Community Workshop

October 12, 2023

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

HALLMARK GROUP

Woodard & Curran

Instructions for Remote Participants

- The workshop 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.

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Welcome and Introductions

- Cory Bantilan
  Chair, Cuyama Basin Groundwater Sustainability Agency

- CBGSA Workshop Team
  - Taylor Blakslee, Executive Management Team, Hallmark Group
  - Brian Van Lienden, Technical Team, Woodard & Curran
  - Charles Gardiner, Outreach Team, Catalyst
  - Alex Dominguez, Legal Team, Klein DeNatale Goldner

Purpose and Agenda

- Purpose: Hear initial community input to inform the 2025 update of the Cuyama Basin Groundwater Sustainability Plan (GSP)
- Agenda:
  - Activities and progress since 2020 GSP
  - GSP Update process and timeline
  - Groundwater monitoring activities and updates
  - Criteria for evaluating groundwater sustainability
  - Approach to groundwater pumping allocations
  - Next Steps

How to Get More Information

- Staff will be available after this meeting
- You are encouraged to attend CBGSA SAC and Board Meetings
- Email Taylor Blakslee with questions: tblakslee@hgcpm.com
- CBGSA Website: cuyamabasin.org

Cuyama Basin Groundwater Sustainability Agency

Activities and Progress Since 2020 GSP

Taylor Blakslee

October 12, 2023

Major Elements of the GSP
Achieving Sustainability by 2040

- Identifies Beneficial Uses and Users in the Basin
  - Includes agricultural and domestic water users, municipal water systems, local planning entities (e.g. counties), and environmental water uses (e.g. groundwater dependent ecosystems)
- Groundwater Monitoring and Modeling
  - Measuring and forecasting to achieve balanced water budgets
- Sustainability Criteria
  - Minimum thresholds, measurable objectives, and undesirable results
- Management Actions & Projects to Achieve Sustainability
  - Increasing supply and reducing pumping
- Reporting
  - Annual reports and 5-year updates

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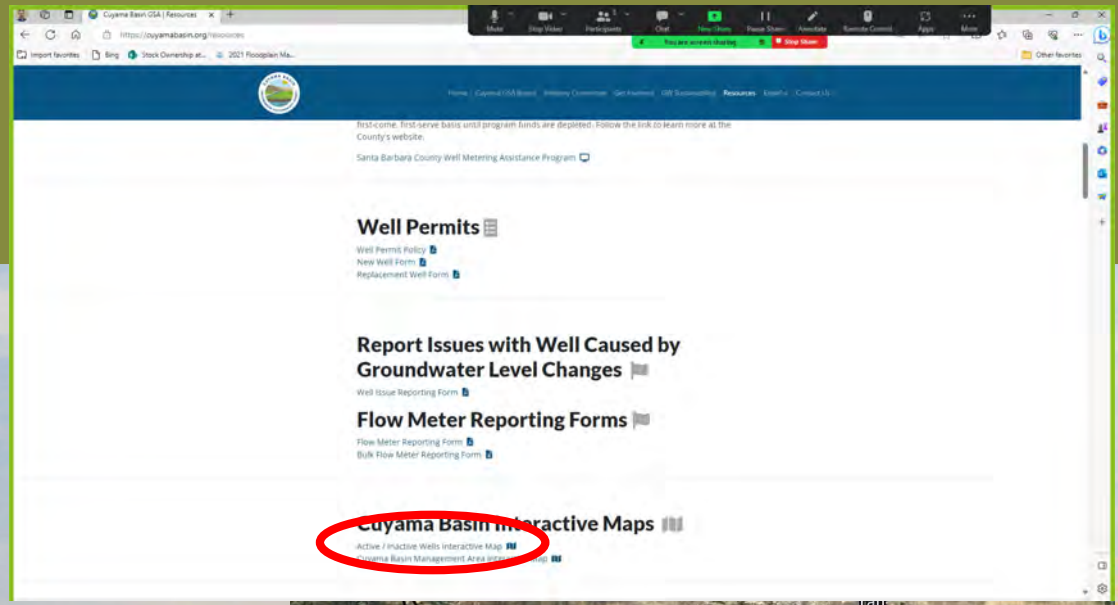
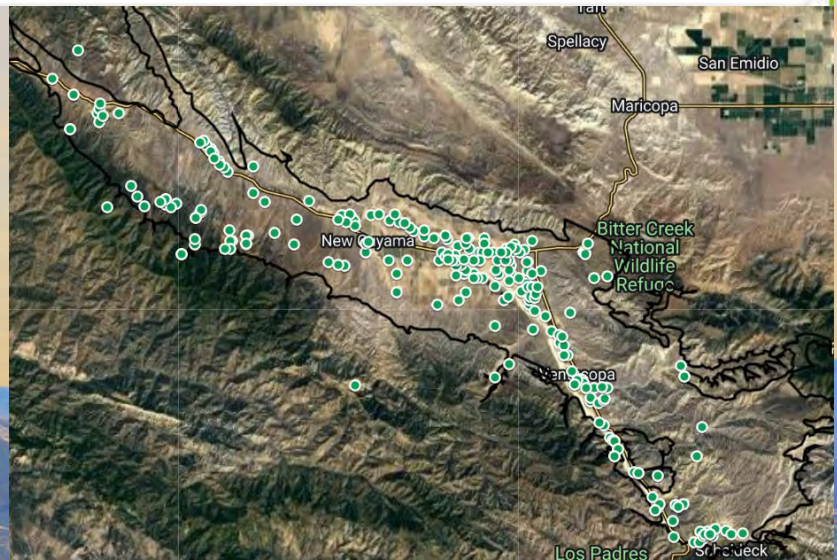
Activities Since 2020 GSP

- Updated the GSP to respond to comments from the California Department of Water Resources (DWR)
- Installed new monitoring network wells with state grant funding
- Performed groundwater data collection for levels and quality
- Implemented groundwater extraction fee
- Implemented groundwater pumping allocation program
- Updated the groundwater model with new data
- Prepared annual reports to DWR
- Developed preliminary dataset of confirmed active wells

Feedback Requested on Active Well Dataset

- The confirmed active well dataset is posted on the Cuyama Basin website:
- This dataset will be used to identify beneficial users in the basin for the 2025 GSP Update
- Stakeholder input is **encouraged** to improve the dataset





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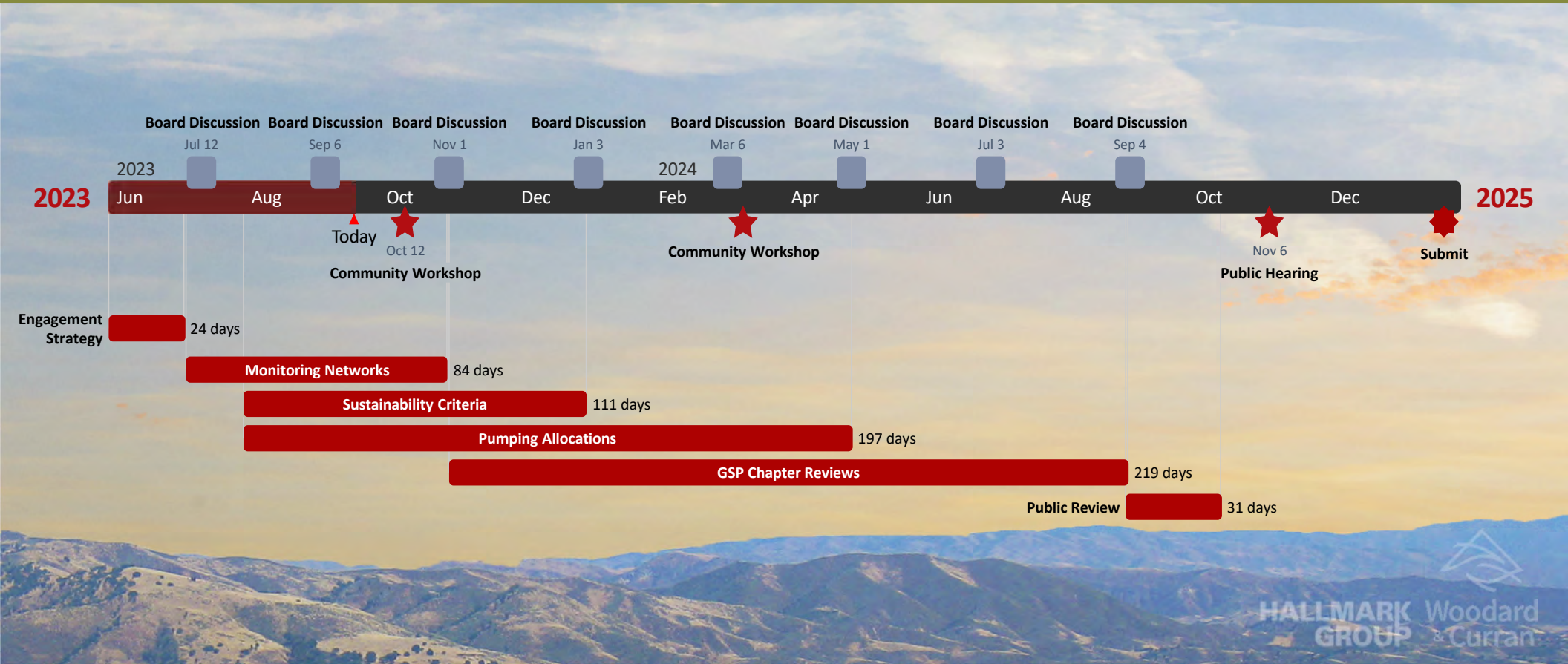
GSP Update Process and Timeline

