Final Draft Cuyama Basin GSA GSP Comments

No.	Commenter	Written Comments Provided Before Nov 6 Public Hearing	Written Comments Provided at Nov 6 Public Hearing	Verbal Comments Made at Nov 6 Public Hearing
1	Central Coast Regional Water Quality Control Board, Diane Kukol	1a		
2	Walking U Ranch, LLC., Kathleen P. March, Esq.	2a		
3	Kern Ridge Growers, LLC., Bob Giragosian	3a		
4	The Nature Conservancy, Sandi Matsumoto	4a		
5	Cuyama Basin Water District, EKI	5a		
6	Cuyama Orchards, Byron Albano	6a		
7	Quail Springs Permaculture Center, Brenton Kelly	7a		Yes; Attachment 1
8	Cuyama Valley Community Association, CVCA Board Members	8a		Yes; Attachment 1
9	Western Cuyama Valley, School House Canyon, Timothy Naughton	9a		
10	Condor's Hope Ranch, Robbie Jaffe and Steve Gliessman	10a		
11	Condor’s Hope Ranch, Cottonwood Canyon, Steve Gliessman		11b	Yes; Attachment 1
12	Farmer in westside and member of the CBGSA SAC, Robbie Jaffe		12b	Yes; Attachment 1
13	Quail Springs Permaculture Center, Sue Blackshear		13b	Yes; Attachment 1
14	Cuyama Basin Water District, Matt Klinchuch			Yes; Attachment 1
15	Quail Springs Permaculture Center, Steve Pearson			Yes; Attachment 1
16	Grimmway Farms, George Cappello		16b	Yes; Attachment 1
17	Bolthouse Land Company, LLC., Daniel Clifford		17b	Yes; Attachment 1

Cuyama Basin Sustainability Section
Summary of Public Comments and Staff Recommendation for Each Comment
November 4, 2019

Attachment #	Commenter	Commenter Organization	Section	Comment	Staff Recommendation	Is a GSP Change Recommended?
1	Diane Kukol for John Robertson	Central Coast Water Board	General	In general, the Central Coast Water Board recommends that the number of chemical constituents included in the Minimum Thresholds (MT), Measurable Objectives (MO), and Interim Milestones (IM) be increased. The Central Coast Water Board agrees that MTs, MOs and IMs should be established for total dissolved solids (TDS), however, including only that single constituent is insufficient for determining whether a groundwater basin is being managed sustainably with respect to water quality or for determining if undesirable results are being addressed. Land use in the Cuyama Valley is dominated by commercial agriculture, an industry that utilizes a variety of chemicals and practices that pose threats to groundwater quality. Therefore, the Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate, arsenic, and major dissolved ions. The reasoning for this recommendation is described in detail below.	These comments are unchanged from what was provided on previous drafts of the GSP. The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
1	Diane Kukol for John Robertson	Central Coast Water Board	General	The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate: Nitrate contamination of groundwater from agricultural activities is widely documented in the Central Coast region, including within the Cuyama Valley. Approximately 9% of on-farm domestic wells in the Cuyama Valley exceed the human health standard for nitrate concentration in drinking water1. The draft chapter states that the Cuyama Valley groundwater sustainability agency (GSA) does not have the authority to influence fertilizer use, and we are not suggesting the GSA should undertake such a regulatory role. However, the GSPs are required to implement thresholds and monitoring that can identify when undesirable results are occurring. Given the current impairment from nitrate in the basin and ongoing agricultural activity, it is appropriate to require thresholds and monitoring for nitrate in the Cuyama Valley groundwater basin. Nitrate monitoring is not unusual in agriculturally-dominated basins; for example, the Salinas Valley GSA is recommending an expanded suite of chemical constituents for its thresholds and monitoring. The recommendation in their most recent draft includes up to 25 different chemical constituents, including nitrate and arsenic2. Finally, we recommend that nitrate be reported as nitrogen (nitrate as N), because this convention allows for easy comparison and summation (e.g., calculation of total nitrogen).	These comments are unchanged from what was provided on previous drafts of the GSP. The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
1	Diane Kukol for John Robertson	Central Coast Water Board	General	The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include arsenic: Arsenic is a toxic chemical compound that occurs naturally in relatively high concentrations in many of the sediments that form California groundwater basins, including those of the Central Coast. Groundwater data from the Water Board's GeoTracker GAMA3 website indicates that 12% of the wells in the Cuyama Valley groundwater basin exceed the maximum contaminant level (MCL) for arsenic in drinking water. The highest concentration recorded in the basin occurred in 2011 and was more than six times greater than the MCL. Furthermore, recent studies in the Central Valley of California4 and the Mekong Delta in Thailand5 have demonstrated that ground subsidence associated with groundwater over-pumping can mobilize arsenic by 'squeezing' it out of subsurface clay layers. The resulting mobilized arsenic can then enter groundwater and increase arsenic concentrations in nearby water supply wells. Because there is documented overdraft and subsidence in the Cuyama Valley, there is the potential risk of anthropogenically-induced arsenic contamination of groundwater due to arsenic mobilization from clay layers in the Cuyama Valley basin. Lastly, in addition to sediment-related sources, arsenic is a component in many pesticides commonly used on various crops. These factors suggest that arsenic should be included in the MTs, MOs, and IMs for the Cuyama Valley basin.	These comments are unchanged from what was provided on previous drafts of the GSP. The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
1	Diane Kukol for John Robertson	Central Coast Water Board	General	The Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include major dissolved ions: Major dissolved cation and anion composition in groundwater reflects the source of recharge water, lithological and hydrological properties of the aquifer, groundwater residence time, and chemical processes within the aquifer. As such, major dissolved ions are valuable for identifying different groundwater types (via Piper or Stiff diagrams) and for "fingerprinting" source water from individual wells. In addition, ionic charge balance provides quality assurance that all the major ions are actually included in the analysis and that TDS concentrations are accurate. Finally, collection and analysis of major dissolved ion samples is easy and inexpensive, and the cost of the analysis is well worth the data provided, particularly if the well is already being sampled for other constituents.	These comments are unchanged from what was provided on previous drafts of the GSP. The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
2	Kathleen Marsh	Walking U Ranch, LLC	General	I write as managing member of Walking U Ranch, LLC, which owns and runs a 1000 acre cattle ranch located in the west end of the cuyama valley, 33 miles east of Santa Maria, CA. Walking U Ranch, LLC objects to the GSP. The proposed funding for the GSP is directly CONTRARY to what the vote was, taken on 7/10/19, of the full Cuyama Basin GSA, on how to fund the Cuyama Basin GSP. My husband and I (yes we are both lawyers) were present, and I spoke to GSA. In addition, I had briefed the controlling law, by letters to the GSA, before the 7/10/19 meeting. The vote of the full CBGSA, on 7/10/19, which was practically unanimous, was to fund the Cuyama Basin GSP by charging fees based on water extracted, and NOT to fund the GSP by charging any per acre fees. Directly contrary to that vote of the full GSA, the "final proposed draft" GSP, at Section 8 (Implementation) at pages 8-4 to 8-5, and in the executive summary, says the GSP may be funded by charging extraction fees, or by charging per acre assessments, or by a combination of both means. The "per acre assessment" is DIRECTLY CONTRARY to that vote of the GSA on 7/10/19. Even more dishonest, the final draft GSP does not anywhere reveal that the Vote, taken on 7/10/19 , of the full GSA, was to fund the GSP by charging fees based on water extracted, and NOT to fund the GSP by charging any per acre fees. Your final draft GSP does not even refer to the fact that Vote was taken by the full GSA, and that the Vote was to ONLY charge fees based on water used (aka "water extraction fees"), and was NOT to fund the GSP by charging any per acre fees. A per acre fee is a property tax, which pursuant to the California Constitution, Proposition 218, CANNOT be charged, unless the GSA holds and wins a valid proposition 218 election, in which all landowners in the Valley vote. I've briefed the controlling law in my letters sent to GSP before the 7/10/19 meeting of the full GSA. It would cost a lot of money for the GSA to publicize and hold a valid proposition 218 election, and GSA would not be able to win a proposition 218 election, because the number of acres owned by ranchers (like Walking U Ranch, LLC) and other non-farmers, is far greater than the number of acres owned by the big farming operations. You couldn't win a majority vote. And a proposition 218 election requires, as I recollect, that any new property tax be approved by a 2/3rds vote of the property owners. If CBGSA tries to charge a per acre fee, without holding and winning a valid Proposition 218 election, Walking U Ranch, LLC will sue CBGSA. I said that at the 7/10/19 meeting. GSA and its attorneys would do well to take that to heart, because my husband and I are attorneys, and we know how to sue to protect the rights of Walking U Ranch, LLC, and the other landowners in the Cuyama Basin who are not OVERUSING water, if necessary. If Walking U Ranch, LLC has to sue CBGSA to stop illegal acreage based assessments, Walking U Ranch, LLC will be seeking award of Ranch's attorneys fees from having to sue GSA, and Ranch will be entitled to be reimbursed for Ranch's attorneys fees incurred suing GSA. That is because charging a fee ("assessment") based on acreage owned is a property tax, and it violates the California Constitution to charge a fee ("assessment") based on acreage owned, unless the GSA has held, and won a valid Proposition 218 election. I note that the above quoted language at 8-4 and 8-5 of "Implementation" of GSP, fails to say that GSP cannot assess any charges/fees/assessments based on acres owned, unless GSA holds and wins a Proposition 218 election. The above quoted language saying "consistent with the requirements of Proposition 218 " is way too vague. Your GSP should state what the California Constitution requires, which is GSP cannot assess charges based on acres owned, unless GSA holds and wins a valid Proposition 218 election. And explain what that entails. Sadly, it appears from the final draft plan, that GSA is hoping that no one notices that the GSP, which GSA is now proposing, is DIRECTLY CONTRARY to the Vote, held on 7/10/19, of the full GSA, which was NOT to assess any charges based on acres owned. Sadly, it appears that whoever got the above "per acre assessment" language put into this final draft plan (the large farming operations, I'm guessing?) are hoping that no one complains it is illegal to charge fees based on acres owned, unless GSA has held and won a valid Proposition 218 election. Walking U Ranch, LLC hereby complains. So stop hoping your GSA can get away with illegally assessing fees based on acreage owned, without holding and winning a valid Proposition 218 election, which you can't win. Fix your GSP, by taking out the above, highlighted in yellow, references to funding your GSP by charging fees based on land area (ie, acres owned). Take that out from section 8. Take it out from the executive summary.	As noted in the comment, the Board voted on July 10 to develop a groundwater extraction fee to provide funding during the first year. Staff recommends adding a sentence to the GSP noting that the direction provided by the Board.	Yes
3	Bob Giragosian	Kern River Growers, LLC	General	See the comment letter for the full comment. The introduction and concluding paragraphs are copied here: The farmers in the Cuyama Water Basin are being accused of causing an overdraft situation with the water table. The water table has been falling and therefore it must be the farmers who are causing the problem. Afterall, the farmers in the Cuyama Water Basin pump in excess of 100,000 gallons per minute of water during the peak pumping season; therefore, farmers must be the problem and if we just reduce the amount of farming the problem will be fixed. Clearly, there are lots of other farming areas where the farmers also pump thousands of gallons per minute the same as we do. In many of those areas there is not an overdraft situation; such as the southern part of the Cuyama Water Basi n, as well as many areas inNorthern California and farming regions all over the United States. Why is it that the farmers can pump as much as they want in these other areas without affecting the water table in their area? ... I have enclosed well reports on several of the wells in the Cuyama Valley which tend to indicate that the water table is going up and down over time which is what you would expect if the water table is not a function of the pumping level. If p umping ground water caused the water table to drop, then the table would continually be falling as we pumped out water to farm. The more we pump the further down the table would go. We would be lowering our bowls yearly to stay with t he new water level. But in reality, when looking at well records during the last 10 years, we see that the water table goes up and down almost at random, clearly illustrating that pumping water for farming is not causing the water table to cha nge. In conclusion, I believe that following our farming model of fallowing 50% of our irrigated acreage will lead to sustainable ground over time consistent with the well data that I have enclosed along with my comments. I do not think that a chang e in pumping level is necessary or appropriate for ground water sustainability in the Cuyama Valley. I further believe that the well monitoring that has been attached to these comments is consistent with my conclusions.	This comment is similar to comments provided on previous drafts of the GSP. The water budget and groundwater levels information described in this document do not match the technical information developed for and described in the GSP. Staff recommends no change to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	1.3.1	Environmental users of groundwater, including groundwater dependent ecosystems (GDEs), are acknowledged as beneficial users of groundwater in the GSP. Other species that depend on interconnected surface waters exist in Cuyama Basin and therefore should be identified and described. For any species that are no longer present in the basin, please provide scientific rationale and data to support this claim.	This comment is similar to comments provided on previous drafts of the GSP. The GSP was previously updated to note that environmental users of groundwater, including GDEs are beneficial users of water. Staff recommends no further changes to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	2.1.6	It is currently unclear how existing well depths compare with the depth of the upper member of the Morales Formation. According to DWR's Hydrogeologic Conceptual Model BMP3, "the definable bottom of the basin should be at least as deep as the deepest groundwater extractions". Thus, groundwater extraction well depth data should also be included in the determination of the basin bottom. This will prevent the possibility of extractors with wells deeper than the basin boundary from claiming exemption of SGMA due to their well residing outside the vertical extent of the basin boundary.	This comment is similar to comments provided on previous drafts of the GSP. Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	2.1.7	In paragraph 1, "The aquifer is considered to be continuous and unconfined with the exception of locally perched aquifers resulting from clays in the formation". Please provide more details on: • the location of perched aquifers • whether perched aquifers are being used by domestic shallow wells, GDEs and/or are potentially interacting with surface water • the vertical gradients between the perched aquifers and the recent and younger alluvium aquifers • other aquifer characteristics that may be known (e.g., perched aquifer thickness, porosity, hydraulic conductivity)	This comment is similar to comments provided on previous drafts of the GSP. Additional detail can potentially be added in future versions of the GSP as additional data is collected in the future. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	2.2.8	The model results are demonstrating that the entire river is an interconnected surface water system ("surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted" 23 CCR §351(o)). Based on the annual average stream depletion by reach (Table 2-2), it appears that losing and gaining reaches of the Cuyama can be mapped. Please distinguish the gaining and losing reaches. The data provides seems to indicate: o Gaining: Reach 1, Reach 3, Reach 6, Reach 8, Reach 9. o Losing: Reach 2, Reach 4, Reach 5, Reach 7	This comment is similar to comments provided on previous drafts of the GSP. Data was not available to perform these analyses in advance of the GSP. Additional detail can potentially be added as additional data is collected in the future. Therefore, staff recommends no changes be made to the GSP.	No

Cuyama Basin Sustainability Section
Summary of Public Comments and Staff Recommendation for Each Comment
November 4, 2019

Attachment #	Commenter	Commenter Organization	Section	Comment	Staff Recommendation	Is a GSP Change Recommended?
4	Sandi Matsumoto	The Nature Conservancy	2.2.9	SGMA requires that all beneficial uses and users, including GDEs, be considered in the development and implementation of GSPs (Water Code §10723.2). The GSP Regulations include specific requirements to identify (map) GDEs and consider them when determining whether groundwater conditions are having potential effects on beneficial uses and users. SGMA also requires an assessment of whether sustainable management criteria (including minimum thresholds and measurable objectives) may cause adverse impacts to beneficial uses, including GDEs, and that monitoring networks are designed to detect such impacts. Therefore, mapping GDEs is a critical first step for incorporating environmental considerations into GSPs. • It appears that the preliminary desktop analysis, completed by Woodard & Curran and documented in Appendix D of the draft GSP, resulted an excessive elimination – totaling two-thirds – of the NC dataset polygons mapped in the Cuyama Basin. In particular, the methods and field verification approach described in the draft GSP failed take groundwater levels into consideration. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface". We recommend that depth to groundwater contour maps are used to verify whether a connection to groundwater exists for polygons in the NC Dataset. Please refer to Appendix D of this letter for best practices for using groundwater data to verify a connection to groundwater.	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	Appendix D	More specific comments related to the desktop analysis approach (as described in Appendix D of the GSP) include: • Inundation visible on aerial imagery – This method is inappropriate because it is not possible to know whether surface water is connected with groundwater by visually inspecting it with aerial imagery. For example, in some cases surface water can be completely disconnected from groundwater, so in this scenario this approach would falsely suggest that NC dataset polygons are connected to groundwater. Similarly, if surface water is not present, this method would also falsely suggest that NC dataset polygons are not connected to groundwater if plant communities and the species they support are accessing groundwater beneath the surface. This method also fails to account for the fact that GDEs can rely on groundwater for some or all its water requirements, which in California often vary by season, and depend on the availability of alternative water sources (e.g., precipitation, river water, reservoir water, soil moisture in the vadose zone, groundwater, applied water, treated wastewater effluent, urban stormwater, irrigated return flow). olf aerial imagery is to be used, a range of dates should be selected to reflect the California's Mediterranean climate, seasonal variations and water year types. oPhreatophytes (groundwater-dependent vegetation) often rely on groundwater that is occurring near the ground surface via their rooting network. Because these sources of groundwater are not detectable using aerial imagery, the images should be compared with contoured groundwater levels to determine whether groundwater levels are close enough to vegetation root zones. oWe suggest the methods be revised and clarified accordingly. • Saturation visible on aerial imagery could indicate many different conditions, including standing water or saturated soils that may be ephemeral, intermittent, or permanent in nature. To help verify what the images actually indicate, this method should be coupled with more advanced remote sensing methods. Please clarify if this was the case. • Dense riparian and/or wetland vegetation visible on aerial imagery can help identify potential GDEs but is not an appropriate method to screen for whether a polygon is supported by groundwater and in fact a GDE. The presence of sparse vegetation also does not preclude the possibility that vegetation are using groundwater. Many desert and semi-arid environments with sparse vegetation can still be groundwater dependent ecosystems.	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	Appendix D	More specific comments related to the GDE field validation approach (as described in Appendix D of the draft GSP): • The removal of Probable Non-GDE 1 and Probable Non-GDE 2 was based on the presence of sandy, dry, and friable soils was not scientifically justified. The presence of this soil type does not preclude the possibility that the dominant plant species observed are reliant on groundwater at depths below the earth surface. For example, a rooting depth of 13 feet has been observed for Ericameria nauseosa and >4 feet for Eriogonum fasiculatum, and the capillary fringe associated with those rooting networks could be accessing groundwater from deeper depths, depending on the hydraulic conductivity of the substratum. For more rooting depth data, please refer to TNC's global rooting depth database, available at: https://groundwaterresourcehub.org/gde-tools/gde-rooting-depths-database-for- gdes/	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	Figure 2-64	[Checklist items #8 & 9]: Decisions to remove, keep, or add polygons from the NC dataset into a basin GDE map should be based on best available science in a manner that promotes transparency and accountability with stakeholders. Any polygons that are removed, added, or kept should be inventoried in the submitted shapefile to DWR, and mapped in the plan. We recommend revising Figure 2-64 to reflect these requirements.	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	Chapter 2	[Checklist item #10]: Groundwater conditions within GDEs should be briefly described within the portion of the Basin Setting Section where GDEs are being identified. Please refer to Attachment E of this letter for details on a new, free online tool that enables groundwater sustainability agencies to assess historical and current trends of growth and moisture content in vegetation using 35 years of satellite imagery for all of the polygons in the NC dataset.	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	Chapter 2	[Checklist item #16]: Not all GDEs are created equal. Some GDEs may contain legally protected species or ecologically rich communities, whereas other GDEs may be highly degraded with little conservation value. Including a description of the types of species (protected status, native versus non-native), habitat, and environmental beneficial uses (see Worksheet 2, p.74 of GDE Guidance Document) can be helpful in assigning an ecological value to the GDEs. Identifying an ecological value of each GDE can help prioritize limited resources when considering GDEs as well as prioritizing legally protected species or habitat that may need special consideration when setting sustainable management criteria.	This comment is similar to comments provided on previous drafts of the GSP. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	3.2.1 and 3.3.1	Significant adverse impacts to GDEs can occur if 30% of representative monitoring wells fall below their minimum groundwater elevation thresholds for two consecutive years. The proposed approach could work if management areas were established to "identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors" [23 CCR §351(r)]. But, as it is written now, significant and unreasonable adverse impacts to GDEs could occur if the exceedance of minimum thresholds disproportionately occurs in representative monitoring wells close to GDEs (e.g., 3 out of the 60 wells minimum thresholds are exceeded for 3 years are causing adverse impacts to GDEs, but because the definition of undesirable results (18 out of 60 wells) is not met, there is no formal recognition that undesirable results are occurring). We recommend that groundwater levels that are protective of GDEs be considered when establishing minimum thresholds for groundwater levels across the basin. Please refer to Step 2 of GDEs under SGMA: Guidance for Preparing GSPs1 for more details.	This comment is similar to comments provided on previous drafts of the GSP. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	3.2.6	Under the Potential Effects of Undesirable Results subsection, "If depletions of interconnected surface water were to reach Undesirable Results, groundwater dependent ecosystems could be affected" should also include potential effects on environmental surface water users, land uses (e.g., fishing/hunting, hiking, boating), and property interests (e.g., privately and publicly protected conservation lands and open spaces, including wildlife refuges, parks, and natural preserves) [23 CCR §354.26(b)(3)]. Please also provide more details on how these various beneficial users could be adversely affected. SGMA also requires that depletions of interconnected surface water also consider adverse impacts on beneficial uses of surface water [23 CCR 354.28(6)].	This comment is similar to comments provided on previous drafts of the GSP. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	3.2.6	In addition to identifying GDEs in the basin, The Nature Conservancy recommends identifying beneficial users of surface water, which include environmental users. This is a critical step, as it is impossible to define "significant and unreasonable adverse impacts" without knowing what is being impacted, nor is possible to monitor ISWs in a way that can "identify adverse impacts on beneficial uses of surface water" [23 CCR §354.34(c)(6)(D)]. For your convenience, we've provided a list of freshwater species within the boundary of the Cuyama Basin in Attachment C. Our hope is that this information will help your GSA better evaluate and monitor the impacts of groundwater management on environmental beneficial users of surface water. We recommend that after identifying which freshwater species exist in your basin, especially federal and state listed species, that you contact staff at the Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS) to obtain their input on the groundwater and surface water needs of the organisms on the freshwater species list, and how best to monitor them. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.	This comment is similar to comments provided on previous drafts of the GSP. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	3.2.6	Please also provide more details on when, where, and how groundwater changes can adversely affect these various beneficial users. Are there particular species, with legal protection, that already have known thresholds that need special consideration? The more specific the definition of what an adverse impact to beneficial users of groundwater and surface water looks like, the easier it is to quantify minimum thresholds, measurable objectives, and interim milestones that are protective of that definition.	This comment is similar to comments provided on previous drafts of the GSP. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	3.3.6	• Please be more specific on what measurements were used to show that groundwater gradients along interconnected surface water bodies in the Cuyama basin are not in an undesirable condition. How were these gradients determined?	This comment is similar to comments provided on previous drafts of the GSP. The current definition reflects the best understanding given currently available data. The undesirable results definitions for depletion of interconnected surface can be updated when better data is available. Therefore, staff recommends no changes be made to the GSP.	No

Cuyama Basin Sustainability Section
Summary of Public Comments and Staff Recommendation for Each Comment
November 4, 2019

Attachment #	Commenter	Commenter Organization	Section	Comment	Staff Recommendation	Is a GSP Change Recommended?
4	Sandi Matsumoto	The Nature Conservancy	3.3.6	• Analysis of Interconnected Surface Waters in Section 2.2.8, particularly Table 2.2, demonstrate that depletions of interconnected surface water are occurring, meaning that adverse impacts to beneficial uses and users could be occurring. Thus, it is inadequate to state that "depletion of interconnected surface water is not identified to be in an undesirable condition" without evaluating potential effects to beneficial users.	This comment is similar to comments provided on previous drafts of the GSP. The chapter reflects undesirable results as defined by minimum threshold levels approved for each sustainability indicator by the GSA Board using the information that is currently available. They can be revised in the future if additional information is developed. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	4.5.4	Please identify which representative monitoring wells are capable of monitoring groundwater level conditions that can impact environmental beneficial users of groundwater (i.e., GDEs) and of surface water (e.g., freshwater aquatic species). Refer to Best Practice #4 in Attachment D to this letter for technical guidance.	This comment is similar to comments provided on previous drafts of the GSP. This can be considered during GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	4.10	The improvement of numerical model accuracy for the estimation of interconnected surface waters should also include the installation of clustered or nested wells and the installation of shallow monitoring wells around GDEs and the Cuyama River to resolve data gaps that were identified in Section 2.2.10: oThe Cuyama River is not gaged inside the Cuyama Basin, so flows of the river in the Basin have been estimated based on measurements at downstream gages. oVertical gradients in the majority of the Basin are not understood due to the lack of wells with completions of different depths located near each other. oGDEs could be evaluated in greater detail oInformation about many of the wells in the Basin is incomplete, and additional information is needed regarding well depths, perforation intervals and current status. oDue to sporadic monitoring by a variety of monitoring entities, a long period of record of monitoring groundwater levels does not exist in many areas in the Basin.	This comment is similar to comments provided on previous drafts of the GSP. Additional information will be developed as the monitoring network is developed during GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	4.10	Please identify appropriate biological indicators that can be used to monitor potential impacts to environmental beneficial users due to groundwater conditions. Refer to Appendix E of this letter for an overview of a free, new online tool for monitoring the health of GDEs over time.	This comment is similar to comments provided on previous drafts of the GSP. This can be considered during GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.2.2	· Selecting thresholds by using groundwater elevation measurements closest to (but not before) January 1, 2015 is inadequate for identifying minimum thresholds or measurable objectives. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions fails to capture the seasonal and interannual variability typical of California's climate. Hydrology is not static. Measurable objectives are intended to be set with enough operational flexibility to permit seasonal and interannual fluctuations that occur in California. We recommend that you consider using a baseline approach to better capture seasonality and water year types.	This comment is similar to comments provided on previous drafts of the GSP. Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.2.2	• January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows). The onus is on the GSAs to determine whether groundwater conditions (due to groundwater pumping) exacerbated impacts to these beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.	This comment is similar to comments provided on previous drafts of the GSP. Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.2.2	· While total well depth information is helpful in considering adverse impacts to beneficial users of groundwater (e.g., domestic, irrigation, and municipal wells), it fails to consider adverse impacts to GDEs and environmental beneficial users of surface water in interconnected surface waters. Environmental beneficial users of groundwater need to be considered when establishing measurable thresholds, measurable objectives, and interim milestones. Please refer to Step 2 of GDEs under SGMA: Guidance for Preparing GSPs1 for how this can be accomplished.	This comment is similar to comments provided on previous drafts of the GSP. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.2.2	· Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs, as required [23 CCR §354.28 (b)(5)].	This comment is similar to comments provided on previous drafts of the GSP. No differences have been identified. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.7	· It is highly doubtful that January 1, 2015 surface water conditions can be considered "normal" (2nd sentence in 2nd paragraph), please provide data to back this claim. January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows).	This comment is similar to comments provided on previous drafts of the GSP. Using January 1, 2015 as a reference point is acceptable for development of the GSP MOs and IMs. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.7	· Please provide more data and an elaborated description on how current basin conditions have not varied from January 1, 2015 conditions.	This comment is similar to comments provided on previous drafts of the GSP. This can potentially be added as more data is available in the future. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.7	· Even if current basin conditions may not have varied from January 1, 2015, the onus is on the GSAs to determine whether groundwater conditions are causing any adverse impacts to beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.	This comment is similar to comments provided on previous drafts of the GSP. This will be performed through monitoring during GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.7	• According to Table 2-2 in the Draft GSP, 5994 AF of surface water was depleted in 2017. Please investigate whether these depletions in surface water are adversely impacting instream flow conditions and groundwater levels in riparian areas for environmental beneficial users, especially legally protected species.	This comment is similar to comments provided on previous drafts of the GSP. Data does not currently exist to assess this, but it could potentially be assessed in the future. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	5.7	• Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters [23 CCR §354.28 (b)(5)].	This comment is similar to comments provided on previous drafts of the GSP. Data does not currently exist to assess this, but it could potentially be assessed in the future. Therefore, staff recommends no changes be made to the GSP.	No
4	Sandi Matsumoto	The Nature Conservancy	7	•Please describe how the projects described in this chapter and their benefits will help "maintain a viable groundwater resource for the beneficial use of people and the environment" as stated in the sustainability goal for the Cuyama Basin.	This comment is similar to comments provided on previous drafts of the GSP. This is reflected in the project descriptions. Therefore, staff recommends no changes be made to the GSP.	No
5	Jeff Shaw, John L. Fio, and David A. Leighton	EKI Environment & Water, Inc.	General	The following is the summary of comments provided in the comment letter. Please refer to the comment letter for additional details on these comments: 1. Projected future drawdown contours (and thus Management Area boundaries) published in the GSP are not reproducible using the model files and procedures provided by WC. 2. The model requires additional review and potential modification before it can be used by basin stakeholders as a groundwater management tool. 3. Long-term decisions such as the extent of areas where groundwater pumping is restricted should not be based solely on model output in its current form. 4. Management Area boundaries are delineated based on estimates of land use and pumping rates. Thus, they incorporate any errors and uncertainty in these parameters. For example, an error in estimated pumping of 1,000 AF can change the area within Management Areas by 600 to 800 acres. 5. The most sensitive model parameter in terms of its effect on estimated groundwater storage is groundwater pumping, which is not well-defined currently, and is not explicitly modeled in the Basin. Groundwater is assumed in the model to be extracted evenly from beneath the land over which it is used for irrigation. Simulation of pumping wells in their actual locations likely would improve model performance. 6. The model was calibrated without an explicitly-modeled vadose zone, which would influence model calibration and as a result alter model-calculated changes in water levels and groundwater storage.	The GSP notes that the CBWRM was developed based on the best available data and information as of June 2018, but that the model will be refined in the future as improved and updated monitoring information becomes available for the Basin, and that future changes in management area boundaries will be considered based on updates to numerical modeling as additional information is collected. Therefore, staff recommends no changes be made to the GSP.	No

Cuyama Basin Sustainability Section
Summary of Public Comments and Staff Recommendation for Each Comment
November 4, 2019

