

Summary of Comments and Questions

Cuyama Basin Groundwater Sustainability Public Workshops

September 5, 2018, New Cuyama, CA

Background

On September 5, 2018, Cuyama Basin Groundwater Sustainability Agency Board of Directors and the Standing Advisory Committee hosted two community workshops at the Cuyama Recreation District facility in New Cuyama, CA. The workshops were noticed through a number of methods. (*See Attachment 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 30 community members, farmers, ranchers, and landowners, not including CBGSA Board members, SAC members, county staff, and consultants. The Spanish language workshop was attended by five community members.

Both of the workshops had three presentations that include time for discussion and questions and answers. The input gathered from the English and Spanish language workshops and seven written comments are summarized below.

Workshops Presentation #1: Modeling Cuyama Basin Groundwater Conditions

Following a presentation on modeling Cuyama Basin groundwater conditions, workshop attendees provided the following comments, observations, and questions.

Participant Comments and Questions Received – English Language Workshop

1. Question: Explain primary and secondary axes and what are the Average Annual Volume numbers on slide 26, Groundwater Budget: Basin-Wide. Answer: The left axis shows the groundwater gains (e.g., recharge) and losses (e.g., pumping) each year. The right axis depicts the cumulative change in groundwater storage, as shown with the black line on the graph. The average annual volumes are the estimated average annual gains or losses from the groundwater basin, as calculated by the model.
2. Comment: The numbers shown as model results today are not calibrated. The community should not assume the numbers fully depict the historical conditions or trends. Answer: Yes, the model is not yet fully calibrated; the numbers are preliminary and are likely to change.
3. Question: When mentioning domestic use, the population you used was in the thousands? Answer: No, the estimated population for the Community Services District is approximately 800. This estimate will be updated with new information when available.
4. Comment: The point is there is a downward trend in groundwater storage, and the point is to figure out how to get it not to go down. It looks like we are down 200 feet, but the water budget graph makes it look like there is the same amount of water coming in as is going. Answer: The annual water budget is balanced on the graph by the amount of change in water storage (purple). Most years, there is a decline in water storage.
5. Question: What is the definition of “developed land?” Answer: Anything with agricultural and urban use on it.

6. Question: Why is evapotranspiration the only thing used to estimate pumping demand and not direct evaporation from spray irrigation or ponded water? Answer: Evapotranspiration includes estimates for direct evaporation.
7. Question: Is there a way to measure/monitor deep percolation? Answer: There is no easy way to measure that.
8. Question: On most of the graphs on slide 28, the actual groundwater levels look like they are deeper than what the model has estimated. Answer: Yes, the model still needs to be calibrated to develop closer alignment between modeled results and actual measurements. The team is working in the next several months to understand local irrigation practices better and calibrate the model.
9. Question: There may be different depths of screens in wells that could affect the well depth monitoring that the model has not captured. How hard is it to go back in and add layers for well? Answer: If we have data on it, then it can be added, but we do not want to break up existing layers into sub layers just to “brute force” the model.
10. Question: How is the pumping value calculated when the pumps do not have meters on them? Answer: We estimate the pumping demand based on domestic and agricultural users, and calculate pumping amounts based on those needs.
11. Question: Plants need water in the ground and there is water above ground, puddling, etc. How is this water considered in the model calculations? Answer: We capture the total irrigation water demand through the evapotranspiration calculations which direct evaporation is a part of.
12. Question: How is climate change incorporated into this model? Answer: The team will include one or more scenarios that estimate the future changes resulting from climate change (e.g., changing rainfall patterns, increased irrigation demand).
13. Does the model take into account the changes in the basin as it narrows? It may be more than the model currently covers. Answer: We have implemented what the USGS implemented in their model for the shape of the basin, based on well logs (water and oil) and satellite data.
14. Comment: Recently the Government proposed selling leases for oil drilling (federal land in the foothills). Oil operations could use additional groundwater, particularly if fracking is involved. How would that be considered? Answer: Future water demands on the Cuyama Basin can be considered. We can look into how likely additional pumping from the Cuyama Basin would be.
15. Question: Is 90% irrigation efficiency realistic? Answer: Irrigation efficiency is based on evapotranspiration and not on other irrigation practices. The team will further clarify these calculations.
16. Question: How do subsidence and the loss of storage due to subsidence fit into the model? Answer: There are not simple, cost-effective ways to model subsidence. Subsidence and the potential loss of storage will be discussed and addressed in the GSP.
17. Question: How do you estimate and calibrate surface water flows if there are no good surface water gauges in the basin. Answer: The land surface component of the model simulates surface water flows based on available precipitation, soil and land use datasets. Then we compare the results with the available stream flow observations to make adjustments.
18. Question: Did the USGS study include surface flow in their model? Answer: USGS has limited information about surface flows, which the team is reviewing and comparing.
19. Comment: We would like to see how surface runoff is calculated and understand that a lot better. Specifically, about runoff of applied water.

