Community Workshop

October 10, 2024

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

- 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

- Workshop Team:
  - **Taylor Blakslee**, Hallmark Group | *Assistant Executive Director*
  - **Brian Van Lienden**, Woodard & Curran | *Technical Project Manager*
  - **Charles Gardiner**, Catalyst | *Outreach Lead*

Purpose

- Review major changes to the Cuyama Basin Groundwater Sustainability Plan (GSP)
- Hear community comments and suggestions before final GSP is presented for approval on November 6, 2024 at 4:30 p.m.

Agenda

1. Introduction and Overview
2. Update on Improved Understanding of the Cuyama Basin
3. Update on Revised Sustainability Thresholds, Undesirable Results and Monitoring
4. Update on Modified Projects and Management Actions to Achieve Sustainability
   - Projects to Increase Basin Recharge
   - Management Actions to Reduce Groundwater Pumping (i.e. Allocations)
5. 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

Hints for Making Helpful Comments

- The goal of public comments should be to improve the quality of the draft GSP Update
- "The GSP would be:
  - Clearer…
  - More accurate…
  - More complete…
  - More effective…"

Cuyama Basin Groundwater Sustainability Agency

1. Introduction and Overview

Taylor Blakslee

October 10, 2024

HALLMARK GROUP Woodard & Curran

Why Prepare a Draft Groundwater Sustainability Plan (GSP)?

- Draft Cuyama Basin GSP follows the requirements and guidance of the 2014 Sustainable Groundwater Management Act (SGMA)
- SGMA requires the Cuyama Basin become sustainable by January 2040
- The GSP is a locally-managed roadmap to preserve and protect groundwater supplies in the Cuyama Basin for the long-term
- 2025 GSP update reflects changes made to the initial 2020 GSP in response to DWR comments and new information that is now available

Required Components of the GSP

Chapter Name	Chapter No.
• Plan area description • Outreach and public engagement	*1*
• Basin setting • Groundwater conditions • Water budgets	*2*
• Undesirable results description	*3*
• Monitoring networks	*4*
• Minimum thresholds and measurable objectives	*5*
• Data management system	*6*
• Projects and management actions	*7*
• Implementation plan	*8*

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

Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply

Significant and unreasonable degraded water quality

Significant and unreasonable reduction of groundwater storage

Significant and unreasonable land subsidence

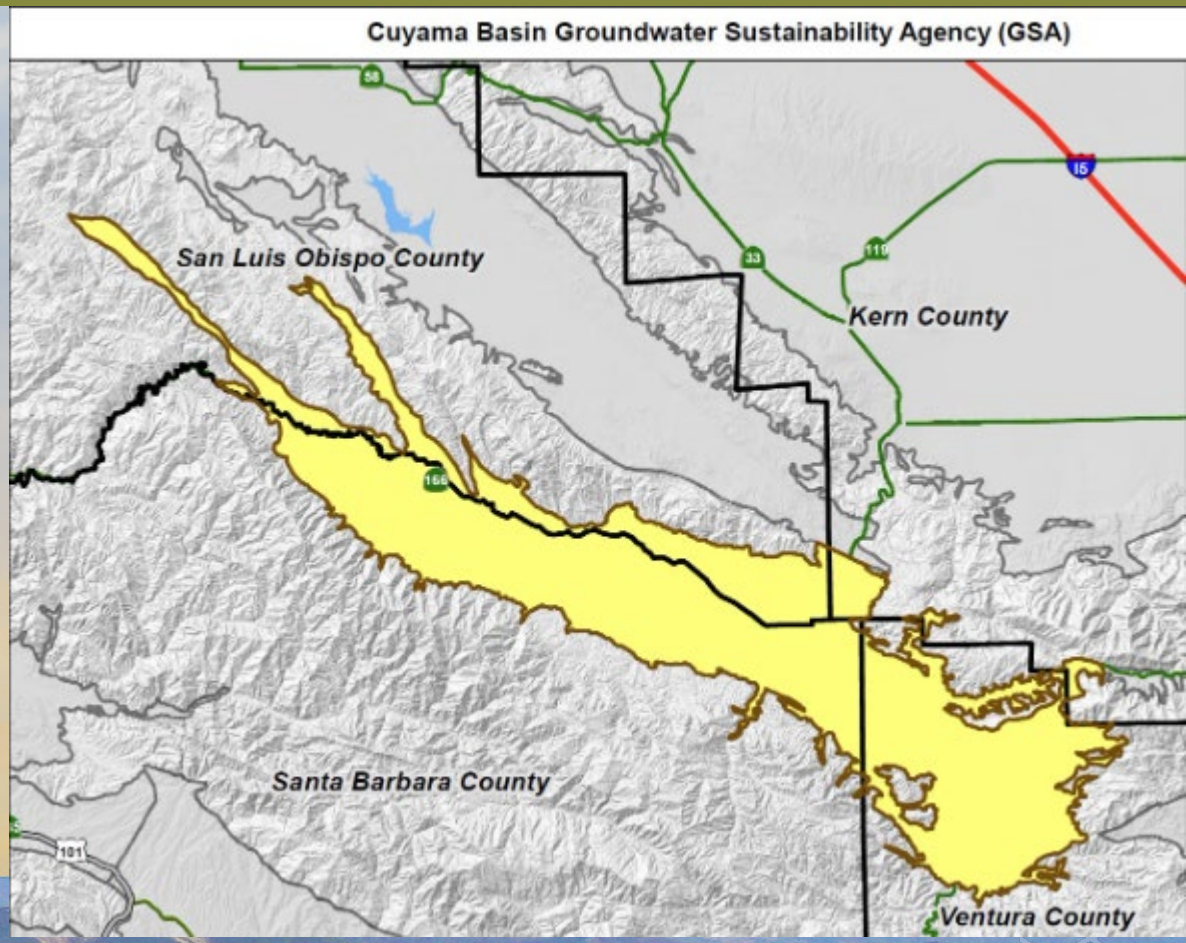
Significant and unreasonable seawater intrusion

Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

Cuyama Basin Groundwater Sustainability Agency (GSA) Approves and Oversees the GSP

Cuyama Basin Groundwater Sustainability Agency (GSA)

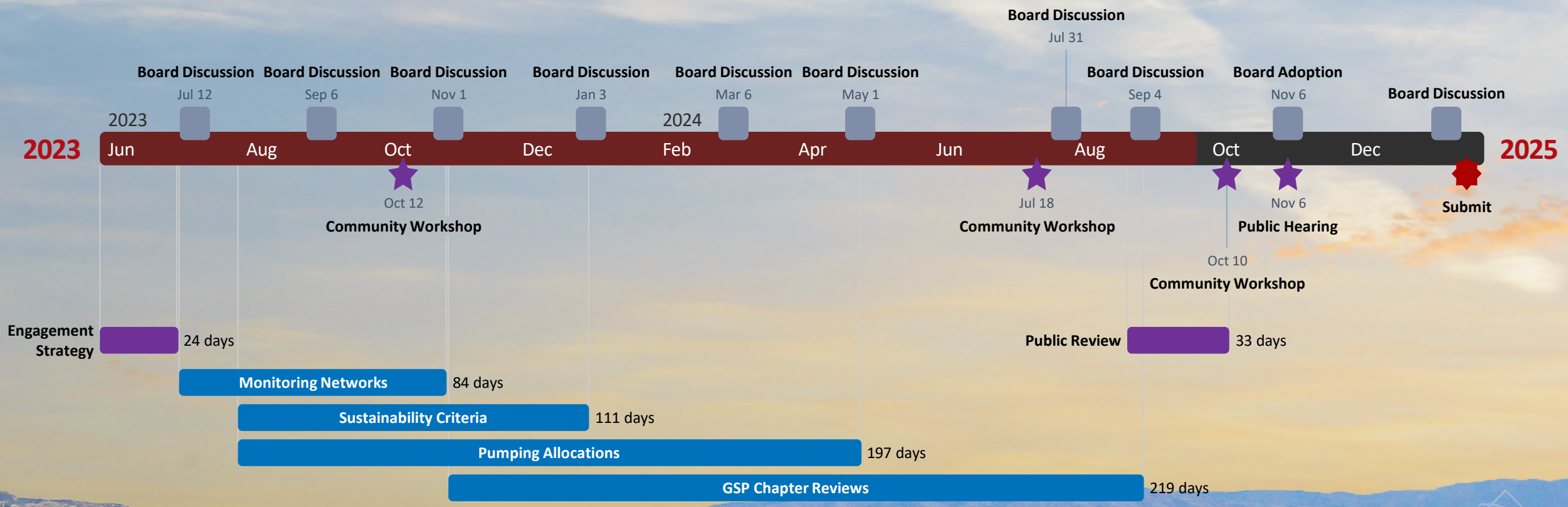
- Plans and manages groundwater in the basin
- Board – 11 members
  - Kern, San Luis Obispo, Santa Barbara, and Ventura counties (5 representatives)
  - Cuyama Basin Water District (5 representatives)
  - Cuyama Community Services District (1 representative)
- Standing Advisory Committee
  - 9 community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