Attachment #	Commenter	Commenter Organization	Section	Comment	Staff Recommendation	Is a GSP Change Recommended?
6	Byron Albano	Cuyama Orchards	General	It will come as no surprise to my fellow community members in the Cuyama Valley, that I have serious reservations about the Cuyama Basin Groundwater Sustainability Plan that is proposed for passage. I think most members of the Cuyama Valley community share this sentiment, if not my same reservations. After millions of dollars spent, the Cuyama GSP doesn't address what I consider to be the most significant question for the residents and property owners in the valley: How will we arrest the historical over-pumping of the main sub-basin in a way that isn't excessively punitive to owners of the properties that caused the overdraft, and that is fair to the rest of the residents, farmers, ranchers, businesses, and property owners in the valley who use, and have used, water in a way that was, and is, sustainable. It's not going to be easy, we all know that. But it strikes me that this plan doesn't even start to address that question. To the contrary. The plan starts by spreading the costs of the plan to all water users in the valley regardless of the historical sustainability of that user's water supply, and without consideration of that user's conservation efforts, or their rights to continue to use water in a reasonable and sustainable way. I've resisted the temptation to condemn any particular farming operations for their activities in the main sub-basin, who have only operated within the bounds of their historical rights under California water law, but we are going to have to talk about and address these issues. There are quite a few sustainable farms and operations throughout the Valley in terms of water usage. In fact, most of them are, simply because physically they've had no choice but to live within their means when it came to water and land availability. But this hasn't been the case in the main sub-basin. Some operations lived beyond their means when it came to a sustainable water supply. They chose to tap that supply for what it was worth, for as long as they were allowed. And it has been worth a lot. As the main aquifer was drafted down over the decades, those with the deepest wells and the deepest pockets were able to buy cheaper contiguous parcels that either didn't have access to water, or whose wells were losing out in the competition for deeper water. It has been clear for decades that this ultimately wasn't a sustainable practice. But neither was it illegal, and so those "deep straws" were used to access water that, in that region of the valley, could be piped over great distances to irrigate an expanse of land regardless of the parcel's access to water. This scenario was never really possible in most of the rest of the valley due to the highly variable topography, which limits the arable land, and fragmented hydrology that creates mostly highly localized availability of water. SGMA now forces a cessation of the long-term overdraft that has occurred in the main sub-basin. The question is worth repeating: How will we arrest the historical over-pumping of the main sub-basin in a way that isn't excessively punitive to owners of the properties that caused the overdraft, and that is fair to the rest of the residents, farmers, ranchers, businesses, and property owners in the valley who use, and have used, water in a way that was, and is, sustainable. I'd like to see a plan that focuses on addressing those issues so that the sustainable farming operations of the Cuyama Valley could start to imagine our future once more. Instead, we are getting a plan that opens up a growing, bottomless pit of spending that threatens us all. We have been led by our consultants, and by those operations with the deepest straws and deepest pockets, to buy into the idea that we just don't have enough data to make these decisions until we spend untold additional millions that our operations can ill afford. I don't think it was the purpose of SGMA to force smaller, often undercapitalized, farming operations, like my own, to pay the price for the ungoverned externalities of large, highly capitalized operations that have been the principal drivers of the drawdown of our largest aquifer. SGMA has given us the tools and local decision making, precisely so that we can sort out these difficult issues. I believe we do have enough data and a clear enough understanding of the issues to start working this out while we test and improve our water model over time. In the interim, we need to be exceptionally judicious with our spending to fill the data gaps that actually bear on the pumping allocations and cost allocations on which we need to reach consensus in order to implement a successful GSP. I feel very strongly along with nearly everyone in this valley, that this should not, and cannot, require spending a million-plus dollars per year while we work that out.	The Board has previously indicated that costs for implementation of the GSP within the management area will be borne by those within the management area. The GSP notes that the plan for implementation of management actions described in the GSP will be refined in the future as more data and information becomes available. Additional refinements can be made to improve the GSP going forward. Therefore, staff recommends no changes be made to the GSP at this time.	No
7	Brenton Kelly	Quail Springs Permaculture	General	Management Area Agreements I have not seen this agreement yet but I have several concerns. The very first is fiscal. Why does Cuyama need two $1 Million public water agencies? Cuyama cannot afford to pay for two agencies to consult each other's consultants and arm-wrestling with public policy. This kind of jurisdictional redundancy is not called for in SGMA. Can the CBWD shrink in relation to the size of the Management Area? Manage for it's inevitable irrelevance.	The discussion of management areas in the GSP reflects Board policy. Therefore, staff recommends no changes be made to the GSP at this time.	No
7	Brenton Kelly	Quail Springs Permaculture	Executive Summary	This Summary paints a fairly pretty picture of a decidedly concerning scene. Cuyama pumps 60 TAF in a Basin with only 20 TAF sustainable yield. With a problem of this magnitude, to underrepresent in this way is like putting lipstick on the backside of the pig. The Groundwater Quality section was greatly reduced from the Public draft, with no reference now to the high concentrations of other constituents. There is no justification for only monitoring for TDS in a Basin full of Arsenic, Boron & Nitrates. The Public Draft version presented the Existing Conditions accurately and compellingly. A resource cannot be managed if it is not well monitored. Why not monitor for more constituents without having to set any Minimum Thresholds? We need the information to understand and Model the basin Hydrology. Figure ES-4: This Depth-to-Groundwater image shows a frightening cone of depression over 600 feet deep. That target pattern should be used to help distribute the Extraction Fee more equitably. It clearly shows where the problem spot is! There is no mention of the major Data Gaps in the Monitoring Network or the heavy lifting required to fill them, or the effect those data Gaps have on the uncertainty of the Model. Or that this Model uncertainty was then used to plot the Management Area in Fig. E-14. Fig. E-14 is mislabeled in the text as E-15 and undervalues the extent of the projected draw down. The Red area is greater than 5' and up to 7.7 feet, not just 4. Why doesn't this image more closely match Fig.ES-4?	Staff recommends correcting the Figure E-14 reference in the text. No other changes to the Executive Summary are recommended.	Yes
7	Brenton Kelly	Quail Springs Permaculture	Chapter 2	This is all review of old publications, including the most recent USGS Study, which suggested further work was needed to understand the permeability of the faults. None of that work has been done. The Data Gaps are profound for all Sustainability Indicators. This Plan does not seem to include the Hydro-geological staff & investigation needed to answer the many unknowns of the Basin.	The content of the chapter can be refined in the future as more information is available. Staff recommends no changes be made to the current GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 3	This Chapter has been problematic from the start. The data clearly indicates that 50 years of chronic overdraft has caused a historic Groundwater Storage loss of over 1,000,000 AF, <400' of Groundwater Elevation declines, subsidence rates of approximately 0.8 inches per year, the total loss of the Cuyama River surface water annual base flow, and the desertification of the many GDEs across the basin. How can this plan not recognize existing, chronic & persistent Undesirable Results today if not already happening on Jan 1, 2015? The Cuyama Basin has been experiencing Undesirable Results for decades. Certainly conditions should not be allowed to get worse than they were in 2015, but many Sustainability Indicators allow for conditions to continue to worsen, very much like they currently are doing. The latest reading is the historic low in the central basin. An acceptable and realistic solution to Cuyama's Groundwater would not start with a complete denial of the actual conditions on the ground after the acknowledged historic out of balance land use. To accept the proposed slow 20 year glide path from current chronic overdraft is to never see a return to 2015 conditions much less to ever see wetlands return to the riverbeds.	The undesirable results statements in the Chapter have been approved by the Board and are consistent with the sustainability indicators in Chapter 5. Therefore, staff recommends that no changes be made to the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 4	Groundwater Quality: It is still unacceptable to this stakeholder that the GSA will not monitor for any other major constituents than TDS. Arsenic, Boron and Nitrates are of concern to domestic wells in the basin. This is an undesirable condition that this Plan cannot disregard. This is unacceptable in the light of California's recognition of a humane right to safe drinking water.	The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 4	Data Gaps: With unknown fault permeability, no stream gauges, no subsidence monitor in the cone of depression, and little understanding of existing GDEs or data to feed the Model to predict stream flow loss, how can it be said that this Monitoring Network can satisfactorily identify the occurrence of Undesirable Results?	The GSP notes that the Monitoring Networks will need to be augmented during GSP implementation. The analysis and discussion of GDEs in the GSP was developed to satisfy SGMA requirements as they relate to GDEs. The GSP recommends piezometers to monitor for groundwater levels in the vicinity of critical GDEs. Additional analysis of GDEs and actions for GDEs and other environmental benefits can potentially be added in the future at the direction of the CBGSA Board. Therefore, staff recommends no changes be made to the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 5	All Minimum Thresholds and most Measurable Objectives were calculated to allow for further dewatering to continue with vague references to how much worse it can get since 2015. In some areas the MO is 80' below 2015 levels with MT below that. How can that protect the nearby willows and cottonwoods? If groundwater elevations are allowed to drop that would indicate continued loss of groundwater storage which is an unacceptable Undesirable Result.	The minimum thresholds and measurable objectives in the GSP reflect the direction that was provided by the GSA Board. Therefore, staff recommends no changes be made to the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 6	What is this system supposed to do other than check a box for SGMA? No well completion information that had been submitted was uploaded to the DMS. Why is it separate from the Cuyama Basin Interactive Map? Who will update the DMS with this proprietary software?	The DMS can be updated during GSP implementation if desired by the GSA Board. The DMS Chapter adequately discusses the DMS. Therefore, staff recommends no changes be made to the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 7	At first glance it looks like this GSP will "Improve reliability of water supplies for local disadvantaged communities. With no funding that looks more like just a letter of support for a significant need, and feels disingenuous to the disadvantaged communities left with dry wells and trucked water.	Financing does not need to be provided directly by the GSA for the projects to be included in the GSP. The GSP accurately describes the Board's support of these projects. Therefore, staff recommends no changes be made the GSP.	No
7	Brenton Kelly	Quail Springs Permaculture	Chapter 8	This section does not present the plan to fill the chronic Data Gaps and holes in the Monitoring Network. Who, when and how will this get done? What coordination will happen with the county permitting authorities regarding new wells or new water demands?	These issues will be addressed during GSP implementation. Therefore, staff recommends no changes be made to the GSP at this time.	No

Cuyama Basin Sustainability Section
Summary of Public Comments and Staff Recommendation for Each Comment
November 4, 2019

Attachment #	Commenter	Commenter Organization	Section	Comment	Staff Recommendation	Is a GSP Change Recommended?
8	Lynn Carlisle	Cuyama Valley Community Association	General	The Cuyama Valley Community Association represents 140 members who live, work or own property in the Cuyama Valley. As an organization that is deeply grounded in the community, the CVCA has closely monitored the development of the Groundwater Sustainability Agency, the establishment of the Standing Advisory Committee and the creation of the Groundwater Sustainability Plan that is currently under review. The CVCA has held numerous Town Hall meetings about SGMA implementation and its potential impact on the valley, and the CVCA receives monthly updates on the progress of SGMA implementation in the Cuyama Basin. The CVCA anticipates that SGMA implementation will have a profound impact on the Cuyama Valley through 2040. It is important to note that the legislation's emphasis on "local control" is reflected not only in the creation of the GSP, but also in its implementation. Throughout the development of the GSP, the Standing Advisory Committee has helped to educate the community and amplify the voices and concerns of local residents in this process. As the GSA and the community transitions from the creation of the all-important Groundwater Sustainability Plan to the implementation of the plan, a strong and well-supported Standing Advisory Committee will help to ensure that the local community is well represented and is an active participant in grappling with the issues that will surely result from SGMA implementation. On behalf of all members of the CVCA, the CVCA Board strongly urges the Groundwater Sustainability Agency to maintain a parallel schedule of separate meetings for the Standing Advisory Committee to the Groundwater Sustainability Agency, and to specific those activities in the final draft of the Groundwater Sustainability Plan for the Cuyama Basin.	The Board can take this into consideration going forward into GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
9	Timothy Naughton	Private Landowner	General	As a landowner in Cuyama Basin that has NEVER used and NEVER plans on using the ground water, I am concerned about sharing the cost of establishing and enforcing a GSP. I feel adamantly that this cost should be shared among those using the ground water. Land owners not using the ground water remain a resource to contribute to the recharge rate but should NOT be accountable for the cost of future water sustainability rates.	The Board voted on July 10 to develop a groundwater extraction fee to provide funding during the first year. Staff recommends adding a sentence to the GSP noting that the direction provided by the Board.	Yes
10	Roberta Jaffe and Steve Gleissman	Condor's Hope Ranch	5.5	There were no changes made to this section since the release of the draft GSP. Only measuring TDS will not give us any relevant information regarding water quality. We recommend that the plan incorporates and continues to monitor groundwater quality measurements from other agencies (eg. CCSD, the Counties, Central Coast Water Board) into the GSP so that an overall assessment of groundwater quality can be done at regular intervals. In addition the GSP should identify monitoring wells near drinking water wells and separate them out for specific monitoring as to potential impact on drinking water. TDS. Table 5-2. This Table shows that the Basin is naturally high in TDS. Of the 63 wells listed only 4 are below the 500 mg/L for the Maximum Measurement Value. 32 (more than 50%) are above 1500 mg/L for the Maximum Measurement Value. In all cases except 1 the MT is set higher or equal to that well's Maximum Measurement Value. The 1 exception is well #703 which has the highest reading for MMV: 4500mg/L and a MT of 4096.8. Thus while monitoring TDS is important to ensure it does not get worse, only monitoring TDS will not inform us about the other important constituents in our water such as nitrates which enter the system through agricultural applications and arsenic which is incorporated when water is pumped from deep levels of the aquifer.	These comments are similar to what was provided on previous drafts of the GSP. The rationale for why monitoring for just TDS in the Basin is provided in the Monitoring chapter. Based on this rationale, direction was provided by the GSA Board (through approval of the Monitoring Networks GSP section) to include only TDS for monitoring and sustainability in the GSP. Therefore, staff recommends no changes be made to the GSP.	No
10	Roberta Jaffe and Steve Gleissman	Condor's Hope Ranch	General	Stakeholder Engagement: During implementation of the CBGSP, community residents will play an important role, from providing access to their wells to be monitored, to representing community concerns and recommendations based on our knowledge of the different aspects of the Valley. This role has been represented in the development of the plan by the Board appointed Standing Advisory Committee. This has been in compliance with SGMA: "The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater" (CA Water Code Sec. 10723.2). "The groundwater sustainability agency shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin" (CA Water Code Sec. 10727.8(a)) as well as the Joint Powers of Agreement establishing the CBGSA: "Article 8.1: Standing Advisory Committee: A Standing Advisory Committee is hereby established as a group of representatives to advise the GSA, and shall be appointed by the Board." (a) Purpose. The Standing Advisory Committee shall advise the Board, concerning, where legally appropriate, implementation of SGMA within the Basin and review the GSP before it is approved by the Board." The Standing Advisory Committee has played a significant role in the development of the GSP and we think it is critical that this community representation continue at the same level during the implementation of the GSP.	The Board can take this into consideration going forward into GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No
10	Roberta Jaffe and Steve Gleissman	Condor's Hope Ranch	General	GSA collaboration with the Counties: There are 4 counties with jurisdiction in the Cuyama Basin. While all are represented on the GSA Board, individual county departments move forward with various permits and monitoring that would be more effective with collaboration with the GSA to avoid undersirable impacts on the Cuyama Basin. We recommend as part of the GSA Plan communication and notification be established in the following areas: • Any new well permit applications in the Cuyama Basin be shared with the GSA for review during the application process; and the County is responsible for notifying applicants that they need to comply with the Cuyama Basin GSP. • Any Planning Department permit applications submitted that could impact Cuyama Basin's groundwater level or quality, such as for Cannabis growing, reservoirs, etc. be shared with the GSA for review and comment during the application process; and the County is responsible for notifying applicants that they need to comply with the Cuyama Basin GSP. • The GSP Monitoring network work with the counties existing monitoring networks as a foundation to build on to meet the GSP monitoring needs. The monitoring network should be updated and implemented in conjunction with the Counties and any other agencies that have been monitoring wells in the Cuyama to take advantage of private well agreements that are already in place (saving costs) and to ensure that wells represent priority areas of concern.	The Board can take this into consideration during implementation of the monitoring networks. Therefore, staff recommends no changes be made to the GSP.	No
10	Roberta Jaffe and Steve Gleissman	Condor's Hope Ranch	Section 5.2	Threshold Regions: The Cuyama Basin is made up of diverse regions and these are addressed in the GSP with different Minimum Thresholds and Measureable Objectives set for each region. We are specifically concerned about the Northwest Region and its potential impact on the entire western region of the Basin. Land in this region has been converted to intensive irrigation in the past three years. Chapter sections 5.2.1 and 5.2.2: Description says it is "most likely in full condition". However, actual monitoring of these wells has shown that the groundwater level has decreased over 80 feet in just a few years of pumping. Furthermore the MT in this region allows many wells to draw down an additional 20 feet, and in some cases more than an additional 100 feet. The formula used for Interim Milestones will allow the Northwest region to have a target of lowering the ground level every 5 years. Our concern is this will have impact on and groundwater levels affecting wells in the region as well as groundwater dependent ecosystems that are known to occur in the area. We recommend the Minimum Thresholds and Interim Milestones for this region be reviewed and adjusted accordingly.	These comments are similar to what was provided on previous drafts of the GSP. The sustainability criteria reflect those that were approved by the CBGSA Board. Insufficient data is currently available to know if recent changes in groundwater elevations are tempory or reflect a long-term change. The sustainabililty criteria can be adjusted by the Board in the future if warranted by additional data that becomes available. Therefore, staff recommends no changes be made to the GSP.	No
10	Roberta Jaffe and Steve Gleissman	Condor's Hope Ranch		Adaptive Management: In Chapter 7.6 The two "triggers" for determining that something should be done, especially further reductions in pumping, are: 1. being more than 5% off of the glide path 2. being within 10% off the MT But in both cases it is not clear what management actions will take place, nor a timeline for their implementation. They both mention that "evaluation" of why the triggers have been reached would take place first, but with no details on a timeline for such evaluation, nor is there any description of what "appropriate actions" are if a consequence needs to be applied. Consequences should be clearly described as primarily in the form of pumping reductions. There should also be mention that these triggers, especially number 2, be applied to the entire basin, and not just to the management areas.	The details of how an evaluation would be performed and the actions to be taken can be determined by the CBGSA Board during GSP implementation. Therefore, staff recommends no changes be made to the GSP.	No

CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Coast Regional Water Quality Control Board

March 15, 2019

Chairperson Derek Yurosek
Cuyama Basin Water District
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309

Dear Chairperson Yurosek:

CENTRAL COAST WATER BOARD COMMENTS ON DRAFT CUYAMA VALLEY GROUNDWATER SUSTAINABILITY PLAN CHAPTER ON MINIMUM THRESHOLDS, MEASUREABLE OBJECTIVES, AND INTERIM MILESTONES

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) is a state agency that implements state and federal water quality laws within the Central Coast region. The Cuyama Valley groundwater basin falls within the jurisdictional area of our region and as such, the Central Coast Water Board has an interest in preserving, enhancing, and restoring water quality within the basin. Groundwater monitoring is a critical component towards addressing our interests and implementing our regulatory authority. The Central Coast Water Board has reviewed the draft chapter of the Cuyama Valley Groundwater Sustainability Plan (GSP) on *Minimum Thresholds, Measurable Objectives, and Interim Milestones* and would like to provide comments on the groundwater quality-related portions of this draft chapter.

In general, the Central Coast Water Board recommends that the number of chemical constituents included in the Minimum Thresholds (MT), Measurable Objectives (MO), and Interim Milestones (IM) be increased. The Central Coast Water Board agrees that MTs, MOs and IMs should be established for total dissolved solids (TDS), however, including only that single constituent is insufficient for determining whether a groundwater basin is being managed sustainably with respect to water quality or for determining if undesirable results are being addressed. Land use in the Cuyama Valley is dominated by commercial agriculture, an industry that utilizes a variety of chemicals and practices that pose threats to groundwater quality. Therefore, the Central Coast Water Board recommends expanding the list of chemical constituents in the MT, MO, and IM to include nitrate, arsenic, and major dissolved ions. The reasoning for this recommendation is described in detail below.

Nitrate

Nitrate contamination of groundwater from agricultural activities is widely documented in the Central Coast region, including within the Cuyama Valley. Approximately 9% of on-farm domestic wells in the Cuyama Valley exceed the human health standard for nitrate concentration in drinking water[1]. The draft chapter states that the Cuyama Valley groundwater sustainability agency (GSA) does not have the authority to influence fertilizer use, and we are not suggesting the GSA should undertake such a regulatory role. However, the GSPs are required to implement thresholds and monitoring that can identify when undesirable results are occurring. Given the current impairment from nitrate in the basin and ongoing agricultural activity, it is appropriate to require thresholds and monitoring for nitrate in the Cuyama Valley groundwater basin. Nitrate monitoring is not unusual in agriculturally-dominated basins; for example, the Salinas Valley GSA is recommending an expanded suite of chemical constituents for its thresholds and monitoring. The recommendation in their most recent draft includes up to 25 different chemical constituents, including nitrate and arsenic[2]. Finally, we recommend that nitrate be reported as nitrogen (nitrate as N), because this convention allows for easy comparison and summation (e.g., calculation of total nitrogen).

Arsenic

Arsenic is a toxic chemical compound that occurs naturally in relatively high concentrations in many of the sediments that form California groundwater basins, including those of the Central Coast. Groundwater data from the Water Board's GeoTracker GAMA[3] website indicates that 12% of the wells in the Cuyama Valley groundwater basin exceed the maximum contaminant level (MCL) for arsenic in drinking water. The highest concentration recorded in the basin occurred in 2011 and was more than six times greater than the MCL. Furthermore, recent studies in the Central Valley of California[4] and the Mekong Delta in Thailand[5] have demonstrated that ground subsidence associated with groundwater over-pumping can mobilize arsenic by 'squeezing' it out of subsurface clay layers. The resulting mobilized arsenic can then enter groundwater and increase arsenic concentrations in nearby water supply wells. Because there is documented overdraft and subsidence in the Cuyama Valley, there is the potential risk of anthropogenically-induced arsenic contamination of groundwater due to arsenic mobilization from clay layers in the Cuyama Valley basin. Lastly, in addition to sediment-related sources,

---

[1] Central Coast Regional Water Quality Control Board, Staff Report for Regular Meeting of May 10-11, 2018. https://www.waterboards.ca.gov/centralcoast/board_info/agendas/2018/may/item8/item8_stfrpt.pdf

[2] Salinas Valley Basin Integrated Sustainability Plan DRAFT Chapter 5: https://d3n9y02raazwpg.cloudfront.net/svbgsa/27fcdbda-fda7-11e8-9afa-0050569183fa-55ab52bf-8db9-4b38-9bb3-c22d83c76d92-1550881306.pdf

[3] Geotracker GAMA website: http://geotracker.waterboards.ca.gov/gama/gamamap/public/

[4] Overpumping leads to California groundwater arsenic threat. Smith, R., Knight, R., and Fendorf, S. Nature Communications, 2018. DOI: 10.1038/s41467-018-04475-3

[5] Release of arsenic to deep groundwater in the Mekong Delta, Vietnam, linked to pumping-induced land subsidence. Erban, L.E., Gorelick, S. M., Zebker, H. A., Fendorf, S. Proceedings of the National Academy of Sciences, 2013. https://doi.org/10.1073/pnas.1300503110

arsenic is a component in many pesticides commonly used on various crops. These factors suggest that arsenic should be included in the MTs, MOs, and IMs for the Cuyama Valley basin.

Major Dissolved Ions

Major dissolved cation and anion composition in groundwater reflects the source of recharge water, lithological and hydrological properties of the aquifer, groundwater residence time, and chemical processes within the aquifer. As such, major dissolved ions are valuable for identifying different groundwater types (via Piper or Stiff diagrams) and for "fingerprinting" source water from individual wells. In addition, ionic charge balance provides quality assurance that all the major ions are actually included in the analysis and that TDS concentrations are accurate. Finally, collection and analysis of major dissolved ion samples is easy and inexpensive, and the cost of the analysis is well worth the data provided, particularly if the well is already being sampled for other constituents.

The Central Coast Water Board thanks the GSA for the work being done in the Cuyama Valley and appreciates this opportunity to provide comments. If you have questions or would like to discuss these comments in greater detail, lease feel free to reach out to Daniel Pelikan, James Bishop, or Diane Kukol at the Central Coast Water Board:

Daniel Pelikan, P.G., C.Hg.
Engineering Geologist
Central Coast Water Board
Daniel.Pelikan@Waterboards.ca.gov
805-549-3880

James Bishop, P.G.
Engineering Geologist
Central Coast Water Board
James.Bishop@waterboards.ca.gov
805-542-4628

Diane Kukol, P.G.
Senior Engineering Geologist
Central Coast Water Board
Diane.Kukol@Waterboards.ca.gov
805-542-4637

Sincerely,

for John M. Robertson
Executive Officer

cc:

Matt Keeling, Central Coast Water Board, Matt.Keeling@Waterboards.ca.gov
Diane Kukol, Central Coast Water Board, Diane.Kukol@Waterboards.ca.gov
Daniel Pelikan, Central Coast Water Board, Daniel.Pelikan@Waterborads.ca.gov
James Bishop, Central Coast Water Board, James.Bishop@Waterboards.ca.gov
Andrew Renshaw, State Water Resources Control Board, Andrew.Renshaw@Waterborads.ca.gov
Natalie Stork, State Water Resources Control Board, Natalie.Stork@Waterboards.ca.gov
Sam Boland-Brian, State Water Resources Control Board, Samuel.Boland-Brien@waterboards.ca.gov

From: K. P. March <kmarch@bkylawfirm.com>
Sent: Thursday, October 17, 2019 7:54 PM
To: Taylor Blakslee <TBlakslee@hgcpm.com>
Subject: To the Cuyama Basin Groundwater Sustainability Agency ("CBGSA") regarding your final draft GSP; From Walking U Ranch, LLC, by Kathleen P. March, Esq., managing member of , LLC; Attn: Talyor Blakslee: Please POST as the Objection and Public Comment of W

101719

To the Cuyama Basin Groundwater Sustainability Agency ("CBGSA") regarding your final draft GSP

From Walking U Ranch, LLC, by Kathleen P. March, Esq., sole managing member of Walking U Ranch, LLC

Attn: Talyor Blakslee**: Please POST as the Objection and Public Comment of Walking U Ranch, LLC to CBGSP, and please to give to each member of CBGSA, and please give to the attorney(s) for CBGSA**

Dear CBGSA:

I just read the final draft proposed Cuyama Basis GSP ("GSP"), using the link that Taylor Blakslee sent today, 10/17/19. I write as managing member of Walking U Ranch, LLC, which owns and runs a 1000 acre cattle ranch located in the west end of the cuyama valley, 33 miles east of Santa Maria, CA.

Walking U Ranch, LLC objects to the GSP.

The proposed funding for the GSP is **directly CONTRARY** to what the vote was, taken on 7/10/19, of the full Cuyama Basin GSA, on how to fund the Cuyama Basin GSP. My husband and I (yes we are both lawyers) were present, and I spoke to GSA. In addition, I had briefed the controlling law, by letters to the GSA, before the 7/10/19 meeting.

The vote of the full CBGSA, on 7/10/19, which was practically unanimous, was to fund the Cuyama Basin GSP **by charging fees based on water extracted**, and **NOT to fund the GSP by charging any per acre fees**.

Directly contrary to that vote of the full GSA, the "final proposed draft" GSP, at Section 8 (Implementation) at pages 8-4 to 8-5, and in the executive summary, says the GSP may be funded by charging extraction fees, **or by charging per acre assessments**, or by a combination of both means. Here is the specific language at p.8-4 and 8-5 of the GSP:

"the CBGSA will develop a financing plan that will include one or more of the following financing approaches:

> • Pumping Fees: Pumping fees would implement a charge for pumping that would be used to fund GSP implementation activities. To meet the funding needs of the GSP, fees would be lower when pumping is higher, such as current pumping levels, and higher when pumping is lower, such as when sustainable pumping levels are achieved. Although this funding approach would meet the financial needs of the GSP and CBGSA, it may discourage pumping reductions due to cost. The financing plan developed by the CBGSA would evaluate how to balance the need for funding with encouraging pumpers to commit to compliance with desired groundwater pumping

reduction goals. DRAFT Draft Groundwater Sustainability Plan 8-5 Implementation Plan June 2019

• Assessments: Assessments would charge a fee based on land areas. There are two methods for implementing an assessment based on acreage. The first option would assess a fee for all acres in the Basin outside of those in federal lands. This option would not distinguish between land use types. The second option would be to assess a fee only on irrigated acres. Similar to the pumping fee approach, assessment based on irrigated acreage could affect agricultural operations and contribute to land use conversions, which could affect the assessment amount or ability to fully fund GSP implementation.

• Combination of fees and assessments: This approach would combine pumping fees and assessments to moderate the effects of either approach on the economy in the Basin. This approach would likely include an assessment that would apply to all acres in the Basin, rather than just to irrigated acreage. It would be coupled with a pumping fee to account for those properties that use more water than others.

During development of a financing plan, the CBGSA would also determine whether to apply fees across the Basin as a whole or just within the management areas. The CBGSA may choose to apply an assessment across the Basin and a pumping fee within the management areas, or choose to set different levels of assessments or fees based on location within a management area or not, or they may choose another combination of the above approaches based on location. Prior to implementing any fee or assessment program, the CBGSA would complete a rate assessment study and other analysis consistent with the requirements of Proposition 218."

The "per acre assessment" is DIRECTLY CONTRARY to that vote of the GSA on 7/10/19.

Even more dishonest, the final draft GSP does not anywhere reveal that the Vote, taken on 7/10/19 , of the full GSA, was to fund the GSP **by charging fees based on water extracted**, and **NOT to fund the GSP by charging any per acre fees**.

Your final draft GSP does not even refer to the fact that Vote was taken by the full GSA, and that the Vote was to ONLY charge fees based on water used (aka "water extraction fees"), and was NOT to fund the GSP by charging any per acre fees.

A per acre fee is a **property tax**, which pursuant to the California Constitution, Proposition 218, CANNOT be charged, unless the GSA holds **and wins** a valid proposition 218 election, in which all landowners in the Valley vote. I've briefed the controlling law in my letters sent to GSP before the 7/10/19 meeting of the full GSA. It would cost a lot of money for the GSA to publicize and hold a valid proposition 218 election, and GSA would not be able to win a proposition 218 election, because the number of acres owned by ranchers (like Walking U Ranch, LLC) and other non-farmers, is far greater than the number of acres owned by the big farming operations. You couldn't win a majority vote. And a proposition 218 election requires, as I recollect, that any new property tax be approved by a 2/3rds vote of the property owners.

If CBGSA tries to charge a per acre fee, without holding and winning a valid Proposition 218 election, Walking U Ranch, LLC will sue CBGSA. I said that at the 7/10/19 meeting. GSA and its attorneys would do well to take that to heart, because my husband and I are attorneys, and we know how to sue to

protect the rights of Walking U Ranch, LLC, and the other landowners in the Cuyama Basin who are not OVERUSING water, if necessary.

If Walking U Ranch, LLC has to sue CBGSA to stop illegal acreage based assessments, Walking U Ranch, LLC will be seeking award of Ranch's attorneys fees from having to sue GSA, and Ranch will be entitled to be reimbursed for Ranch's attorneys fees incurred suing GSA. That is because charging a fee ("assessment") based on **acreage owned** is a **property tax**, and it violates the California Constitution to charge a fee ("assessment") based on acreage owned, unless the GSA has held, and won a valid Proposition 218 election.

I note that the above quoted language at 8-4 and 8-5 of "Implementation" of GSP, **fails** to say that GSP cannot assess any charges/fees/assessments based on **acres owned, unless GSA holds and wins a Proposition 218 election**. The above quoted language saying "consistent with the requirements of Proposition 218 " is way too vague. Your GSP should state what the California Constitution requires, which is GSP cannot assess charges based on acres owned, unless GSA holds and wins a valid Proposition 218 election. And explain what that entails.

Sadly, it appears from the final draft plan, that GSA is hoping that no one notices that the GSP, which GSA is now proposing, is DIRECTLY CONTRARY to the Vote, held on 7/10/19, of the full GSA, which was NOT to assess any charges based on acres owned.

Sadly, it appears that whoever got the above "per acre assessment" language put into this final draft plan (the large farming operations, I'm guessing?) are hoping that no one complains it is illegal to charge fees based on acres owned, unless GSA has held and won a valid Proposition 218 election. **Walking U Ranch, LLC hereby complains**. So stop hoping your GSA can get away with illegally assessing fees based on acreage owned, without holding and winning a valid Proposition 218 election, which you can't win. **Fix your GSP, by taking out the above, highlighted in yellow, references to funding your GSP by charging fees based on land area (ie, acres owned). Take that out from section 8. Take it out from the executive summary.**

Bottom line: Delete from your final draft GSP, the text I have highlighted in yellow, above, about "assessments based on land area", and also take out the text about using a combination of such assessments along with pumping fees. Walking U Ranch, LLC requests you make those deletions.

You also need to delete from your executive summary of GSP, all language about charging fees based on on acreage. Here is an example in the executive summary of that improper language, which needs to be deleted:

> "The CBGSA Board of Directors will evaluate options for securing the needed funding. Similar to the funding options for the CBGSA basin-wide activies,
> **options for funding management area costs include fees based on** groundwater pumping**, acreage, or a combinantion of these**, and pursuit of any available grant funds".

Please Reply to me, to kmarch@bkylawfirm.com, Taylor, to confirm receipt, and to confirm you will post this email as the public comment (and Objection to GSP) of Walking U Ranch, LLC, and to confirm you will forward this to all GSA members, and to GSA's lawyer(s).

After your GSA considers Walking U Ranch, LLC's herein Objection to GSP, and request that GSA correct the GSP, please let me know whether or not GSA is going to delete the fees assessed base on acres owned provisions from your GSP. Thank you.

KPMarch

Kathleen P. March, Esq.
The Bankruptcy Law Firm, PC
10524 W. Pico Blvd, Suite 212
Los Angeles, CA 90064
Phone: 310-559-9224
Fax: 310-559-9133
E-mail: kmarch@BKYLAWFIRM.com
Website: www.BKYLAWFIRM.com
"Have a former bankruptcy judge for your personal bankruptcy attorney"

Taylor Blakslee

From: K. P. March <kmarch@bkylawfirm.com>
Sent: Friday, October 18, 2019 11:51 AM
To: Taylor Blakslee
Cc: Joe Hughes
Subject: RE: To the Cuyama Basin Groundwater Sustainability Agency ("CBGSA") regarding your final draft GSP; From Walking U Ranch, LLC, by Kathleen P. March, Esq., managing member of , LLC; Attn: Talyor Blakslee: Please POST as the Objection and Public Comment

101819

To Taylor Blackslee, administrator for CBGSA; with CC to Joe Hughes, Esq., legal counsel to CBGSA

From Walking U Ranch, LLC, from KPMarch, Esq., Bankruptcy Law Firm, PC

Re: **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** to the Cuyama Basin Groundwater Sustainability Agency ("GSA") final draft Groundwater Sustainability Plan ("GSP")

Taylor:

Thx for confirming receipt of my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP**, that I emailed to you last night, as administrator of CBGSA.

Thx for confirming you will put my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** in the packet to be disseminated to the GSA on November 1, 2019.

But in addition to your forwarding my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** email of last night (10/17/19) to the GSA, I requested, in my email of last night, that my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** be posted as a **public comment**, to bring this problem to the attention of the rest of the landowners in the Cuyama Valley.

