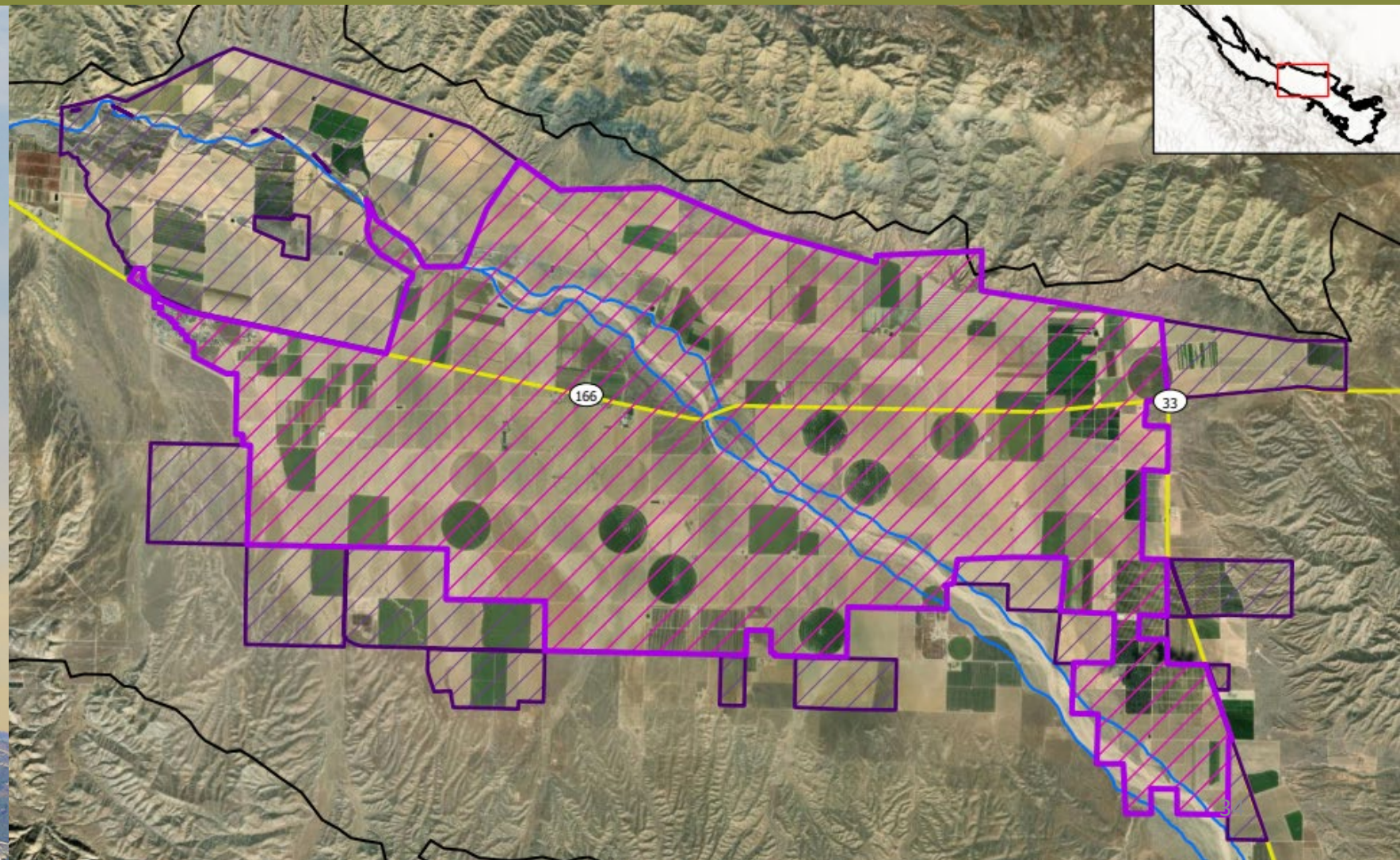
- Geography
  - What areas of the basin are subject to the allocation program?
- Well Type
  - Which wells are subject to the pumping allocations (irrigated ag, ranching, residential, other)?
- Baseline use
  - What is the starting amount of pumping to be reduced?
- Sustainable Yield
  - The target amount of pumping for the geography subject to allocation
- Allocation Methodology
  - What is the proportional amount of baseline use for each user?
- How fast
  - How much should pumping be reduced each year?