Charles Gardiner

October 12, 2023

GSP Update Timeline



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		✓			✓			✓		

Cuyama Basin Groundwater Sustainability Agency

Groundwater Monitoring Networks

Brian Van Lienden

October 12, 2023

Monitoring Networks are Required for each Sustainability Indicator Defined by SGMA

Lowering of Groundwater Levels

Reduction of Groundwater Storage

Degraded Water Quality

~~Seawater Intrusion~~

Land Subsidence

Depletions of Interconnected Surface Water

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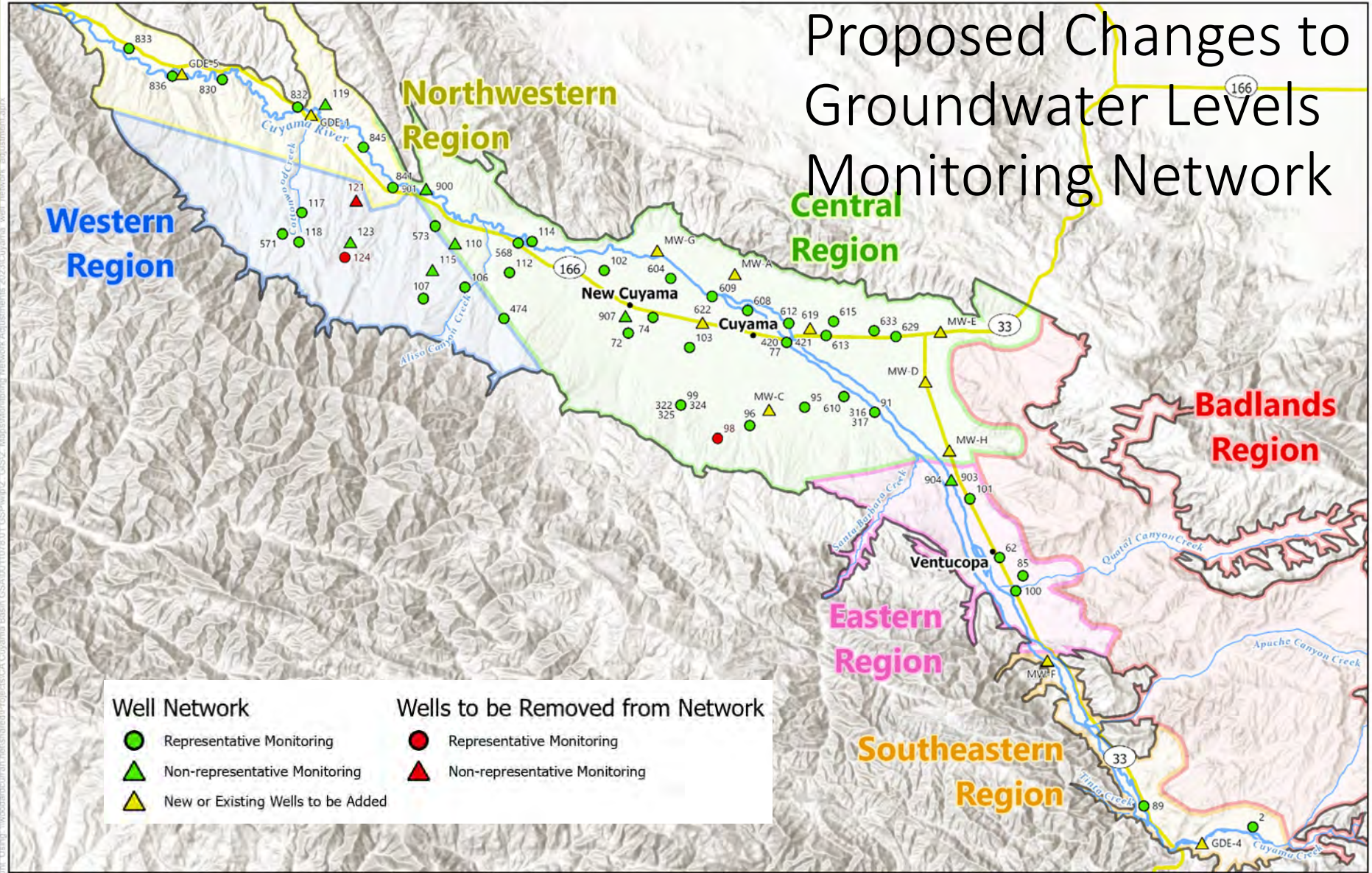
Monitoring Approaches Included in the GSP

- Groundwater Levels:
  - Monitoring network developed; regular monitoring is being performed by the GSA
- Groundwater Quality:
  - Monitoring network developed for TDS; regular monitoring is being performed by the GSA
  - For nitrates and arsenic, the GSA performed monitoring in 2022; otherwise utilizes data from existing monitoring programs (e.g. USGS/SWRCB Regional Board)
- Groundwater Storage:
  - Groundwater levels are used as a proxy for storage
- Land Subsidence:
  - GSA utilizes data from existing monitoring programs (e.g. GPS stations)
- Interconnected Surface Water (ISW):
  - ISW wells are a subset of groundwater levels monitoring wells (those that are close the Cuyama River and of shallow depth)
  - California Dept of Water Resources is developing guidance which may update approach

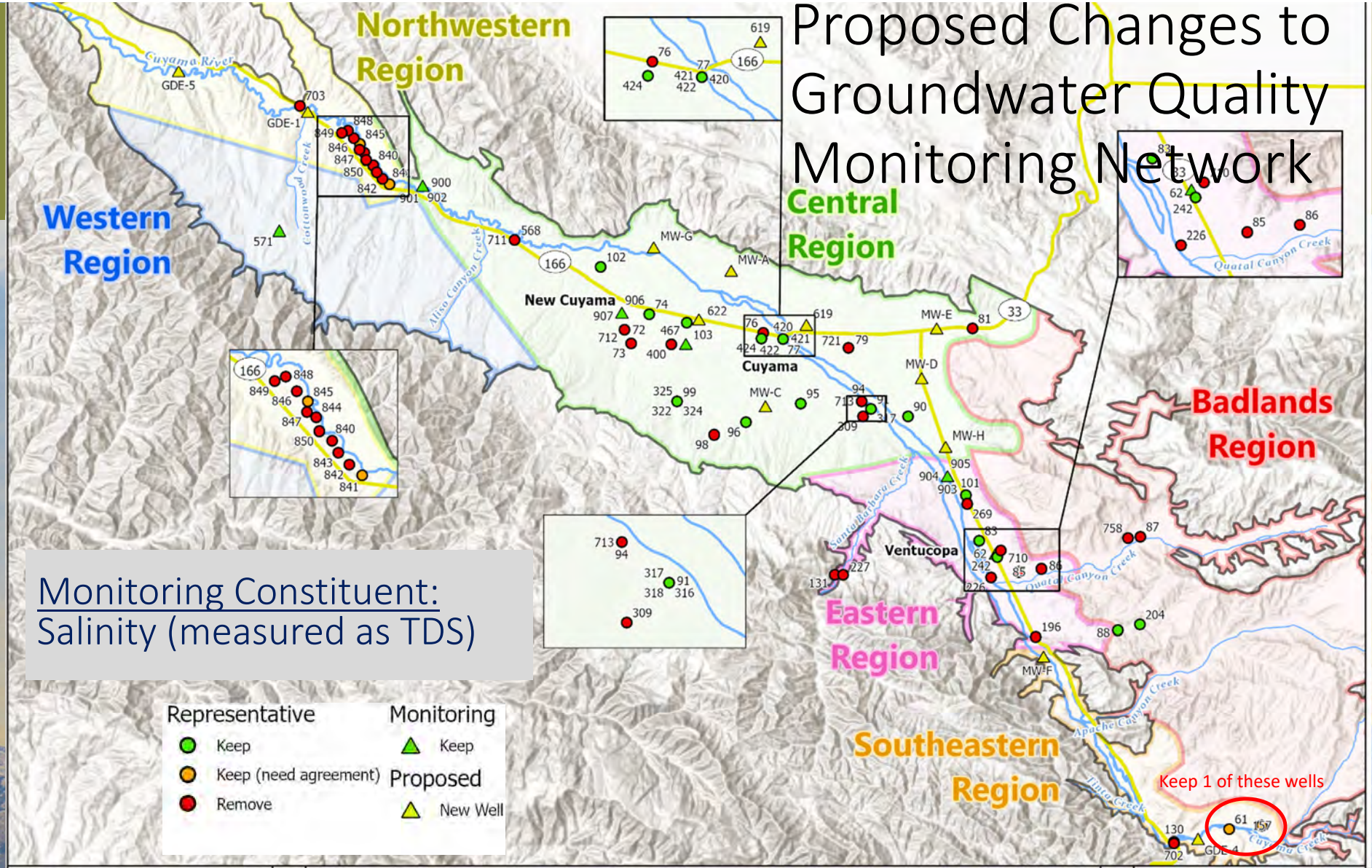
Review of Groundwater Levels and Groundwater Quality (TDS) Monitoring Networks