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

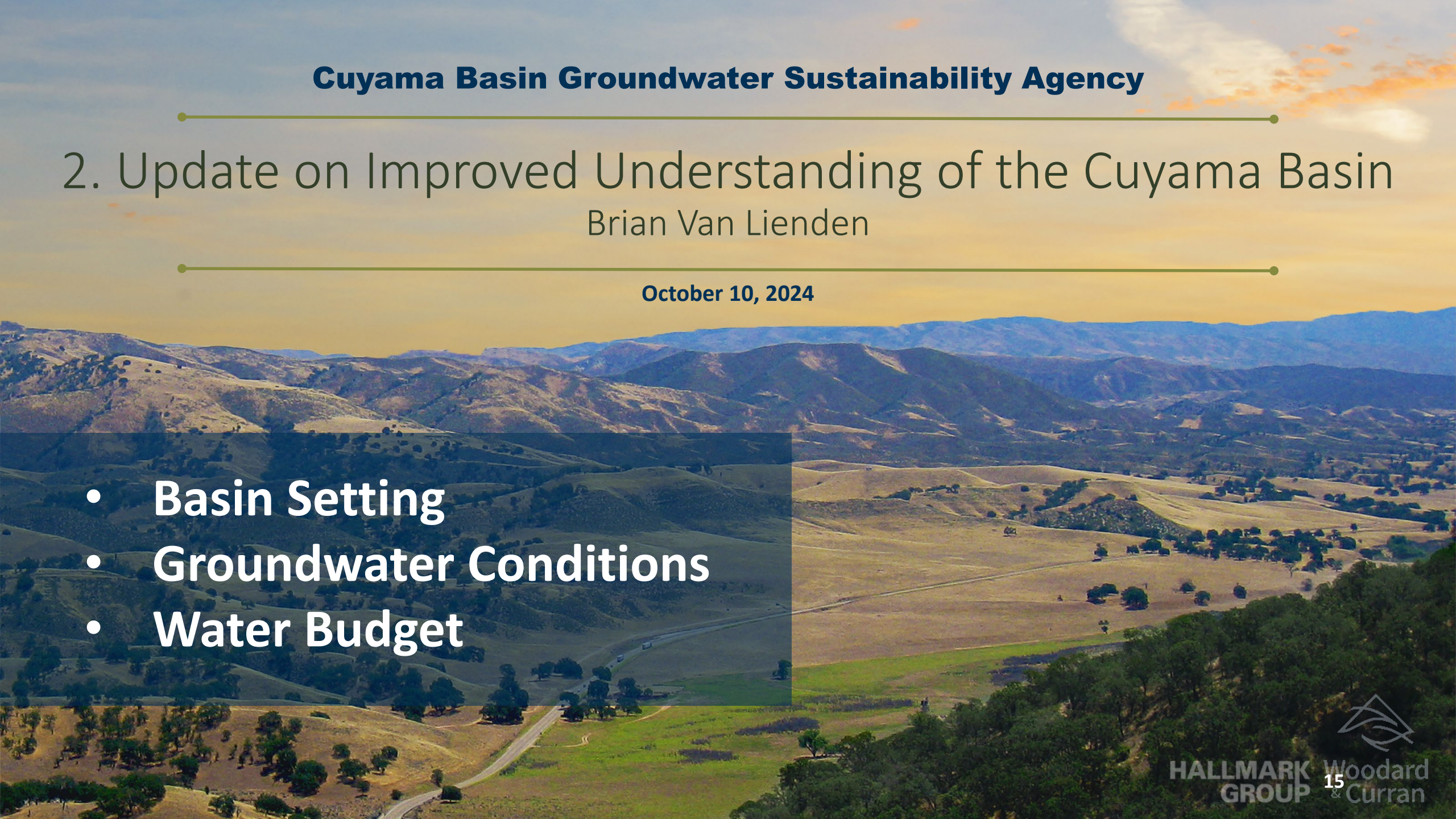


Cuyama Basin Groundwater Sustainability Agency

2. Update on Improved Understanding of the Cuyama Basin

Brian Van Lienden

October 10, 2024



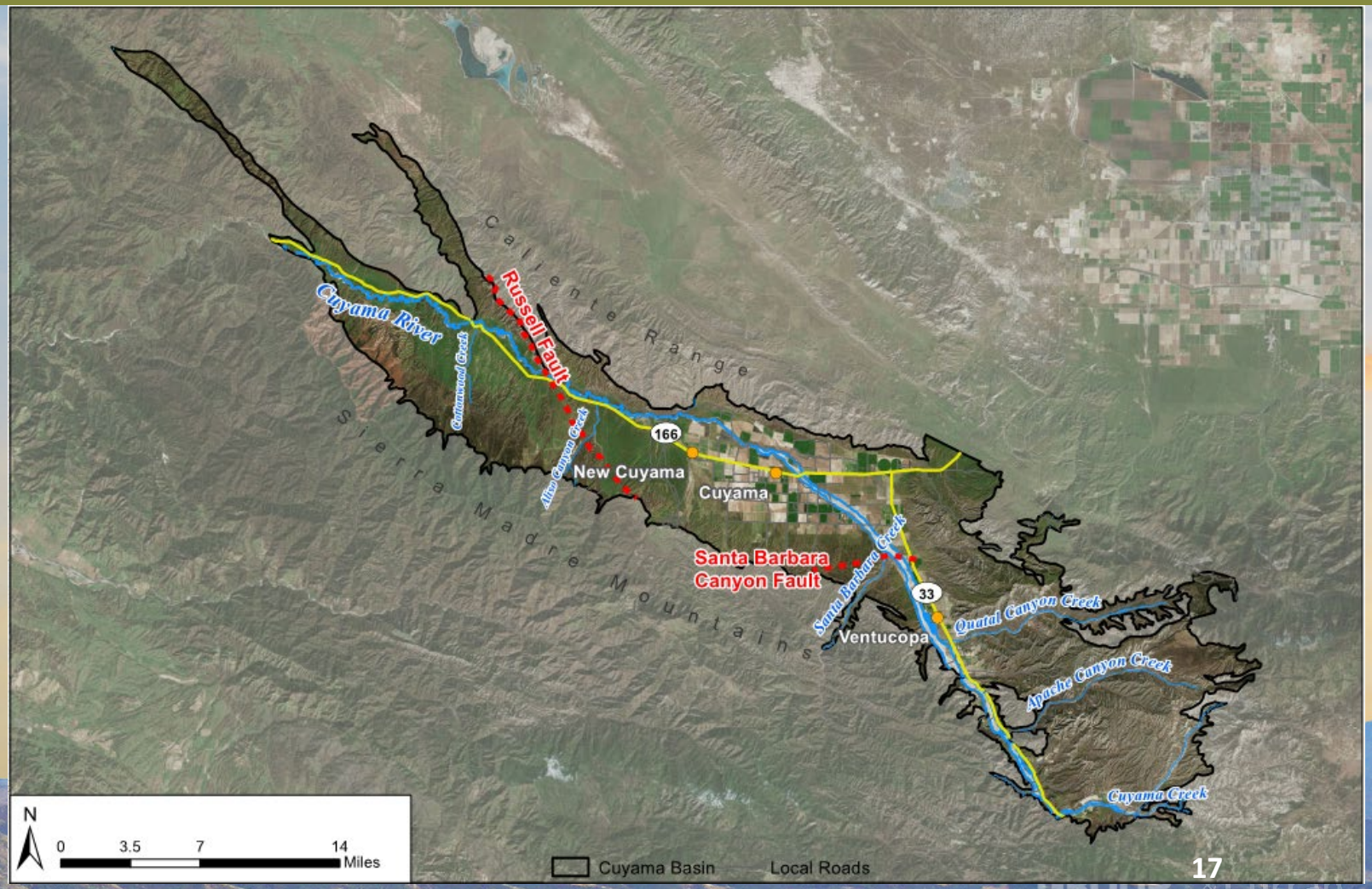
- Basin Setting
- Groundwater Conditions
- Water Budget