20. Comment: It would be good to see the general trend of the basin groundwater depth.
21. Question: How are you looking at groundwater dependent ecosystems and all the wildlife that depends on that. Answer: We have a biologist who is reviewing and checking available data regarding groundwater dependent ecosystems in the basin. The team will prepare a memo summarizing the findings.
22. Comment: The model will be a working tool that is not 100% right and will be continued to be developed.
23. Question: How does the model take into consideration how some wells have declined and others have remained fairly stable? Answer: The model calculates water budget and elevation levels for each cell in the model based on the conditions in that cell. The calibration effort is getting the calculations to replicate real world measurement.
24. Question: With so many factors calculated in the model, it is important to understand the level of certainty that underlies the factors and model results. Can that uncertainty be quantified? Answer: The GSP will include a discussion of uncertainty and recommendations for reducing uncertainty in the future.

Participant Comments and Questions - Spanish Language Workshop

1. Comment: It doesn't rain or snow much in the region.
2. Comment: Some of the wells shown are most likely abandoned oil wells. One of the stakeholder's parents worked there in the past.
3. Comment: Though water usage is low in November and December, the bills remain just as high as those received in June and July. Residents are not sure of the bill structure and would like to know more about the fixed costs.
4. Comment: Farmers proposed solutions to capture water, including installing rainwater harvesters and building more dams.
5. Comment: All assumptions used for the model seem right with respect to land use and water budget.
6. Comment: Empty farmlands are bad for public health and require additional dust control.
7. Comment: There are fewer workers coming in this year because there is less land in production.
8. Comment: Since the drought, less alfalfa has been grown in the region. Less alfalfa means less job opportunities and fewer workers.
9. Comment: Residents have noticed that fewer residents in the region leads to higher water bills. A lot of workers left during the drought, and those that remained noticed increased bill rates.

Written Comments Received – Modeling

Written comments received pertaining to the modeling presentation and discussion are included below. The comment form provided to attendees posed the following questions: *“Do you have any additional questions or clarifications about the water model information you heard tonight? Was the presentation clear to you? What more would you like to know?”*

1. The presenter asked for information about the causes for the Cuyama Community Services District (CCSD) groundwater levels to drop after 2011 – the commenter noted that this was the year that Duncan Family Farms started farming irrigated land near the CCSD well – could there be a correlation?

2. I'd like to know the implications of water being removed from the older alluvium (beneath the aquitard) and being put into the newer alluvium (above the aquitard)? It is called "deep percolation" in the model but it clearly different/distinct from that water not being pumped and remaining in the deep alluvium. In addition, how does the pumping in one area affect others (cone of depression)? Does the heavy agricultural pumping make domestic wells have to be deeper? Who should bear these consequences if this occurs?
3. Excellent work, very understandable. Cuyama Community Services District had two wells. One went out of service a couple of years ago. I am wondering if your model is using numbers from two different wells? Regarding oil development on BLM lands on the eastern side at west end of Cuyama Basin – fracking is very unlikely. We do not need to address until permits are issued and drilling begins.
4. What sustainable options are you exploring? How can the options you are currently presenting be viable? You are addressing a model for "sustainability" by proposing a pipeline? How does that make sense?
5. The data needs to be clarified better. The bar charts are unclear with the slides. Also, in the previous workshop, geology and faults were a large topic. This was not discussed with the preliminary drafts and how those faults may affect the groundwater recovery and storage. The geologist was not entirely certain in the previous workshop so there are many assumptions that the drafts and data presented are assuming. Simulated flows into the river are not actual, especially if faults might cause a different flow. Are there underground river flows (data) available?