- The existing groundwater levels and quality monitoring wells were reviewed with respect to the following issues:
  - Lack of landowner agreement for monitoring
  - Access issues due to issues at the wellsite
  - Access issues due to winter flooding
  - Whether the well is projected to go dry between now and 2030
  - Whether or not a GW levels monitoring well is an active pumping well and the magnitude of pumping in 2022
  - Whether nearby similar wells have shown similar groundwater level changes and are therefore redundant

Proposed Changes to Groundwater Levels Monitoring Network



Proposed Changes to Groundwater Quality Monitoring Network



Questions and Input

- Are there any questions and comments on proposed improvements to the groundwater monitoring networks?

Cuyama Basin Groundwater Sustainability Agency

Criteria for Evaluating Groundwater Sustainability

Brian Van Lienden

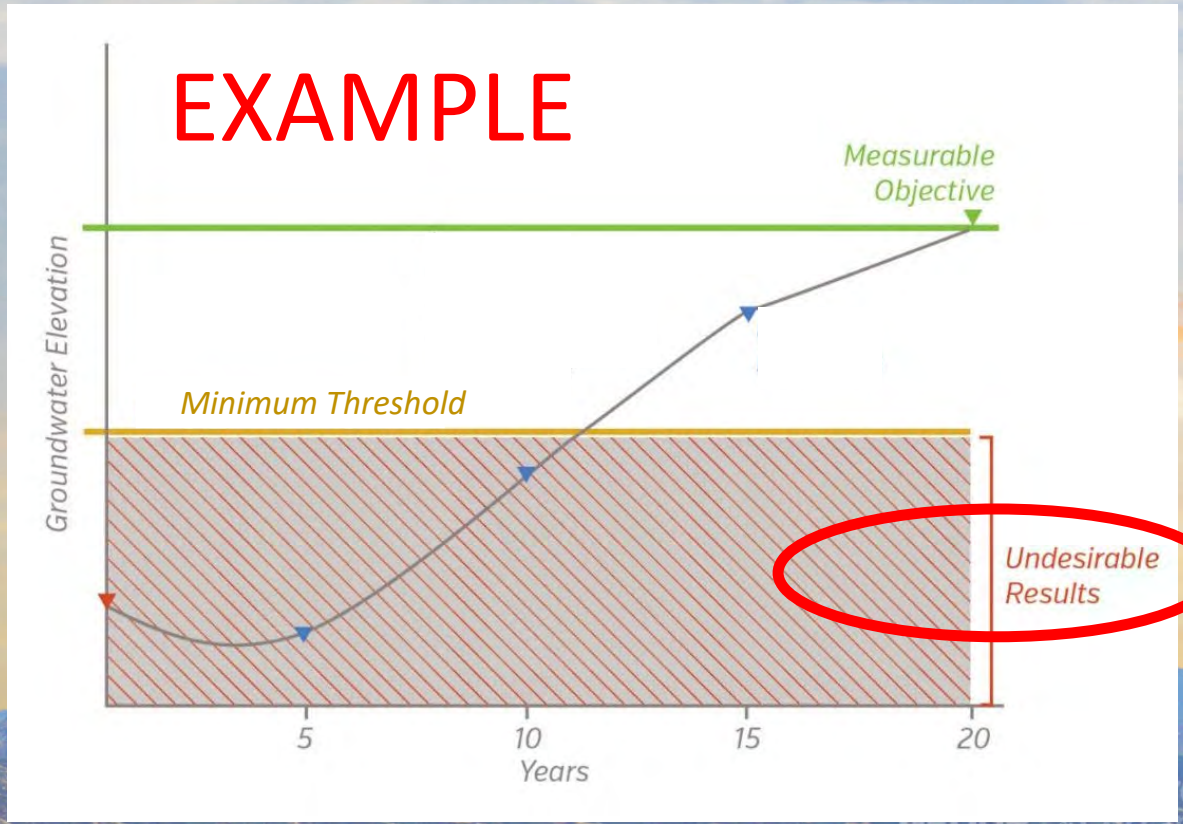
October 12, 2023

Sustainability Indicators in the Cuyama Basin

Sustainability Indicators	Lowering GW Levels	Reduction of Storage	Land Subsidence	Surface Water Depletion	Degraded Water Quality
Cuyama Basin GSP Approach	Groundwater elevation thresholds	Uses Groundwater elevations as proxy	Thresholds for rate and extent of subsidence	Groundwater elevation thresholds (for shallow wells near river)	Salinity (i.e. TDS) thresholds in groundwater wells
Example Problems	Dry wells; low pumping production	Dry wells; low pumping production	Unleveling of fields; damage to structures	Dry out Cuyama River earlier / more often	Higher salinity; nitrates in drinking water

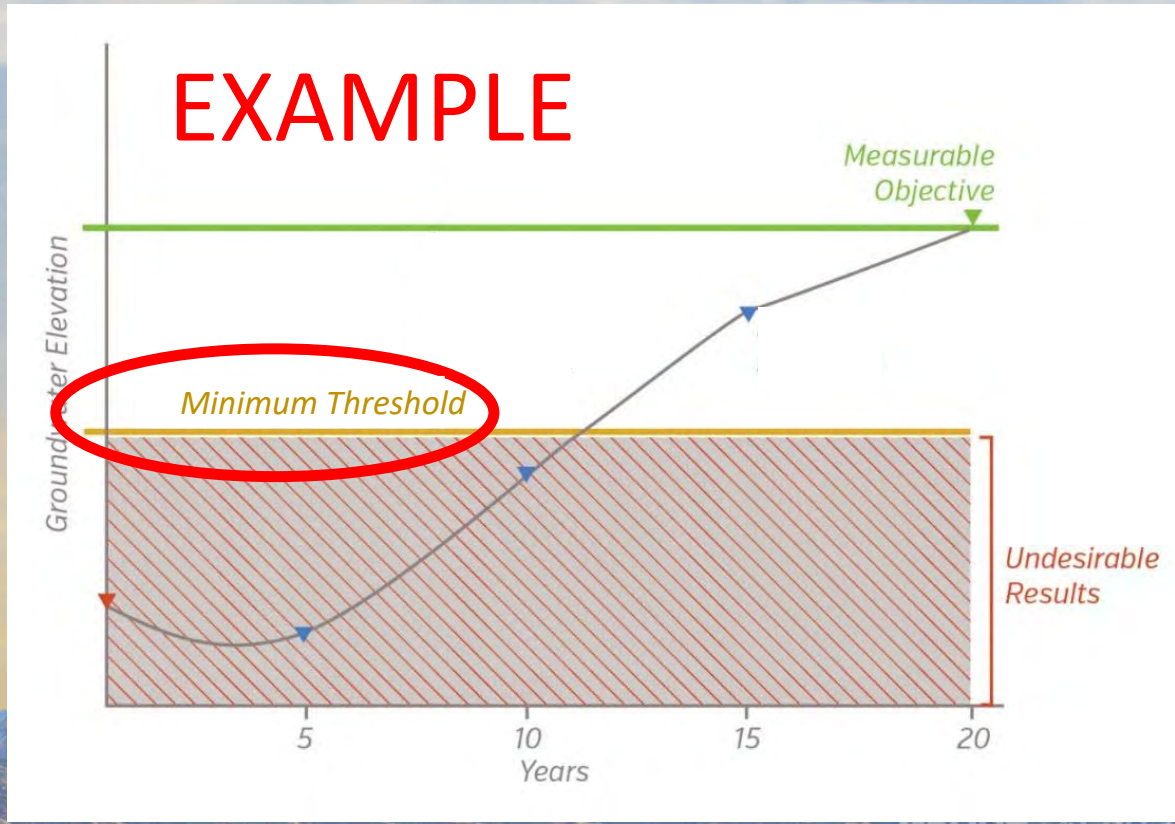
Undesirable Results, Minimum Thresholds & Measurable Objectives

- Undesirable Results:
  - Must be "Significant and Unreasonable"
  - Statement that describes conditions that we do not want to have happen
  - Defined for each sustainability indicator