Activities and Investigations since 2020 GSP Improve Understanding of the Basin

- 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

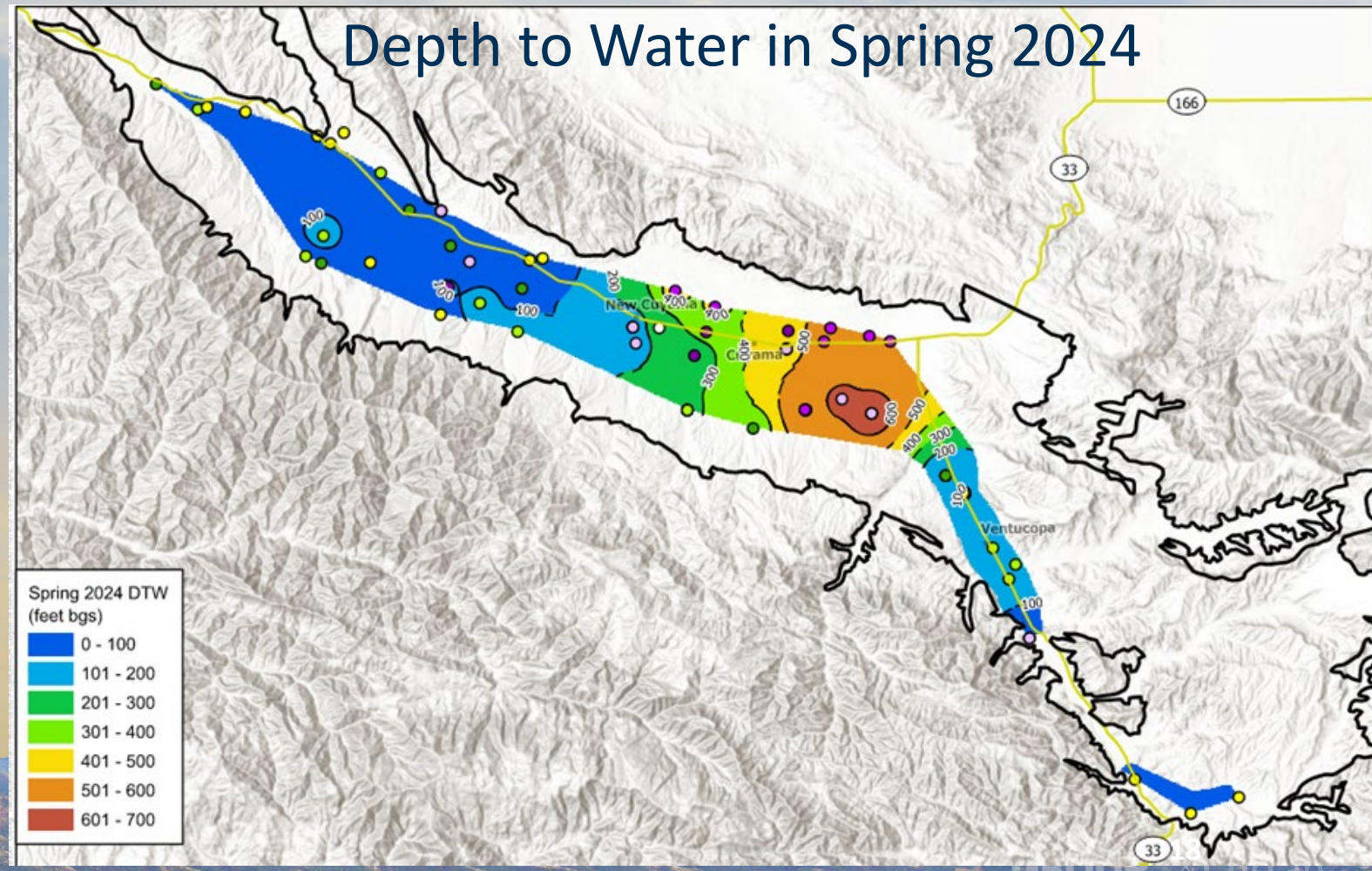
Basin Setting Describes Water and Geology

- Surface water and groundwater generally flow from the southeastern portion of Basin to the northwest
- The Basin contains several geologic faults that constrain groundwater flow, including:
  - Santa Barbara Canyon Fault
  - Russell Fault



Existing Groundwater Conditions Include Declining Groundwater Levels and Salinity Problems

- Groundwater Levels:
  - Declining for many years in Central portion of Basin
  - No significant change in other parts of Basin
- Groundwater Quality:
  - Historically high concentrations of total dissolved solids (TDS)
  - High concentrations of other constituents are generally localized and not wide-spread