Activities Since 2020 GSP
Initial Groundwater Allocation Program

- Timeframe: Calendar years 2023 and 2024
- Geography: Central Management Area (CMA) + Farming Units
- Baseline Use + Type: 2021 modeled water use in the CMA, excluding CCSD metered use and residential pumping
- Sustainable Yield: Calculated by the model for the CMA – 11,500 AF/year
- Allocation Methodology: estimated historic water use based on average annual use from the 1998-2017 for each parcel in the CMA
- How Fast: Achieve sustainable yield by 2038

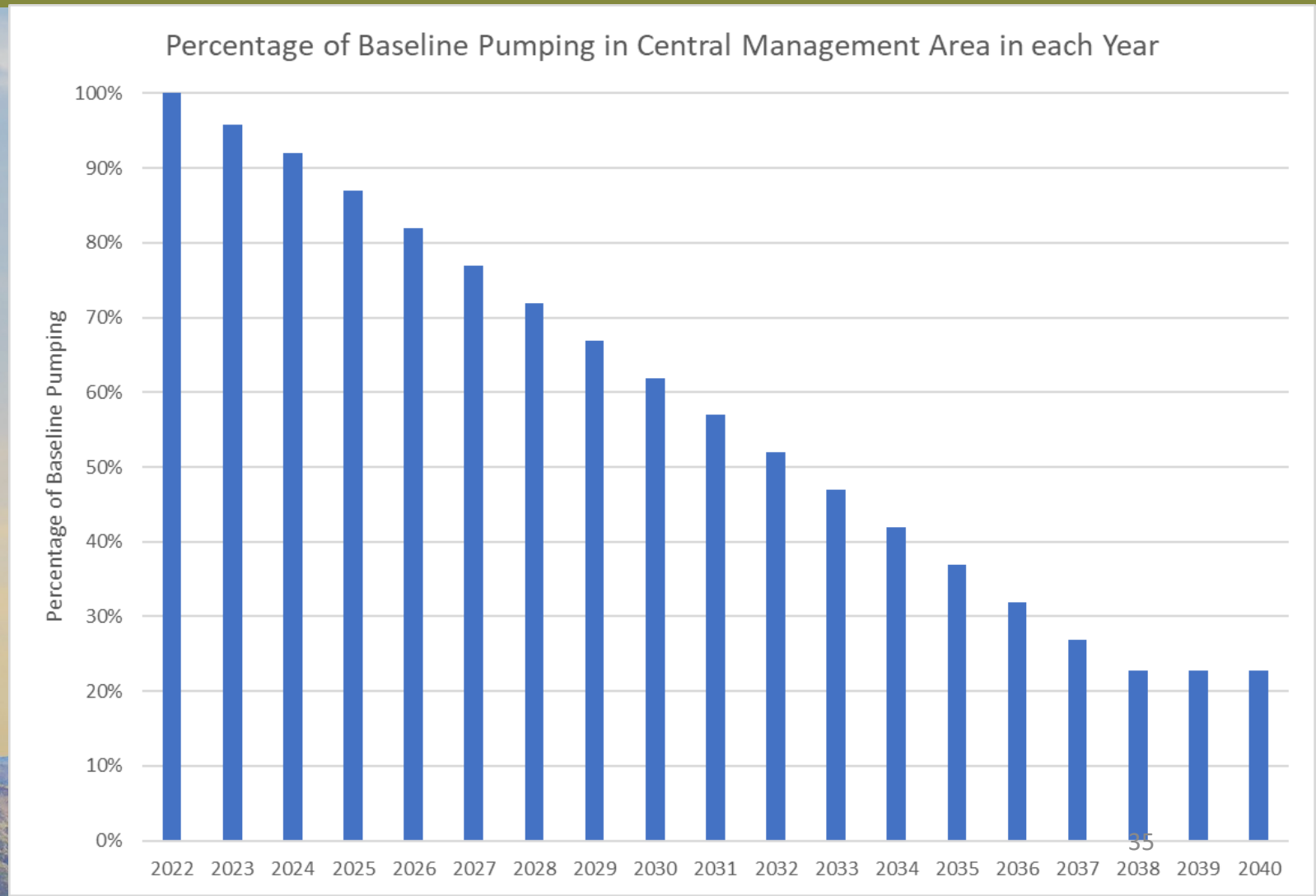
Activities Since 2020 GSP
Initial Groundwater Allocations

