

# Cuyama Basin Groundwater Sustainability Plan Public Workshops

## December 3, 2018

### Summary of Comments and Questions

January 6, 2019

## Overview

On December 3, 2018, Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board of Directors and the Standing Advisory Committee (SAC) hosted two community workshops at the New Cuyama High School, New Cuyama, CA. The workshops were noticed by email and U.S. Mail. (*See Appendix A: Workshop Notification*).

The workshop began at about 6:35 pm and concluded at approximately 8:30 pm. The English language workshop was attended by approximately 35 community members, farmers, ranchers, and landowners, not including CBGSA Board members, SAC members, county staff, and consultants. The Spanish language workshop was attended by four community members, two students and one professor from U.C. Santa Barbara.

Both workshops had two presentations and included time for discussion and questions and answers. The input gathered from the English and Spanish language workshops and three written comments received are summarized below.

Note that in the Spanish language workshop the Sustainability Thresholds were presented first, followed by the Numerical Model Update and Initial Water Budgets presentation. In the English language workshop, the Numerical Model Update and Initial Water Budgets were presented first, followed by the Sustainability Thresholds. This was done so specific technical staff from Woodard and Curran could be available in each workshop to answer questions.

## Presentation: Sustainability Thresholds

Workshop participants provided the following comments and questions.

### English Language Workshop

Comment: The Southeast Region (Option D) is influenced by impervious layers.

Comment: In the Southeast Region, the river bottom is the best place to measure and set thresholds.

Comment: The CBGSA Board should consider local input. In some regions, local users will want to be protective to avoid undesirable results; in other regions, users will want more operational flexibility.

Comment: The Cottonwood Canyon area wants to be more protective.

Question: How does the water budget relate to the minimum thresholds?

Answer: The water budget and minimum thresholds are not directly related. The water budget doesn't influence what is established as minimum thresholds. The water budget and numerical model are used to guide projects and management actions so that the Cuyama Basin will be sustainable within 20 years and be above the minimum thresholds.

Question: When in the water budget analysis are the topography of the Cuyama Basin and recharge areas considered?

Answer: The topography of the Cuyama Basin is considered in the water budget and numerical model, which considers the collection of surface water and infiltration to the groundwater. The identification of potential

recharge areas is a part of the development of projects and management actions to increase water supplies in the basin.

Question: When setting minimum thresholds, why allow further decline of the groundwater levels? How is that sustainability? If minimum thresholds are set below 2015 levels and allow further decline, then how do we get balance? Don't we have to get the water budget in balance?

Answer: The setting of minimum thresholds is designed so that, as a whole, the Cuyama Basin avoids undesirable results. Undesirable results adversely affect beneficial uses of groundwater – in some portions of the basins, groundwater levels can decline without the creation of further undesirable results, and the minimum thresholds reflect this.

Question: Are there actual undesirable results that can be related to the proposed minimum thresholds in the different threshold regions? What are we trying to prevent with the setting of the minimum thresholds? Have the undesirable results that are to be avoided been defined for each region?

Answer: Part of the rationale for setting minimum thresholds by regions within the basin is to indicate when a given threshold region might be approaching an undesirable result. Potential undesirable results have not been identified by region at this time. There are five undesirable results that apply in the Cuyama Basin as defined by SGMA: reduction of groundwater storage, land subsidence, chronic lowering of groundwater levels, depletions of interconnected surface water, degraded water quality). For more information on undesirable results visit the Undesirable Results Statements here: <http://cuyamabasin.org/assets/pdf/2018-07-20-CBGSP-Undesirable-Results-DRAFT.pdf>

Question: How connected is the groundwater between the threshold regions?

Answer: Groundwater flow varies among the threshold regions based on the geology, but generally, the groundwater is connected between the regions.

Question: Are additional monitoring wells planned?

Answer: Yes, a monitoring network will be established that will include new monitoring wells in areas that require additional data.

## Spanish Language Workshop

Question: Explain what you mean by “establish range of operation in the groundwater basin.”

Answer: On slide #30, “Why Minimum Thresholds” three reasons were given: Required by SGMA, establish range of operation in the groundwater basin, and protect other groundwater pumpers. The second reason “establish range of operation in the groundwater basin” is referring to setting a range of groundwater levels to allow for groundwater pumping through wet and dry periods.

Question: Did the technical team working on the model consult with other agencies and surrounding counties for data?

Answer: Yes, data was collected from several agencies including the California Department of Water Resources, U.S. Geological Survey, the counties of Kern, Santa Barbara, San Luis Obispo, and Ventura, and others.

Question: What do you mean when you say, “protect access to groundwater for the Cuyama Community Services District (CSD)?”

Answer: This is a good example of how minimum thresholds can help identify when an undesirable result might occur, such as dewatering the CSD well. The CSD access to groundwater should be protected as it is an existing groundwater user.

