



Cuyama Basin Groundwater Sustainability Agency

Cuyama Basin Groundwater Sustainability Newsletter

Edition 4, February/March 2019

Discussion of Management Actions and Projects Up Next

At our recent workshops in December 2018, we had a good turnout and great discussions with community members. We talked about groundwater modeling and the groundwater forecast for the future and discussed the importance of setting protective minimum thresholds for groundwater use in the Cuyama Basin. On pages 3 and 4, you will find some of the discussion and input that has informed the GSA Board in its decision-making.



Photo courtesy of Sunridge Nurseries

For the March 6, 2019 workshops, we are preparing for discussions about projects and management actions that can help the Cuyama Basin achieve groundwater sustainability. The technical team has started to evaluate options, such as capturing storm water flows for groundwater recharge.

Come hear more about the ideas under consideration and provide your feedback on these ideas at the next workshops (in English and Spanish).

Over the last year, the input into the development of the GSP by residents, business owners, farmers, and landowners has been indispensable. The conversations among all Cuyama Basin stakeholders and our technical team have been extremely helpful. We encourage everyone to stay involved. I look forward to seeing you at an upcoming meeting or workshop.

Jim Beck, Executive Director CBGSA, jbeck@hgcpm.com

Cuyama Basin Groundwater Sustainability Plan (GSP) Schedule Recap

2017 The Cuyama Basin Groundwater Sustainability Agency (CBGSA) was formed in response to California's Sustainable Groundwater Management Act (SGMA). The CBGSA is responsible for developing a Groundwater Sustainability Plan (GSP) for the Cuyama Basin.

2018 Portions of the draft GSP were completed with public, SAC and CBGSA Board input.

2019 March 6 - Community Workshops will discuss **Management Actions and Projects** to avoid undesirable results.

2019 Spring – draft GSP will be available for public review and comment.

2020 January 31 - GSP will be submitted to the California Department of Water Resources.

2020 to 2040 The GSP will be updated at least every five years between 2020 and 2040 to ensure that progress is being made toward bringing Cuyama Basin groundwater use into balance.

Message from Standing Advisory Committee Vice-Chair Kelly

In 2018, we covered a great deal of ground while working on the development of the Cuyama Basin GSP. Through monthly meetings and four community workshops, the SAC members have learned a lot.

This process of developing a GSP has been arduous and complex at times. All of the SAC members have rolled up their sleeves and worked hard to understand the needs and challenges, knowing that the GSP will be our guide for groundwater management for the next 20 years.

The next community workshops will be held on March 6, 2019. We will be learning about the possible projects and management actions to fill the gap we have between the groundwater that we use and the groundwater that we have. These will shape the future of our groundwater use.

I invite every resident, business owner, farmer, landowner, and interested party to continue to participate in the GSP development process. We all use groundwater and by participating in this process, you are participating in your future. Here's how you can get involved:

1. Attend a monthly meeting of the Board of Directors, 1st Wednesday of the month at 4 p.m.
2. Attend a monthly meeting of the Standing Advisory Committee, Thursday preceding the first Wednesday of the month at 4 p.m.
3. Attend one of the community workshops (in English and Spanish language) on **March 6, 2019**.
4. Send an email: tblakslee@hgcpm.com.
5. Write a letter: Cuyama Basin GSA, 4900 California Ave, Tower B, 2nd Floor, Bakersfield, CA 93309, or call during normal business hours, Monday - Friday, 8 am to 5 pm: (661) 477-3385.
6. Visit www.cuyamabasin.org to learn more.

The Board of Directors and Standing Advisory Committee meetings are held at the Cuyama Family Resource Center, 4689 CA-166, New Cuyama. Meetings are open to the public and public comments are welcomed. Agendas and meeting materials are available 72 hours before the meeting.

We hope to see you at the March 6 workshops!

Brenton Kelly, Vice-Chair, Standing Advisory Committee

Save the Date

March 6, 2019

Community Workshops (English and Spanish), **New Cuyama High School Cafeteria** (English) and **Library** (Spanish), **4500 CA-166**. Doors open at 6 p.m., 6:30 to 8:30 p.m. presentations and participant involvement. Refreshments will be available.

Topics for Discussion

Learn and ask questions about:

- 1. Projects and Management Actions** that will support the Cuyama Basin in achieving groundwater sustainability by 2040.
- 2. Implementation Plan** for reaching sustainability by 2040.