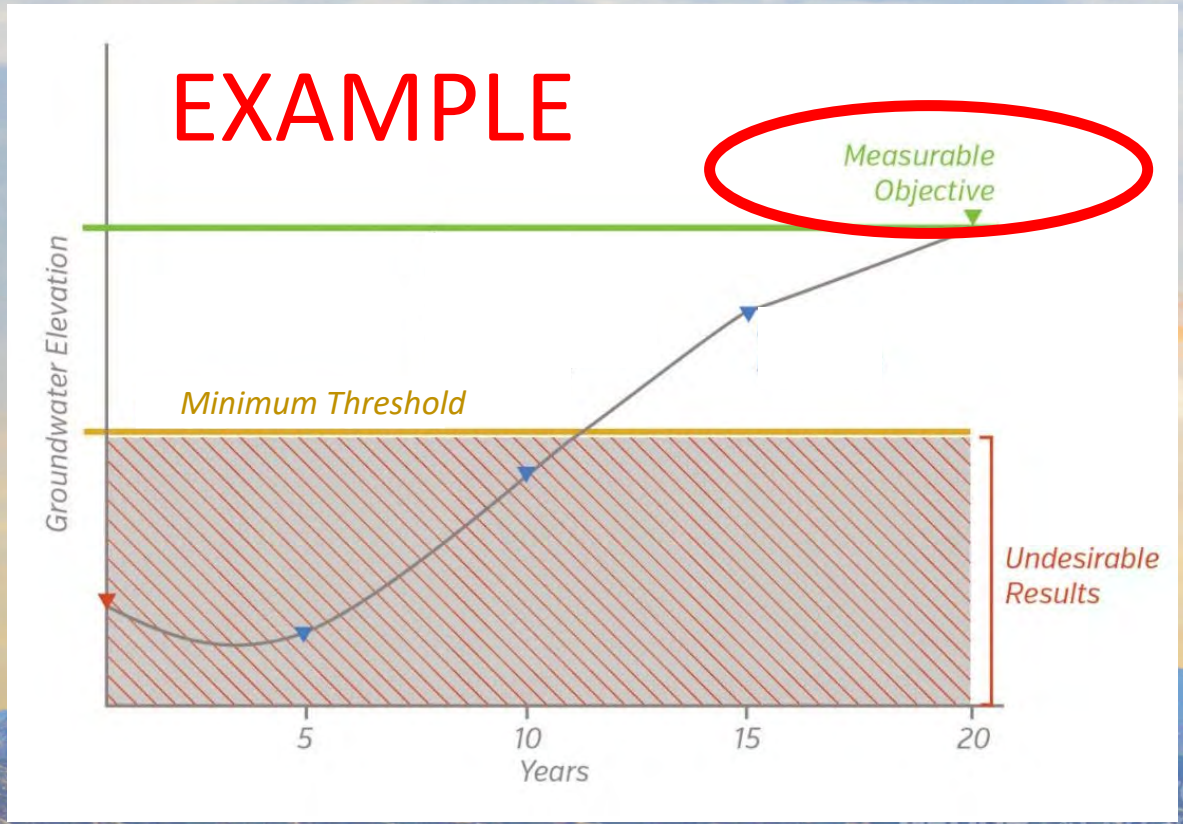
Undesirable Results, Minimum Thresholds & Measurable Objectives

- Minimum Thresholds:
  - Anything worse is considered an “undesirable result”
  - The lowest the basin can go without something significant and unreasonable happening to groundwater



Undesirable Results, Minimum Thresholds & Measurable Objectives

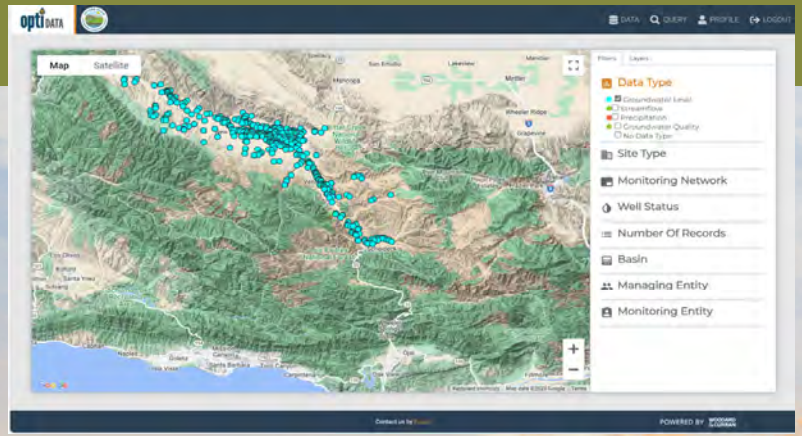
- Measurable Objectives:
  - A management target that provides a usable buffer for use during droughts, etc
  - Establishes the upper targeted boundary for basin management



Data Management System Makes Data Available to All

- Web-based – available to the public
- Additional data is entered into the system as it is collected
- Displays sustainability criteria on charts to allow for comparison to measured groundwater levels
- https://opti.woodardcurran.com/cuyama/login.php

Opti DMS Screenshot



Example Groundwater Level Hydrograph

GSP Approach for Groundwater Levels Minimum Thresholds

- Six threshold regions were defined to allow areas with similar conditions to be grouped together and treated similarly
- Minimum thresholds were set using approaches that utilized historical groundwater levels trends and estimates of saturation within the aquifer

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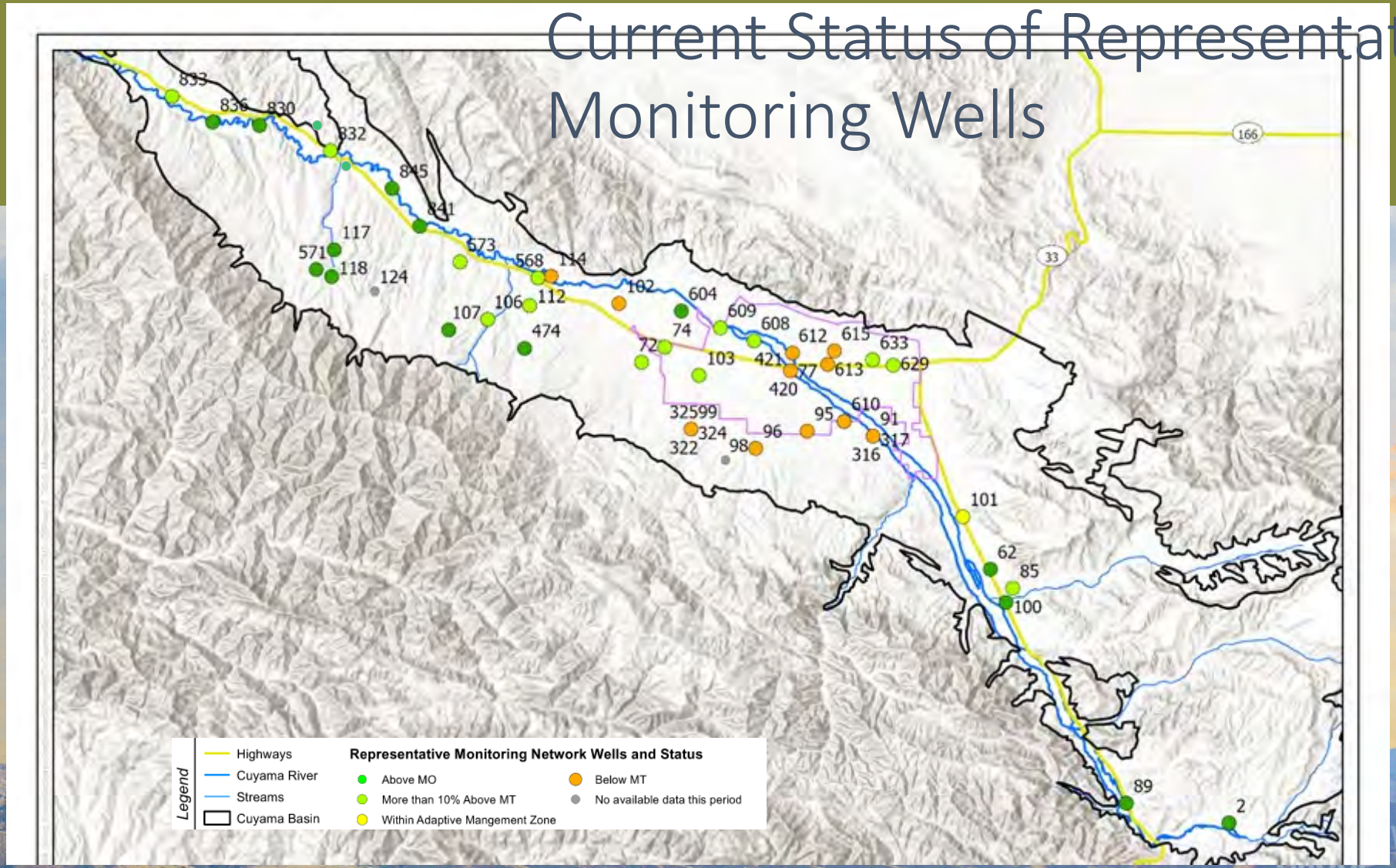
Current Status of Representative Monitoring Wells