Properties subject to the current groundwater allocations in the Central Management Area + Farming Units



Activities Since 2020 GSP
Initial Groundwater Allocations

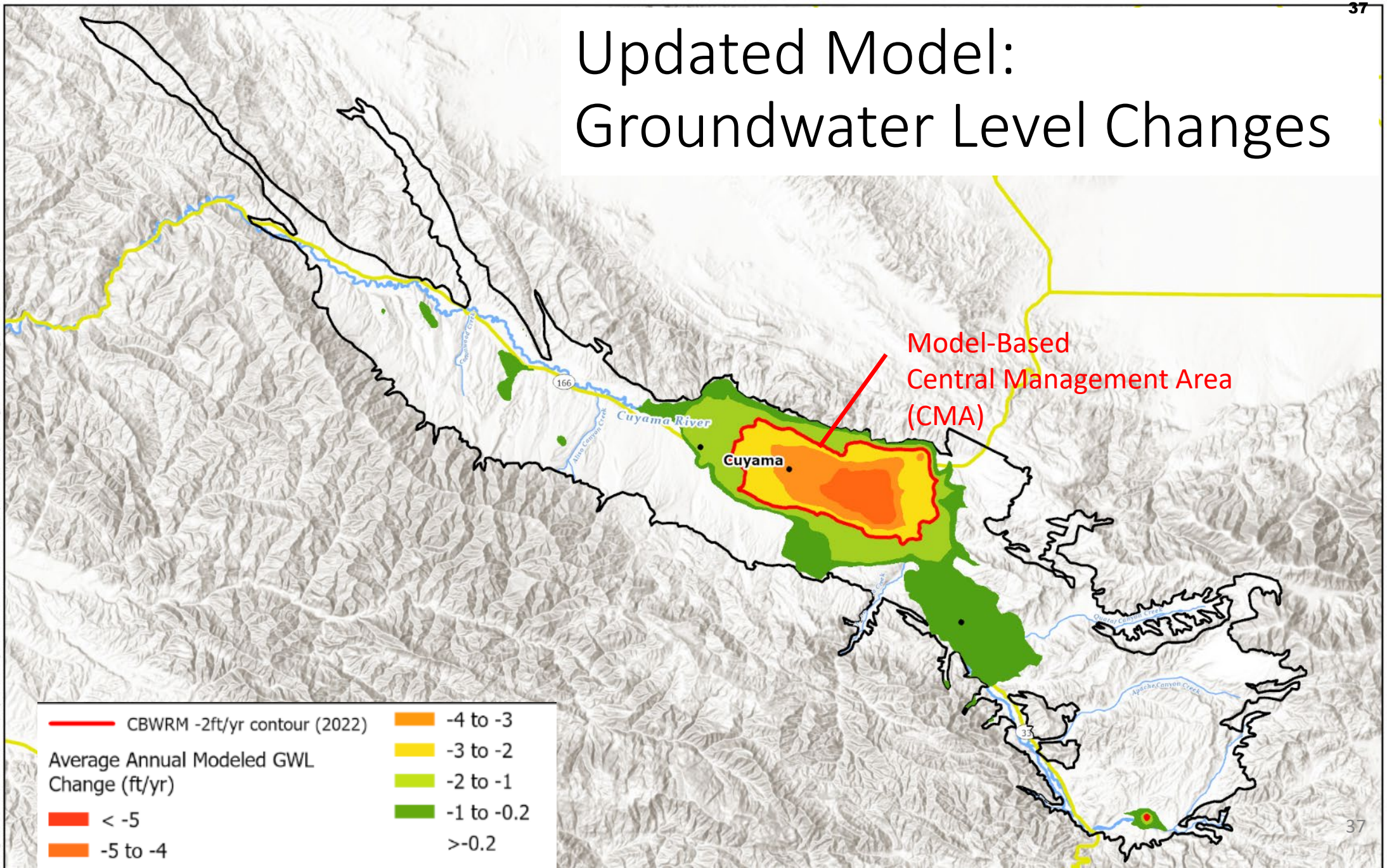
Pumping reduction schedule
(77% reduction by 2038)