Please REPLY to confirm you will post my email of last night as a public comment, and how soon you will do so, and tell me how to check to see that it has been posted as a public comment. Or if you will NOT do so, please tell ME how to post my Walking U Ranch, LLC's OBJECTION and COMMENT to GSP as a public comment, myself. Thx.

Also, I need some information. Is there a GSA meeting on November 1, 2019, and if so what address and what time, and can I address the GSA regarding my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** at that meeting?
Is there a GSA meeting on November 6, 2019, and is it at 6pm at the Cuyama High School, and can I address the GSA regarding my **Walking U Ranch, LLC's OBJECTION and COMMENT to GSP** at that meeting?

It is disappointing that the final proposed CBGSP is directly contrary to the 7/10/19 vote of the GSA, which (almost unanimous vote) was NOT to charge any fees/assessments to fund the CBGSP, on a land owned basis.

Worse than being disappointing, the final draft GSP is **illegal**, because it says assessments may be charged to fund the GSP, based on **land owned**—and doing so would be charging a **property tax**, which requires holding and winning a valid Proposition 218 election, BEFORE any assement can be made on a **land owned basis**—but the GSA does NOT say that fees based on land owned would only be charged, pursuant to the CBGSP, if GSA holds and wins a valid Proposition 218 election. Omitting that makes the final draft GSP illegal, as contrary to what the California Constitution, Proposition 218, requires to charge assessments based on land owned (aka property tax) basis.

I just finished a 5 week trial, so if Walking U Ranch, LLC needs to sue GSA, for the illegal wording of the final draft plan, at least my law firm is available to do so. However, I suggest it would be better for all concerned, if the illegal wording of the GSP were fixed by GSA, **without Walking U Ranch, LLC having to sue to correct the illegal language**, so I suggest GSA do that.

I am "cc"ing GSA's lawyer, Joe Hughes, Esq., on this email: **Attorney Hughes, please REPLY to me regarding whether this illegal language will be fixed, by GSA, or whether suit is going to be necessary to get it fixed. Thx**

When you REPLY to me, please give me what information you have, as to why the final draft GSP is **directly contrary to the 7/10/19 vote** of the GSA, on the "do not assess fees on land owned basis" point? Thx

Please include this email in what you put in the packet of materials to be given to GSA on November 1, 2019. Please REPLY to confirm you will do so. Thx.

Please post this email as part of posting last night's email (**Walking U Ranch, LLC's OBJECTION and COMMENT to GSP**). Please REPLY to confirm you will do so. Thx.

KPMarch

Kathleen P. March, Esq.
The Bankruptcy Law Firm, PC
10524 W. Pico Blvd, Suite 212
Los Angeles, CA 90064
Phone: 310-559-9224
Fax: 310-559-9133
E-mail: kmarch@BKYLAWFIRM.com
Website: www.BKYLAWFIRM.com
"Have a former bankruptcy judge for your personal bankruptcy attorney"

From: Taylor Blakslee [mailto:TBlakslee@hgcpm.com]
Sent: Thursday, October 17, 2019 9:46 PM
To: K. P. March
Cc: Jim Beck; Joe Hughes
Subject: RE: To the Cuyama Basin Groundwater Sustainability Agency ("CBGSA") regarding your final draft GSP; From Walking U Ranch, LLC, by Kathleen P. March, Esq., managing member of , LLC; Attn: Talyor Blakslee: Please POST as the Objection and Public Comment

Kathleen,

I received your below email dated October 17, 2019 at 7:54 pm and it will be included in our material to the Board that will be distributed on Nov 1, 2019. Additionally, I will forward your comment to the Board ahead of the Nov 1 Board packet mailout.

Thank you for your comments.

Best,

Taylor Blakslee
Project Coordinator

(661) 477-3385

HALLMARK GROUP Capital Program Management

Persistence | Proficiency | Performance

To send me a file click here.

Corporate (916) 923-1500
www.hgcpm.com

Taylor Blakslee

From: K. P. March <kmarch@bkylawfirm.com>
Sent: Wednesday, October 23, 2019 1:38 PM
To: Taylor Blakslee
Subject: Taylor Blakslee for CBGSA, from Walking U Ranch, LLC, by KPMarch, Esq., managing member of LLC: Two Questions: It appears there is a meeting at 4pm and a meeting at 6pm, of CBGSA, on Nov 6, 2019. My husband and I plan to come to meeting to address GSA

102319

To Taylor Blakslee for CBGSA, from Walking U Ranch, LLC, by KPMarch, Esq., managing member of LLC: Two Questions:

(1) It appears there is a meeting at 4pm and a meeting at 6pm, of CBGSA, on Nov 6, 2019. My husband and I plan to come to meeting to address GSA about the issues I emailed you Walking U Ranch, LLC's OBJECTION and PUBLIC COMMENT about on 10/17/19 and 10/18/19. What is the correct time for us to come to meeting to address GSA—4pm or 6pm? REPLY and tell me please. Thx. And WHY are there 2 meetings of GSA, one at 4pm and one at 6pm, on the same day?

(2) Regarding the 2019 Groundwater extraction Fee Report, why does it show, at p8, regarding CBGSA FY 2019-20 Budget, under **Legal & Admin**, the Amount of $60,000 labeled as "**Prop 218-Basin-wide**" for months July-Jan? What is the $60,000 actually for? Appears it is for a period (july 2019 to jan 2020) that is soon ending? Yes, am I reading that correctly, or not? **Has that $60,000 been spent, or will it be spent, and FOR WHAT**?

Please REPLY and tell me the Answers. Thx

Also, when last we talked on phone, you said you were going to suggest the ERRORs in the final draft CBGSP that OBJECTED to and COMMENTED on, be fixed. Has that happened? Reply and tell me status please. Thx.

Please include this email, along with my previous emails, in packet you give to GSA for the Nov 6 meeting. Thx

KPMarch

Kathleen P. March, Esq.
The Bankruptcy Law Firm, PC
10524 W. Pico Blvd, Suite 212
Los Angeles, CA 90064
Phone: 310-559-9224
Fax: 310-559-9133
E-mail: kmarch@BKYLAWFIRM.com
Website: www.BKYLAWFIRM.com
"Have a former bankruptcy judge for your personal bankruptcy attorney"

To: Cuyama Basin Groundwater Sustainability Agency
From: Walking U Ranch, LLC
Date: 11/6/19
Re: More detail on why GSA would not be able to win a Cal. Constitution 13D (Proposition 218) election, which GSA would have to hold and win to assess costs of GSA/GSP on a "land owned" basis, instead of a "water extracted" basis.

GSP must be amended to state that GSA/GSP fees cannot be charged on a land-owned basis unless GSA holds, and wins, a Cal. Constitution Article 13D (Proposition 218) election. Special assessments, governed by Article 13D §4 of the California Constitution (part of Proposition 218), require approval of at least half of those who vote, weighted by their proportional share, plus a number of other procedural requirements (discussed below). Special taxes, governed by Article 13A §4 of the California Constitution (part of Proposition 13), require a 2/3 vote.

GSA is highly unlikely to pass a special assessment under Proposition 218:

Summary of §4:
If tax is an assessment under Cal. Constitution Art. 13D, §4, taxing body must:
1. Identify which parcels of land are going to receive a "special benefit," and what that benefit is,
2. Prepare a "detailed engineer's report prepared by a registered professional engineer,"
3. Calculate how much each parcel will be assessed, and give the landowners written notice, by mail, of the proposed assessment, including "the total amount thereof chargeable to the entire district, the amount chargeable to the owner's particular parcel, the duration of the payments, the reason for the assessment and the basis upon which the amount of the proposed assessment was calculated, together with the date, time, and location of a public hearing on the proposed assessment," and ballots and voting instructions,
4. Conduct a public hearing within 45 days of mailing notice to the record owners of parcels, and
5. Weighing the ballots received according to "the proportional financial obligation of the affected property," the assessment cannot be implemented over a majority protest. "A majority protest exists if, upon the conclusion of the hearing, ballots submitted in opposition to the assessment exceed the ballots submitted in favor of the assessment."

The complete statute text of Cal. Constitution Art. 13D, §4 (with emphasis added) is:

> "Procedures and Requirements for All Assessments.
> (a) An agency which proposes to levy an assessment **shall identify all parcels which will have a special benefit conferred upon them and upon which an assessment will be imposed**. The proportionate special benefit derived by each identified parcel shall be determined in relationship to the entirety of the capital cost of a public improvement, the maintenance and operation expenses of a public improvement, or the cost of the property related service being provided. No assessment shall be imposed on any parcel which exceeds the reasonable cost of the proportional special benefit conferred on that parcel. Only special benefits are assessable, and an agency shall separate the general benefits from the special benefits conferred on a parcel. Parcels within a district that are owned or used by any agency, the State of California or the United States shall not be exempt from

assessment unless the agency can demonstrate by clear and convincing evidence that those publicly owned parcels in fact receive no special benefit.

(b) All assessments shall be **supported by a detailed engineer's report prepared by a registered professional engineer certified by the State of California**.

(c) **The amount of the proposed assessment for each identified parcel shall be calculated and the record owner of each parcel shall be given written notice by mail of the proposed assessment, the total amount thereof chargeable to the entire district, the amount chargeable to the owner's particular parcel, the duration of the payments, the reason for the assessment and the basis upon which the amount of the proposed assessment was calculated, together with the date, time, and location of a public hearing on the proposed assessment**. Each notice shall also include, in a conspicuous place thereon, **a summary of the procedures applicable to the completion, return, and tabulation of the ballots required pursuant to subdivision (d), including a disclosure statement that the existence of a majority protest, as defined in subdivision (e), will result in the assessment not being imposed**.

(d) Each notice mailed to owners of identified parcels within the district pursuant to subdivision (c) **shall contain a ballot** which includes the agency's address for receipt of the ballot once completed by any owner receiving the notice whereby the owner may indicate his or her name, reasonable identification of the parcel, and his or her support or opposition to the proposed assessment.

(e) The agency shall conduct a **public hearing upon the proposed assessment not less than 45 days after mailing the notice of the proposed assessment to record owners of each identified parcel**. At the public hearing, the agency shall consider all protests against the proposed assessment and tabulate the ballots. The agency shall not impose an assessment if there is a majority protest. **A majority protest exists if, upon the conclusion of the hearing, ballots submitted in opposition to the assessment exceed the ballots submitted in favor of the assessment. In tabulating the ballots, the ballots shall be weighted according to the proportional financial obligation of the affected property**.

(f) In any legal action contesting the validity of any assessment, the burden shall be on the agency to demonstrate that the property or properties in question receive a special benefit over and above the benefits conferred on the public at large and that the amount of any contested assessment is proportional to, and no greater than, the benefits conferred on the property or properties in question.

(g) Because only special benefits are assessable, electors residing within the district who do not own property within the district shall not be deemed under this Constitution to have been deprived of the right to vote for any assessment. If a court determines that the Constitution of the United States or other federal law requires otherwise, the assessment shall not be imposed unless approved by a two-thirds vote of the electorate in the district in addition to being approved by the property owners as required by subdivision (e).”

Cal. Constitution Art. 13D, §4.

GSA also cannot implement fees on a land-owned, rather than a water-extracted, basis, under Cal. Constitution Art. 13D, §6, because Section 6 requires that the fee be proportionate to the service actually used by, or immediately available to, the owner of the property

The complete statute text of Cal. Constitution Art. 13D, §6 (with emphasis added) is:

> "Property Related Fees and Charges. (a) Procedures for New or Increased Fees and Charges. An agency shall follow the procedures pursuant to this section in imposing or increasing any fee or charge as defined pursuant to this article, including, but not limited to, the following:
>
> (1) The parcels upon which a fee or charge is proposed for imposition shall be identified. **The amount of the fee or charge proposed to be imposed upon each parcel shall be calculated. The agency shall provide written notice by mail of the proposed fee or charge to the record owner of each identified parcel upon which the fee or charge is proposed for imposition, the amount of the fee or charge proposed to be imposed upon each, the basis upon which the amount of the proposed fee or charge was calculated, the reason for the fee or charge, together with the date, time, and location of a public hearing on the proposed fee or charge.**
>
> (2) The agency shall conduct a public hearing upon the proposed fee or charge not less than **45 days after mailing the notice** of the proposed fee or charge to the record owners of each identified parcel upon which the fee or charge is proposed for imposition. At the public hearing, the agency shall consider all protests against the proposed fee or charge. **If written protests against the proposed fee or charge are presented by a majority of owners of the identified parcels, the agency shall not impose the fee or charge.**
>
> (b) Requirements for Existing, New or Increased Fees and Charges. A fee or charge shall not be extended, imposed, or increased by any agency unless it meets all of the following requirements:
>
> (1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
>
> (2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
>
> (3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
>
> (4) **No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted.** Standby charges, whether characterized as charges or assessments, shall be classified as assessments and shall not be imposed without compliance with Section 4.
>
> (5) No fee or charge may be imposed for general governmental services

including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.

Reliance by an agency on any parcel map, including, but not limited to, an assessor's parcel map, may be considered a significant factor in determining whether a fee or charge is imposed as an incident of property ownership for purposes of this article. In any legal action contesting the validity of a fee or charge, the burden shall be on the agency to demonstrate compliance with this article.

(c) Voter Approval for New or Increased Fees and Charges. Except for fees or charges for sewer, water, and refuse collection services, no property related fee or charge shall be imposed or increased unless and until that fee or charge is submitted and approved by a majority vote of the property owners of the property subject to the fee or charge or, at the option of the agency, by a two-thirds vote of the electorate residing in the affected area. The election shall be conducted not less than 45 days after the public hearing. An agency may adopt procedures similar to those for increases in assessments in the conduct of elections under this subdivision.

(d) Beginning July 1, 1997, all fees or charges shall comply with this section."

Definitions applicable to Cal. Constitution Art. 13D:

The complete statute text of Cal. Constitution Art. 13D, §2 is:

"Sec. 2. Definitions. As used in this article:

(a) "Agency" means any local government as defined in subdivision (b) of Section 1 of Article XIII C.

(b) "Assessment" means any levy or charge upon real property by an agency for a special benefit conferred upon the real property. "Assessment" includes, but is not limited to, "special assessment," "benefit assessment," "maintenance assessment" and "special assessment tax."

(c) "Capital cost" means the cost of acquisition, installation, construction, reconstruction, or replacement of a permanent public improvement by an agency.

(d) "District" means an area determined by an agency to contain all parcels which will receive a special benefit from a proposed public improvement or property-related service.

(e) "Fee" or "charge" means any levy other than an ad valorem tax, a special tax, or an assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property related service.

(f) "Maintenance and operation expenses" means the cost of rent, repair, replacement, rehabilitation, fuel, power, electrical current, care, and supervision necessary to properly operate and maintain a permanent public improvement.

(g) “Property ownership” shall be deemed to include tenancies of real property where tenants are directly liable to pay the assessment, fee, or charge in question.

(h) “Property-related service” means a public service having a direct relationship to property ownership.

(i) “Special benefit” means a particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large. General enhancement of property value does not constitute “special benefit.” ”

If GSA tried to claim fees are a “special tax,” then Cal. Constitution Art. 13A (Proposition 13) applies; GSA will be highly unlikely to get the 2/3 vote, in a Proposition 13 election, required to implement a special tax:

The complete statute text of Cal. Constitution Art. 13A, §4 is:

“Cities, Counties and special districts, by a two-thirds vote of the qualified electors of such district, may impose special taxes on such district, except ad valorem taxes on real property or a transaction tax or sales tax on the sale of real property within such City, County or special district.” Cal. Constitution Art. 13A, §4

Comments for the Cuyama Basin Draft Groundwater Sustainability Plan (GSP)

Submitted by Bob Giragosian, Managing Member Kern Ridge Growers, LLC.

Date submitted: 5/22/2019:

Do any of you think that carrots cause Chicken Pox? Probably not because lots of people eat carrots and do not get Chicken Pox while there are people who get chicken pox that do not eat carrots.

What does this have to do with water sustainability? The farmers in the Cuyama Water Basin are being accused of causing an overdraft situation with the water table. The water table has been falling and therefore it must be the farmers who are causing the problem. Afterall, the farmers in the Cuyama Water Basin pump in excess of 100,000 gallons per minute of water during the peak pumping season; therefore, farmers must be the problem and if we just reduce the amount of farming the problem will be fixed.

Clearly, there are lots of other farming areas where the farmers also pump thousands of gallons per minute the same as we do. In many of those areas there is not an overdraft situation; such as the southern part of the Cuyama Water Basin, as well as many areas in Northern California and farming regions all over the United States. Why is it that the farmers can pump as much as they want in these other areas without affecting the water table in their area?

What happens to the water after we pump it out of the ground to farm carrots? There are only 3 places for the water to go:

1) The water goes into the atmosphere, (evaporation).
2) The water goes into the plant, (evapotranspiration).
3) The water goes into the ground, (infiltration).

There is no other place for the water to go.

In researching evaporation, the study that I found, Irrigation of Agricultural Crops in California by Blain Hanson Department of Land, Air and Water Resources, University of California, Davis, study showed that sprinkler irrigated lettuce has approximately 8 inches per year of evaporation, including loss due to evapotranspiration. If we assume that lettuce takes approximately 3-acre feet of water, then the evaporation loss is 23 % of the total water put on the field. Since, the growing of lettuce is similar to carrots, in that it takes about the same amount of water and has a similar growing cycle, it seems appropriate to use this study to estimate the evaporation and evapotranspiration of carrots. Our primary crop in the Cuyama Valley is carrots and therefore my analysis will be on the farming of carrots using the evaporation and evapotranspiration rate associated with the growing of lettuce. let's assume that carrots farmed with sprinklers are going to experience a 23% water loss to evaporation and evapotranspiration, similar to lettuce. I am confident from my farming experience that this is a reasonable assumption.

Let's look at where the water goes. Let's examine a typical acre of carrots farmed.

Carrots that are produced on a field in the Cuyama Water Basin are going to yield approximately 80,000 pounds of carrots per acre farmed. Carrots are 90% water, therefore the amount of water harvested in the carrots is:

80,000 pounds X 90% = 72,000 pounds of water per acre farmed.

The weight of water per gallon is 8.3 pounds per gallon, therefore the number of gallons of water in one acre of carrots is:

72,000 pounds divided by 8.3 pounds per gallon = 8,675 gallons per acre

The percentage of pumped water that ends up in the actual product being shipped is:

3-acre feet per acre farmed X 326,000 gallons = 978,000 gallons of water per acre of carrots farmed

The percentage of water being removed from the area is:

8,675/978,000 =.887% which is less than 1 % of the water being pumped per acre

Therefore, we have the following situation caused by pumping water to farm carrots in the Cuyama Water Basin:

1) The water going into the atmosphere through evaporation and evapotranspiration is approximately 23%
2) The water that is harvested and is transported out of the area is less than 1 %
3) Therefore, the water that is returned to the ground water, through infiltration, is over 76% of the pumped water

The next thing we need to look at is the average rainfall for the Cuyama Valley. The average annual rainfall on the valley floor is 5 inches per year accounting for approximately 15% of the water pumped out of the ground.

To summarize the effects of ground water pumping by carrot farmers in the Cuyama Valley, let's look at the whole picture:

Amount of water pumped per farmed acre:	**978,000 gallons**
From pumped amount we will deduct the amount of water:	
That amount of water that is lost due to evaporation	
and evapotranspiration	(224,940) gallons
The amount of water that is transported in the carrots	(8,675) gallons
Leaving a balance to return to the ground water (infiltration)	**744,345 gallons**
Plus, we need to add back annual rainfall, (5"/year)	
as reported by Wikipedia on the Cuyama Valley	135,833 gallons
Plus the annual rainfall on the acreage that we fallow, (5"/year).	
(As we presently fallow 50% of our acreage)	135,833 gallons
Net effect to ground water from pumping water for farming carrots	**1,016,051 gallons**

This would create a surplus of the difference back to the water table of **38,051 gallons per acre farmed.** This surplus is primarily due to our ongoing practice of fallowing 50% of our acreage**.**

This analysis does not include the snowpack and the rainfall that occurs in the hills surrounding the Cuyama Valley which is a significant amount of water going to the Valley floor further increasing the benefit to the water table.

Let's continue the discussion to go into more detail about the 3 areas where the pumped water can go. The first one is back to the water table accounting for approximately 76% of the total water pumped. We use monitoring probes in the Cuyama Valley which allow us to monitor the movement of water underground. What we will see is that after a few hours of watering the water will saturate over 2 feet below ground and within one week the 2 feet section under the carrots will be nearly dry due to the water traveling to deeper depths below the 2 feet root zone. We then repeat the cycle every week therefore the water is traveling at least 2 feet per week, which means that the water will reach the water table in a maximum of 350 weeks or approximately 7 years, assuming the water table is at 700 feet below ground level. I have been farming carrots in the Cuyama valley since 1978, 41 years ago, but I am quite certain that carrots were farmed in the Cuyama Valley prior to the time I started in the carrot business. The ground water level monitoring shows that infiltration back to the water table is effective due to the character of the free draining soils in the area. Water from pumping is returning to the water table every day.

Let's consider what happens to the water lost to evaporation. Evaporation is the source of atmospheric water, therefore without evaporation, there would not be any rainfall. Clearly evaporation is necessary for rainfall; weather it is the result of water evaporating from the ocean or from our fields, both are creating atmospheric water that will be become rainfall. Evaporation is critical to the water cycle and the fact that there is a significant amount of evaporation is not a bad thing because evaporation is the source for rainfall on earth. In my analysis our rainfall on the farmed land exceeded the evaporation rate that we experience in the production of carrots.

The third place that the water goes is into the product, carrots, that we eat. When you eat a carrot, the water is processed through your body and all water that was stored is now free to replenish the ground water table. As a matter of fact, all food contains a high percentage of water and through the digestive process we expel the water because the human body maintains a level of approximately 60% water.

In essence all pumped water goes right back to the ground water table. When looking at a problem with falling water tables, we must look at the source of the water. Pumping water out of the ground is never the source of the water. The pumping allows us to use the same water over and over again as God intended.

If you really are interested in protecting the ground water in the Cuyama Valley, you must first determine the source of the water and look what is fueling the water table in the Cuyama Valley.

How do water wells work? We pump water form a (16") casing with very little dwell capacity. Dwell capacity would be the number of feet from standing water to the pumping water level times the gallons per foot in a 16" casing. According to the information on the WWW.torrentee.com web site there is 10.4 gallons per foot in a 16" casing. Therefore, in our typical well we have approximately 200 feet of water above the pumping level creating a dwell capacity of roughly 2080 gallons. Many of our wells pump in excess of 1000 gallons per minute. For a well to pump 1000 gallons per minute under pressure, it must receive 1000 gallons per minute. For example if we pump 1000 gallons per minute and we only receive 800 gallons per minute our well will go dry in less than 15 minutes because we have a very small

holding capacity and therefore a small change in incoming water will cause the well to either go dry right away or the pumping will have to be decreased to the 800 gallons per minute that we are replenishing at in order to keep the well running. In the peak of the summer when it is very hot we are pumping around the clock without a loss of water which means the well continually replenishes at the pumping rate. The source of the water must be very large, and its standing level must also be at the 700 feet below ground level similar to our well.

We also looked at what happens to the nearby well when we start pumping. I have 2 wells that are 1 mile apart. We checked the standing water level on both wells prior to operating either well, We then started well 1 to see if it had any effect on the standing level in well 2. There was no change before the well was started and after the well was running. The reason we try to keep wells a minimum of ½ mile apart is to prevent the chance of one well affecting the performance of another well. This also demonstrates the transmobility of the water through the aquifer in the Cuyama Valley.

I have enclosed well reports on several of the wells in the Cuyama Valley which tend to indicate that the water table is going up and down over time which is what you would expect if the water table is not a function of the pumping level. If pumping ground water caused the water table to drop, then the table would continually be falling as we pumped out water to farm. The more we pump the further down the table would go. We would be lowering our bowls yearly to stay with the new water level. But in reality, when looking at well records during the last 10 years, we see that the water table goes up and down almost at random, clearly illustrating that pumping water for farming is not causing the water table to change.

In conclusion, I believe that following our farming model of fallowing 50% of our irrigated acreage will lead to sustainable ground over time consistent with the well data that I have enclosed along with my comments. I do not think that a change in pumping level is necessary or appropriate for ground water sustainability in the Cuyama Valley. I further believe that the well monitoring that has been attached to these comments is consistent with my conclusions.

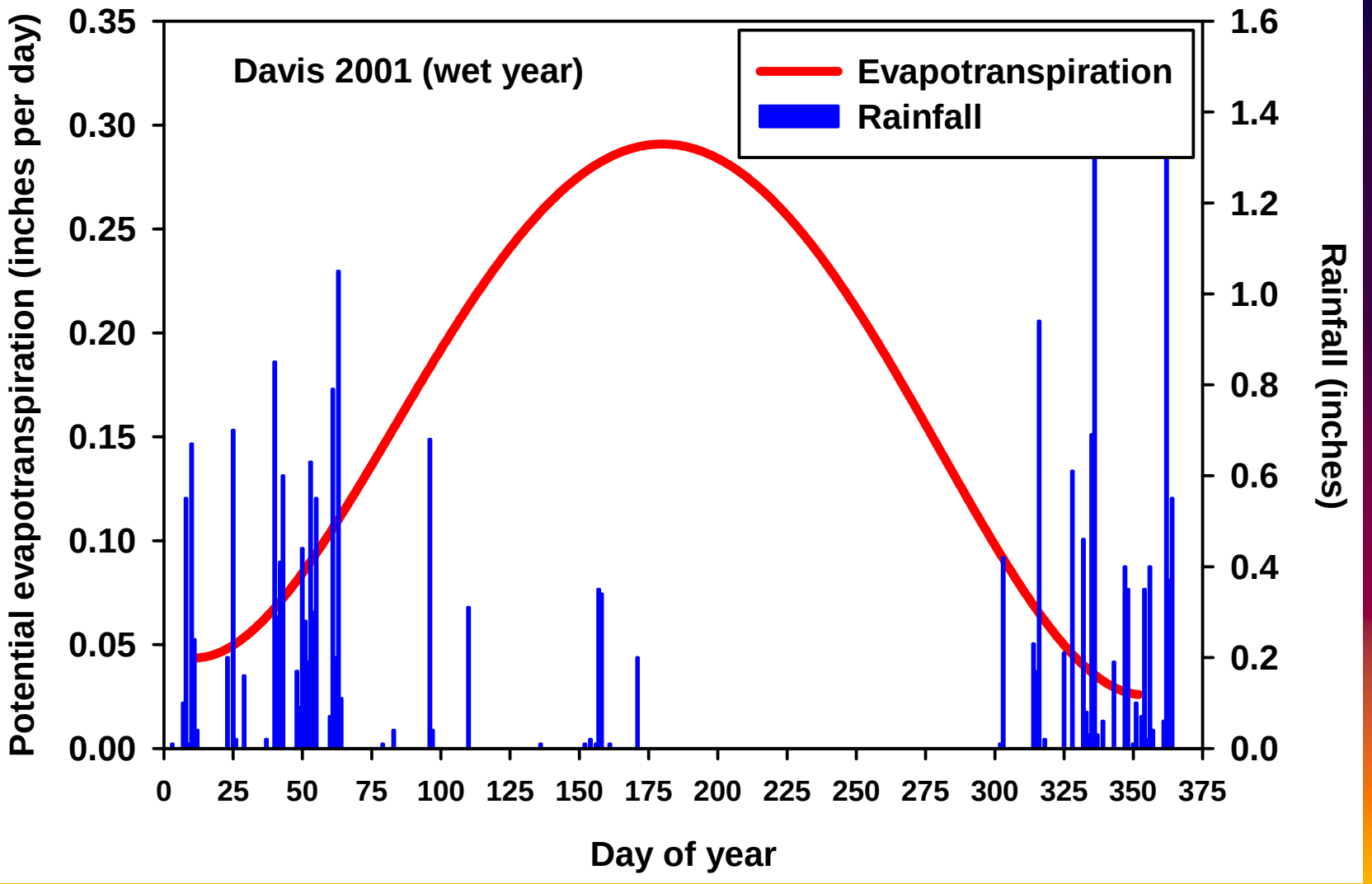
Irrigation of Agricultural Crops in California

Blaine Hanson
Department of Land, Air and Water Resources
University of California, Davis
brhanson@ucdavis.edu

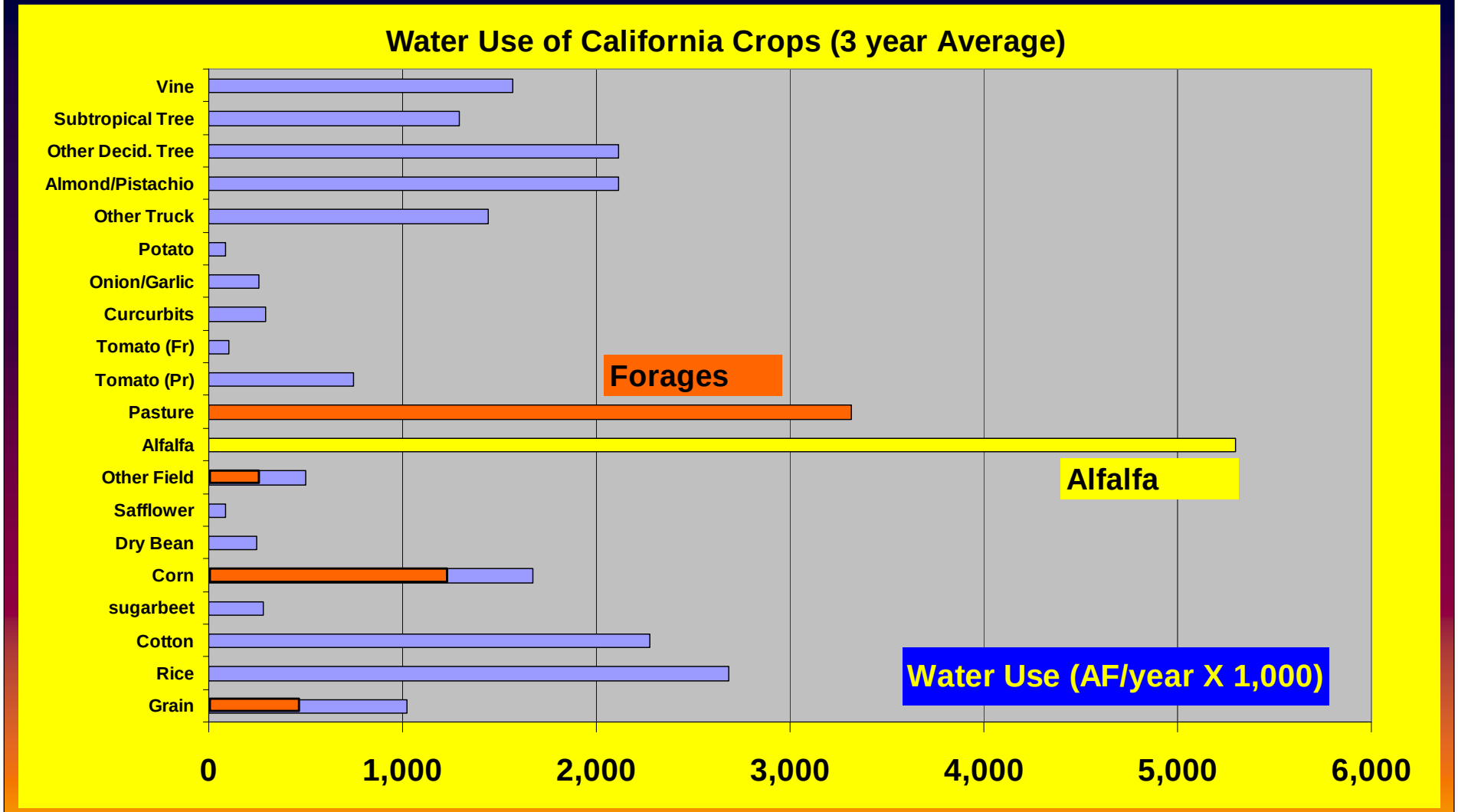
What percentage of California's water is used by agriculture?

- 80 %: based on the developed water supply
- 52 %: based on the total water supply of a dry year
- 29 %: based on the total water supply of a wet year

Why irrigate?



Water Use of California Crops



How much water does agriculture need?

What is evapotranspiration (ET)?