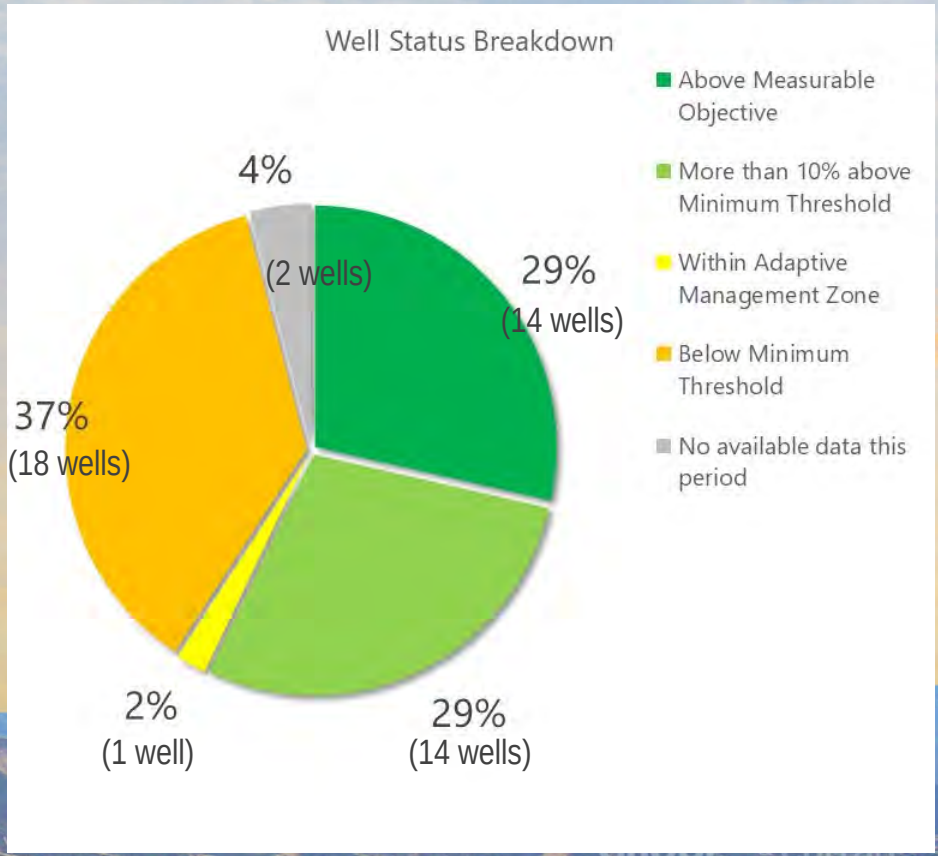


Criteria for Identification of Undesirable Results (Basin-wide)

- **GSP Section 3.2.1 Identification of Undesirable Results (p. 3-2)**:

"This result is considered to occur during GSP implementation when 30 percent of representative monitoring wells (i.e., 15 of 49 wells) fall below their minimum groundwater elevation thresholds for two consecutive years."

- 18 wells are currently below minimum threshold (MT) (as of July 2023)
  - 11 wells (22%) below MT for at least 2 years



What Happens When Minimum Thresholds are Exceeded?

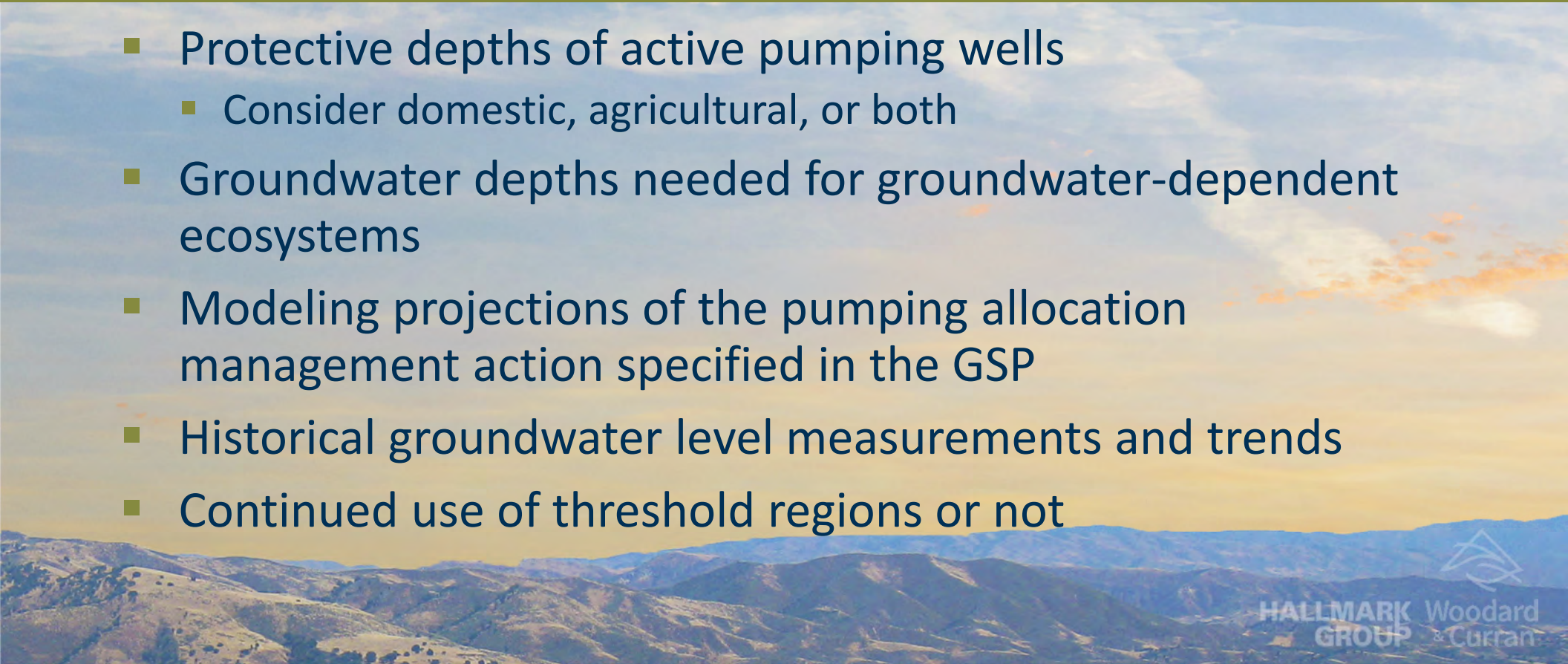
- When groundwater levels approach or exceed, the CBGSA will investigate the cause and consider appropriate **Adaptive Management** actions or projects (per **GSP Section 7.6**)
- If basin-wide **Undesirable Results** occur per the definition in GSP Section 3.2.1:
  - Potential consultation with the California Department of Water Resources and State Water Resources Control Board
  - Potential risk of probation – higher fees and reporting requirements

Reevaluating Groundwater Levels Minimum Thresholds for the GSP 5-Year Update

- There is additional data available now to develop minimum thresholds that was not available at the time that the GSP was developed. For example:
  - CBGSA monitoring program data
  - Enhanced groundwater model
  - Better understanding of active pumping wells
- The Board is considering options for updating the minimum thresholds in the using the new data and information.

Criteria to Consider Updates to Groundwater Levels Minimum Thresholds

- Protective depths of active pumping wells
  - Consider domestic, agricultural, or both
- Groundwater depths needed for groundwater-dependent ecosystems
- Modeling projections of the pumping allocation management action specified in the GSP
- Historical groundwater level measurements and trends
- Continued use of threshold regions or not



Questions and Input

- What criteria should the Board consider in setting minimum thresholds?
  - Protective depths of active pumping wells
    - Consider domestic, agricultural, or both
  - Groundwater depths needed for groundwater-dependent ecosystems
  - Modeling projections of the pumping allocation management action specified in the GSP
  - Historical groundwater level measurements and trends
  - Continued use of threshold regions or not

Cuyama Basin Groundwater Sustainability Agency

Approach for Groundwater Pumping Allocations

Brian Van Lienden

October 12, 2023

CBGSA GSP - Pumping Allocations Action

- **GSP Section 7.5.2 Pumping Allocations in Central Basin Management Area:**
  - "The CBGSA would develop allocations based on estimated historical use, existing land uses, and total irrigated acreage."
  - "The CBGSA would determine historical use by analyzing data about water use during the 20-year historical period from 1998 to 2017…"
  - "Water use would be estimated either using remote sensing and land use data to estimate agricultural consumption or from data provided by pumpers in the Basin, including private pumpers and water agencies."
- The Central Management Area was defined as the area with modeled overdraft conditions greater than 2 feet per year
  - The Board voted to use an "operational boundary" in July 2022