Near-Term Board Direction

- Consider updates to the CMA boundary and sustainable yield based on updated model results
- Only implement groundwater allocations in the CMA, and continue to collect technical data in the basin to evaluate potential expansion of groundwater allocations in the basin

Updated Model: Groundwater Level Changes



Updated Management Area
2022 Version vs. Updated 2 ft/yr Contour

CBWRM -2 ft/yr Contour (v0.30, 2024)
CBWRM -2 ft/yr Contour (v0.20, 2022)
Parcel Boundary

Total acreage within 2ft/yr contour:

- 2022: 22,500 acres
- 2024: 21,800 acres

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Board Discussion Questions for the GSP Update

- Geography: Central Management Area
  - Update CMA boundary based on updated modeled groundwater level changes (projected 2-foot decline per year)?
  - Change criteria for CMA boundary?
- Baseline Use: Use new 2021 modeled water use in the CMA?
- Sustainable Yield: Adjust to new sustainable yields: 17,800 AF/Yr for entire basin, 10,500 AF/Yr for existing CMA + Farming Units?
- Allocation Methodology: Continue to base on each parcel's share of historical use, 1998-2017 or change?
- How Fast: Continue to target 2038 for achieving sustainable yield?

Discussion Question

- Are there any questions or feedback on the topics the Board is considering regarding groundwater allocations?

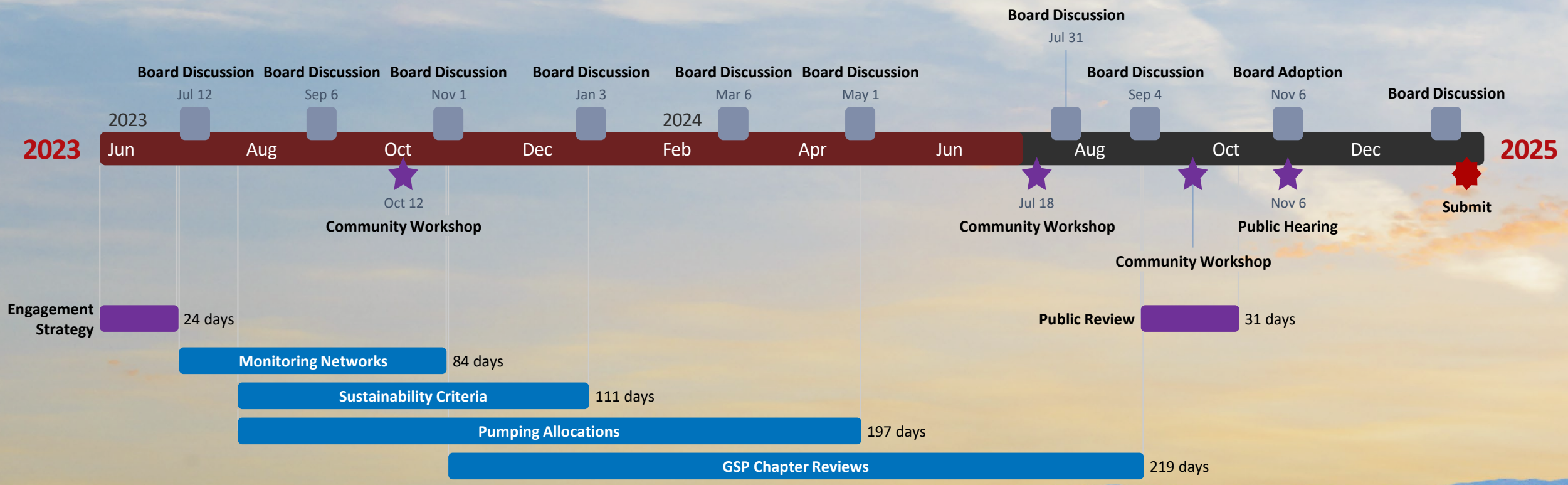
Cuyama Basin Groundwater Sustainability Agency