The Groundwater Model has been Updated with New Data

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

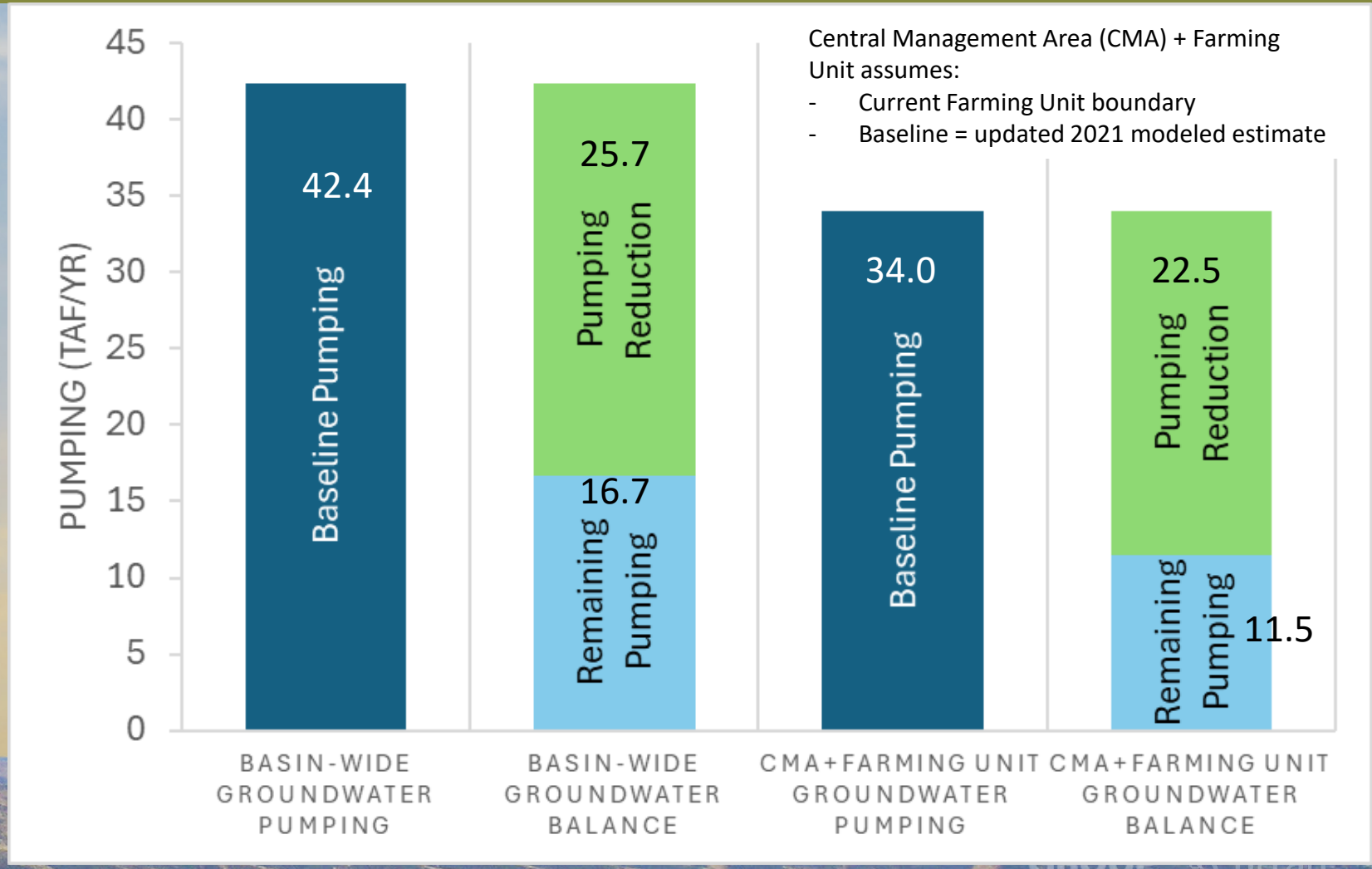
Updated Model Improves Understanding of Forecasted Groundwater Conditions

- Average annual overdraft updated from 25 TAF (thousand acre-feet) to 17.5 TAF

Component	2020 GSP Model Projected AF/Yr	Updated Model Projected AF/Yr
Inflow		
Deep Percolation	25,000	16,700
Stream Seepage	5,000	5,400
Subsurface Inflow	5,000	2,800
Total Inflow	*35,000*	24,900
Outflow		
Groundwater Pumping	60,000	42,400
Total Outflow	*60,000*	42,400
Groundwater Storage Deficit	**25,000**	**17,500**

Water Budgets Guide Basin Management to Achieve Balance and Avoid Undesirable Results

- Groundwater pumping reductions are needed to achieve sustainability
- Pumping reductions initiated in 2023 in Central Management Area (CMA)



Questions and Input

- SGMA background, basin conditions and water budget
  - Any clarifying questions regarding SGMA, basin conditions, and water budget?

- Comments and Suggestions
  - What comments and suggestions do you have to improve the GSP in these topics?

Cuyama Basin Groundwater Sustainability Agency

3. Update on Revised Sustainability Thresholds, Undesirable Results and Monitoring

Brian Van Lienden

October 10, 2024

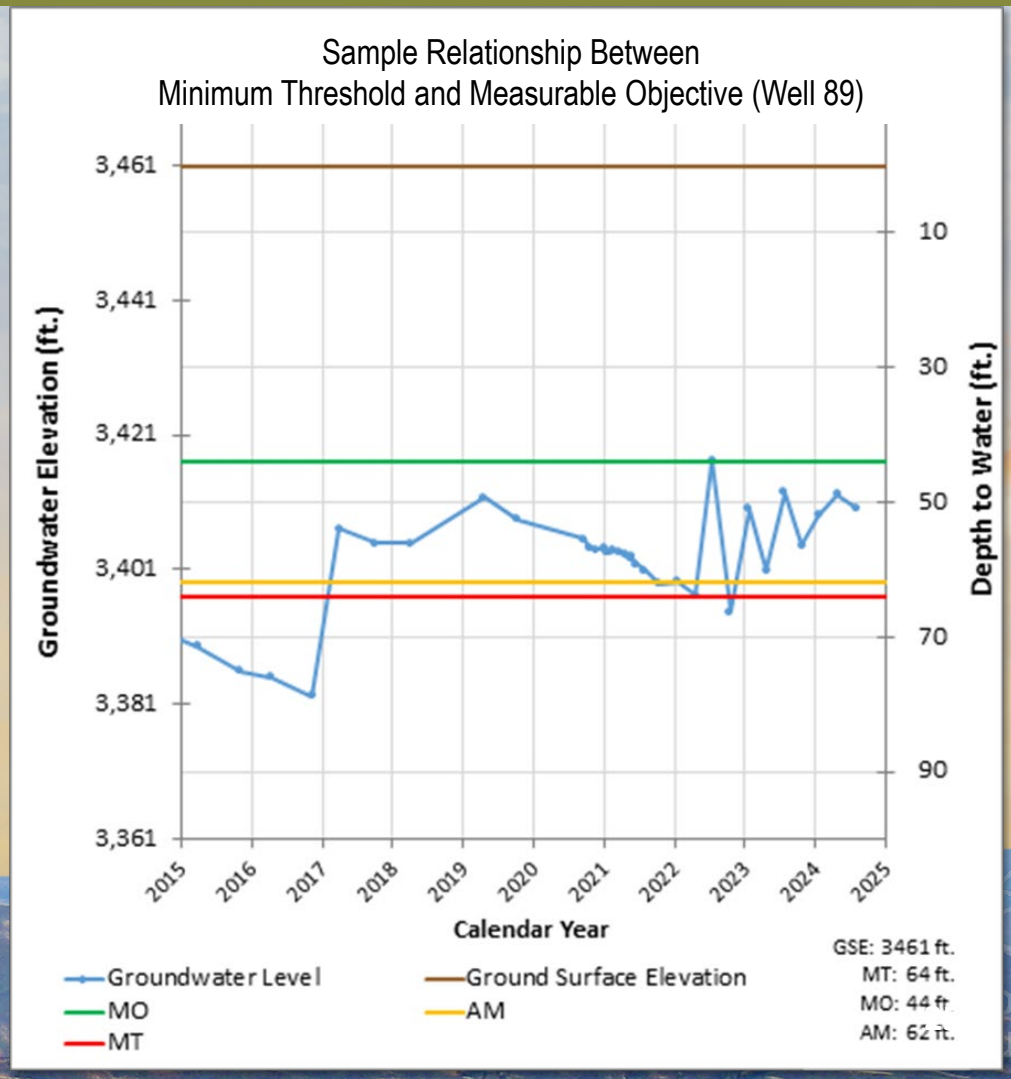
- Sustainable Management Criteria
- Undesirable Results
- Monitoring Networks
- Data Management System

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	Un-leveling of fields; damage to structures	Dry out Cuyama River earlier / more often	Higher salinity; nitrates in drinking water
Changes in 2025 GSP Update	Updated with new information	Remain as groundwater level proxy	No change	Deferred pending DWR guidance	No change

Minimum Thresholds and Measurable Objectives are Tools Used to Avoid Undesirable Results