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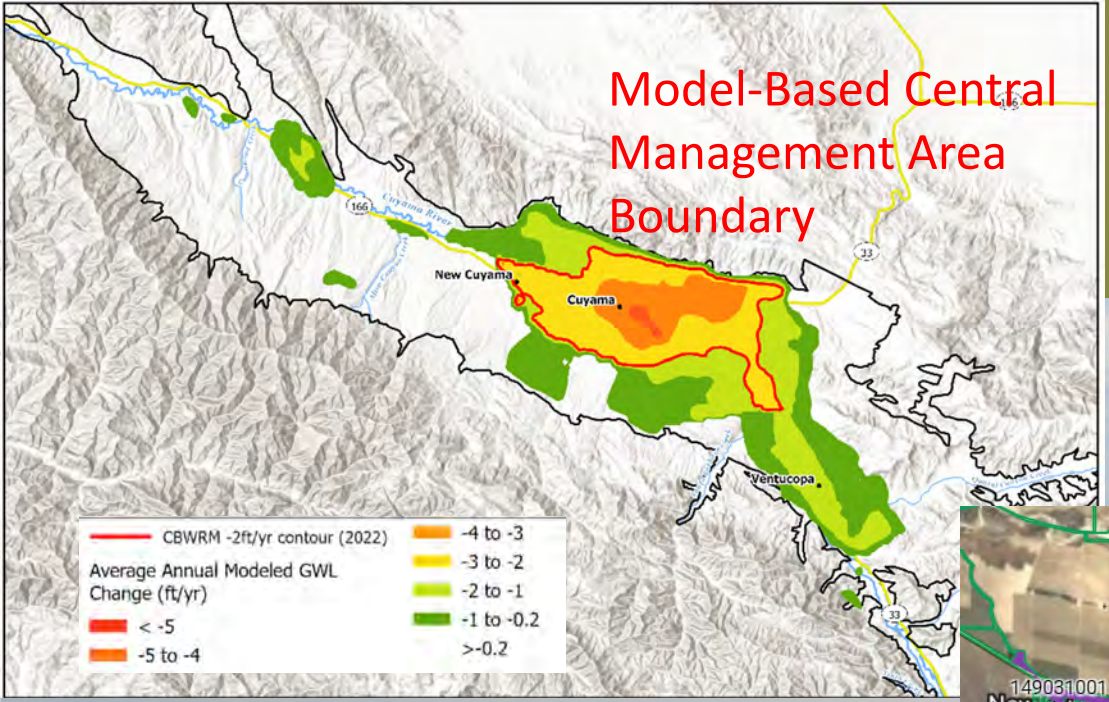
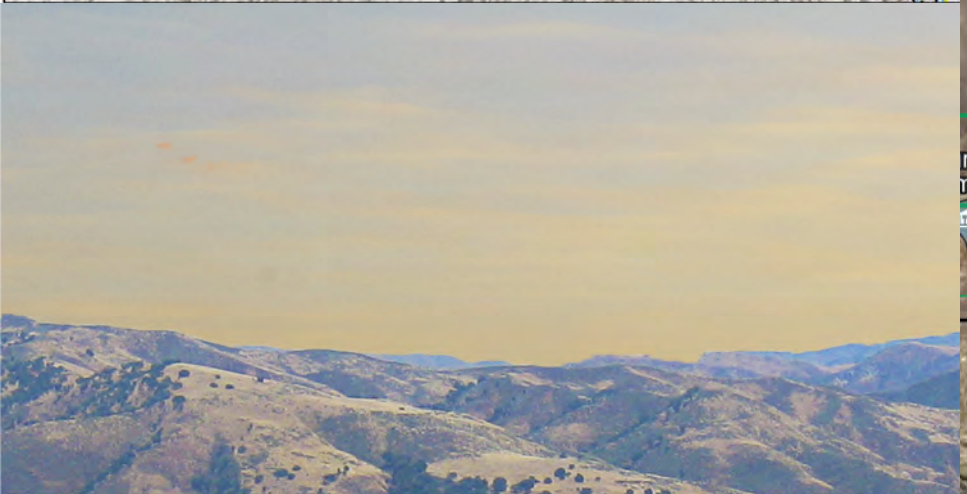
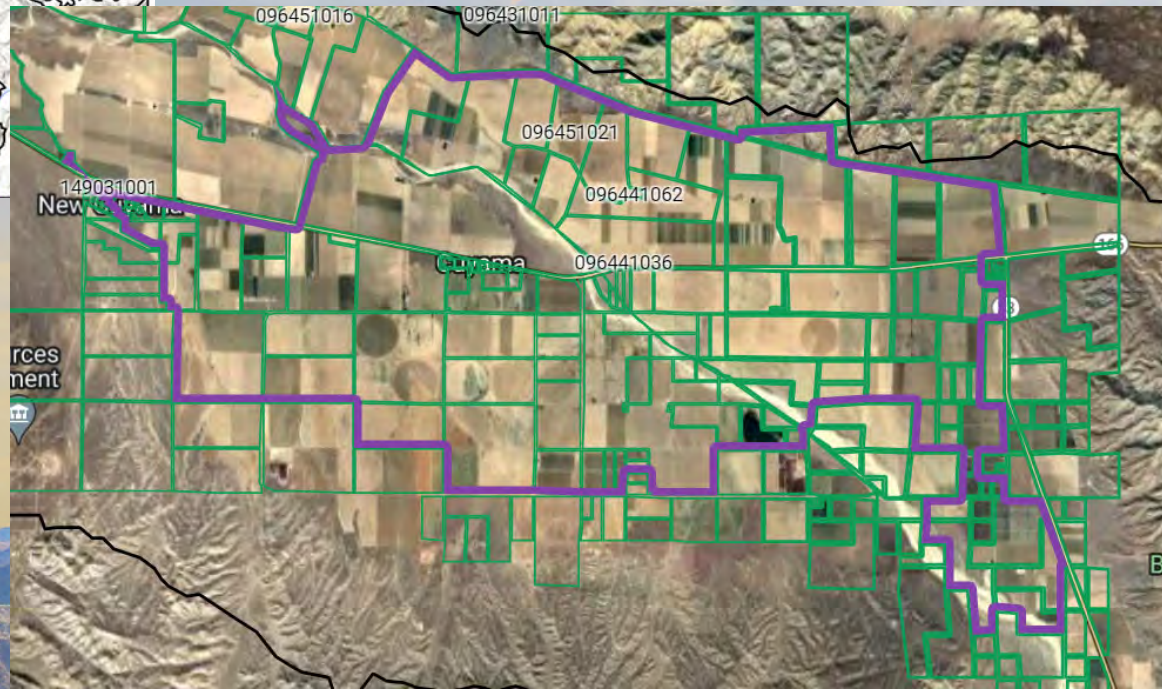




Operational Central Management Area Boundary



CBGSA GSP - Pumping Allocations Action

Board Policy in 2025 GSP Update will apply for 5 years until next update

- A **Glide Path** was defined in the GSP to set future Central Management Area pumping allocations:
  - Specified 5 percent reduction in pumping in 2023 and 2024.
  - From 2025 to 2038, pumping would be reduced by 6.5 percent annually, so as to achieve sustainability in the Basin in 2038.