Next Steps

Charles Gardiner

July 18, 2024

GSP Update Timeline



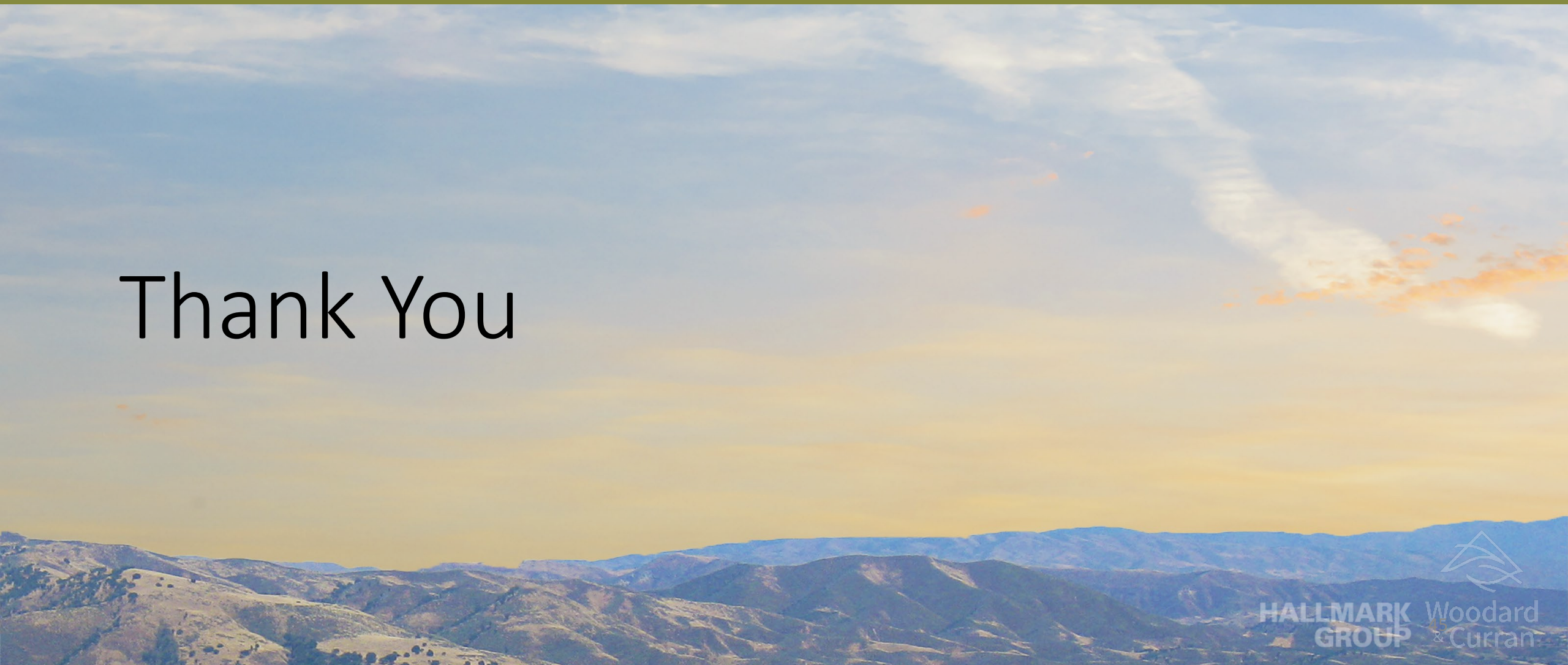
Public Comment Process

- Board and SAC Meetings
  - Board: July 31st
  - SAC: August 29th
  - Board: September 4th
  - SAC: October 31st
- Public Review Period: September to early October
- Community Workshop: Late September
- Board Hearing and Adoption: November 6th
- Submit to DWR: January 2025

Public Comments on Draft GSP Update

- Public Comments on Final Draft GSP will be accepted throughout the 30-day comment period
  - In writing to CBGSA, 4900 California Ave, Tower B, 2nd Floor, Bakersfield, CA 93309
  - Via email to tblakslee@hgcpm.com
  - In writing and orally at Community Meeting
  - In writing and orally at the Public Hearing