Workshop Presentation #2: Management Actions and Projects

Following a presentation on potential management actions and projects for the Cuyama Basin, workshop attendees provided the following comments, observations, and questions.

Participant Comments and Questions – English Language Workshop

6. Comment: Have you thought about the little canyons on the south side of the valley that flood during major rain events and have significant erosion issues? Maybe retaining structures in those creeks to break the velocity of the flows during those events and increase recharge. Also, storm flows take out a lot of bushes, which are important for retaining rainfall.
7. Comment: Use forest management practices to increase groundwater supplies. There isn't much of a demand for native vegetation, which takes a lot of water.
8. Question: Are cattle positive or negative in terms of water use? Can they be used to manage vegetation in rangeland?
9. Comment: There needs to be a way to use technology to figure out how to address these water issues and figure out what may work without spending a lot of money.
10. Comment: Look at technologies for improving the efficiency of agricultural water use and financing to support options. Using today's technology, distribution efficiencies should be much higher, and thus could move the glide path up a notch or two.
11. Question: How do we evaluate the sustainability of whatever project(s) we consider when some options may draw water from other basins? Answer: The options considered should help sustain the Cuyama Basin; the Board and Standing Advisory Committee may consider many factors in evaluating options.
12. Comment: Self-sustainability of the Cuyama Valley should be the first main focus instead of hauling water into the basin. Technologies should be the way to go. Focus on updating farms that may not be

efficient enough. Self-sustainability should be the first focus using technologies to improve irrigation efficiencies.

13. Comment: Talk to locals about efficiencies. Irrigation efficiency is part of the solution, but the actual definition of it should be clearer. A lot of water goes right back into the ground if you overwater. You lose some to evaporation, but most of the water is not being lost, its going back into the groundwater system.
14. Comment: Irrigation efficiencies can be improved, improve irrigation systems.
15. Question: Do the projects need to be suggested now? And implemented by 2020? Or do they get implemented later? Answer: The plan will include an evaluation of potential actions and an implementation plan for the most viable approaches. The actions and projects do not have to be implemented by 2020.
16. Question: Are we trying to reach 2015 levels? Or are we leveling off whenever we level off in 2040? Answer: There is no mandate to meet 2015 levels. The thresholds and objectives will define what the actions and projects need to achieve.
17. Question: Given that we are in critical overdraft, have we been in contact with DWR? They implied that levels could not change from now. Answer: The basin is not required to return to 2015 groundwater levels. The requirement is that the basin achieve sustainability, which the GSP will define for this basin.
18. Question: Explain the glidepath. How is it used, and is this just to help predict the future? Answer: The glidepath is included to establish a predictable plan for how and when the basin might achieve more sustainable conditions.
19. Question: Is there a way when considering purchasing water to evaluate how demands and supplies and price may change over time? Can you account for price changes over a 20-year purchase plan? Answer: The evaluation will estimate costs for the actions and projects considered.
20. Question: How would funds would be raised to buy that water? Answer: The GSP implementation plan will also describe how actions and projects will be funded.
21. Comment: Plant crops that use less water, e.g., perennial plants.
22. Comment: In five years, we will review the GSP, figure out what we did wrong, and figure out how to mitigate and fix it.
23. Comment: Range management might be the only option because any other activity may result in litigation about water use changes from users downstream.
24. Contact the Center for Irrigation Technology for information to evaluate irrigation efficiency actions.
25. The Santa Barbara County Range Improvement Association is developing actions to improve land management.
26. Question: What can be learned from other GSAs? Answer: The team is reviewing ideas being considered by other GSAs.