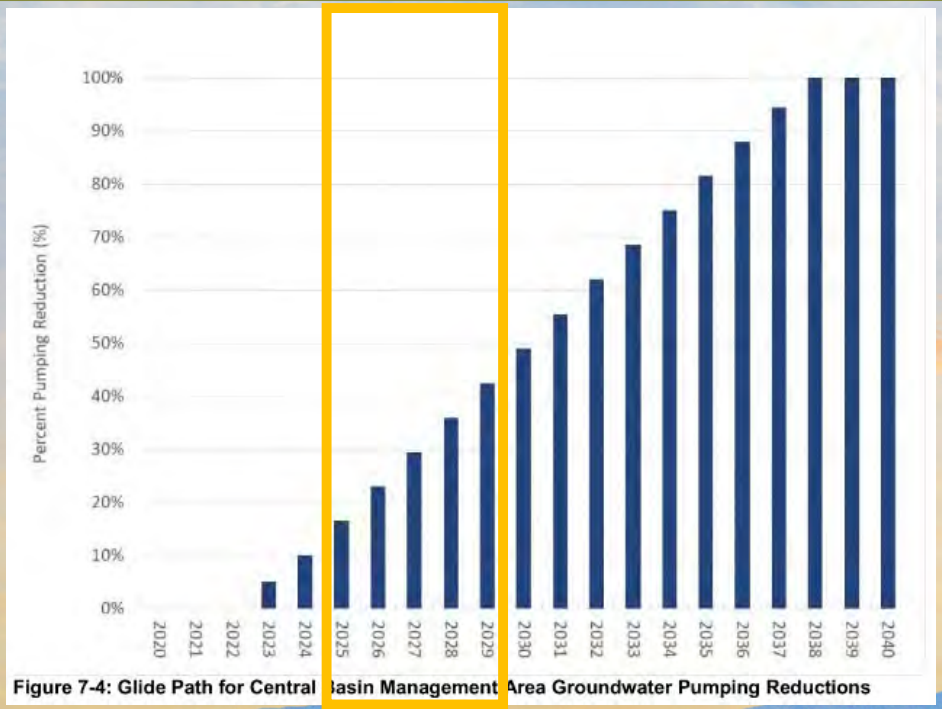
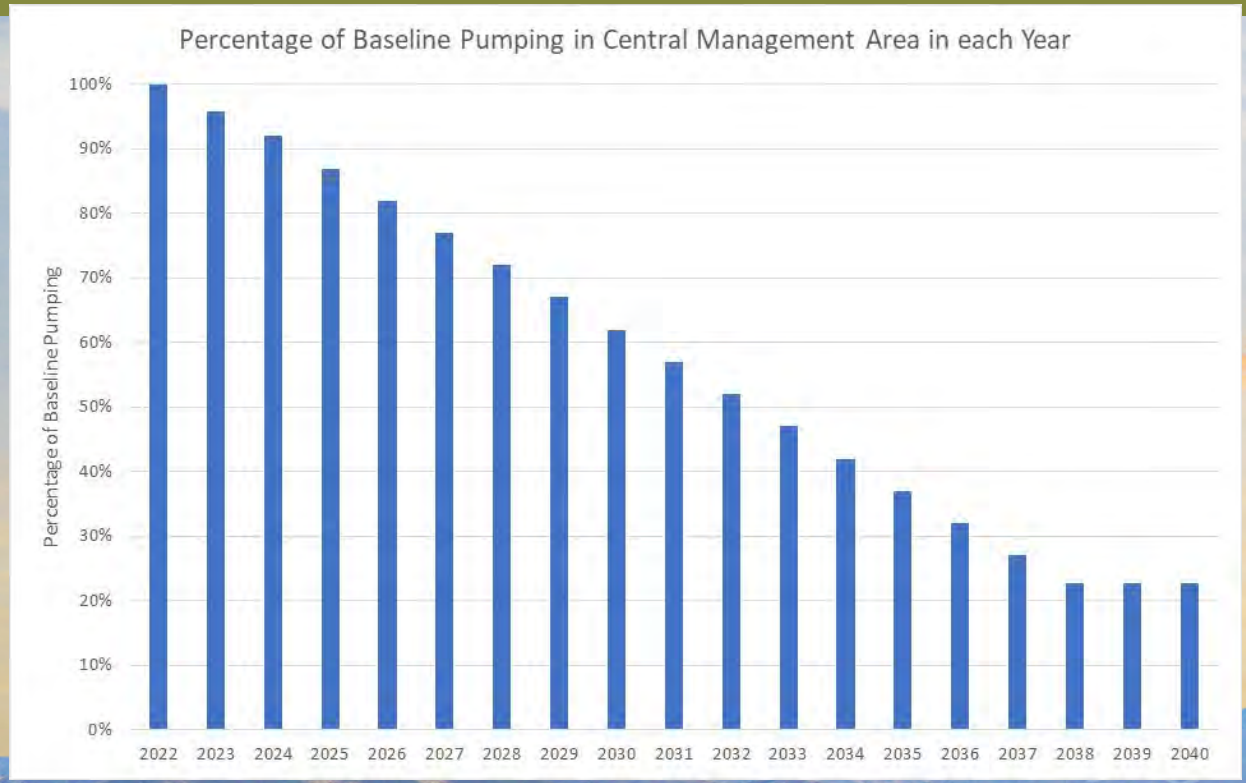


Figure 7-4: Glide Path for Central Basin Management Area Groundwater Pumping Reductions

CBGSA GSP - Pumping Allocations Action

- Based on current modeling estimates, the **Glide Path** will result in Central Management Area pumping allocations equal to 23% of baseline pumping levels in 2040 (a reduction of 77%)
- This will be refined as the model is improved with additional data

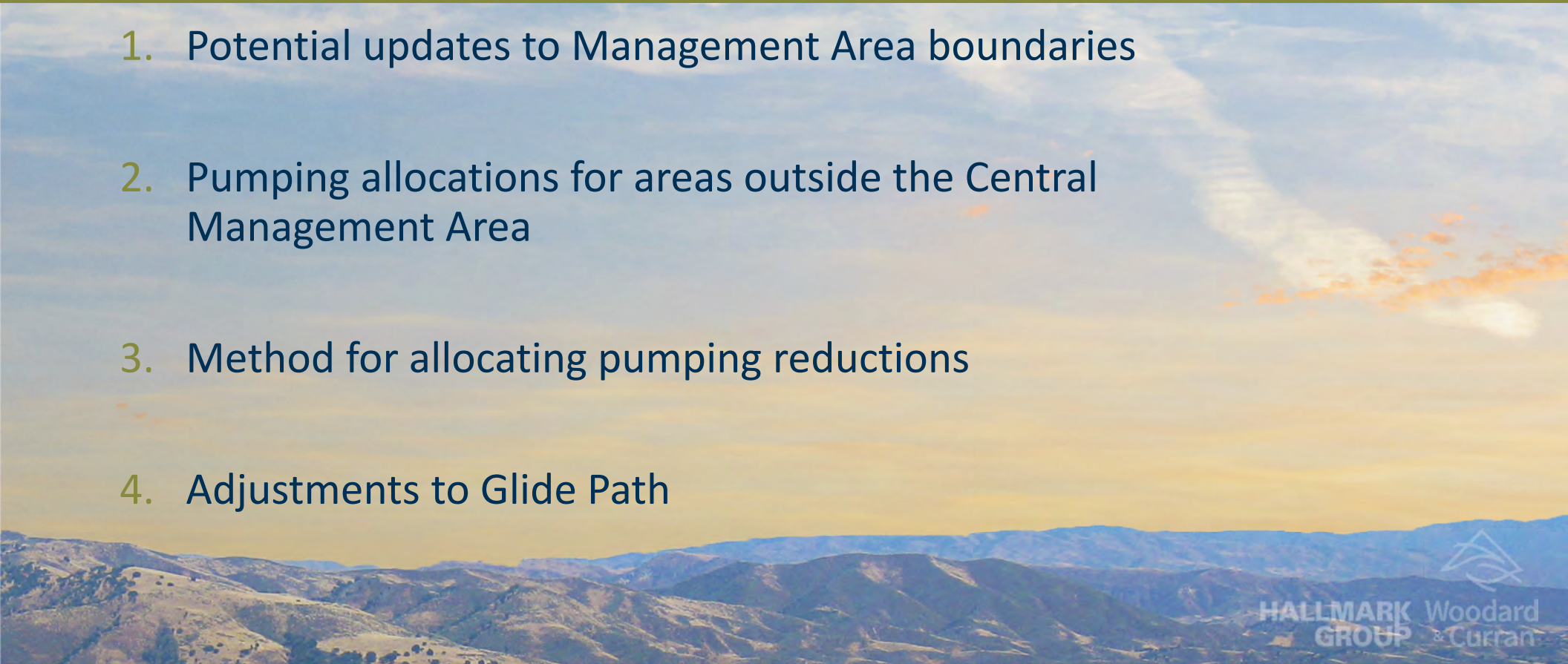


The CBGSA Board Approved the Existing Allocation Methodology for 2023 and 2024

- Allocation Implementation: Calendar years 2023 and 2024
- Applies to: Central Management Area (CMA) + Farming Units
- Baseline Allocation Amount: 2021 modeled water use in the CMA excluding CCSD metered use and residential pumping (estimated by model)
- Sustainable Yield: Calculated by the model for the CMA (including Farm Units)
- Allocation Methodology: estimated historic water use averaged from the 1998-2017 Water Year period for each parcel in the CMA