Thank You



Extra Slides

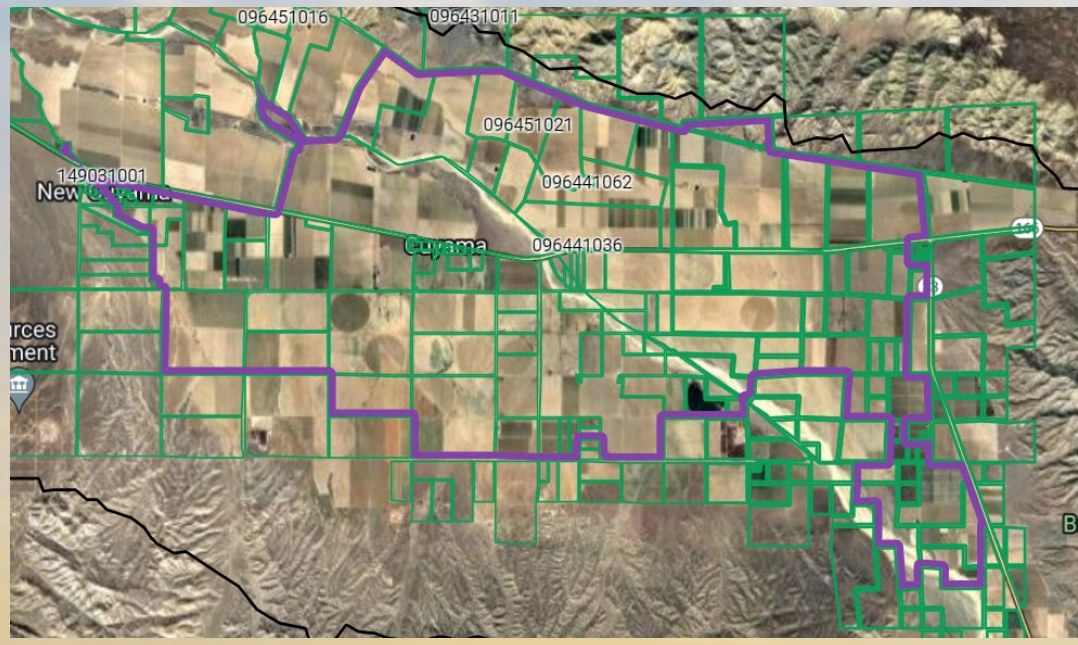
GSP Update and Board Policy Discussions Schedule

	1	2	3	4	5	6	7	8	9	10
	2023			2024						2025
	July	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan
Board Direction:	**Finalize:** Feedback on engagement strategy	Basin-wide pumping restrictions/Central Management Area (CMA) boundary **Finalize:** Groundwater (GW) **levels & storage** monitoring networks GW levels & storage sustainable management criteria (SMC) and undesirable results (UR) criteria options Allocation methodology	**Finalize:** **Subsidence, Interconnected surface water (ISW)**, and **water quality (WQ)** monitoring networks GW subsidence ISW, and WQ SMC and UR options Glidepath methodology	**Finalize:** GW levels, storage, subsidence, ISW, WQ SMC and UR	Project and Management Action (PMA) options Sustainable yield (SY) methodology --- Issue 90-Day Notice	**Finalize:** • Basin-wide Pumping Restrictions/MA Boundary (updated model) • Allocation methodology • Glidepath methodology • PMA options • SY approach		Review Public draft	**Public Hearing to adopt Amended GSP	
GSP Chapter Review:				**Ch 1.** Agency Info/Plan Area **Ch 4.** Monitoring Network		**Ch 2.** Basin Setting **Ch 3.** URs **Ch 5.** SMCs	**Ch 6.** DMS **Ch 7.** PMAs	**Ch 8.** Plan Implementation Executive Summary		
Public Workshop		✓			✓			✓		

GSP Approach

GSP Chapter 7 (p. 7-1): "The CBGSA has designated two areas in the Basin as management areas: the Central Basin Management Area and the Ventucopa Management Area, which are both defined as regions with modeled overdraft conditions greater than 2 feet per year that are projected by the model to drop below minimum threshold levels before 2040."