- Evapotranspiration: crop water use
  - Water evaporation from plant leaves (transpiration)
  - Water evaporation from soil surface
  - More than 95% of the water uptake by plants is evaporated
- Factors
  - Climate: solar radiation, temperature, humidity, wind
  - Plant: crop type, stage of growth, health
  - Soil moisture content

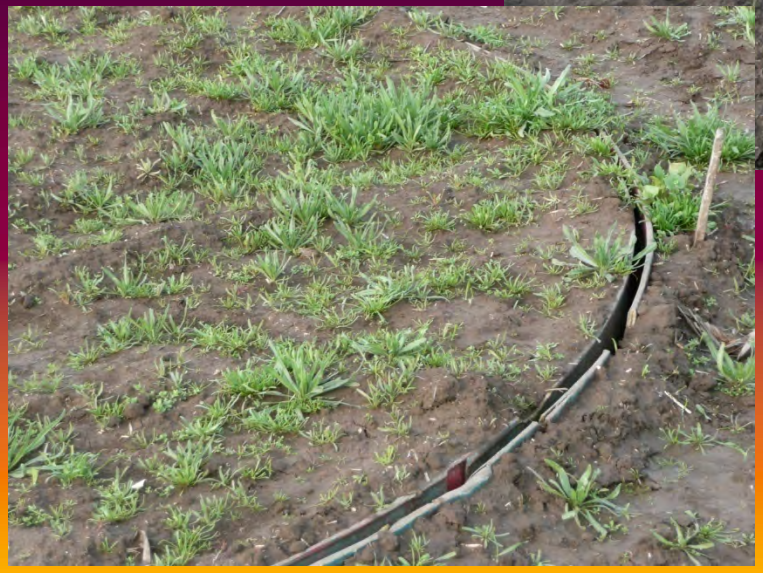
Units of evapotranspiration (ET)

- Volume of water
  - One acre-inch = 27,160 gallons
  - One acre-foot = 325,900 gallons
- Depth of water (inches, feet, cm, mm)
  - Standardized water use (independent of field size)
  - One inch of water = 1 acre-inch per acre = 27,160 gallons per acre

Measuring evapotranspiration (ET)

- Difficult and expensive to measure
- Methods
  - Lysimeter – very expensive, restricted to ag field stations
  - Meteorological methods – moderately expensive, portable
  - Soil moisture measurements – inexpensive, can be inaccurate
- California Irrigation Management Information System (CIMIS)
  - Network of weather stations Installed and maintained by the University of California and California Department of Water Resources
  - Weather data used to calculate a reference crop ET (ET of grass or alfalfa)
  - Crop coefficients (Kc) used to relate reference crop ET to actual crop ET
  - ET = Kc x Reference crop ET

Lysimeter



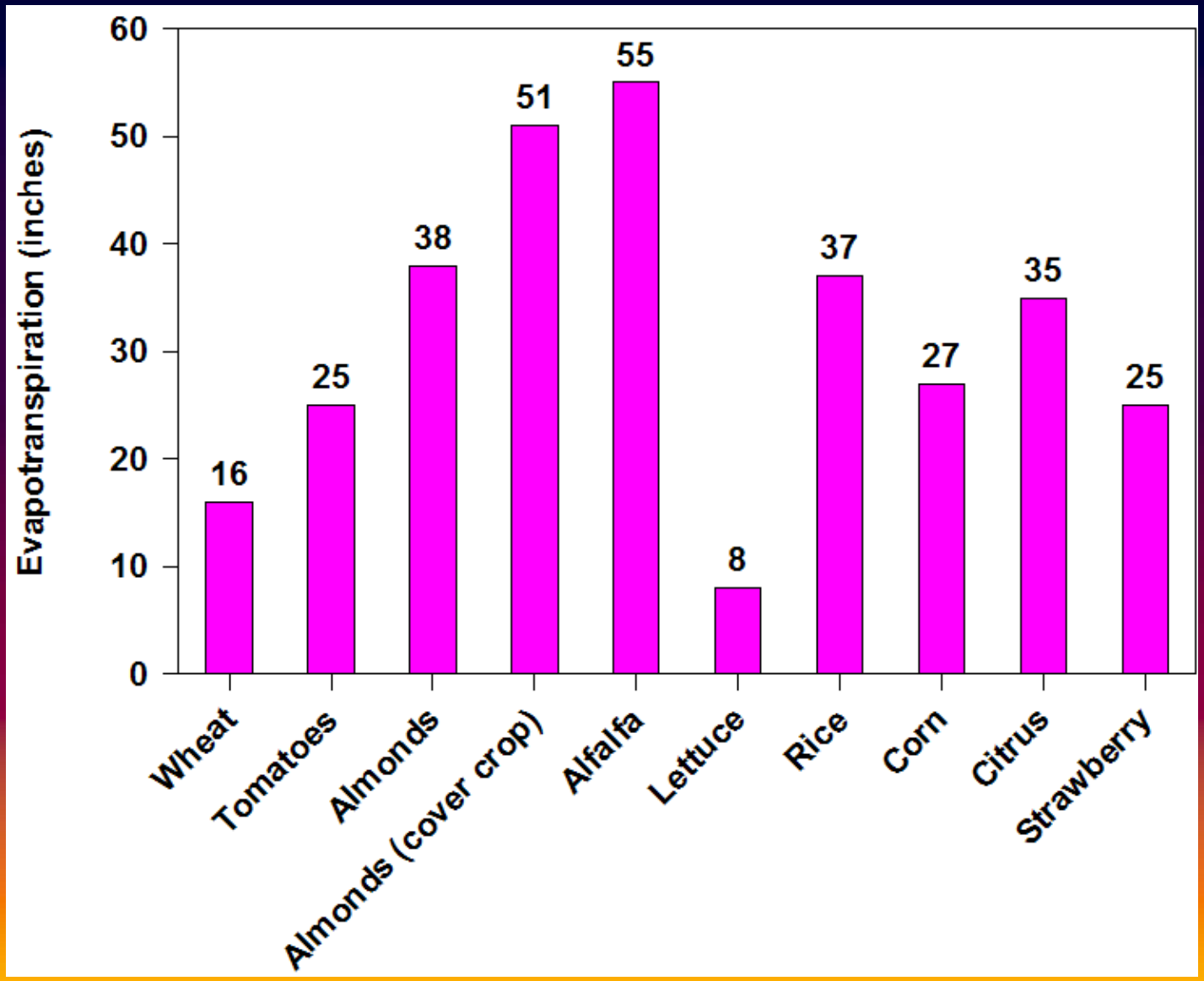
Meteorological Methods

Soil moisture measurements

CIMIS weather station – data and complex equations are used to calculate a reference crop ET

Crop ET = crop coefficient x reference crop ET

Evapotranspiration of selected crops




Alfalfa

Where do dairy products come from?

- Dairy products: ice cream, cheese, milk, yogurt, butter
- Dairy cows produce the milk used to make these products
- Dairy cows eat about 70% of the alfalfa produced in California

Alfalfa

- Products: ice cream, milk, cheese, yogurt, butter
- Seasonal ET of alfalfa = 55 inches of water = 55 acre-inches per acre = 1,500,000 gallons per acre
- 160 acres: ET = 160 acres x 1,500,000 gallons per acre = 240,000,000 gallons of water per year (does not included irrigation system inefficiencies)
- Are we wasting water growing alfalfa?

Grain

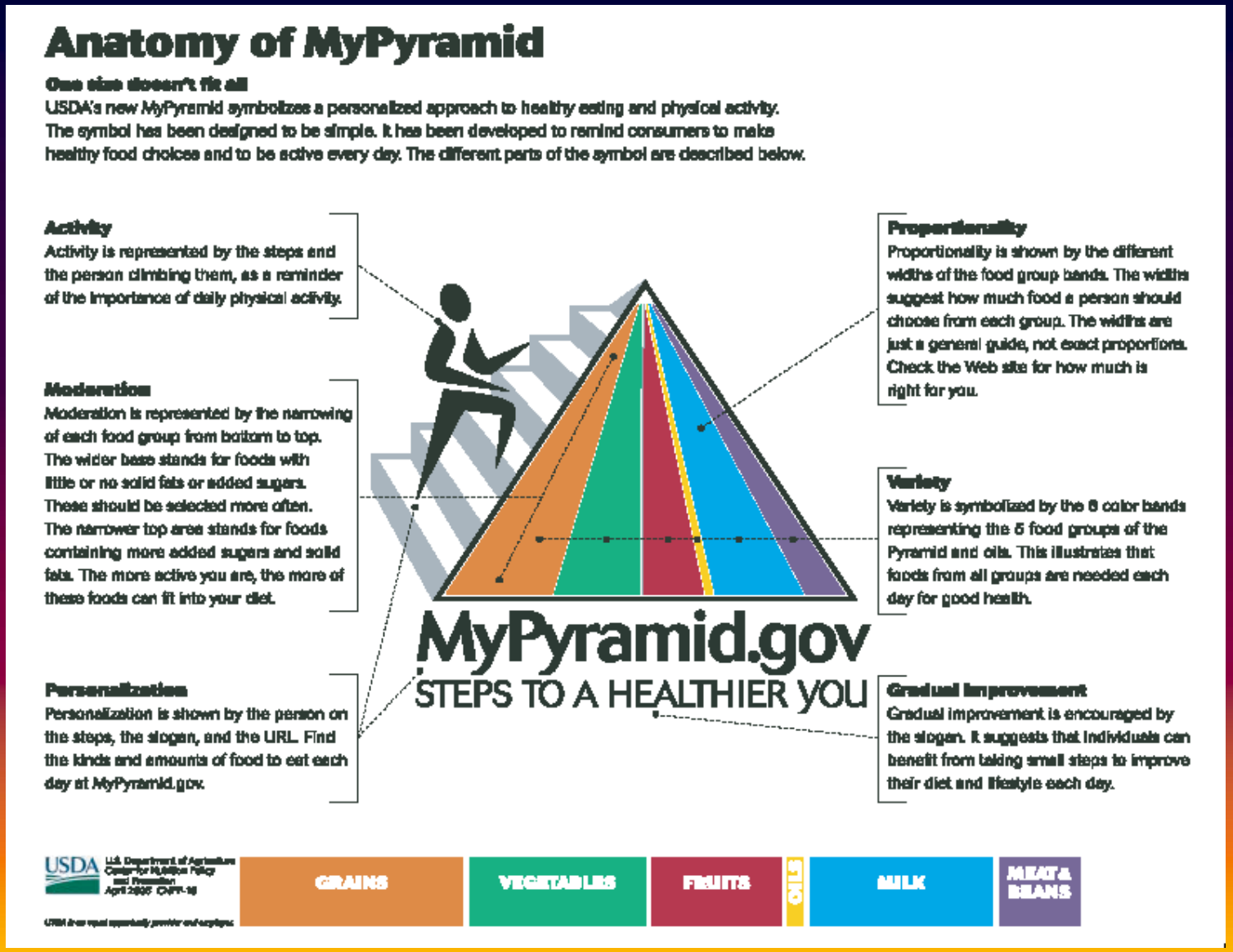
- Products: bread products, rice, cereal, chicken, eggs, steak
- Seasonal ET of wheat = 16 inches of water = 16 acre-inches per acre = 435,000 gallons per acre
- 160 acres: ET = 160 acres x 435,000 gallons per acre = **69,600,000** gallons of water per year (does not included irrigation system inefficiencies)

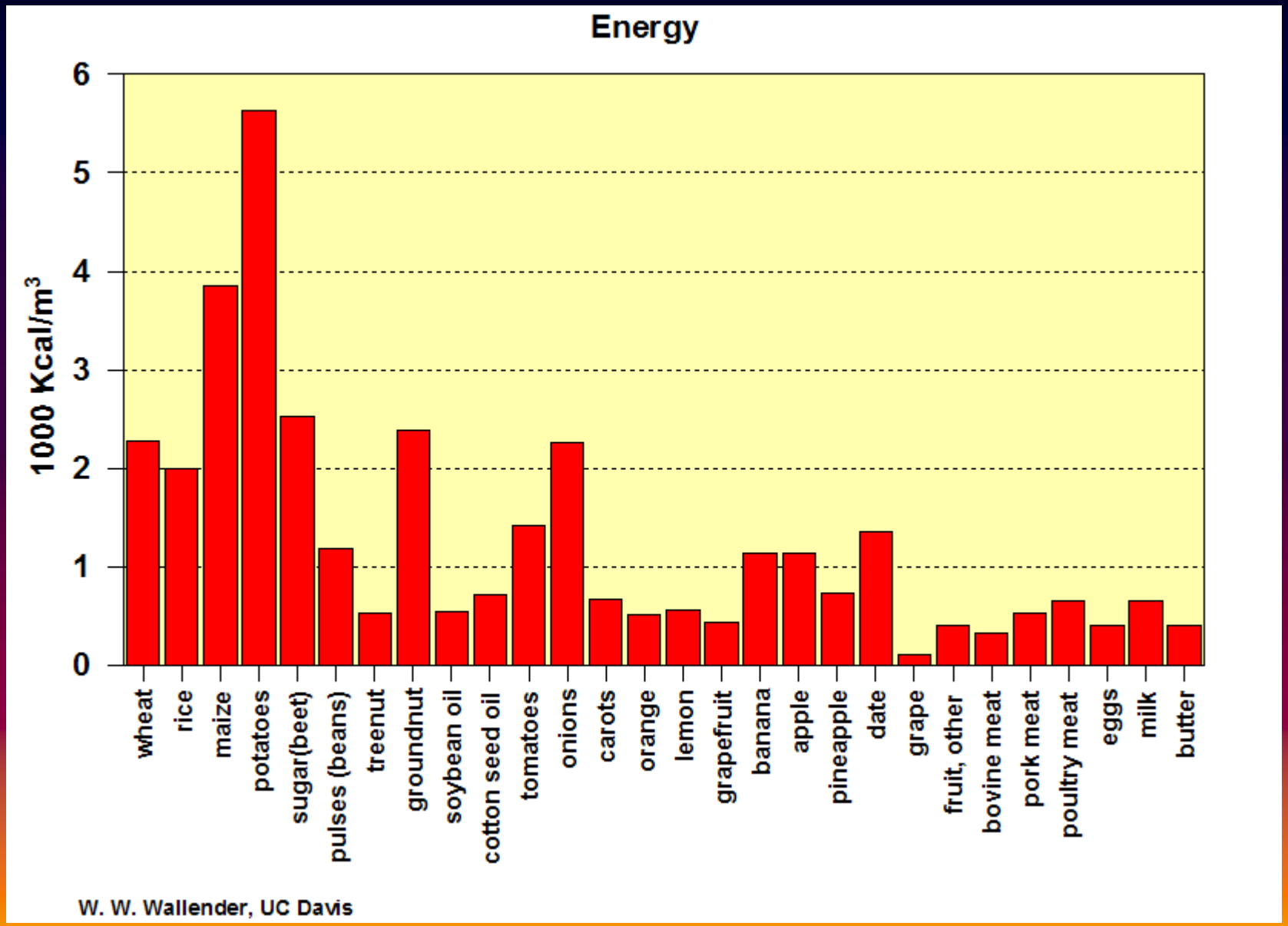
What crops should be grown in California?

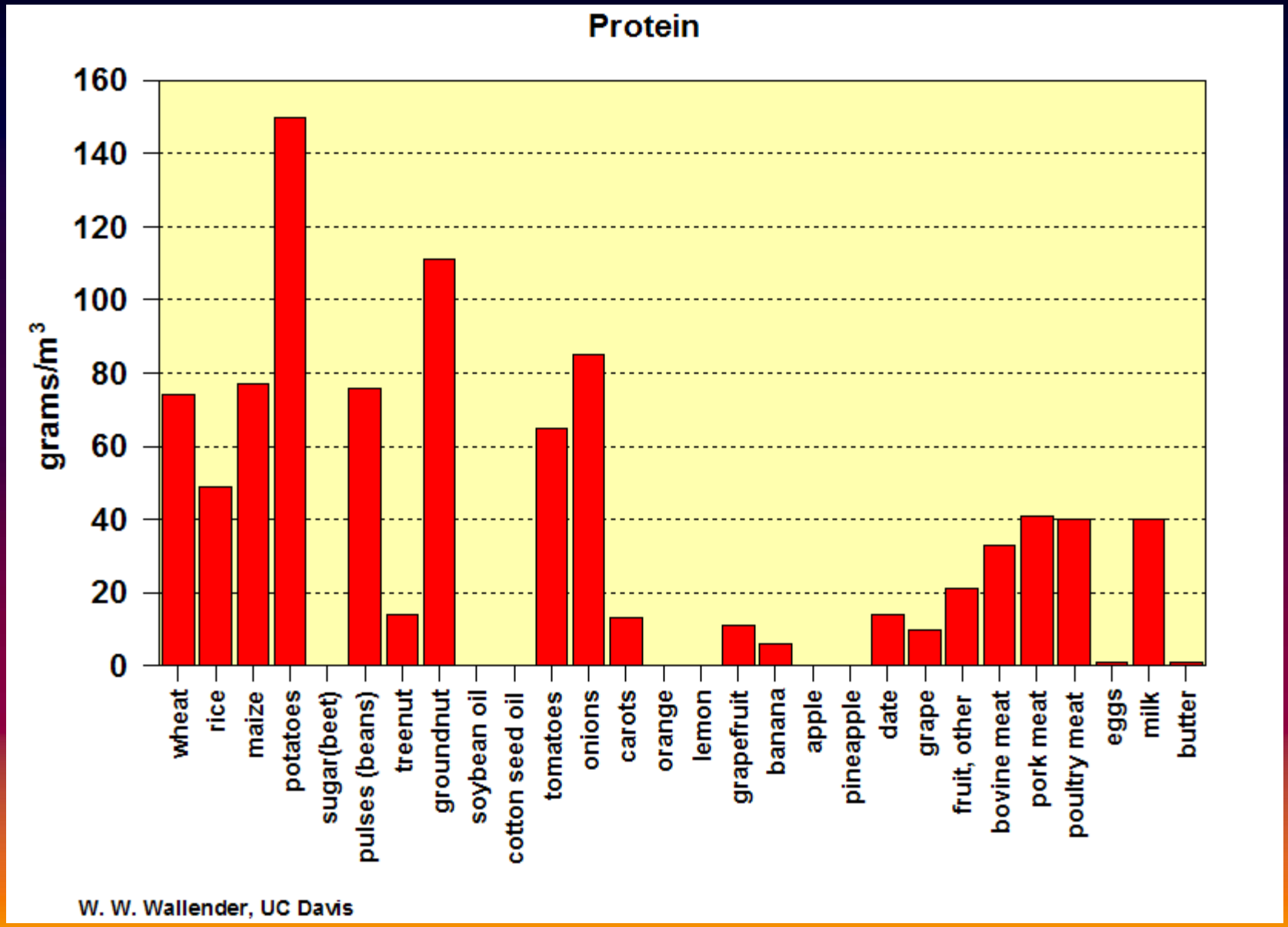
Maximize dollar returns?

- Only high cash value crops should be grown
  - Tree crops
  - Vegetable crops
  - Tomatoes
- Low cash value crops should not be grown
  - Wheat
  - Corn
  - Cotton
  - Alfalfa?

Maximize human health?




Energy
1000 Kcal/m3
0
1
2
3
4
5
6
wheat
rice
maize
potatoes
sugar(beet)
pulses (beans)
treenut
groundnut
soybean oil
cotton seed oil
tomatoes
onions
carots
orange
lemon
grapefruit
banana
apple
pineapple
date
grape
fruit, other
bovine meat
pork meat
poultry meat
eggs
milk
butter
W. W. Wallender, UC Davis


Protein
grams/m3
160
140
120
100
80
60
40
20
0
wheat
rice
maize
potatoes
sugar(beet)
pulses (beans)
treenut
groundnut
soybean oil
cotton seed oil
tomatoes
onions
carots
orange
lemon
grapefruit
banana
apple
pineapple
date
grape
fruit, other
bovine meat
pork meat
poultry meat
eggs
milk
butter
W. W. Wallender, UC Davis

The situation

- Agriculture cannot compete economically with the urban/industrial sector for water.
  - Uses a large amount of water per unit of production
  - We do not pay very much for the agricultural products
- Regardless of the economics, if we want food we will have to pay the price in terms of water and land for producing the agricultural products used to produce our food. There is no other choice if we want food!
- Lower-cash value crops provide a major part of our diet

Irrigation methods in California

Irrigation efficiency

- **Definition: ratio of water beneficially used to amount applied**
- **Beneficial uses**
  - **ET – major use**
  - **Salinity control**
  - **Frost protection**
  - **Drip system maintenance**
- **Losses affecting the irrigation efficiency**
  - **Surface runoff – water that runs off the lower end of gravity irrigated fields**
  - **Deep percolation – water that percolates through the soil below the root zone**
  - **Evaporation**
- **Different numbers for farm, irrigation district, regional irrigation efficiencies**

Furrow irrigation (gravity)

Flood or border irrigation (gravity)

Wheel-line sprinkle system

Hand-move sprinkle system

Portable solid-set sprinkler system

Center-pivot sprinkler system – inappropriate for many California soils

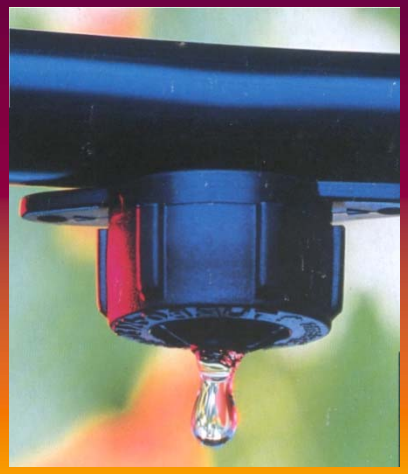
Linear-move sprinkler system

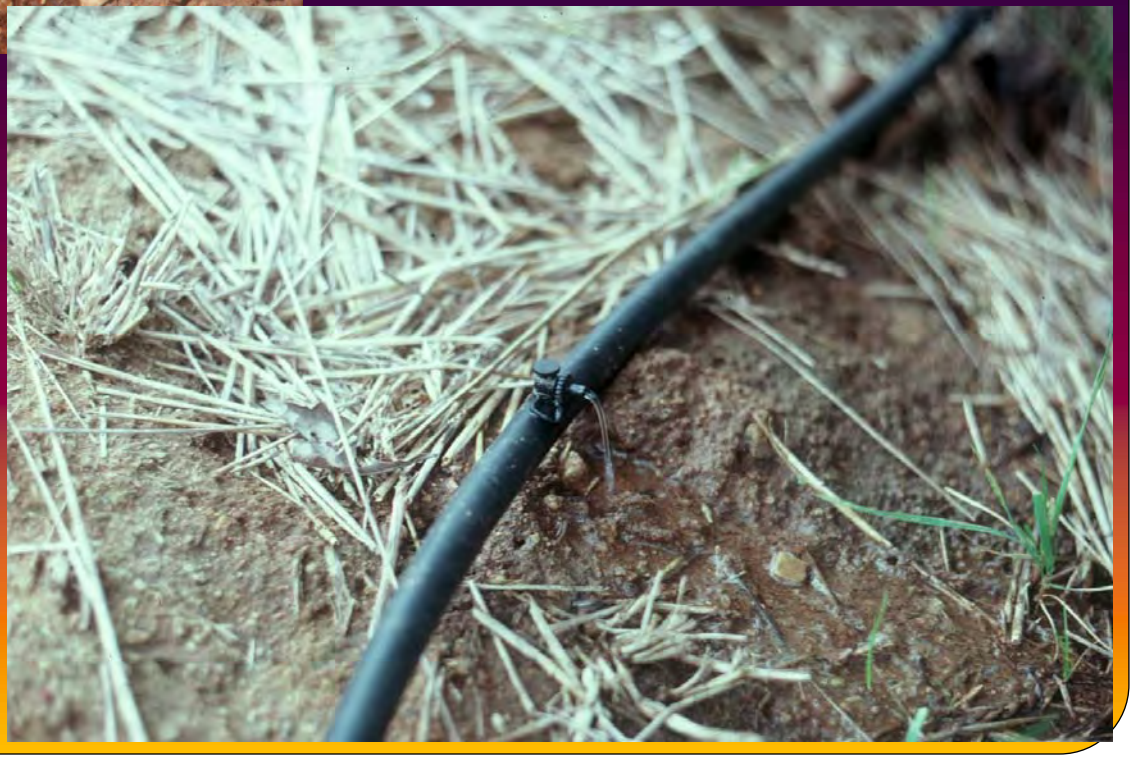
Microsprinklers – tree crops

Microsprinkler

Drip irrigation – vineyards, tree crops

Drip emitter





Drip irrigation – row crops

Surface drip irrigation

Subsurface drip irrigation

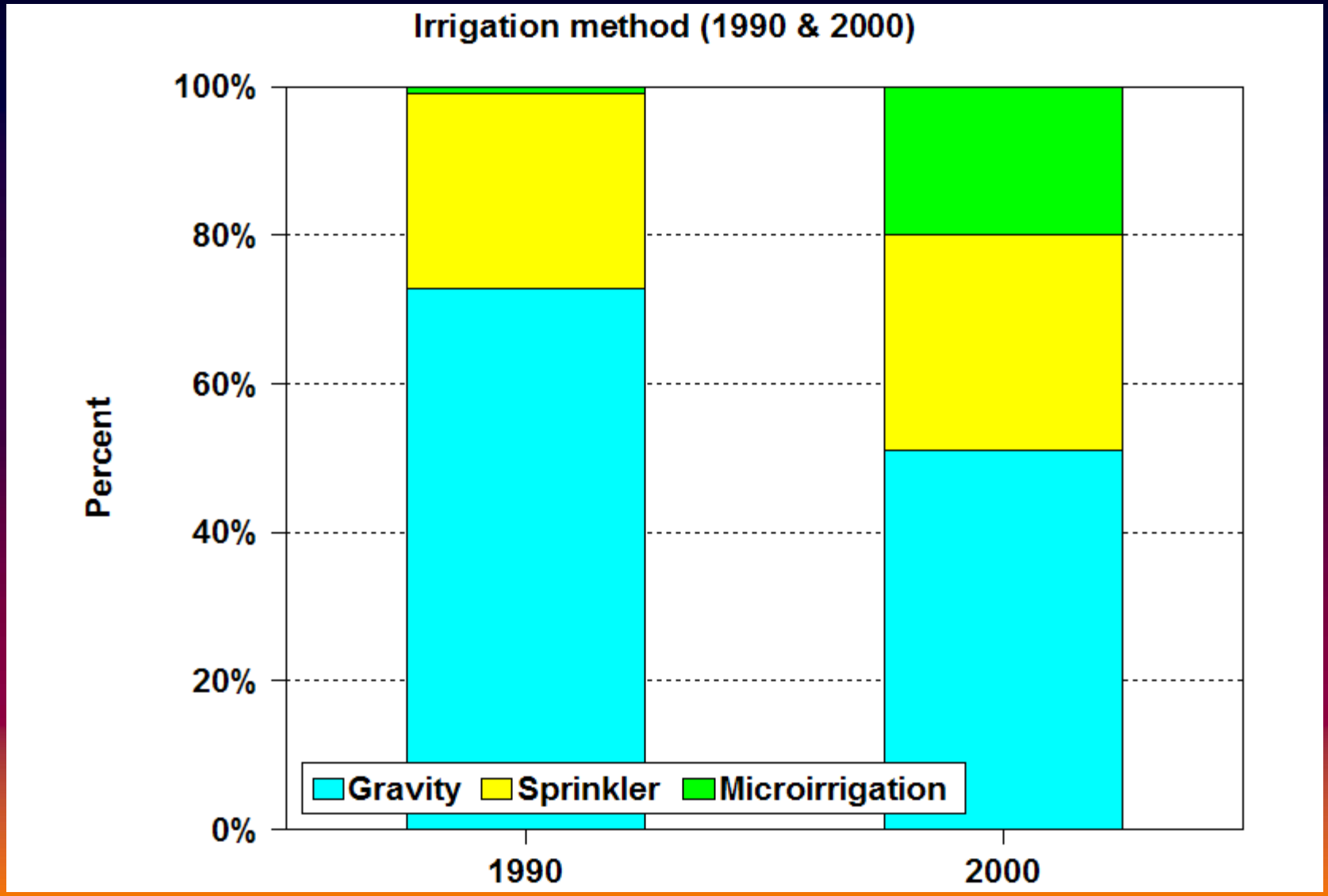
Drip tape

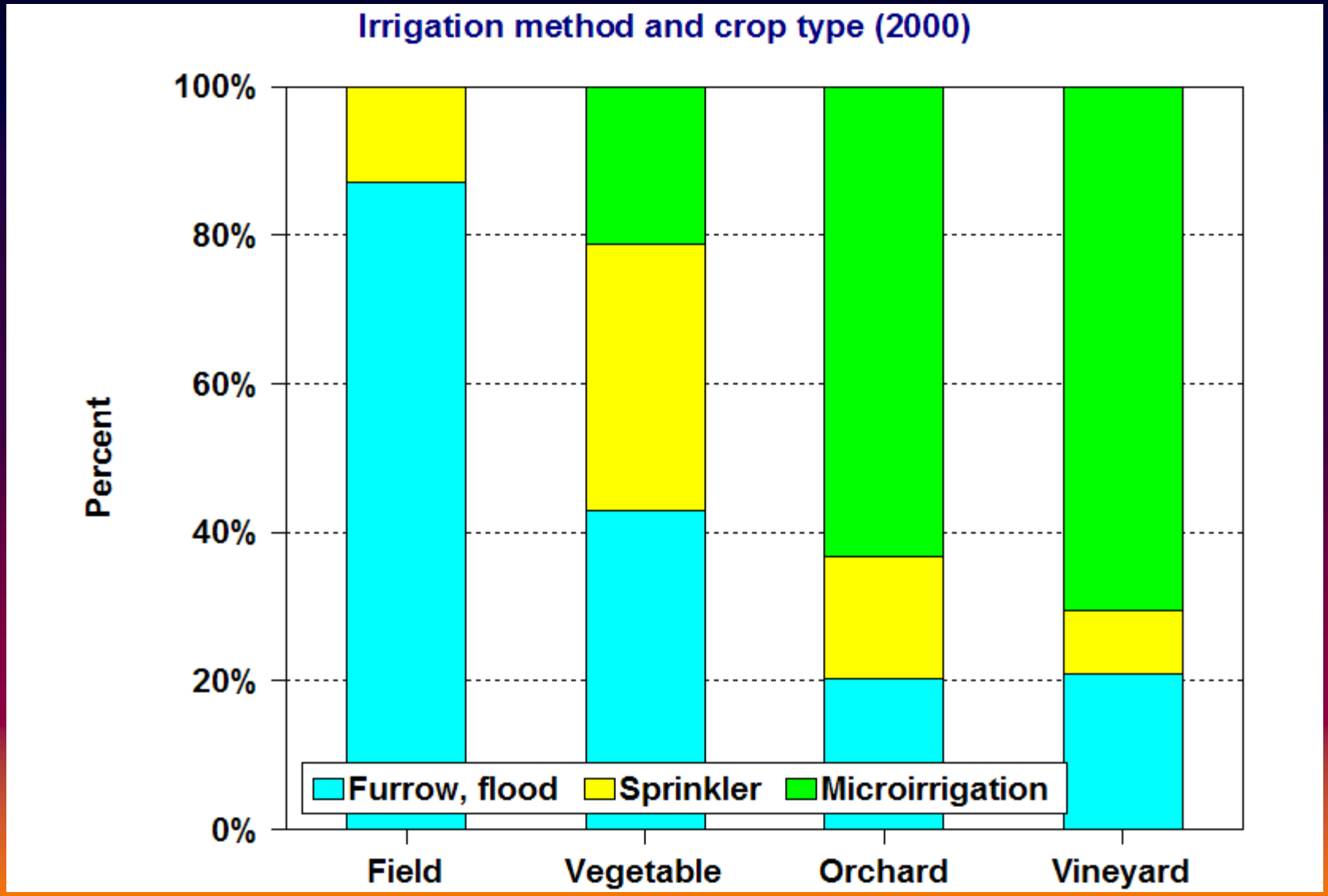
Which irrigation method is the best?