Recap of December 3 Workshops

On December 3, 2018, two community workshops (in English and Spanish) were held at the High School. Both workshops covered two topics: (1) Update on Cuyama Basin groundwater modeling and (2) Review of preliminary thresholds. You may review every workshop presentation and workshop summary here:

<http://cuyamabasin.org/get-involved.html#workshops>

Update on Groundwater Modeling

The technical team has developed an integrated numeric water resource model for the Cuyama Basin. The model was built using data from 1967 to 2017, including the following:

- Daily Rainfall
- Daily Streamflow Reconstruction
- Geologic & Hydrogeologic Characterization
- Land Use & Cropping Patterns
- Soil Conditions
- Population & Domestic Water Use
- Groundwater Wells
- Irrigation Practices

The model was used to develop three **water budgets** for the Cuyama Basin:

1. Historical conditions – hydrology, land use, and population for 1995-2015.
2. Current conditions – current land use and population for 2017 and historic hydrology for 1967 to 2017.
3. Future conditions – forecasts 2040 and beyond using the same land use and population as the current conditions, and the 1967 to 2017 historic hydrology with and without climate change factored in.

The water budget confirms that the demand for groundwater is greater than available groundwater supplies.

Given that this gap exists, the next step is to develop management actions and projects that can bring the water budget for future conditions into balance. There are two general approaches that can be used in combination: (1) increase water supplies through projects such as capturing storm water and flood water or importing or exchanging water supplies, and (2) implement demand reduction strategies. Learn more about the recommended projects and management actions at the March 6, 2019 community workshops (see details on page 2).

The Model and Water Budgets

The numeric model is a computer model based on available data, including well construction, groundwater levels, land use, cropping patterns, historical pumping, precipitation, river and stream flows, and more. First the model is calibrated (verified) using historical data for the period of 1995 to 2015 to ensure that it can accurately represent groundwater conditions over time. Then the model is used to estimate historical, current, and future water budgets. A water budget estimates how much groundwater is available and how much groundwater is used. The model is a critical tool for understanding and forecasting groundwater conditions and will be used to help evaluate projects and management actions that could improve groundwater conditions, reduce overdraft, and improve groundwater sustainability.

The following are some of the questions and answers following the presentation on groundwater modeling.

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: How much water is an acre-foot?

Answer: An acre-foot of water is 325,851 gallons (43,560 cubic feet) and can cover a football field with a foot of water.

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

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

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: Is climate change included in the model?

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

Review of Preliminary Thresholds

This presentation focused on an explanation of the preliminary minimum threshold rationales developed for the six threshold regions identified in the Cuyama Basin.

The setting of minimum thresholds (1) is required by SGMA, (2) establishes a range of operation in the groundwater basin, and (3) protects other groundwater pumpers. The second item refers to setting a range of groundwater levels to allow for groundwater pumping through wet and dry periods. The third item ensures that adjacent pumpers have access to groundwater.

The minimum threshold is the lowest acceptable level for each sustainability indicator without causing significant and unreasonable undesirable results. It is the lowest the basin can go at a given monitoring point without triggering a significant and unreasonable result. Minimum thresholds are set at each monitoring point on the monitoring network to track and report groundwater levels over time.

The technical team presented the six threshold regions identified in the Cuyama Basin and the threshold rationales under consideration for each region. At the December 18, 2018 CBGSA Board meeting, threshold rationales for each region were adopted so the technical team could then develop individual threshold values for each representative monitoring well. The threshold values were presented and approved at the January 8 SAC meeting and January 9 CBGSA Board meeting.

The following are some of the questions and answers following the presentation on minimum thresholds.

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 remain above the minimum thresholds.

Question: When setting minimum thresholds, why allow further decline of the groundwater levels? If minimum thresholds are set below 2015 levels and allow further decline, then how do we get 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 basin, groundwater levels can decline without causing 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 Cuyama 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.

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

Answer: This is a good example of how minimum

thresholds can help identify when an undesirable result might occur, such as dewatering the CCSD well. The CCSD's access to groundwater should be protected as it is an existing groundwater user.

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

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 GSP is to avoid undesirable results. A key way to do this is to manage to the sustainable yield for the Cuyama Basin.

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

Answer: Sustainability boils down to avoiding undesirable results. The goal is to manage the groundwater levels to stay above the minimum thresholds and make progress towards the measurable objectives. Groundwater levels will be managed on a long-term average, not each year, so there will be fluctuations in groundwater levels.

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

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

Question: Does the water budget analysis consider the topography of the Cuyama Basin and potential recharge areas?

Answer: The topography of the Cuyama Basin is considered in the water budget and in the 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.

A complete summary of each workshop is available under "Get Involved" at www.cuyamabasin.org