Comments Received – Spanish Language Workshop

Management actions and projects suggested included:

1. Comment: If people can capture flows downstream, there must be a way for us to also capture stormwater upstream for groundwater recharge.
2. Comment: Water supply can be augmented by building more dams.

3. Comment: Infrastructure for stormwater capture to collect and store water on-site would be helpful to supplement nonpotable, domestic water uses during droughts. This is done in parts of Mexico and has proven to be effective.
4. Comment: Many people are not aware about water conservation. Teaching about water conservation in schools would help reduce water demand.
5. Comment: The whole town needs to be educated on water issues, including water supply and water quality.
6. Comment: Water quota may be necessary like has been done in parts of Mexico.
7. Comment: In the past, residents have received notices that severely limit residential water use. A potential solution is to install on-site or communal water reservoirs to supplement water shortages for emergency needs. This may require to truck in water to fill the reserve.

Written Comments Received – Management Actions and Projects

Written comments received pertaining to the presentation on possible management actions are included below. The comment form posed the questions: *“Are there other actions or projects that you think should be considered? What management actions make the most sense to you and why?”*

1. I think water metering and water accounting are fundamental and necessary tools. Flood water capture to enhance aquifer recharge is a great idea. I think using broad scale earthworks would help recharge the aquifers without depriving folks downstream. I also don't think we should shy away from reducing demand by replacing more water intensive crops with more drought resistant ones, or appropriately managed livestock operations. I also love the woman's idea of using controlled burns to clear understory, for multiple reasons - mostly reducing the intensity of fire danger but also improving the water table.
2. The historic deforestation of oaks in the Cuyama Valley is something you should look at. I felt that there was too much talk of clearing vegetation to free up water without very much education on that matter on long term effects of that.
3. I would like to see this Basin managed to meet supply. Manage undergrowth in forested areas to optimize groundwater recharge and reduce fire danger.
4. Management needs to be sustained and hopefully regenerative; the ecological design system known as “permaculture” urges the use of mulching, contour swales, micro-irrigation, and careful crop planting. I urge further investigation into this design model. Things that need to be considered include climate change, changes in government, the loss of the EPA and new legislation. What can we do as a community to counter these changes to allow ourselves to flourish?
5. Based in the last piece of discussion in this section of the workshop, the six graphs on page 14 indicated that there are areas that are essentially sustaining currently. There clearly needs to be different management in different areas based on the graphed data on page 14. The areas and individuals in the sustained areas will be greatly impacted to average the area or bring them to an averaged sustainability. Areas that are overdrafted should have to make more drastic changes to compensate.
6. Capturing excess water should be considered. There is no water running routinely in the Cuyama River. Not changing what is delivered to people past Twitchell Reservoir. If a known volume is delivered downstream, maintain that delivery and capture any excess, or capture all runoff and release the current volumes that the down river users expect.

Workshop Part 3: Concepts for Management Areas

Following a presentation on potential concepts for management areas to consider for the Cuyama Basin, workshop participants provided the following comments, observations, and questions.

Attendee Comments and Questions – English Language Workshop

1. Question: Can we use a combination of those management areas? Answer: Yes. The GSA could decide to combine concepts, or use a different approach not developed yet.
2. Comment: Divide by irrigated vs non-irrigated areas.
3. Comment: Blue areas (high GW levels) are traditionally grazing lands that use very little water, so why manage them?
4. Question: Why do we have so much area that is outside of main part of the basin? Why don't we just change the basin boundary? Answer: Boundary modifications could be considered, but the rules specify when DWR will consider changes.
5. Question: Do we really need management areas? It's hard to set them if we don't really know what they can and cannot do. Answer: This presentation is a preliminary presentation of concepts. Having no management areas is also an option. The team will provide additional information about what can and can't be accomplished with management areas.
6. Question: Could the plan set management areas based on data gaps, with the purpose of not necessarily setting thresholds and just trying to figure out what to do there? Answer: It is possible, but generally, management areas are to help set thresholds and to organize and implement management actions and projects.
7. Comment: Another data point would be rainfall in the foothills, can you establish management areas by rainfall patterns?
8. Question: What standard are federal lands under in terms of water use? Are there regulations they must comply with? Answer: The federal government is not bound by state law.
9. Question: If there have been grapes planted at the west end of the basin and the basin was in overdraft before that, who makes the decision for final water cutbacks. Answer: The GSA Board will decide on the management actions and implementation plan.
10. Question: Can you accomplish results without management areas? Yes, management areas are not required. The GSA is the managing and implementing agency, with or without management areas.