- Minimum Threshold (MT)
  - The groundwater level below which undesirable results occur
- Measurable Objective (MO)
  - Quantifiable goals for maintaining or improving groundwater conditions
- MTs and MOs are defined for groundwater levels and quality at representative wells throughout the Cuyama Basin



Modified Approach for Defining Minimum Thresholds (MT) for Groundwater Levels

- Threshold regions eliminated, better data allows for consistent methodology
- Minimum thresholds apply to 47 Representative Monitoring Wells
- Where the saturated thickness is well-understood, MT defined as:
  - 15% of the total saturated depth of groundwater (2 wells)
- For the remaining wells, MT defined by identifying the shallowest depth from among:
  - A depth that protects nearby domestic and production wells
  - A depth that protects nearby Groundwater Dependent Ecosystems (GDEs)
  - The deeper of:
    - Deepest depth to water during 2013-2023 plus the greater of 10 feet or 5%
    - Model forecast of depth to water in 2040 for areas subject to allocation

Basin-wide Undesirable Results Definition Remains the Same as 2020

Undesirable Results occur when:

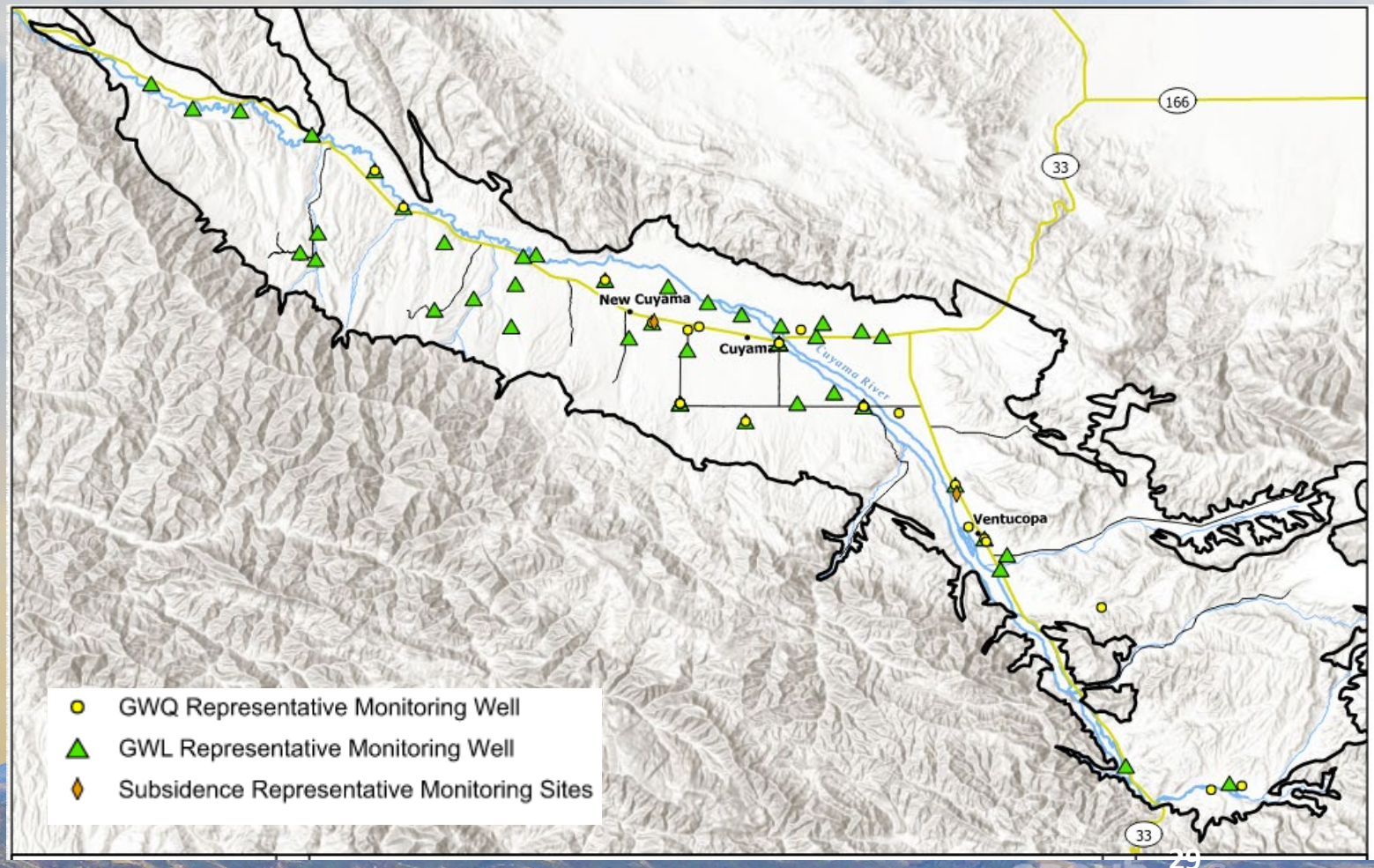
- For groundwater levels and groundwater storage:
  - 30% of representative monitoring wells (15 of 47) remain below Minimum Thresholds for 24 consecutive months
- For groundwater quality
  - 30% of representative monitoring wells (9 of 28) exceed Minimum Thresholds for 24 consecutive months
- For subsidence
  - 30% of representative monitoring sites (1 of 2) exceed Minimum Thresholds for 24 consecutive months (2 inches per year)

Current Status: No Indicators Exceed the Basin-wide Standards for Undesirable Results

Sustainability Indicators	Lowering GW Levels	Reduction of Storage	Land Subsidence	Surface Water Depletion	Degraded Water Quality
Total Sites	47 wells	47 wells	2 sites	Pending DWR guidance	28 wells
30% of Sites	15 wells	15 wells	1 site	Pending DWR guidance	9 wells
Current Status	3 wells exceed Minimum Threshold In 2024	3 wells exceed Minimum Threshold in 2024	No sites exceed Minimum Threshold	Pending DWR guidance	No wells exceed Minimum Threshold in 2023

Monitoring Networks Will Track Progress

- Groundwater Levels
  - 47 wells (green)
- Groundwater quality (TDS - Salinity)
  - 28 wells (yellow)
- Subsidence (Land Sinking)
  - 2 sites (orange)

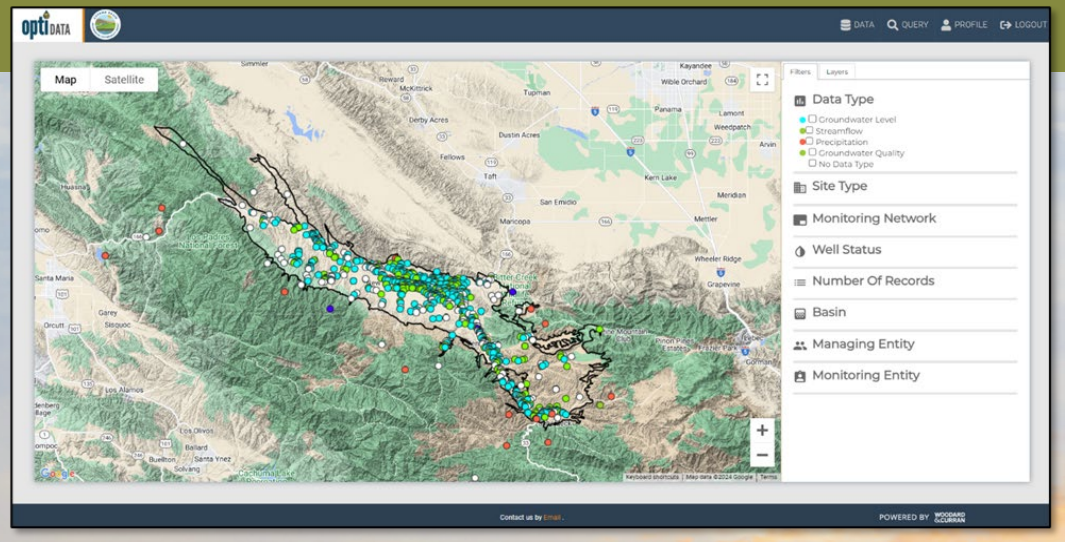


Data Management System Makes Data Available to All

- Web-based – Accessible to the public
  - https://opti.woodardcurran.com/cuyama/login.php

- Additional data is entered into the system as it is collected

Opti DMS Screenshot



Typical DMS Data Display

Questions and Input

- Sustainable Management Criteria, Undesirable Results, Monitoring Networks, and Data Management System
  - Any clarifying questions regarding thresholds, objectives, undesirable results, and monitoring networks?