- Gravity irrigation
  - Low capital cost
  - Low labor cost to operate
  - Difficult to manage efficiently – trial and error approach
  - Surface runoff can cause water quality problems
- Sprinkler irrigation
  - Moderate capital cost
  - Low to moderate labor costs to operate
  - Easy to manage
  - Efficiency limited by wind effects
- Microirrigation
  - High capital costs (up to $1,000 per acre)
  - Precise application of water throughout a field
  - Moderate labor costs
  - Easy to manage
  - Highly susceptible to emitter clogging

Maximum potential irrigation efficiencies

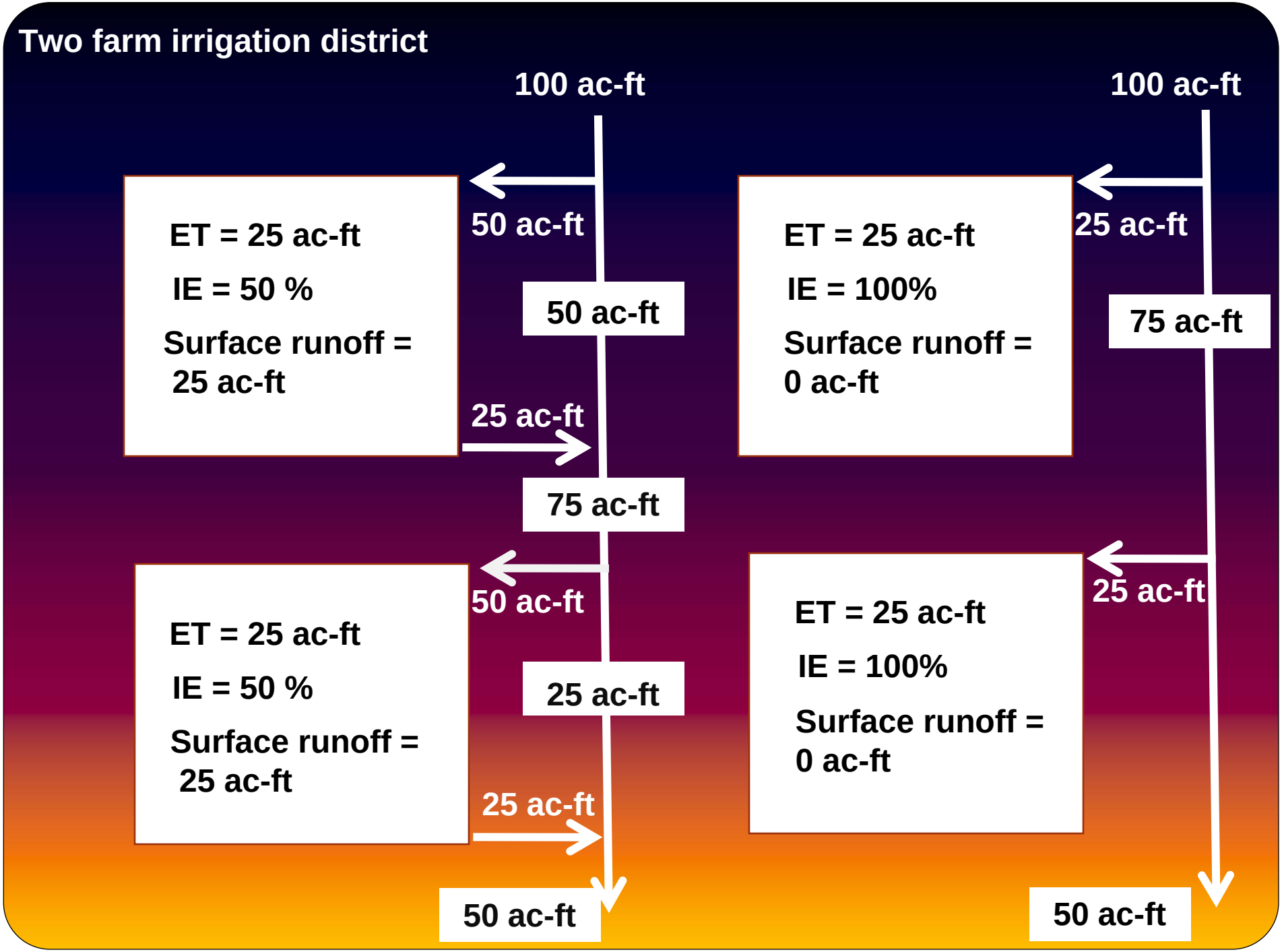
Irrigation method	Irrigation efficiency (%)
Gravity (furrow, flood)	70-85
Sprinkle	
Hand-move, wheel-line, solid set	70-80 (low wind)
Center pivot, linear-move	80-90
Microirrigation	80-90


Irrigation method (1990 & 2000)
100%
80%
60%
40%
20%
0%
Percent
Gravity
Sprinkler
Microirrigation
1990
2000


Irrigation method and crop type (2000)
Percent
100%
80%
60%
40%
20%
0%
Furrow, flood
Sprinkler
Microirrigation
Field
Vegetable
Orchard
Vineyard

Will increasing the farm irrigation efficiency save water that can be used elsewhere?

- Numerous studies have attempted to answer this question
  - Many researchers are not very familiar with irrigated agriculture
  - Some ignore reality
  - Questionable assumptions, results, and conclusions
- Problem – losses from one farm frequently are used by downstream water users
  - Difficult to track where the water goes
  - Little or no real water savings


Two farm irrigation district
100 ac-ft
50 ac-ft
ET = 25 ac-ft
IE = 50 %
Surface runoff = 25 ac-ft
50 ac-ft
25 ac-ft
75 ac-ft
50 ac-ft
ET = 25 ac-ft
IE = 50 %
Surface runoff = 25 ac-ft
25 ac-ft
25 ac-ft
50 ac-ft
100 ac-ft
25 ac-ft
ET = 25 ac-ft
IE = 100%
Surface runoff = 0 ac-ft
75 ac-ft
25 ac-ft
ET = 25 ac-ft
IE = 100%
Surface runoff = 0 ac-ft
50 ac-ft

Estimates of potential water savings from increased irrigation efficiency

- University of California study – 843,000 acre-feet
  - University , state and federal agencies, irrigation districts, grower organizations
  - Considered reuse of water
  - Estimate based on amount of water not reused downstream
- Consultant study – at least 4.400,000 acre-feet
  - Did not consider reuse of water
- Improved water quality may be the primary benefit of increased irrigation efficiency rather than water savings – reduced surface runoff (sediments, pesticides, nutrients)

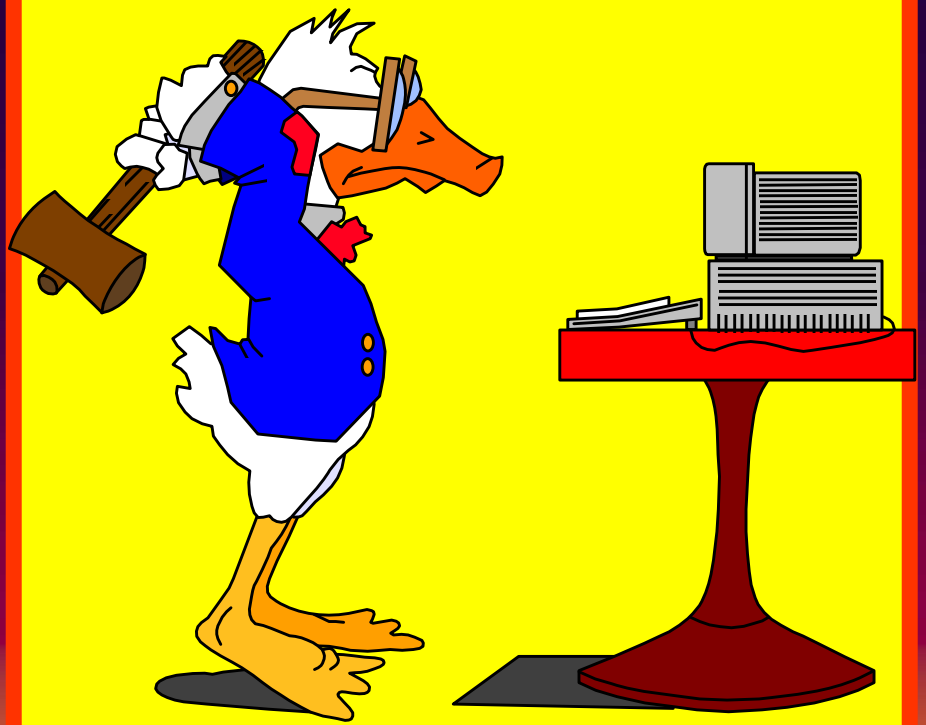
Where will the water come from?

- No more dams for water storage
- Water conservation from increased irrigation efficiency?
- Removal of agricultural land from production – most likely source of water for satisfying the increased urban/industrial and environmental water demands
  - DWR water transfer program
  - MWD program of removing alfalfa fields from production on a rotating basis in the Palo Verde Valley – water is transferred to the LA area
- Deficit irrigation of agricultural fields
  - Regulated deficit irrigation – trees and vine crops (UC Davis)
  - Mid-summer deficit irrigation - alfalfa (UC Davis)
- Reduced urban/industrial and environmental demands

Summary

- Agriculture is California's largest user of water.
- It takes a lot of water to produce a crop.
- The price that society has to pay for food is the water and land required to produce the crops needed for food. There is no other choice.
- It is unlikely that increasing irrigation efficiency will have a large impact in supplying the predicted future water needs of the urban/industrial and environmental sectors.
- Agricultural land will need to be removed from production to supply the needed water.

Have a good day!



optiDATA

DATA QUERY LOGOUT

Groundwater Level for OPTI Well #608

Site Info | Chart | Data

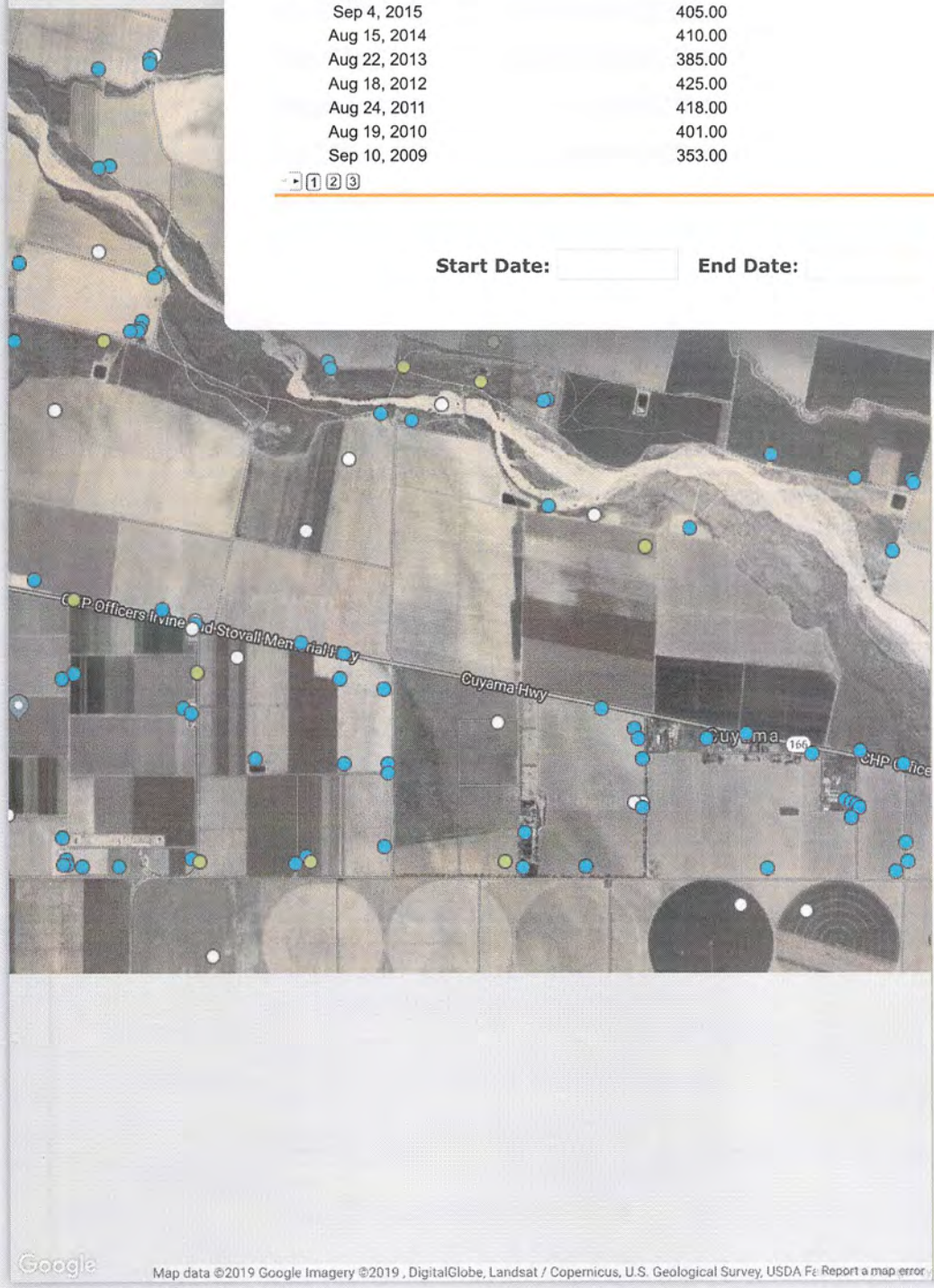
Site Details

Depth to Groundwater ▼

Date	Depth to Groundwater (Feet)	Measurement Issue
Aug 9, 2017	424.00	
Apr 10, 2017	388.00	
Aug 24, 2016	435.00	
Sep 4, 2015	405.00	
Aug 15, 2014	410.00	
Aug 22, 2013	385.00	
Aug 18, 2012	425.00	
Aug 24, 2011	418.00	
Aug 19, 2010	401.00	
Sep 10, 2009	353.00	

1 2 3

Start Date: End Date: Update Export



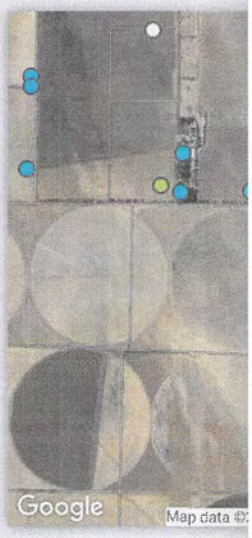
Contact Us

POWERED BY WOODARD & CURRAN

opti DATA

DATA QUERY LOGOUT

Groundwater Level for OPTI Well #667



Site Info | Chart | Data

Site Details

Depth to Groundwater ▼

Date	Depth to Groundwater (Feet)	Measurement Issue
Mar 21, 2016	445.00	
Sep 30, 2014	466.00	
Oct 23, 2013	487.00	
Dec 13, 2012	466.00	
Nov 17, 2009	97.00	
Dec 9, 2005	376.00	
Apr 21, 2005	385.00	
Aug 25, 2004	409.00	
Sep 24, 2003	399.00	
May 5, 2003	378.00	

1 2

Start Date: End Date: Update Export

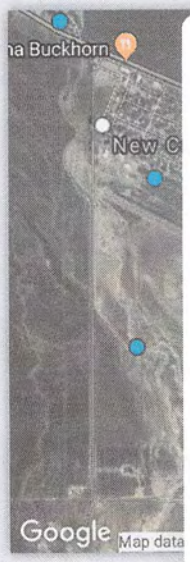
Contact Us

POWERED BY WOODARD & CURRAN

opti DATA

DATA QUERY LOGOUT

Map List



Groundwater Level for OPTI Well #68

Site Info | Chart | Data

Site Details

Depth to Groundwater

Date	Depth to Groundwater (Feet)	Measurement Issue
Feb 15, 2008	219.14	
Nov 20, 2007	221.35	
Mar 21, 2007	217.30	
Feb 21, 2006	203.99	
Mar 2, 2005	206.42	
Feb 24, 2004	206.55	
Apr 24, 2003	211.89	
Mar 26, 2002	221.25	
Mar 29, 2001	220.30	
Apr 8, 2000	216.10	

1 2 10 18

Start Date: End Date: Update Export

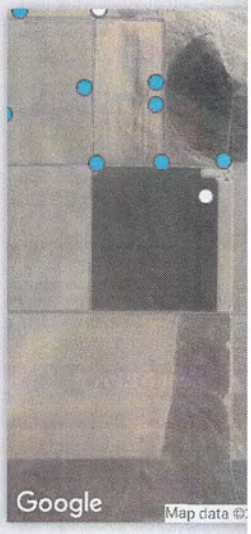
Contact Us

POWERED BY WOODARD & CURRAN

optiDATA

DATA QUERY LOGOUT

Groundwater Level for OPTI Well #660



Site Info | Chart | Data

Site Details

Depth to Groundwater

Date	Depth to Groundwater (Feet)	Measurement Issue
Mar 23, 2016	462.00	
Nov 4, 2014	621.00	
Oct 3, 2012	598.00	
Sep 21, 2010	563.70	
Dec 29, 2009	554.50	
Dec 8, 2008	448.00	
Dec 1, 2008	420.48	
Nov 20, 2007	556.80	
Sep 15, 2005	579.90	

Start Date: End Date: Update Export

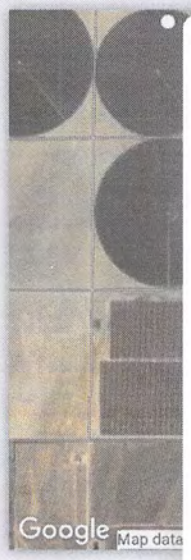
Contact Us

POWERED BY WOODARD & CURRAN

opti DATA

DATA QUERY LOGOUT

Map List



Groundwater Level for OPTI Well #620

Site Info | Chart | Data

Site Details

Depth to Groundwater ▼

Date	Depth to Groundwater (Feet)	Measurement Issue
Aug 17, 2017	594.00	
Aug 17, 2016	595.00	
Sep 2, 2015	585.00	
Aug 8, 2014	586.00	
Aug 27, 2013	559.00	
Dec 7, 2012	493.00	
Aug 13, 2012	573.00	
Aug 13, 2011	587.00	
Aug 16, 2010	539.00	
Aug 12, 2009	530.00	

▸ 1 2 3

Start Date: End Date: Update Export

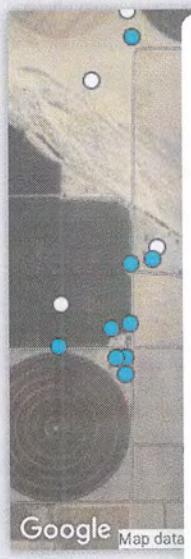
Contact Us

POWERED BY WOODARD & CURRAN

optiDATA

DATA QUERY LOGOUT

Map List



Groundwater Level for OPTI Well #653

Site Info | Chart | Data

Site Details

Depth to Groundwater ▼

Date	Depth to Groundwater (Feet)	Measurement Issue
Mar 23, 2016	465.00	
Sep 17, 2014	532.00	
Oct 9, 2013	514.00	
Oct 3, 2012	509.00	
Aug 1, 2012	472.00	
Sep 22, 2010	481.50	
Feb 2, 2010	472.22	
Dec 29, 2009	472.22	
Nov 20, 2007	467.60	
May 29, 2007	458.40	

1 2

Start Date: End Date: Update Export

Contact Us

POWERED BY WOODARD & CURRAN

opti DATA

DATA QUERY LOGOUT

Map List

Groundwater Level for OPTI Well #640

Site Info | Chart | Data

Site Details

Depth to Groundwater ▼

Date	Depth to Groundwater (Feet)	Measurement Issue
Aug 8, 2017	528.00	
Aug 3, 2017	445.00	
Apr 11, 2017	521.00	
Feb 4, 2017	510.00	
Feb 1, 2017	510.00	
Aug 23, 2016	453.00	
Sep 3, 2015	427.00	
Jun 2, 2015	531.00	
Aug 13, 2014	423.00	
May 15, 2012	406.00	

1 2

Start Date: End Date: Update Export

Contact Us

POWERED BY WOODARD & CURRAN

Torrent Engineering and Equipment

Jun-02

Pipeline Volume Capacities

Nominal Diameter (inches)	Area (Sq. Inches)	Volume (per FT) (Cu. Inches)	(Cu. Feet)	Capacity (Gal/Ft)
2	3.1	38	0.02	0.2
3	7.1	85	0.05	0.4
4	12.6	151	0.09	0.7
6	28.3	339	0.20	1.5
8	50.3	603	0.35	2.6
10	78.5	942	0.55	4.1
12	113.1	1,357	0.79	5.9
14	153.9	1,847	1.07	8.0
16	201.1	2,413	1.40	10.4
18	254.5	3,054	1.77	13.2
20	314.2	3,770	2.18	16.3
24	452.4	5,429	3.14	23.5
30	706.9	8,482	4.91	36.7
36	1,017.9	12,215	7.07	52.9
48	1,809.6	21,715	12.57	94.0

Coordinates: 34.9295°N 119.5971°W

WIKIPEDIA

Cuyama Valley

Cuyama Valley

Rugged terrain surrounding the Cuyama Valley

Location of the Cuyama Valley in southern and central California: green areas are national forests and national parks

Area	300 square miles (780 km^2)
	Geography
Location	California, United States
Population centers	Cuyama, New Cuyama, Ventucopa
Coordinates	34.9295°N 119.5971°W
Traversed by	State Route 166, State Route 33
Rivers	Cuyama River

The **Cuyama Valley** is a valley along the Cuyama River in central California, in northern Santa Barbara, southern San Luis Obispo, southwestern Kern, and northwestern Ventura counties.

It is a sparsely inhabited area containing two primary towns – Cuyama and New Cuyama, and also Ventucopa. The land is largely used for ranching, agriculture, and oil and gas production. California State Route 166 runs along most of the east/west length of the valley, connecting the Kern County and the southern San Joaquin Valley with Santa Maria and coastal Santa Barbara and San Luis Obispo Counties. State Route 33 runs north/south through the eastern end of the valley, connecting the southern San Joaquin Valley with Ojai and coastal Ventura County.

Contents

Geography

The valley encompasses an area of approximately 300 square miles (780 km^2). It is bounded on all sides by mountains: the Sierra Madre Mountains along the south and west, La Panza Range on the north, and Caliente Range along the northeast – all of the California Coast Ranges System; and the San Emigdio Mountains on the east – of the Transverse Ranges System.

The headwaters of the Cuyama River are just north of Pine Mountain Summit on State Route 33. The valley widens from the river's entry to a maximum width near the highway junction of Routes 166 and 33, near the corner of the four counties. Then it narrows again as the river flows west out of the valley through a narrow canyon between the Sierra Madre and La Panza ranges, to the Santa Maria Valley and its river mouth on the Pacific Ocean.

The agricultural fields are in the center of the valley, near the Cuyama Highway junction and the two primary towns, where the alluvium is rich and the valley is a wide floodplain.[1]

North of the major portion of the valley is the Caliente Range rises, over which is the Carrizo Plain, a much larger inland valley. To the southeast is the high backcountry of Ventura County, which includes the highest summit in the region, Mount Pinos and other features of the San Emigdio Mountains. The far eastern end of the valley the San Andreas Faultzone crosses, and forms a low jumble of hills which Route 166 passes over to reach the southwestern San Joaquin Valley, with Maricopa, I–5, and Bakersfield.

The Los Padres National Forest lands are adjacent to the Cuyama Valley on the south, east, and northwest sides. Much of the land to the northeast, including most of the Caliente Range, is managed by the U.S. Bureau of Land Management (BLM).

Geology

Geologically, the valley is an alluvium-filled synclinal basin, at an elevation of approximately 2,000 to 2,500 feet (600 to 800 meters). Most of the rocks are sedimentary, and the Miocene-age Monterey Formation outcrops to the south, in the foothills of the Sierra Madre. Pliocene and Pleistocene sedimentary formations occur in the foothills along the south side of the valley as well. The large Morales Thrust Fault separates the abruptly-rising block of the Caliente Range from the valley itself on the north. Scenic badlands occur in the upper reaches of the valley, north and northeast of Pine Mountain Summit; they are reachable from Route 33 via Lockwood Valley Road.[1][2]

Climate

The climate of the valley is semi-arid with hot summers and cool winters. Almost all precipitation occurs in the winter in the form of rain, although snow has fallen on occasion; only five inches of rain falls annually on the valley floor, making it the driest place in coastal Central California.[3] Since the valley is open to the sea, there is occasional marine influence. The principal native vegetation on the valley floor is grassland and scrub, with chaparral and oak woodland in the hills to the south.

History

4a

The Nature Conservancy
Protecting nature. Preserving life.

CALIFORNIA WATER | GROUNDWATER

555 Capitol Mall, Suite 1290
Sacramento, California 95814
[916] 449-2850

nature.org
GroundwaterResourceHub.org

31 October 2019

Taylor Blakslee
Cuyama Basin Groundwater Sustainability Agency
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309

Submitted via email: tblakslee@hgcpm.com

Re: Cuyama Basin Draft Groundwater Sustainability Plan

Dear Mr. Taylor Blakslee,

The Nature Conservancy (TNC) appreciates the opportunity to comment on the Final Draft of the Cuyama Basin Draft Groundwater Sustainability Plan (GSP) being prepared under the Sustainable Groundwater Management Act (SGMA). Please note that we have previously submitted comments on the Public Draft GSP in a letter dated 17 May 2019.

TNC as a Stakeholder Representative for the Environment

TNC is a global, nonprofit organization dedicated to conserving the lands and waters on which all life depends. We seek to achieve our mission through science-based planning and implementation of conservation strategies. For decades, we have dedicated resources to establishing diverse partnerships and developing foundational science products for achieving positive outcomes for people and nature in California. TNC was part of a stakeholder group formed by the Water Foundation in early 2014 to develop recommendations for groundwater reform and actively worked to shape and pass SGMA.

Our reason for engaging is simple: California's freshwater biodiversity is highly imperiled. We have lost more than 90 percent of our native wetland and river habitats, leading to precipitous declines in native plants and the populations of animals that call these places home. These natural resources are intricately connected to California's economy providing direct benefits through industries such as fisheries, timber and hunting, as well as indirect benefits such as clean water supplies. SGMA must be successful for us to achieve a sustainable future, in which people and nature can thrive within Cuyama region and California.

We believe that the success of SGMA depends on bringing the best available science to the table, engaging all stakeholders in robust dialog, providing strong incentives for beneficial outcomes and rigorous enforcement by the State of California.

Given our mission, we are particularly concerned about the inclusion of nature, as required, in GSPs. The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at GroundwaterResourceHub.org. The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Addressing Nature's Water Needs *in GSPs*

SGMA requires that all beneficial uses and users, including environmental users of groundwater, be considered in the development and implementation of GSPs (Water Code § 10723.2).

The GSP Regulations include specific requirements to identify and consider groundwater dependent ecosystems (23 CCR §354.16(g)) when determining whether groundwater conditions are having potential effects on beneficial uses and users. GSAs must also assess whether sustainable management criteria may cause adverse impacts to beneficial uses, which include environmental uses, such as plants and animals. In addition, monitoring networks should be designed to detect potential adverse impacts to beneficial uses due to groundwater. Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decision, and using data collected through monitoring to revise decisions in the future. Over time, GSPs should improve as data gaps are reduced and uncertainties addressed.

To help ensure that GSPs adequately address nature as required under SGMA, The Nature Conservancy has prepared a checklist (Attachment A) for GSAs and their consultants to use. The Nature Conservancy believes the following elements are foundational for 2020 GSP submittals. For detailed guidance on how to address the checklist items, please also see our publication, *GDEs under SGMA: Guidance for Preparing GSPs*[1].

1. Environmental Representation

SGMA requires that groundwater sustainability agencies (GSAs) consider the interests of all beneficial uses and users of groundwater. To meet this requirement, we recommend actively engaging environmental stakeholders by including environmental representation on the GSA board, technical advisory group, and/or working groups. This could include local staff from state and federal resource agencies, nonprofit organizations and other environmental interests. By engaging these stakeholders, GSAs will benefit from access to additional data and resources, as well as a more robust and inclusive GSP.

2. Basin GDE and ISW Maps

SGMA requires that groundwater dependent ecosystems (GDEs) and interconnected surface waters (ISWs) be identified in the GSP. We recommend using the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) provided online[2] by the Department of Water Resources (DWR) as a starting point for the GDE map. The NC Dataset was developed through a collaboration between DWR, the Department of Fish and Wildlife and TNC.

3. Potential Effects on Environmental Beneficial Users

SGMA requires that potential effects on GDEs and environmental surface water users be described when defining undesirable results. In addition to identifying GDEs in the basin, The Nature Conservancy recommends identifying beneficial users of surface water, which include environmental users. This is a critical step, as it is impossible to define "significant and

[1]GDEs under SGMA: Guidance for Preparing GSPs is available at: https://groundwaterresourcehub.org/public/uploads/pdfs/GWR_Hub_GDE_Guidance_Doc_2-1-18.pdf

[2] The Department of Water Resources' Natural Communities Commonly Associated with Groundwater dataset is available at: *https://gis.water.ca.gov/app/NCDatasetViewer/*

unreasonable adverse impacts" without knowing *what* is being impacted. For your convenience, we've provided a list of freshwater species within the boundary of the Cuyama groundwater basin in Attachment C. Our hope is that this information will help your GSA better evaluate the impacts of groundwater management on environmental beneficial users of surface water. We recommend that after identifying which freshwater species exist in your basin, especially federal and state listed species, that you contact staff at the Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS) to obtain their input on the groundwater and surface water needs of the organisms on the GSA's freshwater species list. We also refer you to the Critical Species Lookbook[3] prepared by The Nature Conservancy and partner organizations for additional background information on the water needs and groundwater reliance of critical species. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.

4. Biological and Hydrological Monitoring

If sufficient hydrological and biological data in and around GDEs is not available in time for the 2020/2022 plan, data gaps should be identified along with actions to reconcile the gaps in the monitoring network.

TNC has reviewed the Cuyama Basin Draft GSP and appreciates the work that has gone into the preparation of this plan. However, we consider it to be inadequate under SGMA since key environmental beneficial uses and users are not adequately identified and considered. In particular, ISWs and GDEs are not adequately identified and evaluated for ecological importance or adequately considered in the basin's sustainable management criteria. Please present a more thorough analysis of the identification and evaluation of ISWs and GDEs in subsequent drafts of the GSP.

Our comments related to the Cuyama Basin Draft GSP are provided in detail in Attachment B and are in reference to the numbered items in Attachment A. Attachment C provides a list of the freshwater species located in the Cuyama Basin. Attachment D describes six best practices that GSAs and their consultants can apply when using local groundwater data to confirm a connection to groundwater for DWR's Natural Communities Commonly Associated with Groundwater Dataset[2]. Attachment E provides an overview of a new, free online tool that allows GSAs to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data.

Thank you for fully considering our comments as you develop your GSP.

Best Regards,

Sandi Matsumoto
Associate Director, California Water Program
The Nature Conservancy

[3] Available online at: https://groundwaterresourcehub.org/sgma-tools/the-critical-species-lookbook/

Attachment A

Considering Nature under SGMA: A Checklist

The Nature Conservancy is neither dispensing legal advice nor warranting any outcome that could result from the use of this checklist. Following this checklist does not guarantee approval of a GSP or compliance with SGMA, both of which will be determined by DWR and the State Water Resources Control Board.