Comments Received – Spanish Language Workshop

1. Comment: Would prefer everything to be one management area since they are all connected. If there is a drought, the entire basin is affected.

Written Comments Received – English Language Workshop

Written comments received pertaining to the presentation on concepts for management areas are included below. The comment form posed the questions: *Did the options presented to you make sense? What are the important considerations for establishing management areas in the Cuyama Basin – jurisdiction, geography, groundwater conditions, others?*

1. I favor management areas based on current basin conditions. At either end of the basin, near Ventucopa and west of New Cuyama water levels have held at same level thus they are sustainable. Grazing land – open land – use far less than an inch of water per acre year.
2. No, the options do not make sense in terms of what is actually sustainable. What options are you considering that are regenerative?

Additional General Written Comments Received

The comment form included a final statement: *Please provide any additional comments regarding groundwater management in the Cuyama Valley.*

1. There is a lot of education to be done on holistic grazing, forest management, and how we can make sure that the management plan chosen isn't just stabilizing but thinking about regenerating our groundwater.
2. West end of basin where wells have been drilled beyond water table – I believe that these may have been drills for oil that did not pan out because that type of well was sometimes turned over to surface owner as water well.
3. I urge further investigation into permaculture and exploring regenerative options for water supply.
4. Clearly, data gathered suggests that management/subbasin areas are needed to address sustainability vs high overdraft. There are already {missing word} that indicates the Ventucopa area is currently sustaining or needs a little change. Where New Cuyama CSD needs more heavy investigation to achieve sustainability. Averaging these two areas will not fix the problem.
5. Consider putting workshops on YouTube/Web so that what is presented at the meeting can be presented without bias. The last Cuyama Rec District newsletter gave a biased overview of the previous workshop. Those not in attendance reading that accounting will not have all of the details.
6. Offer community-based groundwater-level monitoring network (using WellIntel tech). Provide well owners real-time well status - level pumping. Fill data gaps and calibrate numerical model.

Attachment A – Workshop Notification

Two CBGSA notices were prepared for the September 5, 2018 workshops – one in English and one in Spanish. The notices were distributed as follows:

1. **August 1:** Cuyama Valley Recreation District newsletter included the Newsletter, edition 2, which announced the workshops on Sept. 5.
2. **August 8:** Mailed postcards to 694 parcel owners in the Cuyama Basin, 22 came back to the CBGSA marked *return to sender*.
3. **August 13:** Issued English and Spanish versions of the notice electronically to CBGSA email list, and to partners including Family Resource Center, Cuyama Community Association, BlueSky, and the four counties.
4. **August 14 through September 5:** Coordinated distribution of the workshop notices within Cuyama Basin by the volunteers at the Cuyama Valley Family Resource Center. More than 200 notices were distributed by volunteers through the FRC at locations including the Food Truck, The Place, along Hwy 33, and several other locations in New Cuyama.
5. **August 15:** Posted workshop notices to the CBGSA website.
6. **August 26:** SAC member Jake Furstenfeld agreed to post notices in the “finger” areas in Cuyama.
7. **August 24:** San Luis Obispo County emailed the workshop notices to their stakeholder list for Cuyama.
8. **August 29:** CBGSA issued a reminder email to its stakeholder list and partners.
9. **August 31:** San Luis Obispo emailed out a reminder notice to its Cuyama stakeholder email list.