- Comments and Suggestions
  - What comments and suggestions do you have to improve the GSP on these topics?

Cuyama Basin Groundwater Sustainability Agency

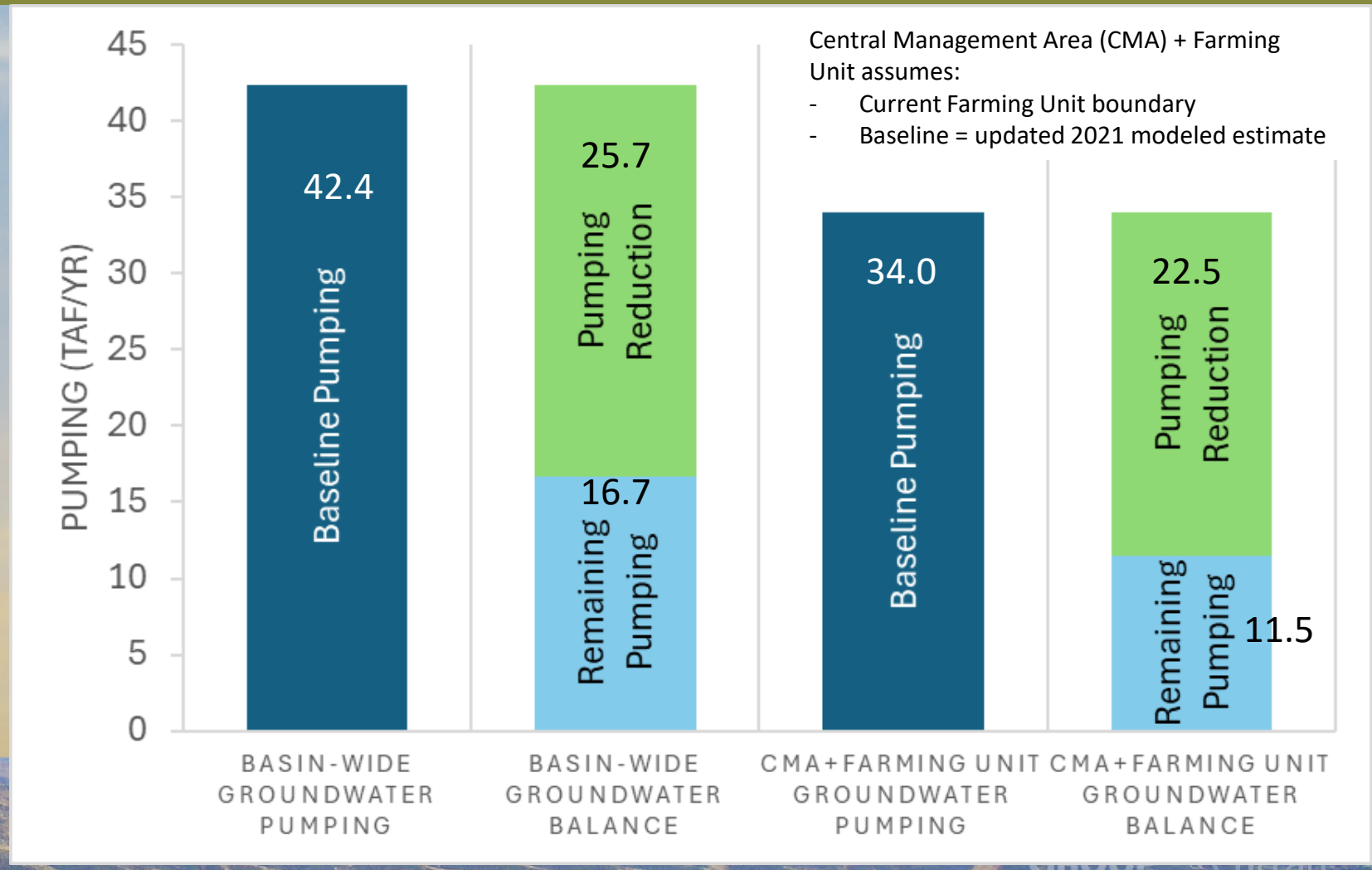
4. Update on Modified Projects and Management Actions to Achieve Sustainability

Brian Van Lienden

October 10, 2024

Project and Management Actions Are Necessary to Achieve Groundwater Balance

- Groundwater pumping reductions and/or water supply projects are needed to achieve sustainability
- Pumping reductions initiated in 2023 in Central Management Area (CMA)



Projects and Management Action Options

Projects and Management Actions Included in the 2020 GSP

1. Flood and Stormwater Capture – In Progress
2. Water Supply Transfers/Exchanges – Not Started
3. Precipitation Enhancement – In Progress
4. Improve Reliability of Water Supplies for Local Communities – In Progress
5. Basin-Wide Economic Analysis – Completed
6. Pumping Allocations in Central Management Area – In Progress
7. Adaptive Management – In Progress