Question: When will there be a new well for the CSD?

Answer: A new CSD well will be evaluated as a possible project in the Groundwater Sustainability Plan (GSP). It will be up to the CBGSA Board to decide on the actions that protect groundwater users.

Question: Does the CBGSA submit the GSP and then find funding for projects and management actions such as a new well for the CSD?

Answer: Part of the evaluation of projects and management actions will be identifying potential funding sources for projects, including grants and/or local funding by the GSA and groundwater pumpers.

Question: Isn't it a contradiction to say that we can allow wells to be drilled deeper such as a new CSD well while working to achieve sustainability in the Cuyama Basin?

Answer: Interim period between 2020 to 2040, while projects actions are being implemented, it is possible that groundwater levels will continue to decline, which may warrant new wells to maintain access for groundwater pumpers.

Question: Do other GSPs have more or fewer monitoring wells than are available in the Cuyama Basin?

Answer: It varies. Each groundwater basin is developing their own monitoring wells and the right number to provide basin wide measurement of sustainability.

Question: How do you update the GSP every 5-years; what does that look like?

Answer: During the 5-year period, everything is monitored and assessed. The update is a chance to relook at conditions with new and better information, refine and update sustainability thresholds, check-in on how project and management actions are doing, and determine if new projects or actions are justified or needed.

Question: What is an example of a management action that is implemented, and then needs to be changed or modified during the 5-year GSP update process?

Answer: For example, new monitoring wells will be installed around the faults. During the 5-year update, it may be learned that more monitoring wells are needed to further understand the conditions. Another example would be where a recharge project was implemented with good results and a decision might be made to expand it.

Question: If a goal is to increase water supplies, how will that be done?

Answer: The team will be evaluating projects and actions, which is a topic for future workshops.

Question: As the GSP is updated every 5-years, will the actions get stricter to achieve sustainability by 2040?

Answer: The GSP contemplates phased implementation of projects and management actions as well as water allocations. The 5-year updates may show more projects and management actions are needed if progress toward sustainability by 2040 is not matching expectations.

Question: For the rationale that sets the minimum threshold at 2015, is the idea then that the well doesn't go below that level even without undesirable results?

Answer: This is still to be determined. The team will use rationales selected with input from the community, SAC and the CBGSA Board to develop specific minimum thresholds for each threshold region and interim milestones. In some cases, the interim milestones may go below 2015 levels with the goal of recovering by 2040.

### Written Comments Regarding Sustainability Thresholds

Comment: The minimum threshold needs to be set only slightly below 2015 levels so that we don't continue to be in overdraft.

Comment: We need to begin re-evaluating our water usage practices to conserve water. If after a year or two, this seems too draconian, we can adjust the minimum threshold to a more favorable level for the water user.

Comment: In 2015, the central region was already in serious overdraft.

Question: How do threshold regions or rationales relate to the existing 30% overdraft?

Answer: The rationales are intended to develop the minimum thresholds to monitor against undesirable results. The 30% represents the over-pumping across the entire basin. Projects and management actions will be developed to address the over-pumping.

Question: 20 thousand acre-feet (TAF) must be cut back, but how can that happen if we keep declining groundwater levels?

Answer: There will be a transition period between now and 2040, during this time there may be further lowering of groundwater levels, but the overall intent of the plan is to get the basin in balance by 2040 and beyond. Beyond 2040, inputs have to match the outputs.

Question: Groundwater levels must flatten completely to be sustainable; is that rationale correct?

Answer: Sustainability boils down to two things: inputs must match outputs and undesirable results must be avoided. The inputs must match the outputs on a long-term average, not each year, so there may still be fluctuations in groundwater levels.

There were no additional written comments received from the participants of the Spanish language workshop.

## Presentation: Numerical Model Update and Initial Water Budgets

Workshop attendees provided the following comments, observations, and questions.

### English Language Workshop

Question: What direction does groundwater flow?

Answer: Like surface water, groundwater movement in an unconfined aquifer is dictated by gravity – it flows downhill. Groundwater flows from areas of higher hydraulic head to areas of lower hydraulic head. In the Cuyama Basin, that is generally from the south to the north, and from the east to the west.

Question: How much water is an acre-foot?

Answer: An acre-foot of water is 43,560 cubic feet, or to 325,851 U.S. gallons, enough water to cover a football field with a foot of water.

Question: How does the model calculate deep percolation?

Answer: The model calculates deep percolation as the potential quantity of recharge to an aquifer. Recharge is the amount of water leaving the active root zone (deep percolation). Recharge is derived from precipitation, irrigation, evapotranspiration and soil hydraulic properties.

Question: How does the water budget change in different parts of the Cuyama Basin?

Answer: The water budget is developed for the entire Cuyama Basin.