GSP Plan Element*		GDE Inclusion in GSPs: Identification and Consideration Elements	Check Box
Admin Info	2.1.5 Notice & Communication *23 CCR §354.10*	Description of the types of environmental beneficial uses of groundwater that exist within GDEs and a description of how environmental stakeholders were engaged throughout the development of the GSP.	1
Planning Framework	2.1.2 to 2.1.4 Description of Plan Area *23 CCR §354.8*	Description of jurisdictional boundaries, existing land use designations, water use management and monitoring programs; general plans and other land use plans relevant to GDEs and their relationship to the GSP.	2
		Description of instream flow requirements, threatened and endangered species habitat, critical habitat, and protected areas.	3
		Summary of process for permitting new or replacement wells for the basin, and how the process incorporates any protection of GDEs	4
Basin Setting	2.2.1 Hydrogeologic Conceptual Model *23 CCR §354.14*	Basin Bottom Boundary: Is the bottom of the basin defined as at least as deep as the deepest groundwater extractions?	5
		Principal aquifers and aquitards: Are shallow aquifers adequately described, so that interconnections with surface water and vertical groundwater gradients with other aquifers can be characterized?	6
		Basin cross sections: Do cross-sections illustrate the relationships between GDEs, surface waters and principal aquifers?	7
	2.2.2 Current & Historical Groundwater Conditions *23 CCR §354.16*	Interconnected surface waters:	8
		Interconnected surface water maps for the basin with gaining and losing reaches defined (included as a figure in GSP & submitted as a shapefile on SGMA portal).	9
		Estimates of current and historical surface water depletions for interconnected surface waters quantified and described by reach, season, and water year type.	10
		Basin GDE map included (as figure in text & submitted as a shapefile on SGMA Portal).	11

		If NC Dataset *was* used:	Basin GDE map denotes which polygons were kept, removed, and added from NC Dataset (Worksheet 1, can be attached in GSP section 6.0).	12
			The basin's GDE shapefile, which is submitted via the SGMA Portal, includes two new fields in its attribute table denoting: 1) which polygons were kept/removed/added, and 2) the change reason (e.g., why polygons were removed).	13
			GDEs polygons are consolidated into larger units and named for easier identification throughout GSP.	14
		If NC Dataset *was not* used:	Description of why NC dataset was not used, and how an alternative dataset and/or mapping approach used is best available information.	15
		Description of GDEs included:		16
		Historical and current groundwater conditions and variability are described in each GDE unit.		17
		Historical and current ecological conditions and variability are described in each GDE unit.		18
		Each GDE unit has been characterized as having high, moderate, or low ecological value.		19
		Inventory of species, habitats, and protected lands for each GDE unit with ecological importance (Worksheet 2, can be attached in GSP section 6.0).		20
	2.2.3 Water Budget *23 CCR §354.18*	Groundwater inputs and outputs (e.g., evapotranspiration) of native vegetation and managed wetlands are included in the basin's historical and current water budget.		21
		Potential impacts to groundwater conditions due to land use changes, climate change, and population growth to GDEs and aquatic ecosystems are considered in the projected water budget.		22
Sustainable Management Criteria	3.1 Sustainability Goal *23 CCR §354.24*	Environmental stakeholders/representatives were consulted.		23
		Sustainability goal mentions GDEs or species and habitats that are of particular concern or interest.		24
		Sustainability goal mentions whether the intention is to address pre-SGMA impacts, maintain or improve conditions within GDEs or species and habitats that are of particular concern or interest.		25
	3.2 Measurable Objectives *23 CCR §354.30*	Description of how GDEs were considered and whether the measurable objectives and interim milestones will help achieve the sustainability goal as it pertains to the environment.		26
	3.3 Minimum Thresholds *23 CCR §354.28*	Description of how GDEs and environmental uses of surface water were considered when setting minimum thresholds for relevant sustainability indicators:		27
		Will adverse impacts to GDEs and/or aquatic ecosystems dependent on interconnected surface waters (beneficial user of surface water) be avoided with the selected minimum thresholds?		28
		Are there any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters?		29
	3.4 Undesirable Results *23 CCR §354.26*	For GDEs, hydrological data are compiled and synthesized for each GDE unit:		30
		If hydrological data *are available* within/nearby the GDE	Hydrological datasets are plotted and provided for each GDE unit (Worksheet 3, can be attached in GSP Section 6.0).	31
			Baseline period in the hydrologic data is defined.	32

			GDE unit is classified as having high, moderate, or low susceptibility to changes in groundwater.	33
			Cause-and-effect relationships between groundwater changes and GDEs are explored.	34
		If hydrological data *are not available* within/nearby the GDE	Data gaps/insufficiencies are described.	35
			Plans to reconcile data gaps in the monitoring network are stated.	36
		For GDEs, biological data are compiled and synthesized for each GDE unit:		37
		Biological datasets are plotted and provided for each GDE unit, and when possible provide baseline conditions for assessment of trends and variability.		38
		Data gaps/insufficiencies are described.		39
		Plans to reconcile data gaps in the monitoring network are stated.		40
		Description of potential effects on GDEs, land uses and property interests:		41
		Cause-and-effect relationships between GDE and groundwater conditions are described.		42
		Impacts to GDEs that are considered to be "significant and unreasonable" are described.		43
		Known hydrological thresholds or triggers (e.g., instream flow criteria, groundwater depths, water quality parameters) for significant impacts to relevant species or ecological communities are reported.		44
		Land uses include and consider recreational uses (e.g., fishing/hunting, hiking, boating).		45
		Property interests include and consider privately and publicly protected conservation lands and opens spaces, including wildlife refuges, parks, and natural preserves.		46
Sustainable Management Criteria	3.5 Monitoring Network *23 CCR §354.34*	Description of whether hydrological data are spatially and temporally sufficient to monitor groundwater conditions for each GDE unit.		47
		Description of how hydrological data gaps and insufficiencies will be reconciled in the monitoring network.		48
		Description of how impacts to GDEs and environmental surface water users, as detected by biological responses, will be monitored and which GDE monitoring methods will be used in conjunction with hydrologic data to evaluate cause-and-effect relationships with groundwater conditions.		49
Projects & Mgmt Actions	4.0. Projects & Mgmt Actions to Achieve Sustainability Goal *23 CCR §354.44*	Description of how GDEs will benefit from relevant project or management actions.		50
		Description of how projects and management actions will be evaluated to assess whether adverse impacts to the GDE will be mitigated or prevented.		51

* In reference to DWR's GSP annotated outline guidance document, available at:
https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/GD_GSP_Outline_Final_2016-12-23.pdf

Attachment B

TNC Evaluation of the Cuyama Basin Final Draft Groundwater Sustainability Plan

This attachment summarizes our comments on the Final Draft GSP for the Cuyama Basin. TNC previously submitted comments on the Public Draft GSP in a letter dated 17 May 2019. Where these comments have not yet been addressed, they are repeated here.

1.3.1 Description of Beneficial Uses and Users of Groundwater (p. 1-46 & 1-47)

[Checklist item #1]: Environmental users of groundwater, including groundwater dependent ecosystems (GDEs), are acknowledged as beneficial users of groundwater in the GSP. Other species that depend on interconnected surface waters exist in Cuyama Basin and therefore should be identified and described. For any species that are no longer present in the basin, please provide scientific rationale and data to support this claim.

The information on environmental users in the Cuyama basin is readily available and includes the data and data sources. Please refer to the following:

- Natural Communities Commonly Associated with Groundwater dataset (NC Dataset), which is provided by the Department of Water Resources and identifies potential GDEs - https://gis.water.ca.gov/app/NCDatasetViewer/
- In Fall 2018, The Nature Conservancy sent a list of freshwater species located in the Cuyama Basin, which is included as Attachment C of this letter. Please take particular note of the species with protected status.
- In addition to identifying and describing environmental beneficial users, SGMA requires that beneficial users be considered throughout the plan. The Nature Conservancy has identified each part of the GSP with this requirement. That list is available here: https://groundwaterresourcehub.org/importance-of-gdes/provisions-related-to-groundwater-dependent-ecosystems-in-the-groundwater-s. Please ensure that environmental beneficial users are addressed accordingly throughout the plan.

2.1.6 Basin Boundaries – Bottom of the Cuyama Basin (p. 2-26)

[Checklist item #5]: It is currently unclear how existing well depths compare with the depth of the upper member of the Morales Formation. According to DWR's Hydrogeologic Conceptual Model BMP[4], "the definable bottom of the basin should be at least as deep as the deepest groundwater extractions". Thus, groundwater extraction well depth data should also be included in the determination of the basin bottom. This will prevent the possibility of extractors with wells deeper than the basin boundary from claiming exemption of SGMA due to their well residing outside the vertical extent of the basin boundary.

2.1.7 Principal Aquifers and Aquitards (p. 2-26)

[Checklist item #6]: In paragraph 1, "The aquifer is considered to be continuous and unconfined with the exception of locally perched aquifers resulting from clays in the formation". Please provide more details on:

- the location of perched aquifers

[4]Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_HCM_Final_2016-12-23.pdf

- whether perched aquifers are being used by domestic shallow wells, GDEs and/or are potentially interacting with surface water
- the vertical gradients between the perched aquifers and the recent and younger alluvium aquifers
- other aquifer characteristics that may be known (e.g., perched aquifer thickness, porosity, hydraulic conductivity)

2.2.8 Interconnected Surface Water Systems (p. 2-112)

[Checklist item #8]: The model results are demonstrating that the entire river is an interconnected surface water system ("surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted" 23 CCR §351(o)). Based on the annual average stream depletion by reach (Table 2-2), it appears that losing and gaining reaches of the Cuyama can be mapped. Please distinguish the gaining and losing reaches. The data provides seems to indicate:

- Gaining: Reach 1, Reach 3, Reach 6, Reach 8, Reach 9.
- Losing: Reach 2, Reach 4, Reach 5, Reach 7

2.2.9 Groundwater Dependent Ecosystems (p. 2-117)

SGMA requires that all beneficial uses and users, including GDEs, be considered in the development and implementation of GSPs (Water Code §10723.2). The GSP Regulations include specific requirements to identify (map) GDEs and consider them when determining whether groundwater conditions are having potential effects on beneficial uses and users. SGMA also requires an assessment of whether sustainable management criteria (including minimum thresholds and measurable objectives) may cause adverse impacts to beneficial uses, including GDEs, and that monitoring networks are designed to detect such impacts. Therefore, mapping GDEs is a critical first step for incorporating environmental considerations into GSPs.

[Checklist item #11]:

- It appears that the preliminary desktop analysis, completed by Woodard & Curran and documented in Appendix D of the draft GSP, resulted an excessive elimination − totaling two-thirds − of the NC dataset polygons mapped in the Cuyama Basin. In particular, the methods and field verification approach described in the draft GSP failed take groundwater levels into consideration. SGMA defines GDEs as "ecological communities and species that depend on *groundwater emerging from aquifers or on groundwater occurring near the ground surface*". We recommend that depth to groundwater contour maps are used to verify whether a connection to groundwater exists for polygons in the NC Dataset. Please refer to Appendix D of this letter for best practices for using groundwater data to verify a connection to groundwater.

More specific comments related to the desktop analysis approach (as described in Appendix D of the GSP) include:

- Inundation visible on aerial imagery − This method is inappropriate because it is not possible to know whether surface water is connected with groundwater by visually inspecting it with aerial imagery. For example, in some cases surface water can be

completely disconnected from groundwater, so in this scenario this approach would falsely suggest that NC dataset polygons are connected to groundwater. Similarly, if surface water is not present, this method would also falsely suggest that NC dataset polygons are not connected to groundwater if plant communities and the species they support are accessing groundwater beneath the surface. This method also fails to account for the fact that GDEs can rely on groundwater for some or all its water requirements, which in California often vary by season, and depend on the availability of alternative water sources (e.g., precipitation, river water, reservoir water, soil moisture in the vadose zone, groundwater, applied water, treated wastewater effluent, urban stormwater, irrigated return flow).

  - If aerial imagery is to be used, a range of dates should be selected to reflect the California's Mediterranean climate, seasonal variations and water year types.
  - Phreatophytes (groundwater-dependent vegetation) often rely on groundwater that is occurring near the ground surface via their rooting network. Because these sources of groundwater are not detectable using aerial imagery, the images should be compared with contoured groundwater levels to determine whether groundwater levels are close enough to vegetation root zones.
  - We suggest the methods be revised and clarified accordingly.

- Saturation visible on aerial imagery could indicate many different conditions, including standing water or saturated soils that may be ephemeral, intermittent, or permanent in nature. To help verify what the images actually indicate, this method should be coupled with more advanced remote sensing methods. Please clarify if this was the case.
- Dense riparian and/or wetland vegetation visible on aerial imagery can help identify potential GDEs but is not an appropriate method to screen for whether a polygon is supported by groundwater and in fact a GDE. The presence of sparse vegetation also does not preclude the possibility that vegetation are using groundwater. Many desert and semi-arid environments with sparse vegetation can still be groundwater dependent ecosystems.

More specific comments related to the GDE field validation approach (as described in Appendix D of the draft GSP):

- The removal of Probable Non-GDE 1 and Probable Non-GDE 2 was based on the presence of sandy, dry, and friable soils was not scientifically justified. The presence of this soil type does not preclude the possibility that the dominant plant species observed are reliant on groundwater at depths below the earth surface. For example, a rooting depth of 13 feet has been observed for Ericameria nauseosa and >4 feet for Eriogonum fasiculatum, and the capillary fringe associated with those rooting networks could be accessing groundwater from deeper depths, depending on the hydraulic conductivity of the substratum. For more rooting depth data, please refer to TNC's global rooting depth database, available at: https://groundwaterresourcehub.org/gde-tools/gde-rooting-depths-database-for-gdes/

[Checklist items #12 & 13]:

- Decisions to remove, keep, or add polygons from the NC dataset into a basin GDE map should be based on best available science in a manner that promotes transparency and accountability with stakeholders. Any polygons that are removed, added, or kept should be inventoried in the submitted shapefile to DWR, and mapped in the plan. We recommend revising Figure 2-64 to reflect these requirements.

[Checklist item #17]:

- Groundwater conditions within GDEs should be briefly described within the portion of the Basin Setting Section where GDEs are being identified. Please refer to Attachment E of this letter for details on a new, free online tool that enables groundwater sustainability agencies to assess historical and current trends of growth and moisture content in vegetation using 35 years of satellite imagery for all of the polygons in the NC dataset.

[Checklist item #19]:

- Not all GDEs are created equal. Some GDEs may contain legally protected species or ecologically rich communities, whereas other GDEs may be highly degraded with little conservation value. Including a description of the types of species (protected status, native versus non-native), habitat, and environmental beneficial uses (see Worksheet 2, p.74 of GDE Guidance Document) can be helpful in assigning an ecological value to the GDEs. Identifying an ecological value of each GDE can help prioritize limited resources when considering GDEs as well as prioritizing legally protected species or habitat that may need special consideration when setting sustainable management criteria.

3.2.1 Undesirable Results Statements - Chronic Lowering of Groundwater Levels (p. 3-2) and 3.3.1 Evaluation of Presence of Undesirable Results – Chronic Lowering of Groundwater Levels (p. 3-6)

[Checklist items #30-46]:

- Identification of Undesirable Results – significant adverse impacts to GDEs can occur if 30% of representative monitoring wells fall below their minimum groundwater elevation thresholds for two consecutive years. The proposed approach could work if management areas were established to "identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors" [23 CCR §351(r)]. But, as it is written now, significant and unreasonable adverse impacts to GDEs could occur if the exceedance of minimum thresholds disproportionately occurs in representative monitoring wells close to GDEs (e.g., 3 out of the 60 wells minimum thresholds are exceeded for 3 years are causing adverse impacts to GDEs, but because the definition of undesirable results (18 out of 60 wells) is not met, there is no formal recognition that undesirable results are occurring). We recommend that groundwater levels that are protective of GDEs be considered when establishing minimum thresholds for groundwater levels across the basin. Please refer to Step 2 of *GDEs under SGMA: Guidance for Preparing GSPs*[1] for more details.

3.2.6 Undesirable Results Statements - Depletions of Interconnected Surface Water (p. 3-5)

[Checklist items #30-46]:

- Under the Potential Effects of Undesirable Results subsection, "If depletions of interconnected surface water were to reach Undesirable Results, groundwater dependent ecosystems could be affected" should also include potential effects on environmental surface water users, land uses (e.g., fishing/hunting, hiking, boating), and property interests (e.g., privately and publicly protected conservation lands and open spaces, including wildlife refuges, parks, and natural preserves) [23 CCR §354.26(b)(3)]. Please also provide more details on how these various beneficial users could be adversely affected. SGMA also requires that depletions of interconnected surface water also consider adverse impacts on beneficial uses of surface water [23 CCR 354.28(6)].
- In addition to identifying GDEs in the basin, The Nature Conservancy recommends identifying beneficial users of surface water, which include environmental users. This is a critical step, as it is impossible to define "significant and unreasonable adverse impacts" without knowing *what* is being impacted, nor is possible to monitor ISWs in a way that can "identify adverse impacts on beneficial uses of surface water" [23 CCR §354.34(c)(6)(D)]. For your convenience, we've provided a list of freshwater species within the boundary of the Cuyama Basin in Attachment C. Our hope is that this information will help your GSA better evaluate and monitor the impacts of groundwater management on environmental beneficial users of surface water. We recommend that after identifying which freshwater species exist in your basin, especially federal and state listed species, that you contact staff at the Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS) to obtain their input on the groundwater and surface water needs of the organisms on the freshwater species list, and how best to monitor them. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.
- Please also provide more details on when, where, and how groundwater changes can adversely affect these various beneficial users. Are there particular species, with legal protection, that already have known thresholds that need special consideration? The more specific the definition of what an adverse impact to beneficial users of groundwater and surface water looks like, the easier it is to quantify minimum thresholds, measurable objectives, and interim milestones that are protective of that definition.

<u>3.3.6 Evaluation of the Presence of Undesirable Results - Depletions of Interconnected Surface Water (p. 3-8)</u>

[Checklist items #30-46]:

- Please be more specific on what measurements were used to show that groundwater gradients along interconnected surface water bodies in the Cuyama basin are not in an undesirable condition. How were these gradients determined?
- Analysis of Interconnected Surface Waters in Section 2.2.8, particularly Table 2.2, demonstrate that depletions of interconnected surface water are occurring, meaning that adverse impacts to beneficial uses and users could be occurring. Thus, it is inadequate to state that "depletion of interconnected surface water is not

identified to be in an undesirable condition**" without evaluating potential** effects to beneficial users.

4.5.4 Groundwater Level Monitoring Network – Representative Monitoring (p. 4-41 & 4-42)
[Checklist items #47-49]:

- Please identify which representative monitoring wells are capable of monitoring groundwater level conditions that can impact environmental beneficial users of groundwater (i.e., GDEs) and of surface water (e.g., freshwater aquatic species). Refer to Best Practice #4 in Attachment D to this letter for technical guidance.

4.10 Depletions of Interconnected Surface Water Monitoring Network (p. 4-66)
[Checklist items #47-49]:

- The improvement of numerical model accuracy for the estimation of interconnected surface waters should also include the installation of clustered or nested wells and the installation of shallow monitoring wells around GDEs and the Cuyama River to resolve data gaps that were identified in Section 2.2.10:
    - The Cuyama River is not gaged inside the Cuyama Basin, so flows of the river in the Basin have been estimated based on measurements at downstream gages.
    - Vertical gradients in the majority of the Basin are not understood due to the lack of wells with completions of different depths located near each other.
    - GDEs could be evaluated in greater detail
    - Information about many of the wells in the Basin is incomplete, and additional information is needed regarding well depths, perforation intervals and current status.
    - Due to sporadic monitoring by a variety of monitoring entities, a long period of record of monitoring groundwater levels does not exist in many areas in the Basin.
- Please identify appropriate biological indicators that can be used to monitor potential impacts to environmental beneficial users due to groundwater conditions. Refer to Appendix E of this letter for an overview of a free, new online tool for monitoring the health of GDEs over time.

5.2.2 Minimum Thresholds, Measurable Objectives, and Interim Milestones - Chronic Lowering of Groundwater Levels (p. 5-6 thru p. 5-9)
[Checklist items #26-29]:

- Selecting thresholds by using groundwater elevation measurements closest to (but not before) January 1, 2015 is inadequate for identifying minimum thresholds or measurable objectives. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions fails to capture the seasonal and interannual variability typical of California's climate. Hydrology is not static. Measurable objectives are intended to be set with enough operational flexibility to permit seasonal and interannual fluctuations that occur in California. We recommend that you consider using a baseline approach to better capture seasonality and water year types.

- January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows). The onus is on the GSA to determine whether groundwater conditions (due to groundwater pumping) exacerbated impacts to these beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.
- While total well depth information is helpful in considering adverse impacts to beneficial users of groundwater (e.g., domestic, irrigation, and municipal wells), it fails to consider adverse impacts to GDEs and environmental beneficial users of surface water in interconnected surface waters. Environmental beneficial users of groundwater need to be considered when establishing measurable thresholds, measurable objectives, and interim milestones. Please refer to Step 2 of *GDEs under SGMA: Guidance for Preparing GSPs*[1] for how this can be accomplished.
- Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs, as required [23 CCR §354.28 (b)(5)].

5.7 Minimum Thresholds, Measurable Objectives, and Interim Milestones - Depletions of Interconnected Surface Water (p. 5-26)

[Checklist items #26-29]:

- It is highly doubtful that January 1, 2015 surface water conditions can be **considered "normal" (2**nd sentence in 2nd paragraph); please provide data to substantiate this claim. January 1, 2015 was at the height of California's historic drought, a period of time that was characterized by adverse impacts to domestic well owners (e.g., dry wells), GDEs (e.g., water stress impacts on growth, reproduction, and even mortality due to lack of groundwater), and surface water users (e.g., lower streamflows).
- Please provide more data and an elaborated description on how current basin conditions have not varied from January 1, 2015 conditions.
- Even if current basin conditions may not have varied from January 1, 2015, the onus is on the GSA to determine whether groundwater conditions are causing any adverse impacts to beneficial users. And if so, to recognize these impacts and establish thresholds and measurable objectives that can avoid adverse impacts to beneficial users caused by groundwater in all water year types.
- According to Table 2-2 in the Draft GSP, 5994 AF of surface water was depleted in 2017:

Reach	Depletion in AF
2	19.9
3	300.4
4	67.8
5	906
7	4700.3
Total	5994.4

Please investigate whether these depletions in surface water are adversely impacting instream flow conditions and groundwater levels in riparian areas for environmental beneficial users, especially legally protected species.

- Please describe any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters [23 CCR §354.28 (b)(5)].

7. Projects and Management Actions

[Checklist items #50 - 51]:

- Please describe how the projects described in this chapter and their benefits will help "maintain a sustainable groundwater resource for beneficial users of the Basin", including environmental users, as stated in the sustainability goal for the Cuyama Basin.
- For more case studies on how to incorporate environmental benefits into groundwater projects, please visit our website:
    - https://groundwaterresourcehub.org/case-studies/recharge-case-studies/

Attachment C

Freshwater Species Located in the Cuyama Basin

To assist in identifying the beneficial users of surface water necessary to assess the undesirable result "depletion of interconnected surface waters", Attachment C provides a list of freshwater species located in the Cuyama Basin. To produce the freshwater species list, we used ArcGIS to select features within the California Freshwater Species Database version 2.0.9 within the GSA's boundary. This database contains information on ~4,000 vertebrates, macroinvertebrates and vascular plants that depend on fresh water for at least one stage of their life cycle. The methods used to compile the California Freshwater Species Database can be found in Howard et al. 2015[5]. The spatial database contains locality observations and/or distribution information from ~400 data sources. The database is housed in the California Department of Fish and Wildlife's BIOS[6] as well as on The Nature Conservancy's science website[7].

Scientific Name	Common Name	Legal Protected Status		
		Federal	State	Other
BIRDS				
Actitis macularius	Spotted Sandpiper			
Agelaius tricolor	Tricolored Blackbird	Bird of Conservation Concern	Special Concern	BSSC - First priority
Anas americana	American Wigeon			
Anas crecca	Green-winged Teal			
Anas cyanoptera	Cinnamon Teal			
Anas discors	Blue-winged Teal			
Anas platyrhynchos	Mallard			
Anser albifrons	Greater White-fronted Goose			
Ardea alba	Great Egret			
Ardea herodias	Great Blue Heron			
Aythya collaris	Ring-necked Duck			
Butorides virescens	Green Heron			
Calidris alpina	Dunlin			
Calidris mauri	Western Sandpiper			
Calidris minutilla	Least Sandpiper			
Chen caerulescens	Snow Goose			
Cistothorus palustris palustris	Marsh Wren			
Egretta thula	Snowy Egret			
Empidonax traillii	Willow Flycatcher	Bird of Conservation Concern	Endangered	
Fulica americana	American Coot			
Gallinago delicata	Wilson's Snipe			
Haliaeetus leucocephalus	Bald Eagle	Bird of Conservation Concern	Endangered	
Himantopus mexicanus	Black-necked Stilt			
Limnodromus scolopaceus	Long-billed Dowitcher			
Megaceryle alcyon	Belted Kingfisher			
Numenius americanus	Long-billed Curlew			
Pelecanus erythrorhynchos	American White Pelican		Special Concern	BSSC - First priority
Phalacrocorax auritus	Double-crested Cormorant			
Phalaropus tricolor	Wilson's Phalarope			
Porzana carolina	Sora			

[5] Howard, J.K. et al. 2015. Patterns of Freshwater Species Richness, Endemism, and Vulnerability in California. PLoSONE, 11(7). Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130710
[6] California Department of Fish and Wildlife BIOS: https://www.wildlife.ca.gov/data/BIOS
[7] Science for Conservation: https://www.scienceforconservation.org/products/california-freshwater-species-database

Setophaga petechia	Yellow Warbler			BSSC - Second priority
Tachycineta bicolor	Tree Swallow			
Tringa melanoleuca	Greater Yellowlegs			
Tringa solitaria	Solitary Sandpiper			
Xanthocephalus xanthocephalus	Yellow-headed Blackbird		Special Concern	BSSC - Third priority
CRUSTACEANS				
Artemia franciscana	San Francisco Brine Shrimp			
Cyprididae fam.	Cyprididae fam.			
Hyalella spp.	Hyalella spp.			
FISH				
Gila orcutti	Arroyo chub		Special Concern	Vulnerable - Moyle 2013
Lavinia symmetricus symmetricus	Central California roach		Special Concern	Near-Threatened - Moyle 2013
Oncorhynchus mykiss - SCCC	South Central California coast steelhead	Threatened	Special Concern	Vulnerable - Moyle 2013
Oncorhynchus mykiss irideus	Coastal rainbow trout			Least Concern - Moyle 2013
Ptychocheilus grandis	Sacramento pikeminnow			Least Concern - Moyle 2013
HERPS				
Actinemys marmorata marmorata	Western Pond Turtle		Special Concern	ARSSC
Ambystoma californiense californiense	California Tiger Salamander	Threatened	Threatened	ARSSC
Anaxyrus boreas boreas	Boreal Toad			
Anaxyrus californicus	Arroyo Toad	Endangered	Special Concern	ARSSC
Pseudacris cadaverina	California Treefrog			ARSSC
Pseudacris regilla	Northern Pacific Chorus Frog			
Rana boylii	Foothill Yellow-legged Frog	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Rana draytonii	California Red-legged Frog	Threatened	Special Concern	ARSSC
Spea hammondii	Western Spadefoot	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Thamnophis couchii	Sierra Gartersnake			
Thamnophis hammondii hammondii	Two-striped Gartersnake		Special Concern	ARSSC
Thamnophis sirtalis sirtalis	Common Gartersnake			
INSECTS & OTHER INVERTS				
Agabus spp.	Agabus spp.			
Ambrysus mormon				Not on any status lists
Ambrysus spp.	Ambrysus spp.			
Ameletus spp.	Ameletus spp.			
Anacaena spp.	Anacaena spp.			
Anax junius	Common Green Darner			
Anax walsinghami	Giant Green Darner			
Apedilum spp.	Apedilum spp.			
Argia lugens	Sooty Dancer			
Argia nahuana	Aztec Dancer			
Argia spp.	Argia spp.			
Argia vivida	Vivid Dancer			
Baetidae fam.	Baetidae fam.			
Baetis adonis	A Mayfly			

Baetis spp.	Baetis spp.			
Belostomatidae fam.	Belostomatidae fam.			
Berosus spp.	Berosus spp.			
Brillia spp.	Brillia spp.			
Callibaetis spp.	Callibaetis spp.			
Capniidae fam.	Capniidae fam.			
Centroptilum spp.	Centroptilum spp.			
Chaetarthria ochra				Not on any status lists
Chaetarthria pallida				Not on any status lists
Chaetocladius spp.	Chaetocladius spp.			
Chironomidae fam.	Chironomidae fam.			
Cinygmula spp.	Cinygmula spp.			
Coenagrionidae fam.	Coenagrionidae fam.			
Corydalidae fam.	Corydalidae fam.			
Cricotopus spp.	Cricotopus spp.			
Culicidae fam.	Culicidae fam.			
Diamesa spp.	Diamesa spp.			
Dicrotendipes spp.	Dicrotendipes spp.			
Drunella coloradensis	A Mayfly			
Drunella spp.	Drunella spp.			
Enochrus carinatus				Not on any status lists
Enochrus cristatus				Not on any status lists
Enochrus hamiltoni				Not on any status lists
Enochrus piceus				Not on any status lists
Enochrus spp.	Enochrus spp.			
Ephemerella spp.	Ephemerella spp.			
Ephydridae fam.	Ephydridae fam.			
Eubrianax edwardsii				Not on any status lists
Eukiefferiella spp.	Eukiefferiella spp.			
Euryhapsis spp.	Euryhapsis spp.			
Gumaga spp.	Gumaga spp.			
Helochares normatus				Not on any status lists
Hydraena spp.	Hydraena spp.			
Hydrophilidae fam.	Hydrophilidae fam.			
Hydroporus spp.	Hydroporus spp.			
Hydropsyche spp.	Hydropsyche spp.			
Hydropsychidae fam.	Hydropsychidae fam.			
Hydroptila spp.	Hydroptila spp.			
Hydryphantidae fam.	Hydryphantidae fam.			
Ischnura cervula	Pacific Forktail			
Ischnura denticollis	Black-fronted Forktail			
Ischnura spp.	Ischnura spp.			
Isoperla spp.	Isoperla spp.			
Laccobius spp.	Laccobius spp.			
Lepidostoma spp.	Lepidostoma spp.			
Lestes congener	Spotted Spreadwing			
Libellula luctuosa	Widow Skimmer			
Libellula saturata	Flame Skimmer			
Libellulidae fam.	Libellulidae fam.			
Limnophyes spp.	Limnophyes spp.			
Mesocapnia spp.	Mesocapnia spp.			
Micrasema spp.	Micrasema spp.			
Micropsectra spp.	Micropsectra spp.			
Neoclypeodytes plicipennis				Not on any status lists
Ochthebius gruwelli				Not on any status lists
Oecetis spp.	Oecetis spp.			
Oreodytes spp.	Oreodytes spp.			

Orthocladius spp.	Orthocladius spp.			
Paltothemis lineatipes	Red Rock Skimmer			
Paracladopelma spp.	Paracladopelma spp.			
Parakiefferiella spp.	Parakiefferiella spp.			
Paraleptophlebia spp.	Paraleptophlebia spp.			
Parametriocnemus spp.	Parametriocnemus spp.			
Paraphaenocladius spp.	Paraphaenocladius spp.			
Paratendipes spp.	Paratendipes spp.			
Peltodytes simplex				Not on any status lists
Phaenopsectra spp.	Phaenopsectra spp.			
Physemus minutus				Not on any status lists
Plathemis lydia	Common Whitetail			
Plathemis subornata	Desert Whitetail			
Polypedilum spp.	Polypedilum spp.			
Postelichus spp.	Postelichus spp.			
Procladius spp.	Procladius spp.			
Progomphus borealis	Gray Sanddragon			
Prosimulium spp.	Prosimulium spp.			
Psectrocladius spp.	Psectrocladius spp.			
Pseudochironomus spp.	Pseudochironomus spp.			
Rheotanytarsus spp.	Rheotanytarsus spp.			
Sanfilippodytes spp.	Sanfilippodytes spp.			
Serratella spp.	Serratella spp.			
Simulium spp.	Simulium spp.			
Sperchon spp.	Sperchon spp.			
Sperchontidae fam.	Sperchontidae fam.			
Stictotarsus spp.	Stictotarsus spp.			
Stictotarsus striatellus				Not on any status lists
Sympetrum corruptum	Variegated Meadowhawk			
Taenionema spp.	Taenionema spp.			
Tanytarsus spp.	Tanytarsus spp.			
Telebasis salva	Desert Firetail			
Tinodes spp.	Tinodes spp.			
Tipulidae fam.	Tipulidae fam.			
Tricorythodes spp.	Tricorythodes spp.			
Tropisternus spp.	Tropisternus spp.			
Tvetenia spp.	Tvetenia spp.			
MOLLUSKS				
Physa spp.	Physa spp.			
PLANTS				
Alnus rhombifolia	White Alder			
Anemopsis californica	Yerba Mansa			
Bolboschoenus maritimus paludosus	NA			Not on any status lists
Carex senta	Western Rough Sedge			
Castilleja minor minor	Alkali Indian-paintbrush			
Cicuta maculata angustifolia	Spotted Water-hemlock			
Elatine californica	California Waterwort			
Eleocharis parishii	Parish's Spikerush			
Epilobium campestre	NA			Not on any status lists
Isolepis cernua	Low Bulrush			
Juncus macrophyllus	Longleaf Rush			
Juncus xiphioides	Iris-leaf Rush			
Mimulus guttatus	Common Large Monkeyflower			
Mimulus parishii	Parish's Monkeyflower			
Myosurus minimus	NA			
Perideridia parishii latifolia	Parish's Yampah			
Perideridia pringlei	Pringle's Yampah		Special	CRPR - 4.3
Phacelia distans	NA			
Platanus racemosa	California Sycamore			
Pluchea odorata odorata	Scented Conyza			
Rumex conglomeratus	NA			
Salix exigua exigua	Narrowleaf Willow			

Salix laevigata	Polished Willow			
Salix lasiandra lasiandra				Not on any status lists
Salix lasiolepis lasiolepis	Arroyo Willow			
Salix melanopsis	Dusky Willow			
Stachys albens	White-stem Hedge-nettle			
Veronica americana	American Speedwell			

Attachment D

July 2019

IDENTIFYING GDEs UNDER SGMA
Best Practices for using the NC Dataset

The Sustainable Groundwater Management Act (SGMA) requires that groundwater dependent ecosystems (GDEs) be identified in Groundwater Sustainability Plans (GSPs). As a starting point, the Department of Water Resources (DWR) is providing the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) online[8] to help Groundwater Sustainability Agencies (GSAs), consultants, and stakeholders identify GDEs within individual groundwater basins. To apply information from the NC Dataset to local areas, GSAs should combine it with the best available science on local hydrology, geology, and groundwater levels to verify whether polygons in the NC dataset are likely supported by groundwater in an aquifer (Figure 1)[9]. This document highlights six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater.

[8] *NC Dataset Online Viewer:* https://gis.water.ca.gov/app/NCDatasetViewer/

[9] California Department of Water Resources (DWR). 2018. Summary of the "Natural Communities Commonly Associated with Groundwater" Dataset and Online Web Viewer. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf

The NC Dataset identifies vegetation and wetland features that are good indicators of a GDE. The dataset is comprised of 48 publicly available state and federal datasets that map vegetation, wetlands, springs, and seeps commonly associated with groundwater in California[10]. It was developed through a collaboration between DWR, the Department of Fish and Wildlife, and The Nature Conservancy (TNC). TNC has also provided detailed guidance on identifying GDEs from the NC dataset[11] on the Groundwater Resource Hub[12], a website dedicated to GDEs.