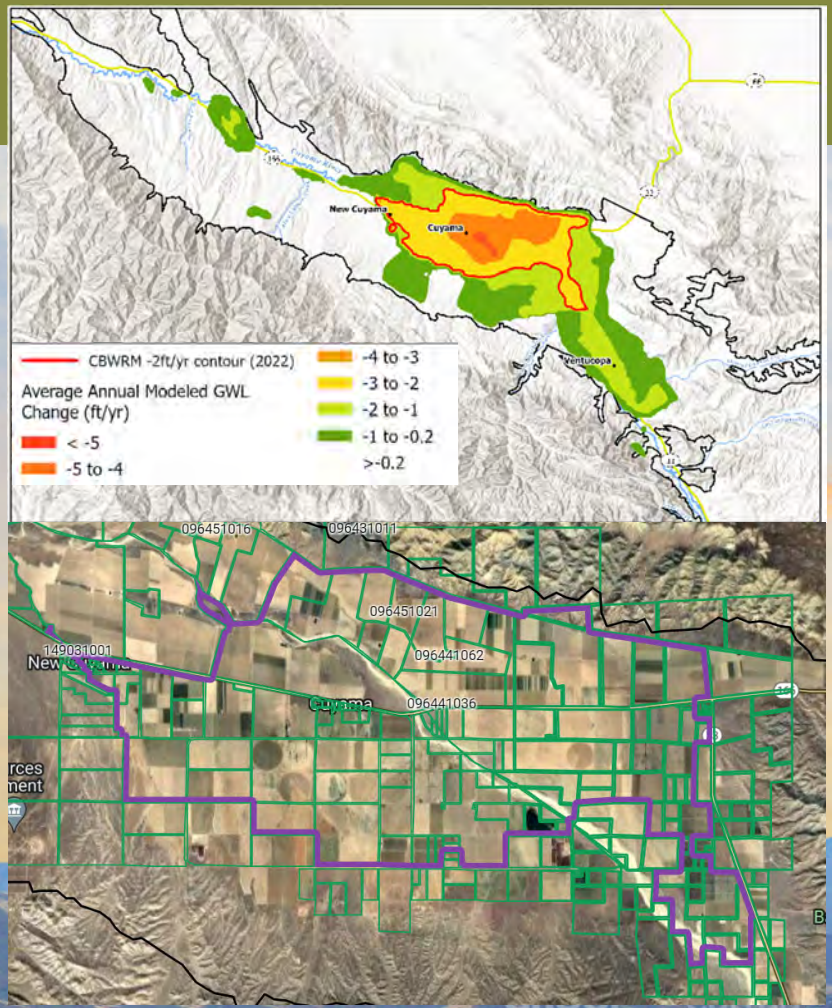
Key Board Discussion and Considerations for Pumping Allocations Implementation Beyond 2024

1. Potential updates to Management Area boundaries
2. Pumping allocations for areas outside the Central Management Area
3. Method for allocating pumping reductions
4. Adjustments to Glide Path



1. Management Area Boundary Options to Consider

- Model-Based CMA Boundary:
  - Keep 2 feet per year rule
  - Change the 2 feet per year rule
- Physical Features-Based CMA Boundary:
  - Use faults or other geologic features to determine edges of boundary
- If Board chooses to manage pumping outside the CMA, other Management Areas could potentially be developed



2. 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

3. Allocation Methodologies to Consider

HISTORICAL USE

GROSS ACREAGE

IRRIGATED ACREAGE

Historical Use (Current Methodology)

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

PROS	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

- **HOW DOES IT WORK**: The GSA establishes allocations among overlying landowners proportionate to acreage.

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

Irrigated Acreage

- **HOW DOES IT WORK**: The GSA certifies all existing irrigated acreage and establishes allocations proportionate to that acreage.

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

4. Glide Path Options to Consider

- Continue to use the same glide path
- Greater reductions earlier in the period and lesser reductions later in the period (less overall reduction in groundwater storage and levels)
- Lesser reductions earlier in the period and greater reductions later in the period (less early impacts to agricultural users)

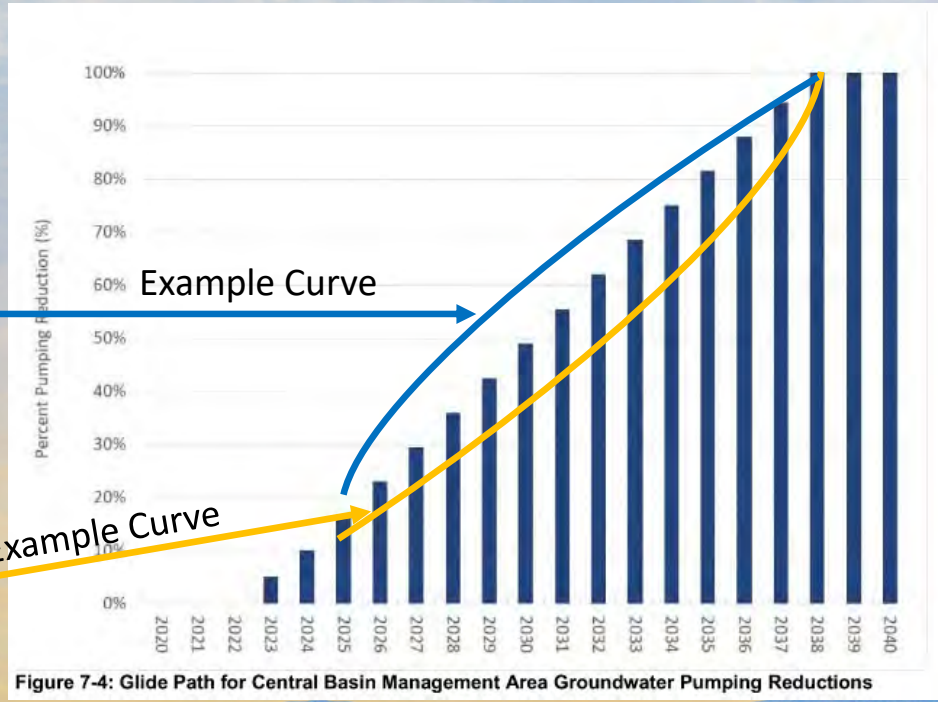


Figure 7-4: Glide Path for Central Basin Management Area Groundwater Pumping Reductions

Questions and Input on Pumping Allocations

1. Should the Central Management Area Boundary be changed?

2. Should the GSA develop pumping allocations outside the Central Management Area?
   - No, reduce pumping only in the Central Management Area
   - Yes, define additional management areas to reduce pumping
   - Yes, develop allocations consistently across the entire basin

Questions and Input on Pumping Allocations

3. Which allocation method should be the basis for determining allocations?
   - Historical use
   - Allocations to all acres
   - Allocations to irrigated acres
   - Combination of the above

4. Should adjustments be made to the glide path?

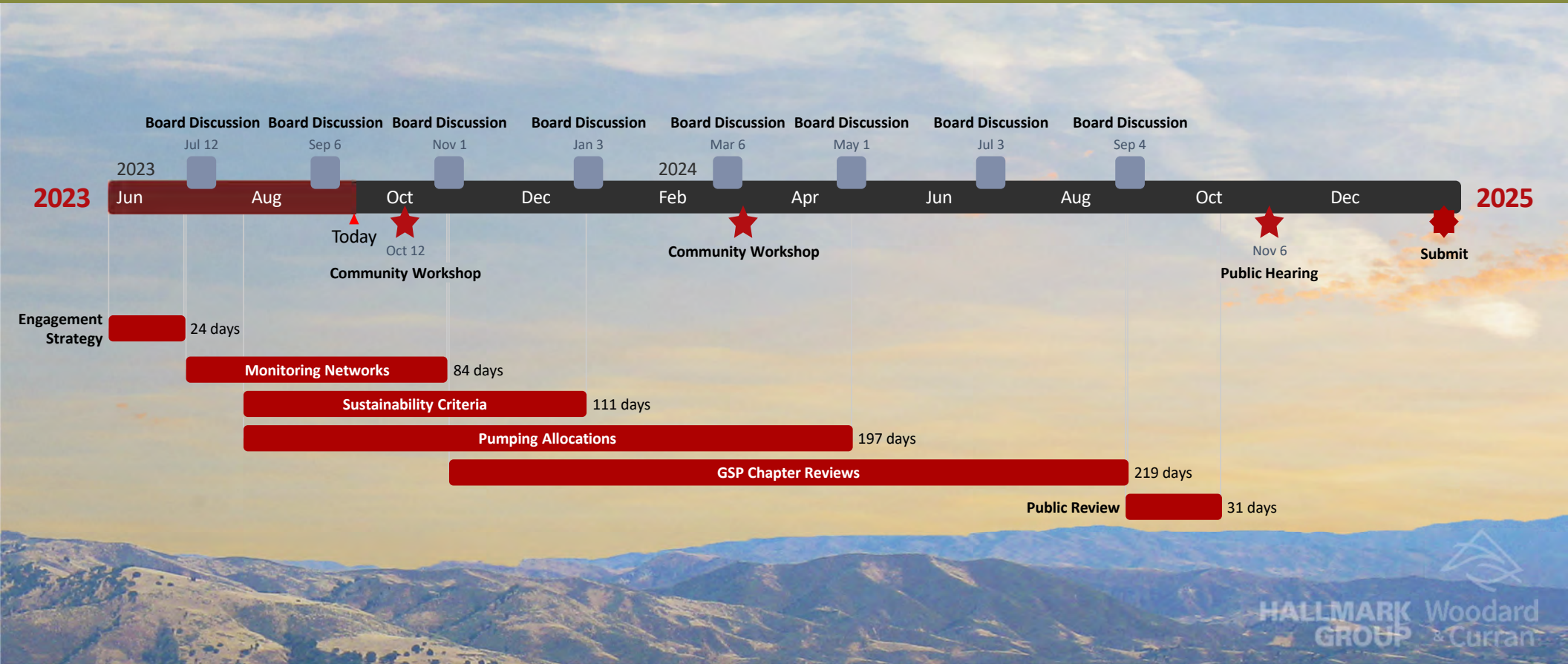
Cuyama Basin Groundwater Sustainability Agency

Next Steps

Charles Gardiner

October 12, 2023

GSP Update Timeline



Thank You