New Projects Considered

7. Flow Meter Recalibration Program (Included)
8. Rangeland and Forest Management (Not Included)

Projects Summary

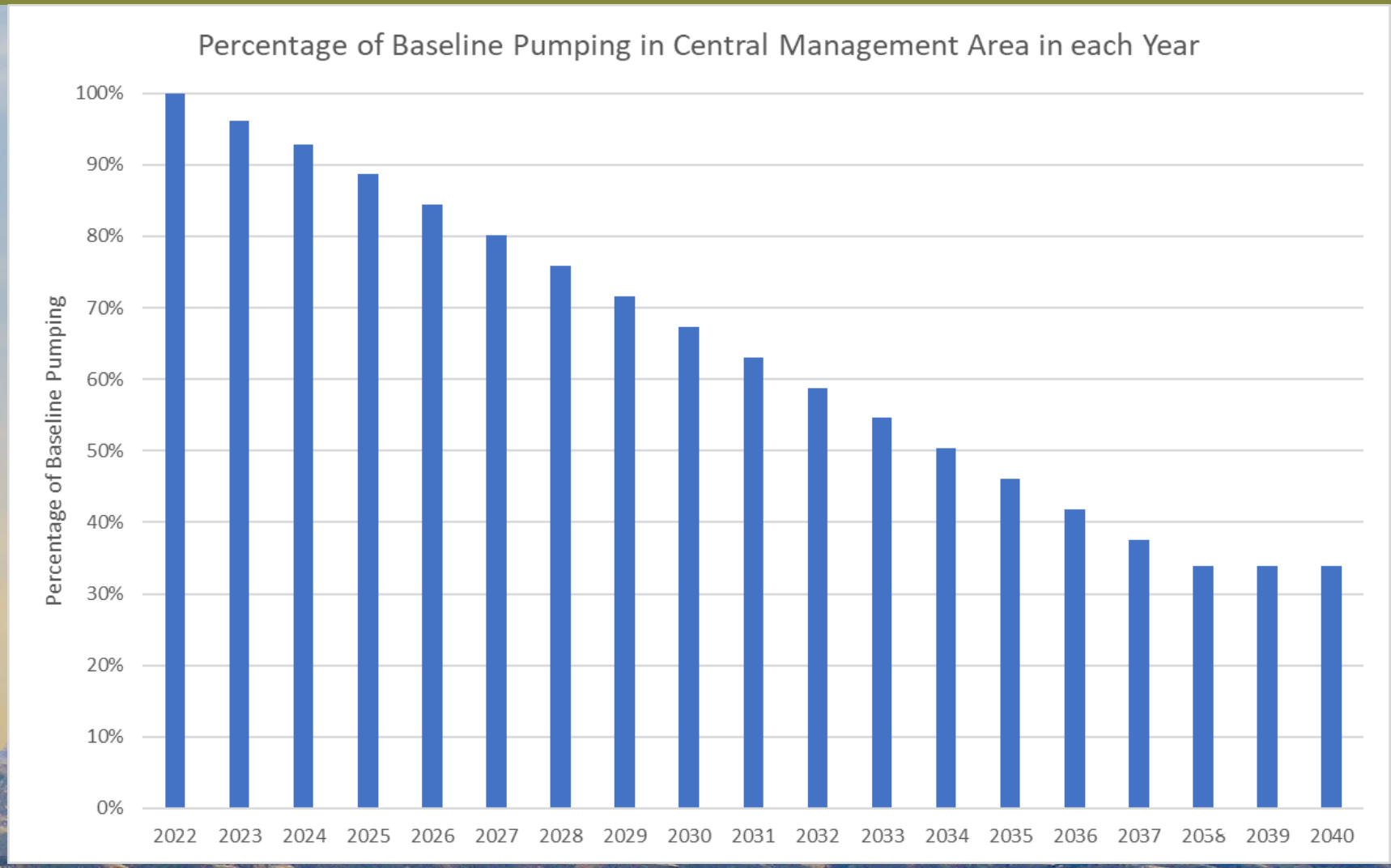
- ~26,000 AF of supply increase or demand reduction (pumping reductions) are needed to achieve sustainability
- Combined, the water supply projects could increase precipitation and groundwater recharge by approximately 1,500 to 5,500 AF per year
  - Pending further analysis of constraints and costs
  - Current analysis indicates that there are substantial constraints and potentially higher costs
- Pumping allocation program initiated in the Central Management Area for 2023 and 2024, and currently planning for 2025 and beyond
- Other projects would improve the accuracy of pumping information and support community water needs

Initial Groundwater Allocation Program Established for 2023 and 2024

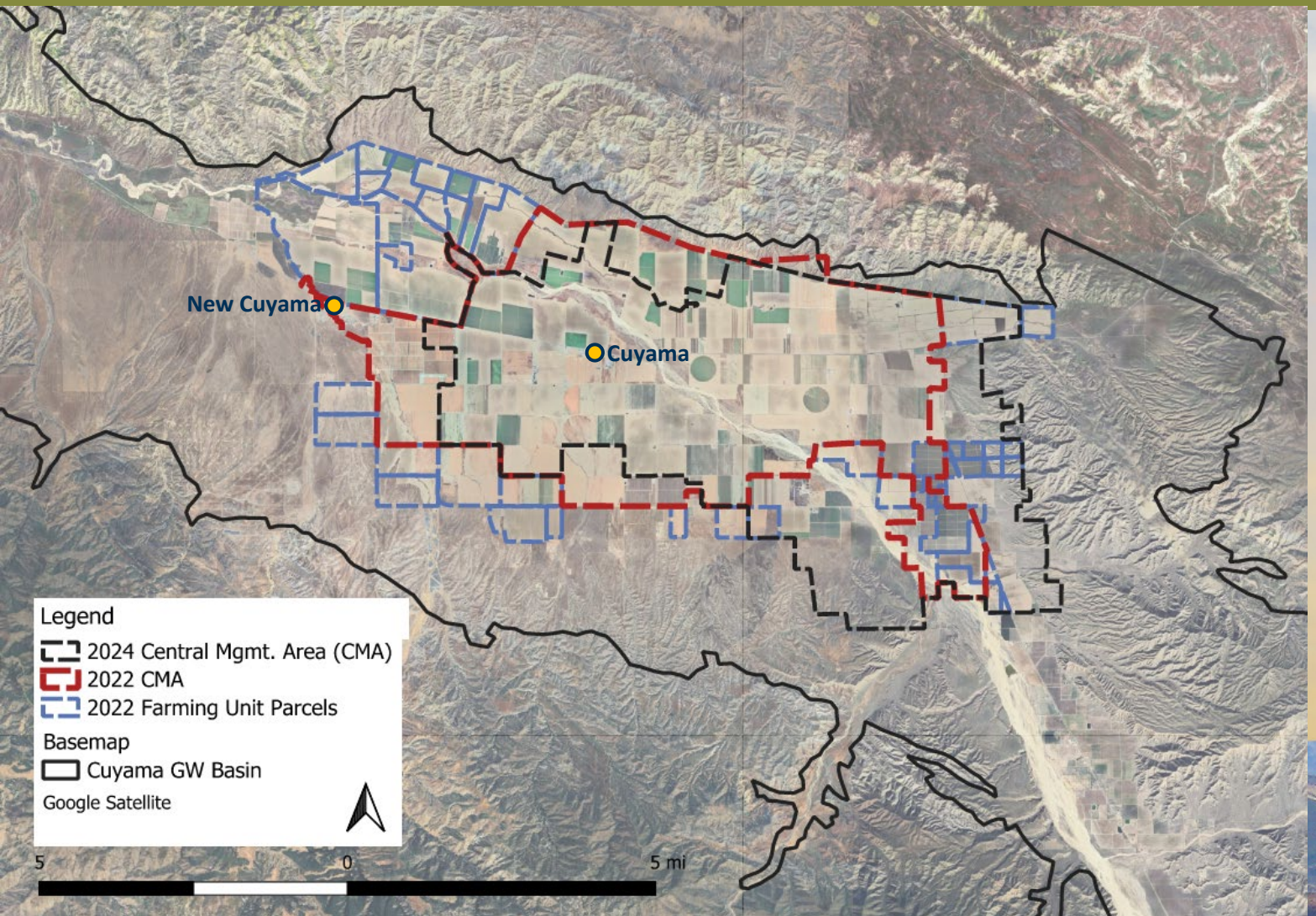
- Timeframe: Calendar years 2023 and 2024
- Geography: Central Management Area (CMA) + Farming Units
- Baseline Use + Type: 2021 modeled water use in the CMA, excluding CCSD metered use and residential pumping
- Sustainable Yield: Calculated by the model for the CMA – 11,500 AF/year
- Allocation Methodology: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

Planned Pumping Reduction of ~6.5%/year for Parcels in CMA and Farming Units

- Pumping reduction schedule (66% reduction by 2038)