BEST PRACTICE #1. Establishing a Connection to Groundwater

Groundwater basins can be comprised of one continuous aquifer (Figure 2a) or multiple aquifers stacked on top of each other (Figure 2b). In unconfined aquifers (Figure 2a), using the depth-to-groundwater and the rooting depth of the vegetation is a reasonable method to infer groundwater dependence for GDEs. If groundwater is well below the rooting (and capillary) zone of the plants and any wetland features, the ecosystem is considered disconnected and groundwater management is not likely to affect the ecosystem (Figure 2d). However, it is important to consider local conditions (e.g., soil type, groundwater flow gradients, and aquifer parameters) and to review groundwater depth data from multiple seasons and water year types (wet and dry) because intermittent periods of high groundwater levels can replenish perched clay lenses that serve as the water source for GDEs (Figure 2c). Maintaining these natural groundwater fluctuations are important to sustaining GDE health.

Basins with a stacked series of aquifers (Figure 2b) may have varying levels of pumping across aquifers in the basin, depending on the production capacity or water quality associated with each aquifer. If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water. The goal of SGMA is to sustainably manage groundwater resources for current and future social, economic, and environmental benefits. While groundwater pumping may not be currently occurring in a shallower aquifer, use of this water may become more appealing and economically viable in future years as pumping restrictions are placed on the deeper production aquifers in the basin to meet the sustainable yield and criteria. Thus, identifying GDEs in the basin should done irrespective to the amount of current pumping occurring in a particular aquifer, so that future impacts on GDEs due to new production can be avoided. A good rule of thumb to follow is: *if groundwater can be pumped from a well - it's an aquifer*.

---

[10] *For more details on the mapping methods, refer to: Klausmeyer, K., J. Howard, T. Keeler-Wolf, K. Davis-Fadtke, R. Hull, A. Lyons. 2018. Mapping Indicators of Groundwater Dependent Ecosystems in California: Methods Report. San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/iGDE_data_paper_20180423.pdf*

[11] "Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans" is available at: https://groundwaterresourcehub.org/gde-tools/gsp-guidance-document/

[12] *The Groundwater Resource Hub: www.GroundwaterResourceHub.org*

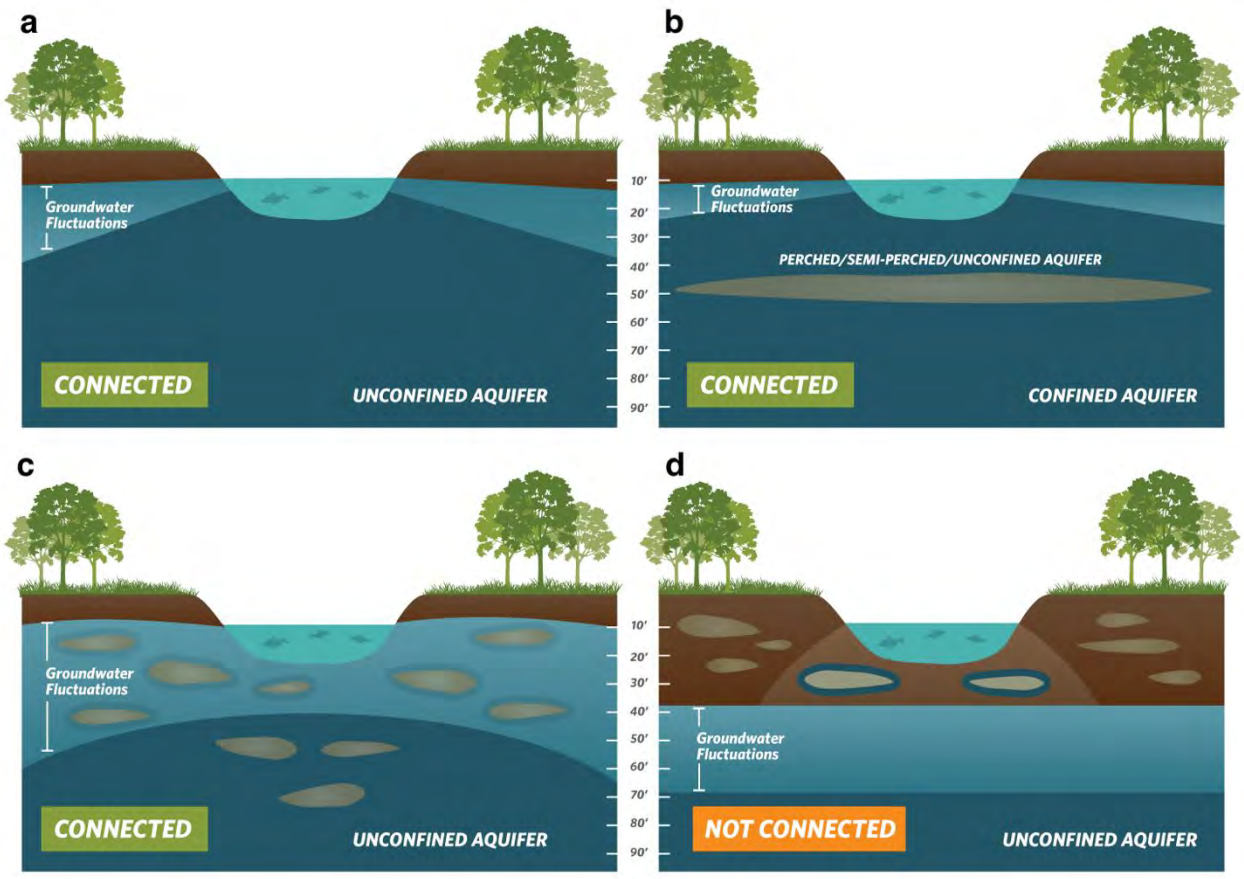


Figure 2. Confirming whether an ecosystem is connected to groundwater. Top: (a) Under the ecosystem is an unconfined aquifer with depth-to-groundwater fluctuating seasonally and interannually within 30 feet from land surface. (b) Depth-to-groundwater in the shallow aquifer is connected to overlying ecosystem. Pumping predominately occurs in the confined aquifer, but pumping is possible in the shallow aquifer. Bottom: (c) Depth-to-groundwater fluctuations are seasonally and interannually large, however, clay layers in the near surface prolong the ecosystem's connection to groundwater. (d) Groundwater is disconnected from surface water, and any water in the vadose (unsaturated) zone is due to direct recharge from precipitation and indirect recharge under the surface water feature. These areas are not connected to groundwater and typically support species that do not require access to groundwater to survive.

BEST PRACTICE #2. Characterize Seasonal and Interannual Groundwater Conditions

SGMA requires GSAs to describe current and historical groundwater conditions when identifying GDEs [23 CCR §354.16(g)]. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions (e.g., depth-to-groundwater) is inadequate because managing groundwater conditions with data from one time point fails to capture the seasonal and interannual variability typical of California's climate. DWR's Best Management Practices document on water budgets[13] recommends using 10 years of water supply and water budget information to describe how historical conditions have impacted the operation of the basin within sustainable yield, implying that a baseline[14] could be determined based on data between 2005 and 2015. Using this or a similar time period, depending on data availability, is recommended for determining the depth-to-groundwater.

GDEs depend on groundwater levels being close enough to the land surface to interconnect with surface water systems or plant rooting networks. The most practical approach[15] for a GSA to assess whether polygons in the NC dataset are connected to groundwater is to rely on groundwater elevation data. As detailed in TNC's GDE guidance document[4], one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5).

Groundwater levels fluctuate over time and space due to California's Mediterranean climate (dry summers and wet winters), climate change (flood and drought years), and subsurface heterogeneity in the subsurface (Figure 3). Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. While depth-to-groundwater levels within 30 feet[4] of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. Utilizing groundwater data from one point in time can misrepresent groundwater levels required by GDEs, and inadvertently result in adverse impacts to the GDEs. Time series data on groundwater elevations and depths are available on the SGMA Data Viewer[16]. However, if insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons in the GSP until data gaps are reconciled in the monitoring network (see Best Practice #6).

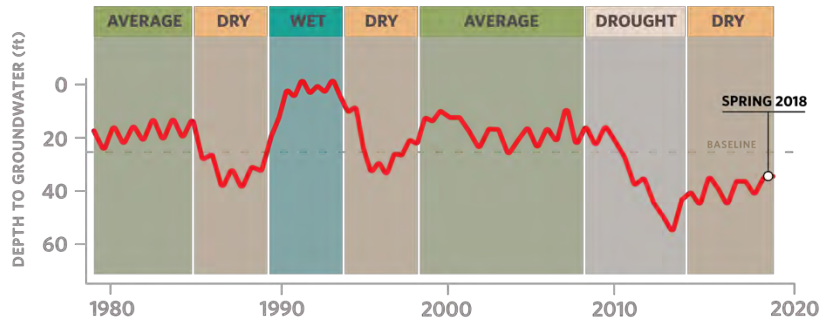


Figure 3. Example seasonality and interannual variability in depth-to-groundwater over time. Selecting one point in time, such as Spring 2018, to characterize groundwater conditions in GDEs fails to capture what groundwater conditions are necessary to maintain the ecosystem status into the future so adverse impacts are avoided.

[13] DWR. 2016. Water Budget Best Management Practice. Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Water_Budget_Final_2016-12-23.pdf

[14] *Baseline is defined under the GSP regulations as "historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin." [23 CCR §351(e)]*

[15] Groundwater reliance can also be confirmed via stable isotope analysis and geophysical surveys. For more information see The GDE Assessment Toolbox (Appendix IV, GDE Guidance Document for GSPs[4]).

[16] *SGMA Data Viewer: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer*

BEST PRACTICE #3. Ecosystems Often Rely on Both Groundwater and Surface Water

GDEs are plants and animals that rely on groundwater for all or some of its water needs, and thus can be supported by multiple water sources. The presence of non-groundwater sources (e.g., surface water, soil moisture in the vadose zone, applied water, treated wastewater effluent, urban stormwater, irrigated return flow) within and around a GDE does not preclude the possibility that it is supported by groundwater, too. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" [23 CCR §351(m)]. Hence, depth-to-groundwater data should be used to identify whether NC polygons are supported by groundwater and should be considered GDEs. In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals[17], which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water.

GSAs are only responsible for impacts to GDEs resulting from groundwater conditions in the basin, so if adverse impacts to GDEs result from the diversion of applied water, treated wastewater, or irrigation return flow away from the GDE, then those impacts will be evaluated by other permitting requirements (e.g., CEQA) and may not be the responsibility of the GSA. However, if adverse impacts occur to the GDE due to changing groundwater conditions resulting from pumping or groundwater management activities, then the GSA would be responsible (Figure 4).

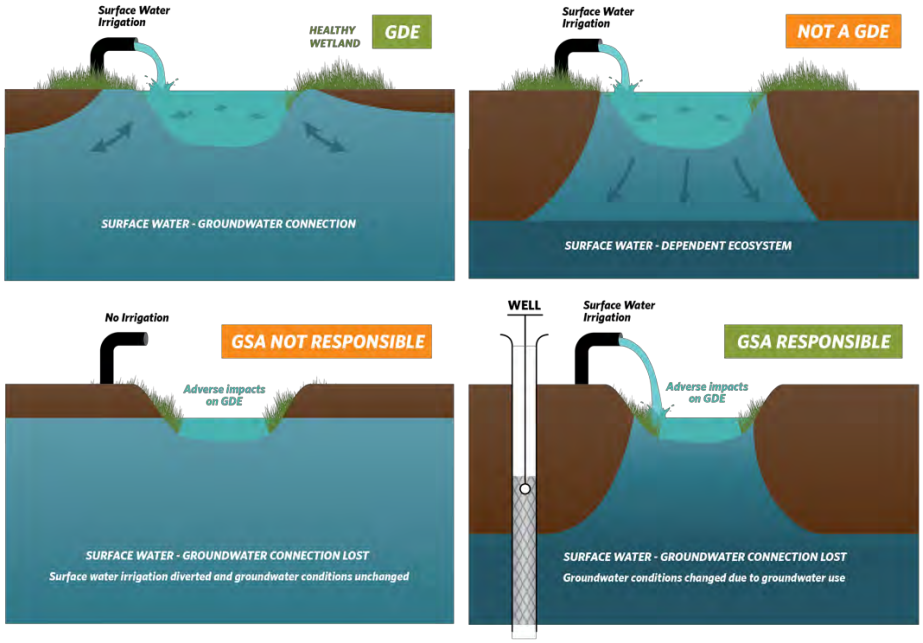


Figure 4. Ecosystems often depend on multiple sources of water. Top: (Left) Surface water and groundwater are interconnected, meaning that the GDE is supported by both groundwater and surface water. (Right) Ecosystems that are only reliant on non-groundwater sources are not groundwater-dependent. Bottom: (Left) An ecosystem that was once dependent on an interconnected surface water, but loses access to groundwater solely due to surface water diversions may not be the GSA's responsibility. (Right) Groundwater dependent ecosystems once dependent on an interconnected surface water system, but loses that access due to groundwater pumping is the GSA's responsibility.

[17] *For a list of environmental beneficial users of surface water by basin, visit: https://groundwaterresourcehub.org/gde-tools/environmental-surface-water-beneficiaries/*

BEST PRACTICE #4. Select Representative Groundwater Wells

Identifying GDEs in a basin requires that groundwater conditions are characterized to confirm whether polygons in the NC dataset are supported by the underlying aquifer. To do this, proximate groundwater wells should be identified to characterize groundwater conditions (Figure 5). When selecting representative wells, it is particularly important to consider the subsurface heterogeneity around NC polygons, especially near surface water features where groundwater and surface water interactions occur around heterogeneous stratigraphic units or aquitards formed by fluvial deposits. The following selection criteria can help ensure groundwater levels are representative of conditions within the GDE area:

- Choose wells that are within 5 kilometers (3.1 miles) of each NC Dataset polygons because they are more likely to reflect the local conditions relevant to the ecosystem. If there are no wells within 5km of the center of a NC dataset polygon, then there is insufficient information to remove the polygon based on groundwater depth. Instead, it should be retained as a potential GDE until there are sufficient data to determine whether or not the NC Dataset polygon is supported by groundwater.

- Choose wells that are screened within the surficial unconfined aquifer and capable of measuring the true water table.

- Avoid relying on wells that have insufficient information on the screened well depth interval for excluding GDEs because they could be providing data on the wrong aquifer. This type of well data should not be used to remove any NC polygons.

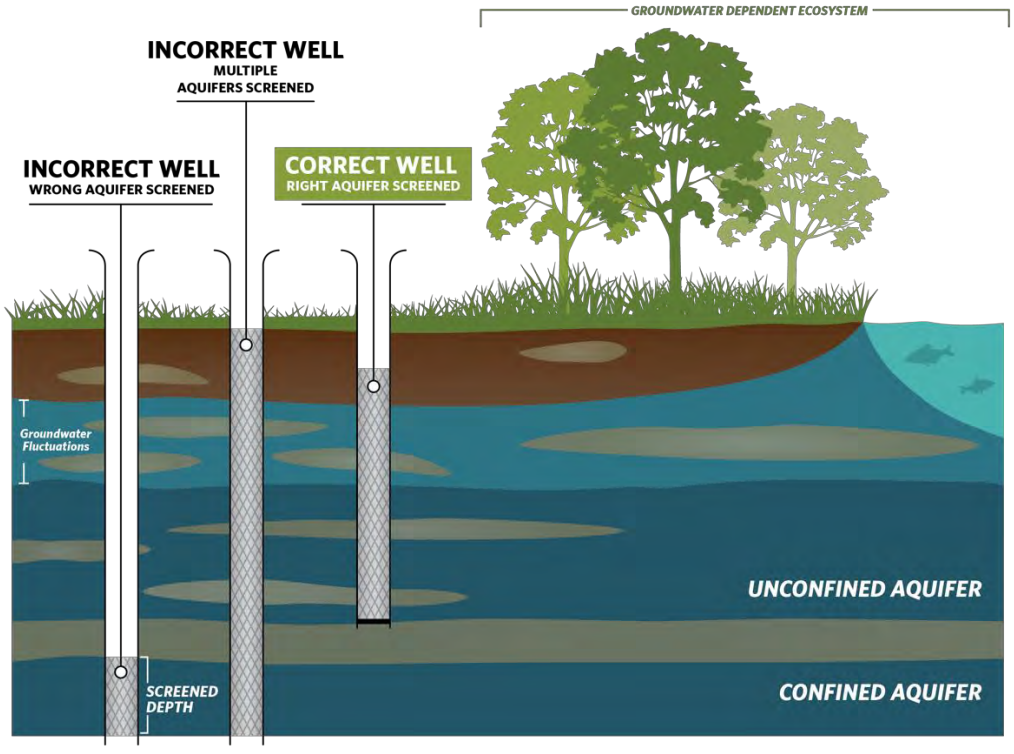


Figure 5. Selecting representative wells to characterize groundwater conditions near GDEs.

BEST PRACTICE #5. Contouring Groundwater Elevations

The common practice to contour depth-to-groundwater over a large area by interpolating measurements at monitoring wells is unsuitable for assessing whether an ecosystem is supported by groundwater. This practice causes errors when the land surface contains features like stream and wetland depressions because it assumes the land surface is constant across the landscape and depth-to-groundwater is constant below these low-lying areas (Figure 6a). A more accurate approach is to interpolate groundwater elevations at monitoring wells to get groundwater elevation contours across the landscape. This layer can then be subtracted from land surface elevations from a Digital Elevation Model (DEM)[18] to estimate depth-to-groundwater contours across the landscape (Figure b; Figure 7). This will provide a much more accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.

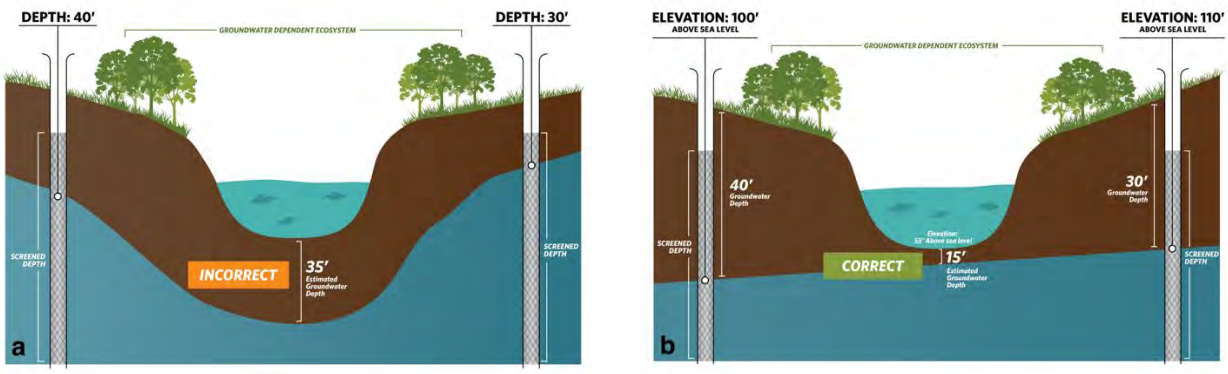


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. (b) Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

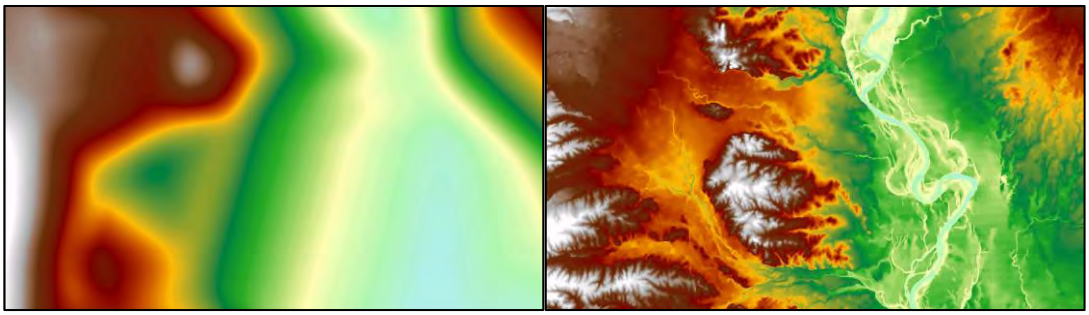


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. (Right) Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

[18] USGS Digital Elevation Model data products are described at: https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services and can be downloaded at: https://iewer.nationalmap.gov/basic/

BEST PRACTICE #6. Best Available Science

Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decisions, and using the data collected through monitoring programs to revise decisions in the future. In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network. Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.

KEY DEFINITIONS

Groundwater basin is an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom. *23 CCR §341(g)(1)*

Groundwater dependent ecosystem (GDE) are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. *23 CCR §351(m)*

Interconnected surface water (ISW) surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted. *23 CCR §351(o)*

Principal aquifers are aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems. *23 CCR §351(aa)*

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and waters on which all life depends*. To support successful SGMA implementation that meets the future needs of people, the economy, and the environment, TNC has developed tools and resources (www.groundwaterresourcehub.org) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

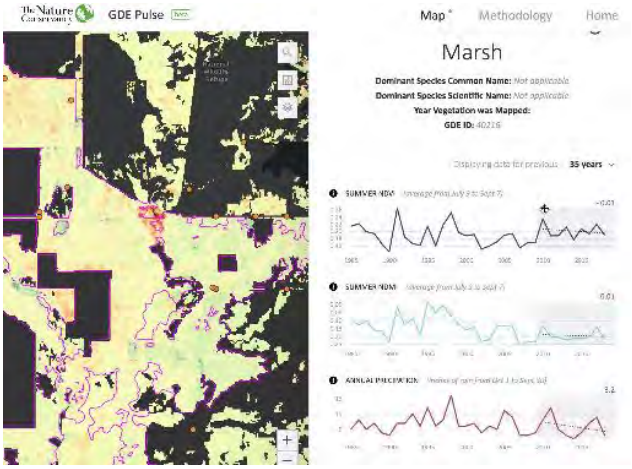
Attachment E

GDE Pulse

A new, free online tool that allows Groundwater Sustainability Agencies to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data.

The Nature Conservancy
Protecting nature. Preserving life.®

Visit
https://gde.codefornature.org/



Remote sensing data from satellites has been used to monitor the health of vegetation all over the planet. GDE pulse has compiled 35 years of satellite imagery from NASA's Landsat mission for every polygon in the Natural Communities Commonly Associated with Groundwater Dataset[19]. The following datasets are included:

Normalized Difference Vegetation Index (NDVI) is a satellite-derived index that represents the greenness of vegetation. Healthy green vegetation tends to have a higher NDVI, while dead leaves have a lower NDVI. We calculated the average NDVI during the driest part of the year (July - Sept) to estimate vegetation health when the plants are most likely dependent on groundwater.

Normalized Difference Moisture Index (NDMI) is a satellite-derived index that represents water content in vegetation. NDMI is derived from the Near-Infrared (NIR) and Short-Wave Infrared (SWIR) channels. Vegetation with adequate access to water tends to have higher NDMI, while vegetation that is water stressed tends to have lower NDMI. We calculated the average NDVI during the driest part of the year (July–September) to estimate vegetation health when the plants are most likely dependent on groundwater.

Annual Precipitation is the total precipitation for the water year (October 1st – September 30th) from the PRISM dataset[20]. The amount of local precipitation can affect vegetation with more precipitation generally leading to higher NDVI and NDMI.

Depth to Groundwater measurements provide an indication of the groundwater levels and changes over time for the surrounding area. We used groundwater well measurements from nearby (<1km) wells to estimate the depth to groundwater below the GDE based on the average elevation of the GDE (using a digital elevation model) minus the measured groundwater surface elevation.

[19] The Natural Communities Commonly Associated with Groundwater Dataset is hosted on the California Department of Water Resources' website: https://gis.water.ca.gov/app/NCDatasetViewer/#

[20] The PRISM dataset is hosted on Oregon State University's website: http://www.prism.oregonstate.edu/

1 November 2019

MEMORANDUM

To: Taylor Blakslee, Cuyama Basin Groundwater Sustainability Agency

From: Jeff Shaw, P.G., C.Hg., EKI Environment & Water, Inc. (EKI)
John L. Fio, EKI
David A. Leighton, EKI

Subject: Comments on Some Aspects of the Cuyama Basin Water Resources Model, Cuyama Basin Groundwater Sustainability Plan
(EKI B70069.01)

EKI has prepared this brief outline of selected preliminary findings from our ongoing review of the transient 3-D numerical finite-element groundwater flow model known as the Cuyama Basin Water Resources Model (CBWRM or "the model"), which was constructed to support the Groundwater Sustainability Plan (GSP) for the Cuyama Basin Groundwater Sustainability Agency (GSA). Woodard & Curran (WC) provided model input files for the historical and future projection periods, and for scenarios representing projects and management actions, including pumping reductions. EKI used these files as-received, with no modifications, to run the CBWRM and attempt to reproduce certain model results published in the GSP. Our comments on certain aspects of the model are listed below, with further explanation on following pages.

SUMMARY OF COMMENTS

1. Projected future drawdown contours (and thus Management Area boundaries) published in the GSP are not reproducible using the model files and procedures provided by WC.
2. The model requires additional review and potential modification before it can be used by basin stakeholders as a groundwater management tool.
3. Long-term decisions such as the extent of areas where groundwater pumping is restricted should not be based solely on model output in its current form.
4. Management Area boundaries are delineated based on estimates of land use and pumping rates. Thus, they incorporate any errors and uncertainty in these parameters. For example, an error in estimated pumping of 1,000 AF can change the area within Management Areas by 600 to 800 acres.
5. The most sensitive model parameter in terms of its effect on estimated groundwater storage is groundwater pumping, which is not well-defined currently, and is not explicitly modeled in the Basin. Groundwater is assumed in the model to be extracted evenly from beneath the land over which it is used for irrigation. Simulation of pumping wells in their actual locations likely would improve model performance.
6. The model was calibrated without an explicitly-modeled vadose zone, which would influence model calibration and as a result alter model-calculated changes in water levels and groundwater storage.

MANAGEMENT AREAS

The public-review draft Cuyama Basin GSP defines proposed Management Areas within the basin based on "the model's projection of groundwater levels decreasing at a rate of 2 feet or more per year over a 50-year hydrologic period." Proposed Management Area boundaries define properties which will be required to reduce groundwater pumping, by as much as 67%, from all other lands where pumping currently is planned to remain unrestricted. Hence, Management Area boundaries are critically important for implementing basin management decisions.

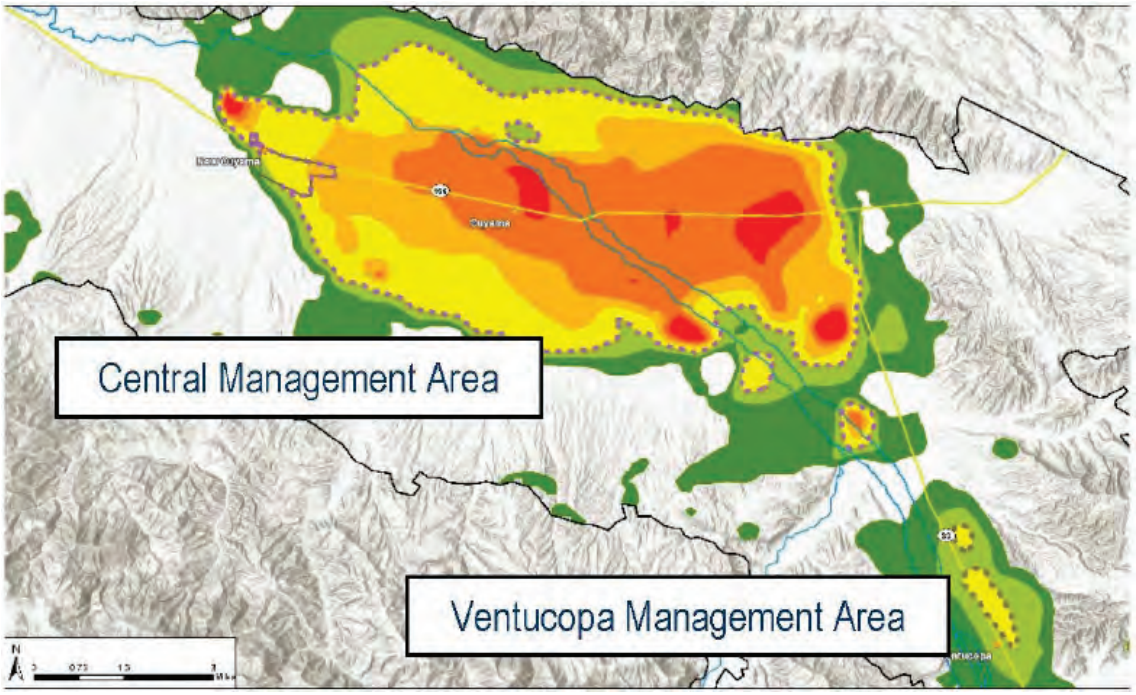


Figure 1. Groundwater Sustainability Plan proposed Management Area boundaries, Cuyama Basin (from Figure 7-1, *Cuyama Valley Groundwater Basin Draft Groundwater Sustainability Plan,* June 2019).

REPRODUCIBILITY OF MODEL RESULTS

EKI attempted to reproduce the Management Area boundaries using the provided model files and the post-processing steps described by WC. EKI could not reproduce the Management Area boundaries published in the GSP. Geographic Information System (GIS) shapefiles provided by WC that delineate the Management Area boundaries agree with the GSP, but EKI's model results, using the un-modified input files provided by WC and the post-processing steps described by WC, do not.

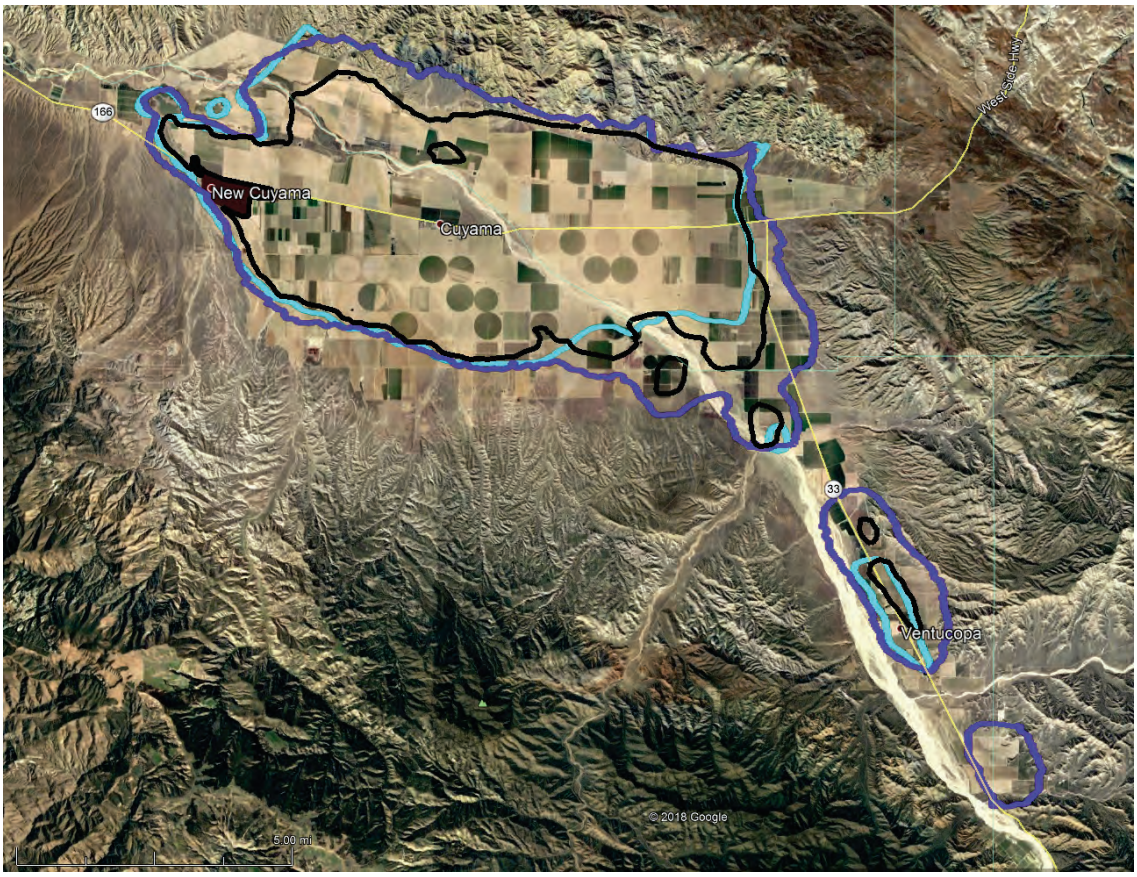


Figure 2. Groundwater Sustainability Plan proposed Management Area boundaries and model-generated contours, Cuyama Basin.

Preliminary output from the CBWRM is shown in Figure 2. The GSP-proposed Management Area boundaries are shown in black. The average 2-ft/yr drawdown contour EKI derived from the 50-year projected groundwater conditions is shown for model layer 2 (the Older Alluvium) in light blue, and for model layer 3 (the Upper Morales Formation) in purple.

Neither model-generated polygon agrees with the boundary proposed in the GSP, and WC has not yet confirmed how post-processing of results from each layer was conducted to obtain the Management Area boundaries proposed in the GSP.