- Modeled boundary was updated with model update and the Board voted to use an "operational boundary" in July 2022



Options for Management Area Boundaries

- Model-Based CMA Boundary:
  - Use existing boundary
  - Keep 2 feet per year rule, but update operational boundary when model updated in Spring 2024
  - Change the 2 feet per year rule
  - Draw a boundary based on model-estimated pumping
- Measured Groundwater Level-Based CMA Boundary:
  - Buffer around representative wells below minimum thresholds
  - Buffer around representative wells with levels dropping more than X feet per year
- Physical Features-Based CMA Boundary:
  - Use faults or other geologic features to determine edges of boundary
  - Use institutional boundaries (e.g. counties or CBWD)
- If Board chooses to manage pumping outside the CMA, other Management Areas could potentially be developed using the same or different criteria from the CMA boundary

Can we simplify?

Pumping Allocations Outside Central Management Area – What does the GSP say?

Executive Summary (p. ES-1): "Although current analysis indicates groundwater pumping reductions on the order of 50 to 67 percent may be required Basin-wide to achieve sustainability, additional efforts are required to confirm the amount and location of pumping reductions required to achieve sustainability. These efforts include collecting additional data and a review of the Basin's groundwater model, along with other efforts as outlined in this document."

- Pumping reductions outside the CMA were contemplated but not *mandated* under the current version of the GSP

Use this as a board for dot voting.

Options to Consider Regarding Pumping Allocations Outside the Central Management Area

	OPTIONS	PROS	CONS
1. Do nothing (at this time)		Lower cost, if overdraft is not significant outside the CMA	May not achieve basin-wide sustainability; incentivizes development outside the CMA
2. Do something			
2A	**Create multiple Management Areas**	Better representation for local conditions	Boundary issues remain; administration of multiple MAs = multiple methodologies
2B	**Create 1 new MA that's everything outside the CMA**	Everyone in an overdrafted portion of the basin is treated similarly	Boundary issues remain; administration of two different MA = two different methodologies
2C	**Eliminate all MAs and manage basin as a whole**	Consistent with basin boundary and ease of administration (everyone treated the same)	May not reflect local groundwater conditions within the basin

Allocation Methodologies to Consider

Use this as a board for dot voting.

HISTORICAL USE

GROSS ACREAGE

IRRIGATED ACREAGE

Historical Use

- **HOW DOES IT WORK**: The GSA establishes allocations based on historical groundwater use over a base period (e.g., 1998 – 2017).

- **EXAMPLE**: Existing Methodology

PROS	VS.	CONS
Acknowledges historical uses		Excludes landowners who have not developed groundwater resources
May reduce conflict among users		GSA may not have sufficient data

Gross Acreage

The example is too complex.
Can we just use the first sentence in how it works and the native yield allocation in the example?
Rest can be talking point if needed.

- **HOW DOES IT WORK**: The GSA allocates the sustainable yield among overlying landowners proportionate to acreage. Additionally, the GSA may develop other pools of water (i.e., penalty pools, overdraft pools, etc.)

- **EXAMPLE**: East Kaweah GSA provides: (1) a Native Yield allocation of 0.85 AF/Ac; (2) a Penalty Tier 1 allocation of 0.3 AF/Ac at $500 per AF*; and (3) a Hard Cap allocation of 2.5 AF/Ac at $500 per AF*.

PROS	VS.	CONS
Treats all landowners equally		Ignores current and historical uses
Simple calculation		

*= includes a one for one reduction of water user's 2024 water year allocation

Irrigated Acreage

The example seems overly complicated.
Isn't it simply allocating just to the irrigated lands and adjusting if new lands come into irrigation?

- **HOW DOES IT WORK**: The GSA certifies all existing overlying groundwater use and develops allocation proportionate to land use.

- **EXAMPLE**: Tri-County Water Authority GSA provides a Native Yield allocation to all parcels 5 acres or larger and then provides "overdraft" water only to irrigated lands.

PROS	VS.	CONS
Reduction in use would be felt proportionately across all historic users		Does not give differential allocations based on historical use
		Potentially favors certain land uses
		Potentially discourages water conservation