Updated Central Management Area
Modeled Groundwater Level Decline over 50 Years



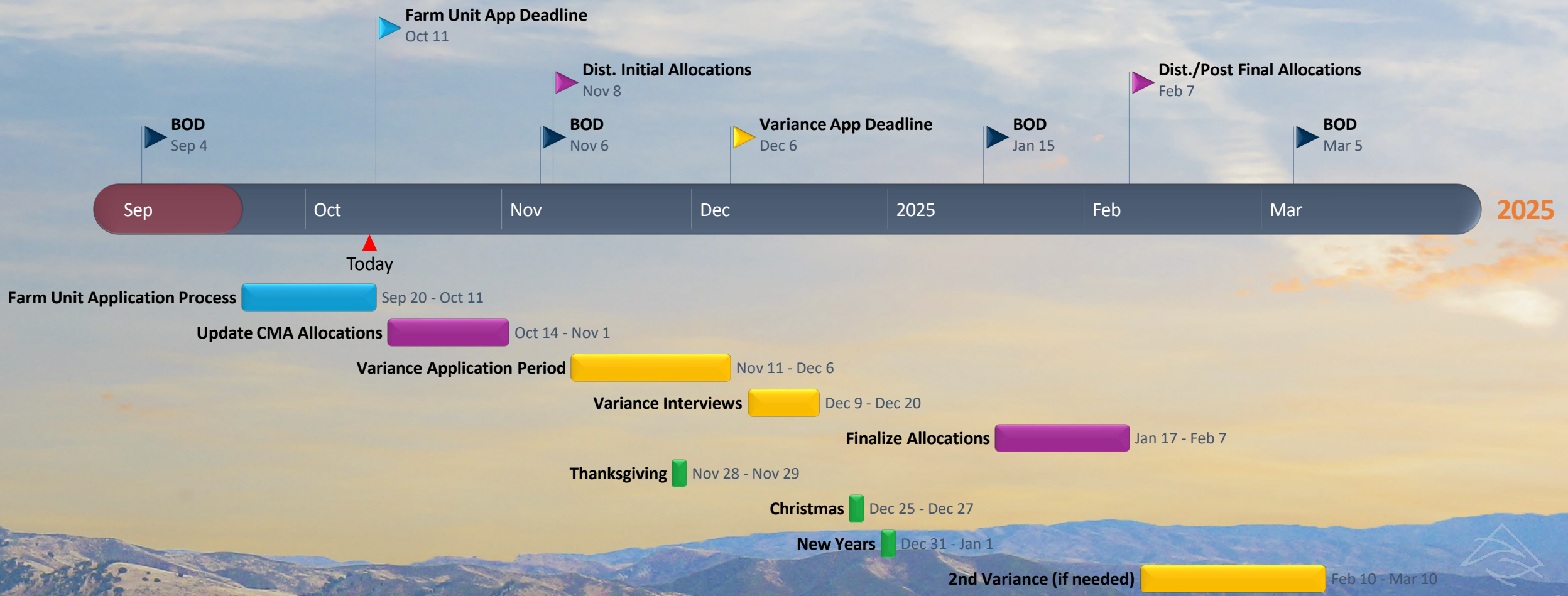
Central Management Area

- Average 2 ft./yr. decline in groundwater levels over projected 50-year period
- Operational boundary set along parcel lines
- Updated farming units (*in process*)

Total acreage within 2 ft./yr. contour:

- 2022: 22,500 acres
- 2024: 25,900 acres

Schedule for Development of 2025 Groundwater Allocations



Other Areas in the Cuyama Basin

- Develop a management plan for the Ventucopa Management Area identified in the GSP, which may or may not provide for pumping restrictions
  - Premature to develop an allocation program in this area
  - More data and modeling is needed

- Continue to collect technical data in the basin to evaluate potential expansion of groundwater allocations in the basin
  - Northwest area is generally in balance with Minimum Thresholds and Measurable Objectives
  - Continue monitoring

Implementation Plan Activities Over 15 Years, with 5-year Updates to the GSP

2025	2030	2035	2040
Project Implementation and GSP Evaluation/Update	**Project Implementation and GSP Evaluation/Update**	**Achieve Groundwater Basin Sustainability**	
• **GSA conducts 5-year evaluation/update** • Monitoring and reporting continues • Evaluate/refine thresholds and monitoring network • Refine water budget • Management Area administration • Ventucopa Area Management Plan • Pumping monitoring program continues • Continue implementation of pumping allocation program • Plan/design/construct projects* • Outreach continues	• **GSA conducts 5-year evaluation/update** • Monitoring and reporting continues • Evaluate/refine thresholds and monitoring network • Refine water budget • Management Area updates and administration • Pumping monitoring program continues • Continue implementation of pumping allocation program • Plan/design/construct projects* • Outreach continues	• **GSA conducts 5-year evaluation/update** • Monitoring and reporting continues • Evaluate/refine thresholds and monitoring network • Refine water budget • Management Area updates and administration • Pumping monitoring program continues • Pumping allocation program fully implemented • Project implementation completed* • Outreach continues	

***Pending project feasibility and future board direction**

Questions and Input

- Groundwater Pumping Allocations
  - What comments and suggestions do you have to improve the groundwater pumping allocation program?
- Other Projects and Management Actions
  - What comments or suggestions do you have to improve the projects and management actions included in the GSP?
- Any other comments and suggestions regarding the draft GSP update?

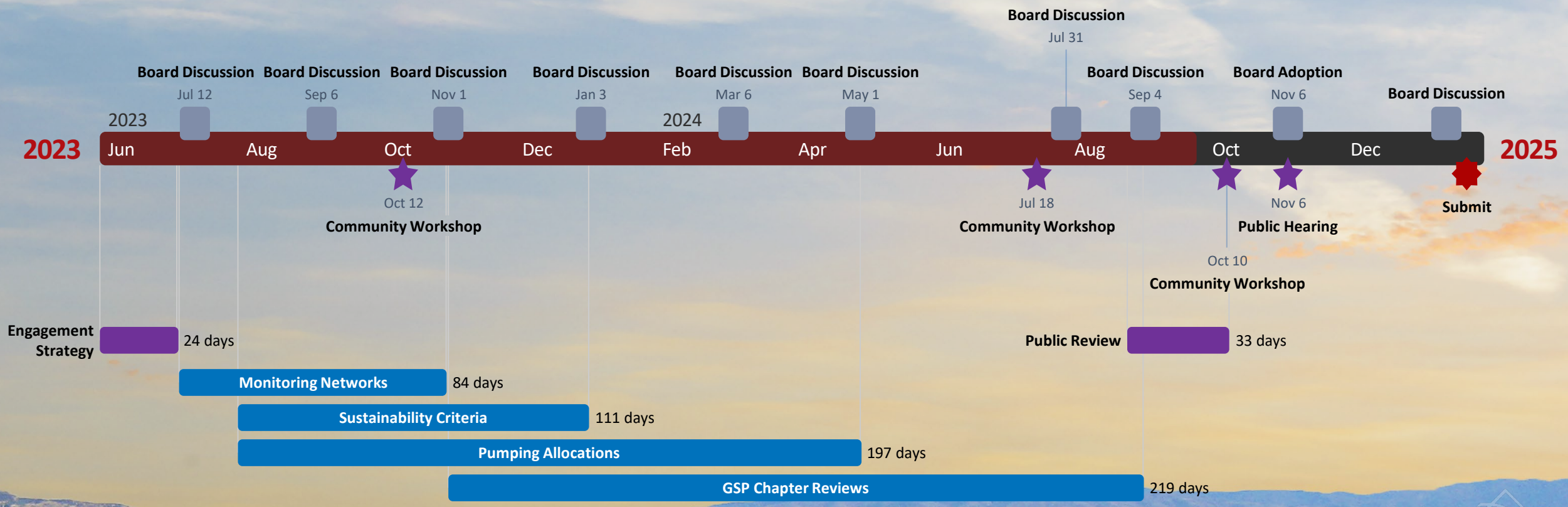
Cuyama Basin Groundwater Sustainability Agency

5. Next Steps

Charles Gardiner

October 10, 2024

GSP Update Timeline



Public Comment Process

- Board and SAC Meetings
  - SAC: October 31st
  - Board: November 6th
- Public Review Period: September through October 11th
- Public Comments on Draft GSP Update
  - In writing to CBGSA, 4900 California Ave, Tower B, 2nd Floor, Bakersfield, CA 93309
  - Via email to tblakslee@hgcpm.com
  - In writing and orally tonight
  - In writing and orally at the Public Hearing
- Board Hearing and Potential Adoption: November 6th at 4:30 p.m.
- Submit to DWR: January 2025

Thank You