Question: What is the total groundwater depletion in the Cuyama Basin over the past 20 years?

Answer: Since 1995, the total decline in basin storage is approximately 400,000 acre-feet.

Question: Was the age of the wells recorded?

Answer: The monitoring well data that was collected had a wide variation in its level of detail. Some wells had an installation date, and some did not.

Question: How does plugging of well screens affect groundwater level readings?

Answer: If a monitoring well's screens are plugged, it is less likely that measurements in the well will represent conditions near the well.

Question: Is the model developed enough to depict the size of storage or what is left in storage?

Answer: The total amount of storage in the basin is unknown because there is uncertainty about the depth of the groundwater basin throughout the whole area.

Question: How was evapotranspiration calculated by the model?

Answer: The model being used calculates the evapotranspiration based on the data provided by the Irrigation Training & Research Center at Cal Poly San Luis Obispo.

Question: How much water is nature using?

Answer: Native vegetation consumptive use is approximately 182,000 acre-feet per year out of a basin-wide total of about 223,000 acre-feet.

Question: How much water is left after native plants and agriculture?

Answer: Deep percolation to the groundwater is approximately 32,000 acre-feet per year, with 11,000 acre-feet per year is runoff.

Question: Have you forecasted full groundwater depletion?

Answer: No. The GSP is looking at how to get the basin back in balance, not how long it would take to use all the water in the basin.

Question: What about groundwater dependent ecosystems, are they taken into account in the model?

Answer: Groundwater dependent ecosystems are not represented directly in the model; instead their water consumption is lumped in with other native vegetation.

Question: What influences the groundwater ranges?

Answer: Location, geologic conditions, topography, precipitation, and several other factors.

Question: What about groundwater quality, is that factored in?

Answer: Salinity is being included in the GSP.

Question: Is climate change included in the model?

Answer: There will be projected hydrologic conditions under a climate change scenario provided by the Department of Water Resources.

### Spanish Language Workshop

Question: What does “reconstructed stream flows” mean? Isn’t it simply an estimate?

Answer: Streamflows leaving the Cuyama Basin are estimated using the reconstructed historical precipitation data.

Question: When looking at earlier studies conducted in the Cuyama Basin, how do they compare with the model and the resulting water budgets?

Answer: The results are not directly comparable because no previous model covered the entire Cuyama Basin.

Question: Will climate change be included in the model and when will it be included?

Answer: A projected hydrologic conditions simulation will be performed with under a climate change scenario provided by the Department of Water Resources.

Comment: For the future modeling, the assumption that everything stays the same for the 50-year period is an interesting one, it doesn’t seem right.

### Additional Written Comments Received

Question: If the model can calculate storage loss, how much is left, how close to empty are we?

Answer: The total amount of water stored in the basin is unknown due to uncertainties in the depth of the basin. The GSP is looking at how to get the basin back in balance, not how long it would take to use all the water in the basin.

Question: What science can show what happens to deep percolation when the vadose zone is 500 feet of empty, de-watered dry zone above the groundwater level but below the land use? Where in California has this ever been studied? What procedure can predict this? What certainty exists as to whether the deep percolation ever makes it back down to usable groundwater?

Answer: The lowering of groundwater levels at very high rates has significant impact on the recharge of deeper aquifers when a thick clay layer exists. As a result of lower pressures, the pore space between the clay particles get smaller and slow the vertical flow. Without such thick clay layers, the most significant impact is the delay in time for the recharge occurrence to reach saturated groundwater level rather than the volume.

Comment: One location not yet discussed is very similar to Cottonwood Canyon. The water level in New Cuyama’s well began to decline around the time that close neighbors put in a well very close to the New Cuyama CSD well.

## Appendix A – Workshop Notification

### Notification Timeline

1. **October 29:** The CBGSA Newsletter, edition 3, announcing the December 3 workshop was emailed to the Stakeholder list.
2. **November 10:** Cuyama Valley Recreation District newsletter, which included the CBGSA Newsletter was distributed to all post office boxes.
3. **November 2:** Postcards were mailed to 640+ parcel owners in the Cuyama Basin.
4. **November 5:** English and Spanish versions of the workshop notice electronically distributed to CBGSA email list, and to partners including Family Resource Center, Community Association, BlueSky, and the county contacts.
5. **November 5:** English and Spanish notices posted to the website.
6. **November 14:** SAC member Jake Furstenfeld agreed to post notices in the “finger” areas in Cuyama.
7. **November 5 to December 2:** Workshop notices distributed throughout the Cuyama Basin by the volunteers at the Cuyama Valley Family Resource Center.
8. **November 15:** San Luis Obispo County emailed the workshop notices to the County’s stakeholder list for the Cuyama Basin.
9. **November 26:** Reminder email distributed to stakeholders and partners.