The main part of the Central Basin Management Area (excluding smaller detached areas or the apparently excluded area in the interior) encompasses roughly 22,000 acres, whereas the corresponding area defined by EKI's model results using the input data provided by WC encompass about 25,000 acres in layer 2, and about 31,000 acres in layer 3. Thus, as much as 9,000 acres of land cannot be definitively classified as within or outside the proposed Central Basin Management Area as described in the GSP. Substantial discrepancies also are visible in the Ventucopa Management Area boundaries.

UNCERTAINTY IN MODELING OF MANAGEMENT AREAS

The Management Areas, as defined by the 2-ft/yr drawdown contour line are dependent upon the modeled pumping rate, a parameter that is subject to significant uncertainty given the lack of available pumping data.

A simple calculation illustrates the point. Basin Management Areas vary in size as a function of pumping. The ratio of the change in pumping (as estimated in the model) to the change in area enclosed by the 2-ft/yr drawdown contour indicates that Management Areas grow and shrink at the ratio of 0.6 acres or 0.8 acres of area for layers 2 and 3, respectively, per acre-foot of pumping change in the model.

Thus, even if the assumed total-basin pumping rate used for model input is known to an accuracy and precision of 1,000 AF (an optimistic scenario), parcels assigned to Management Areas through model output still could be incorrect by as much as 800 acres.

Compounding this problem, the model (as currently implemented) does not explicitly simulate supply wells pumping groundwater at specific locations and depths. Instead, pumping is estimated from the calculated applied water demand and land-use (crop) assumptions. Thus, the model implicitly assumes groundwater is always withdrawn from beneath the parcels where the water is applied. Groundwater piped from supply wells to irrigate fields some distance away therefore is not accurately simulated using the current model, and the drawdown effects of these wells are not captured by the model.

SENSITIVITY OF MODEL GROUNDWATER STORAGE ESTIMATES TO PUMPING UNCERTAINTY

The GSP states that simulated pumping is the most sensitive parameter in the entire model. Thus, any uncertainty in the pumping assumptions fed into the model will cause even greater uncertainty in the estimates of groundwater storage calculated by the model. The GSP notes[1] that a +/- 20% change in simulated groundwater pumping causes the model to change its modeled groundwater storage estimates by at least +/- 45%.

CALIBRATION OF MODEL WITHOUT VADOSE ZONE GROUNDWATER MOVEMENT

The model was calibrated without representing the time delay for water percolating past plant roots to travel through the unsaturated soil zone (vadose zone), which can be hundreds of feet thick in some areas of the Basin. Groundwater percolating downward through the vadose zone can require decades before reaching the water table. Age-dating results reported by the USGS show that water samples from wells can be very old (up to thousands of years) in parts of the basin. The rationale for ignoring the vadose zone is not documented in the GSP, but it can substantially influence the magnitude and timing of recharge, and pumping effects on groundwater storage changes.

Figure 3 shows an example of two possible future projected hydrographs from a well (OPTI 612) located near the center of the Central Basin Management Area. The simulations used to create the

[1] Table C-4: Sensitivity of Basin-wide Storage Change to Different Parameters, *Cuyama Valley Groundwater Basin Draft Groundwater Sustainability Plan*, Appendices Chapter 2, Appendix C, June 2019

hydrographs were (1) the unaltered model files (as provided) with no explicit vadose zone simulation, and (2) the same input files but with the vadose zone active.

The hydrographs are similar in shape, but model-calculated water levels are about 50 to 100 feet lower than measured water levels when the vadose zone is included. This discrepancy shows that a substantially different set of aquifer parameter values are needed to improve the match between measured and simulated water levels, which in turn will alter the modeled groundwater storage response to changes in pumping.

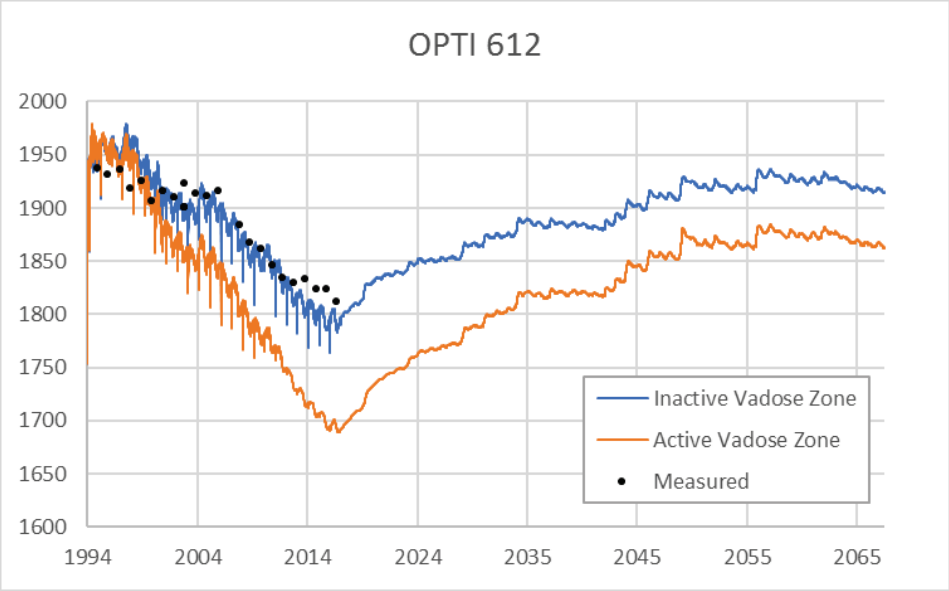


Figure 3. Hydrograph showing difference in water levels for monitoring network well OPTI 612, located near the center of the Central Basin Management Area, based on future simulations with activation (orange line) and without activation (blue line) of the modeled vadose zone.

REVIEW METHOD

The base model files used were for simulation of the projection period (2018 - 2067), with no adjustments for the effects of climate change, and no implementation of projects to increase water supply. Model files specifying native and agricultural land use areas were replaced with files provided by WC to represent pumpage reductions needed to achieve sustainability for the "no climate change and no projects" scenario. The model was configured to produce model-calculated water levels at each model node for each layer at each time step. Model-calculated water levels were extracted from model output for time steps at the beginning (30 September 2017) and end (30 September 2067) of the projection period. The average annual change in model-calculated water level over this 50-year time period was calculated for every model node and for each layer.

A surface representing the water level change for the model area was interpolated for each layer from these results using the ArcMap Spatial Analyst Kriging interpolation method with default settings. Due to the spatial density of data used as input to the interpolation process, the resulting surface likely would not vary significantly using different interpolation methods or parameters.

6a

Byron Albano
Owner, Cuyama Orchards
31681 Hwy 33
Ventucopa, CA 93252
Director, Cuyama Basin Water District
Director, Cuyama Basin Groundwater Sustainability Agency
byronalbano@gmail.com

November 1, 2019

Derek Yurosek, Chairperson
Cuyama Basin Groundwater Sustainability Agency
c/o Project Coordinator, Taylor Blakslee
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309
SENT VIA EMAIL TO: TBLAKSLEE@HGCPM.COM

SUBJECT: COMMENT LETTER TO FINAL DRAFT CUYAMA BASIN GROUNDWATER SUSTAINABILITY PLAN

Dear Chairperson Yurosek,

Thank you for the opportunity to submit written comments regarding the Final Draft of the Cuyama Basin Groundwater Sustainability Plan.

It will come as no surprise to my fellow community members in the Cuyama Valley, that I have serious reservations about the Cuyama Basin Groundwater Sustainability Plan that is proposed for passage. I think most members of the Cuyama Valley community share this sentiment, if not my same reservations.

After millions of dollars spent, the Cuyama GSP doesn't address what I consider to be the most significant question for the residents and property owners in the valley: **How will we arrest the historical over-pumping of the main sub-basin in a way that isn't excessively punitive to owners of the properties that caused the overdraft, and that is fair to the rest of the residents, farmers, ranchers, businesses, and property owners in the valley who use, and have used, water in a way that was, and is, sustainable.**

It's not going to be easy, we all know that. But it strikes me that this plan doesn't even start to address that question. To the contrary. The plan starts by spreading the costs of the plan to all water users in the valley regardless of the historical sustainability of that user's water supply, and without consideration of that user's conservation efforts, or their rights to continue to use water in a reasonable and sustainable way. I've resisted the temptation to condemn any particular farming operations for their activities in the main sub-basin, who have only operated within the bounds of their historical rights under California water law, but we are going to have to talk about and address these issues. There are quite a few sustainable farms and operations throughout the Valley in terms of water usage. In fact, most of them are, simply because physically they've had no choice but to live within their means when it came to water and land availability.

But this hasn't been the case in the main sub-basin. Some operations lived beyond their means when it came to a sustainable water supply. They chose to tap that supply for what it was worth, for as long as they were allowed. And it has been worth a lot. As the main aquifer was drafted down over the

decades, those with the deepest wells and the deepest pockets were able to buy cheaper contiguous parcels that either didn't have access to water, or whose wells were losing out in the competition for deeper water. It has been clear for decades that this ultimately wasn't a sustainable practice. But neither was it illegal, and so those "deep straws" were used to access water that, in that region of the valley, could be piped over great distances to irrigate an expanse of land regardless of the parcel's access to water. This scenario was never really possible in most of the rest of the valley due to the highly variable topography, which limits the arable land, and fragmented hydrology that creates mostly highly localized availability of water.

SGMA now forces a cessation of the long-term overdraft that has occurred in the main sub-basin. The question is worth repeating: How will we arrest the historical over-pumping of the main sub-basin in a way that isn't excessively punitive to owners of the properties that caused the overdraft, and that is fair to the rest of the residents, farmers, ranchers, businesses, and property owners in the valley who use, and have used, water in a way that was, and is, sustainable.

I'd like to see a plan that focuses on addressing those issues so that the sustainable farming operations of the Cuyama Valley could start to imagine our future once more. Instead, we are getting a plan that opens up a growing, bottomless pit of spending that threatens us all. We have been led by our consultants, and by those operations with the deepest straws and deepest pockets, to buy into the idea that we just don't have enough data to make these decisions until we spend untold additional millions that our operations can ill afford. I don't think it was the purpose of SGMA to force smaller, often undercapitalized, farming operations, like my own, to pay the price for the ungoverned externalities of large, highly capitalized operations that have been the principal drivers of the drawdown of our largest aquifer.

SGMA has given us the tools and local decision making, precisely so that we can sort out these difficult issues. I believe we do have enough data and a clear enough understanding of the issues to start working this out while we test and improve our water model over time. In the interim, we need to be exceptionally judicious with our spending to fill the data gaps that actually bear on the pumping allocations and cost allocations on which we need to reach consensus in order to implement a successful GSP. I feel very strongly along with nearly everyone in this valley, that this should not, and cannot, require spending a million-plus dollars per year while we work that out.

Respectfully Submitted,

Byron Albano,
Owner, Cuyama Orchards
Director, Cuyama Basin Water District
Director, Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin
Groundwater Sustainability Plan
Final Draft

Public Hearing Comment

To:
Taylor Blakslee
CBGSA Project Coordinator
1901 Royal Oaks Dr. Suite 200
Sacramento, CA 95815
Sent by electronic mail to: tblakslee@hgcpm.com

From:
Brenton Kelly
Quail Springs Permaculture
Ventucopa Uplands
Vice-Chair CBGSA SAC
brenton@quailsprings.org

November, 6, 2019

Mr. Blakslee,

Thank you for this opportunity to submit comments to the Cuyama Basin Groundwater Sustainability Agency (GSA) as part of the Public Hearing in consideration of the Cuyama Basin Groundwater Sustainability Plan (Plan).

General Comments:

With many entrenched Stakeholders protecting their interests and last minute negotiations, this Plan is being pushed and pulled around a lot right now, and satisfaction is hard to gauge yet. In the hopes that this GSP is an acceptable Plan, I'll share here my greatest concerns & dissatisfactions as a local small farmer and groundwater dependent stakeholder.

In May, I submitted several specific comments (80 discreet) on the first Public Draft. Some comments were addressed or excused but many were disregarded or the text was edited / reformatted so it was hard to determine what was new. In some cases comments were accepted in the matrix but unchanged in the Final Draft, (i.e. Alphabetize the Useful Terms of every chapter. Some are, some aren't) Also, major plan development is currently ongoing with the Management Area Agreements and Extraction Fee Report reviewed at this Public Hearing for the first time making this Final Draft very much a premature work still in process.

As many of my comments in May are still unresolved I'll share here some of my top concerns.

Specific Comments:

Management Area Agreements

I have not seen this agreement yet but I have several concerns. The very first is fiscal. Why does Cuyama need two $1 Million public water agencies? Cuyama cannot afford to pay for two agencies to consult each other's consultants and arm-wrestling with public policy. This kind of jurisdictional redundancy is not called for in SGMA. Can the CBWD shrink in relation to the size of the Management Area? Manage for it's inevitable irrelevance.

Extraction Fee Report

This is a start. This will pay the first bills. But this will not do for long. This is the hottest topic in the Plan and remains problematic. My main concerns are these:

- No Incentives or penalties to encourage compliance.
- No recognition that the problem is located only in the central region.
- No tier structure or recognition of areas with historically balanced water use.
- No recognition or discouragement of wasteful & unreasonable water use.
- No ability to adapt to and limit new water users and water use.

Executive Summary

This Summary paints a fairly pretty picture of a decidedly concerning scene. Cuyama pumps 60 TAF in a Basin with only 20 TAF sustainable yield. With a problem of this magnitude, to underrepresent in this way is like putting lipstick on the backside of the pig.

The Groundwater Quality section was greatly reduced from the Public draft, with no reference now to the high concentrations of other constituents. There is no justification for only monitoring for TDS in a Basin full of Arsenic, Boron & Nitrates. The Public Draft version presented the Existing Conditions accurately and compellingly. A resource cannot be managed if it is not well monitored. Why not monitor for more constituents without having to set any Minimum Thresholds? We need the information to understand and Model the basin Hydrology.

Figure ES-4: This Depth-to-Groundwater image shows a frightening cone of depression over 600 feet deep. That target pattern should be used to help distribute the Extraction Fee more equitably. It clearly shows where the problem spot is!

There is no mention of the major Data Gaps in the Monitoring Network or the heavy lifting required to fill them, or the effect those data Gaps have on the uncertainty of the Model. Or that this Model uncertainty was then used to plot the Management Area in Fig. E-14.

Fig. E-14 is mislabeled in the text as E-15 and undervalues the extent of the projected draw down. The Red area is greater than 5’ and up to 7.7 feet, not just 4. Why doesn’t this image more closely match Fig.ES-4?

Chapter 2. Basin Settings

This is all review of old publications, including the most recent USGS Study, which suggested further work was needed to understand the permeability of the faults. None of that work has been done. The Data Gaps are profound for all Sustainability Indicators. This Plan does not seem to include the Hydro-geological staff & investigation needed to answer the many unknowns of the Basin.

Chapter 3. Undesirable Results

This Chapter has been problematic from the start. The data clearly indicates that 50 years of chronic overdraft has caused a historic Groundwater Storage loss of over 1,000,000 AF, <400' of Groundwater Elevation declines, subsidence rates of approximately 0.8 inches per year, the total loss of the Cuyama River surface water annual base flow, and the desertification of the many GDEs across the basin. How can this plan not recognize existing, chronic & persistent Undesirable Results today if not already happening on Jan 1, 2015? The Cuyama Basin has been experiencing Undesirable Results for decades. Certainly conditions should not be allowed to get worse than they were in 2015, but many Sustainability Indicators allow for conditions to continue to worsen, very much like they currently are doing. The latest reading is the historic low in the central basin.

An acceptable and realistic solution to Cuyama's Groundwater would not start with a complete denial of the actual conditions on the ground after the acknowledged historic out of balance land use. To accept the proposed slow 20 year glide path from current chronic overdraft is to never see a return to 2015 conditions much less to ever see wetlands return to the riverbeds.

Chapter 4. Monitoring Network

Groundwater Quality: It is still unacceptable to this stakeholder that the GSA will not monitor for any other major constituents than TDS. Arsenic, Boron and Nitrates are of concern to domestic wells in the basin. This is an undesirable condition that this Plan cannot disregard. This is unacceptable in the light of California's recognition of a humane right to safe drinking water.

Data Gaps: With unknown fault permeability, no stream gauges, no subsidence monitor in the cone of depression, and little understanding of existing GDEs or data to feed the Model to predict stream flow loss, how can it be said that this Monitoring Network can satisfactorily identify the occurrence of Undesirable Results?

Chapter 5. Sustainability Indicators

All Minimum Thresholds and most Measurable Objectives were calculated to allow for further dewatering to continue with vague references to how much worse it can get since 2015. In some areas the MO is 80' below 2015 levels with MT below that. How can that protect the nearby willows and cottonwoods?

If groundwater elevations are allowed to drop that would indicate continued loss of groundwater storage which is an unacceptable Undesirable Result.

Chapter 6. Data Management System

What is this system supposed to do other than check a box for SGMA? No well completion information that had been submitted was uploaded to the DMS. Why is it

separate from the Cuyama Basin Interactive Map? Who will update the DMS with this proprietary software?

Chapter 7. Projects and Management Actions

At first glance it looks like this GSP will "Improve reliability of water supplies for local disadvantaged communities. With no funding that looks more like just a letter of support for a significant need, and feels disingenuous to the disadvantaged communities left with dry wells and trucked water.

Chapter 8. Implementation Plan

This section does not present the plan to fill the chronic Data Gaps and holes in the Monitoring Network. Who, when and how will this get done? What coordination will happen with the county permitting authorities regarding new wells or new water demands?

Summary

We are not there yet, but there is light at the end of the tunnel. Here are some highlights:

- Groundwater Quality issues are not going away and must be reconsidered.
- Equity of responsibility has not been achieved.
- The water budget is so out of balance it is reasonable to expect landowner resistance to the magnitude of the necessary reductions.
- The only incentive is to be a De miminis user and pump less than 1.5AF per year per well.
- The same logic used to exempt the rangelands applies to sustainably developed parts of the basin.
- The problem area should own more of the solution

Thank you for your consideration,

Brenton Kelly

Submitted by: The Cuyama Valley Community Association
Public Comment: To the Cuyama Basin Groundwater Sustainability Agency regarding the Draft Groundwater Sustainability Plan
Date: November 6, 2019

The Cuyama Valley Community Association represents 140 members who live, work or own property in the Cuyama Valley.

As an organization that is deeply grounded in the community, the CVCA has closely monitored the development of the Groundwater Sustainability Agency, the establishment of the Standing Advisory Committee and the creation of the Groundwater Sustainability Plan that is currently under review. The CVCA has held numerous Town Hall meetings about SGMA implementation and its potential impact on the valley, and the CVCA receives monthly updates on the progress of SGMA implementation in the Cuyama Basin.

The CVCA anticipates that SGMA implementation will have a profound impact on the Cuyama Valley through 2040. It is important to note that the legislation's emphasis on "local control" is reflected not only in the creation of the GSP, but also in its implementation. Throughout the development of the GSP, the Standing Advisory Committee has helped to educate the community and amplify the voices and concerns of local residents in this process. As the GSA and the community transitions from the *creation* of the all-important Groundwater Sustainability Plan to the *implementation* of the plan, a strong and well-supported Standing Advisory Committee will help to ensure that the local community is well represented and is an active participant in grappling with the issues that will surely result from SGMA implementation. On behalf of all members of the CVCA, the CVCA Board strongly urges the Groundwater Sustainability Agency to maintain a parallel schedule of separate meetings for the Standing Advisory Committee to the Groundwater Sustainability Agency, and to specific those activities in the final draft of the Groundwater Sustainability Plan for the Cuyama Basin.

Respectfully submitted,

Brenton Kelly, CVCA Board Chair
Meg Brown, CVCA Board Vice-Chair
Pam Baczuk, CVCA Board Secretary
Nicole Furstenfeld, CVCA Board Member
Alex Guerrero, CVCA Board Member
Em Johnson, CVCA Board Member
Alison Mann, CVCA Board Member

9a

Taylor Blakslee

From: Timothy Naughton <naughton.t.d@gmail.com>
Sent: Friday, November 1, 2019 11:36 PM
To: Taylor Blakslee
Subject: COMMENT FOR NOV 6 HEARING

As a landowner in Cuyama Basin that has NEVER used and NEVER plans on using the ground water, I am concerned about sharing the cost of establishing and enforcing a GSP. I feel adamantly that this cost should be shared among those using the ground water. Land owners not using the ground water remain a resource to contribute to the recharge rate but should NOT be accountable for the cost of future water sustainability rates.

Sincerely.
Timothy D Naughton
Western Cuyama Valley, School House Canyon

To:
Taylor Blakslee
CBGSA Project Coordinator
1901 Royal Oaks Dr. Suite 200
Sacramento, CA 95815
Sent by electronic mail to: tblakslee@hgcpm.com

From:
Roberta Jaffe and Steve Gliessman
Condor's Hope Ranch
Cottonwood Canyon
condor@condorshope.com

November 6, 2019

Dear Directors of the Cuyama Basin GSA:

Thank you for this opportunity to submit comments to the Cuyama Basin Groundwater Sustainability Agency (GSA) as part of the Public Hearing in consideration of the Cuyama Basin Groundwater Sustainability Plan (GSP). As farmers and residents in the Basin we have been active participants in the development of the GSP since the beginning of the process. Roberta (Robbie) has been Chair of the Standing Advisory Committee since its inception. We strongly believe that it is important for all stakeholders to work together on a GSP that will maintain and improve groundwater levels and quality of the Cuyama Basin groundwater so that residents of the communities (all identified as Disadvantaged Communities by California) and farmers and residents of the entire Valley as well as natural habitats can look forward to a sustainable groundwater resource for generations to come. This requires the GSP to call for critical changes to ensure to the best of our ability this occurs.

In reviewing the Final Draft we submit the following comments that reflect our concerns and ways we think the GSP can be improved before submission to the California Department of Water Resources.

• Water Quality

Chapter 5.5 Degraded water quality.

There were no changes made to this section since the release of the draft GSP. Only measuring TDS will not give us any relevant information regarding water quality. We recommend that the plan incorporates and continues to monitor groundwater quality measurements from other agencies (eg. CCSD, the Counties, Central Coast Water Board) into the GSP so that an overall assessment of groundwater quality can be done at regular intervals. In addition the GSP should identify monitoring wells near drinking water wells and separate them out for specific monitoring as to potential impact on drinking water.

TDS. Table 5-2. This Table shows that the Basin is naturally high in TDS. Of the 63 wells listed only 4 are below the 500 mg/L for the Maximum Measurement Value. 32 (more than 50%) are above 1500 mg/L for the Maximum Measurement Value. In all cases except 1 the MT is set higher or equal to that well's Maximum Measurement Value. The 1 exception is well #703

which has the highest reading for MMV: 4500mg/L and a MT of 4096.8. Thus while monitoring TDS is important to ensure it does not get worse, only monitoring TDS will not inform us about the other important constituents in our water such as nitrates which enter the system through agricultural applications and arsenic which is incorporated when water is pumped from deep levels of the aquifer.

• Stakeholder Engagement

During implementation of the CBGSP, community residents will play an important role, from providing access to their wells to be monitored, to representing community concerns and recommendations based on our knowledge of the different aspects of the Valley. This role has been represented in the development of the plan by the Board appointed Standing Advisory Committee. This has been in compliance with SGMA: "The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater" (CA Water Code Sec. 10723.2). "The groundwater sustainability agency shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin" (CA Water Code Sec. 10727.8(a)) as well as the Joint Powers of Agreement establishing the CBGSA: "Article 8.1: Standing Advisory Committee: A Standing Advisory Committee is hereby established as a group of representatives to advise the GSA, and shall be appointed by the Board."

(a) Purpose. The Standing Advisory Committee shall advise the Board, concerning, where legally appropriate, implementation of SGMA within the Basin and review the GSP before it is approved by the Board."

The Standing Advisory Committee has played a significant role in the development of the GSP and we think it is critical that this community representation continue at the same level during the implementation of the GSP.

• GSA collaboration with the Counties:

There are 4 counties with jurisdiction in the Cuyama Basin. While all are represented on the GSA Board, individual county departments move forward with various permits and monitoring that would be more effective with collaboration with the GSA to avoid undersirable impacts on the Cuyama Basin. We recommend as part of the GSA Plan communication and notification be established in the following areas:

- Any new well permit applications in the Cuyama Basin be shared with the GSA for review during the application process; and the County is responsible for notifying applicants that they need to comply with the Cuyama Basin GSP.
- Any Planning Department permit applications submitted that could impact Cuyama Basin's groundwater level or quality, such as for Cannabis growing, reservoirs, etc. be shared with the GSA for review and comment during the application process; and the

County is responsible for notifying applicants that they need to comply with the Cuyama Basin GSP.

- The GSP Monitoring network work with the counties existing monitoring networks as a foundation to build on to meet the GSP monitoring needs. The monitoring network should be updated and implemented in conjunction with the Counties and any other agencies that have been monitoring wells in the Cuyama to take advantage of private well agreements that are already in place (saving costs) and to ensure that wells represent priority areas of concern.

• Threshold Regions

The Cuyama Basin is made up of diverse regions and these are addressed in the GSP with different Minimum Thresholds and Measureable Objectives set for each region. We are specifically concerned about the Northwest Region and its potential impact on the entire western region of the Basin. Land in this region has been converted to intensive irrigation in the past three years. Chapter sections 5.2.1 and 5.2.2: Description says it is "most likely in full condition". However, actual monitoring of these wells has shown that the groundwater level has decreased over 80 feet in just a few years of pumping. Furthermore the MT in this region allows many wells to draw down an additional 20 feet, and in some cases more than an additional 100 feet. The formula used for Interim Milestones will allow the Northwest region to have a target of lowering the ground level every 5 years. Our concern is this will have impact on and groundwater levels affecting wells in the region as well as groundwater dependent ecosystems that are known to occur in the area.
We recommend the Minimum Thresholds and Interim Milestones for this region be reviewed and adjusted accordingly.

• Adaptive Management

In Chapter 7.6 The two "triggers" for determining that something should be done, especially further reductions in pumping, are:

1. being more than 5% off of the glide path
2. being within 10% off the MT

But in both cases it is not clear what management actions will take place, nor a timeline for their implementation. They both mention that "evaluation" of why the triggers have been reached would take place first, but with no details on a timeline for such evaluation, nor is there any description of what "appropriate actions" are if a consequence needs to be applied. Consequences should be clearly described as primarily in the form of pumping reductions. There should also be mention that these triggers, especially number 2, be applied to the entire basin, and not just to the management areas.

This is landmark work and we appreciate the opportunity to participating in developing a GSP that will bring changes to our critically overdrafted Basin. We hope these recommendations will be incorporated into the GSP prior to final approval. Thank you for your consideration.

Sincerely,

Roberta Jaffe

Chair, Standing Advisory Committee

Farmer and Resident, Cuyama Basin

Steve Gliessman

Farmer and Resident, Cottonwood Canyon

Condor's Hope Ranch

Thank you for this opportunity to submit comments to the Cuyama Basin Groundwater Sustainability Agency (GSA) as part of the Public Hearing in consideration of the Cuyama Basin Groundwater Sustainability Plan (GSP). I am a farmer and resident in the Basin (Cottonwood Canyon) and have been an active participant in the development of the GSP since the beginning of the process. The GSA Board, Staff, and the Standing Advisory Committee (SAC) have done a lot of work, but I feel there are several issues still not dealt with adequately in the GSP. Two that I want to address are ones that I have brought up before at SAC and GSA meetings, as well as commented on for the first draft of the GSP and again for the final draft. These two issues have not been adequately addressed.

• Water Quality

Chapter 5.5 Degraded water quality.

No changes have been made to this section since the release of the draft GSP. Only measuring TDS will not give us any relevant information regarding water quality. I recommend that the plan incorporates and continues to monitor groundwater quality measurements from other agencies (eg. CCSD, the Counties, Central Coast Water Board) into the GSP so that an overall assessment of groundwater quality can be done at regular intervals. In addition the GSP should identify monitoring wells near drinking water wells and separate them out for specific monitoring as to potential impact on drinking water.

TDS. Table 5-2. This Table shows that the Basin is naturally high in TDS. Of the 63 wells listed only 4 are below the 500 mg/L for the Maximum Measurement Value. 32 (more than 50%) are above 1500 mg/L for the Maximum Measurement Value. In all cases except 1 the MT is set higher or equal to that well's Maximum Measurement Value. The 1 exception is well #703 which has the highest reading for MMV: 4500mg/L and a MT of 4096.8. Thus, while monitoring TDS is important to ensure it does not get worse, only monitoring TDS will not inform us about other important constituents in our water, especially nitrates which enter the system through agricultural applications and arsenic which is incorporated when water is pumped from deep levels of the aquifer. The argument made in the GSP (Section 4.8) that only TDS need be monitored is strongly refuted by comments made by the Central Coast Water Control Board for both nitrates (heavy use currently by agriculture and rising levels in monitoring wells) and arsenic (high levels in deep ground water and increased availability from subsidence). Nitrates and arsenic should be added to the TDS measurements.

• Adaptive Management

In Chapter 7.6 The two "triggers" for determining that mitigation actions should take place, especially further reductions in pumping, are:

1. if monitoring data show that the Basis is more than 5% off of the glide path for pumping reductions

2. data show that groundwater levels in monitoring wells have fallen to within 10% off the minimum threshold (MT) values set by GSP for wells in any region of the Basin

But in both cases it is not clear what management or mitigation actions will take place, nor a timeline for their implementation. The GSP mentions that "evaluation" of why the triggers have been reached would take place first in both cases, but with no details on a timeline for such evaluation, nor is there any description of what "appropriate actions" are if a consequence needs to be applied. Consequences should be clearly described as primarily in the form of pumping reductions. There should also be mention that these triggers, especially number 2, be applied to the entire basin, and not just to the management areas.

Furthermore, saying that mitigation actions will be determined during the implementation phase is not sufficient. Enough is known about extraction rates and groundwater level declines that an outline for rates of pumping reduction if the "triggers" are approached can be developed and included in the GSP.

I appreciate the opportunity to participating in developing a GSP that will bring changes to our critically overdrafted Basin. I hope these recommendations will be incorporated into the GSP prior to final approval. Thank you for your consideration.

Steve Gliessman, Condor's Hope Ranch, Cottonwood Canyon, Cuyama Valley

Statement to Hearing on the Cuyama Basin GSP
Roberta Jaffe
November 6, 2019

Thank you for this opportunity to submit comments to the Cuyama Basin Groundwater Sustainability Agency (GSA) as part of the Public Hearing in consideration of the Cuyama Basin Groundwater Sustainability Plan (GSP). I have been a farmer and resident in the western part of the Basin for over 25 years and have been actively involved in the development of the GSP since its inception as Chair of the Standing Advisory Committee. I strongly believe that it is important for all stakeholders to work together on a GSP that will maintain and improve groundwater levels and quality of the Cuyama Basin groundwater so that residents of the communities (all identified as Disadvantaged Communities by California) and farmers and residents of the entire Valley as well as natural habitats can look forward to a sustainable groundwater resource for generations to come. This requires the GSP to call for critical changes in water use to ensure to the best of our ability this occurs.

I would like to make the following comments on the Final Draft and request that they be considered for inclusion in the GSP before submission to the California Department of Water Resources.

• to establish procedures for the GSA to collaborate with the Counties:

There are 4 counties with jurisdiction in the Cuyama Basin. While all are represented on the GSA Board, individual county departments continue to move forward with various permits and monitoring that could impact our groundwater. This process would be more effective if procedures for collaboration between the GSA and the Counties were in place to avoid undesirable impacts on the Cuyama Basin. I recommend as part of the GSA Plan communication and notification be established in the following areas:

- Any new well permit applications in the Cuyama Basin be shared with the GSA for review during the application process; and the County be responsible for notifying applicants that they need to comply with the Cuyama Basin GSP.
- Any Planning Department permit applications submitted that could impact Cuyama Basin's groundwater level or quality, such as for Cannabis growing, reservoirs, etc. be shared with the GSA for review and comment during the application process; and the County be responsible for notifying applicants that they need to comply with the Cuyama Basin GSP.

In my submitted written comments staff responded: "The Board can take this into consideration during implementation of the monitoring networks. Therefore, staff recommends no changes be made to the GSP." However, from my on the ground experience I think it is important to include this in the GSP now so that as soon as the GSP is submitted the coordination between county departments and the GSA can be implemented. Currently for the Cuyama Basin there are 8 cannabis permits in review and 2 approved. Recent UC Davis research on cannabis says that potential water use per acre is greater than any current crop system in the Basin. It seems important that the GSA be notified and able to comment on pending permits and that the applicant be informed that they need to comply with the GSP. Otherwise

we may be caught in a situation that while other agricultural interests reduce their pumping, increased water use could be used by cannabis operations. Similarly over the past 2 years while the GSP was being developed Santa Barbara County's Planning Department approved the construction of three 49 acre foot reservoirs in the western section of the Basin which is currently under appeal. This is an example of the type of impact that the GSA needs to be notified of and able to comment on immediately.

• Threshold Regions and the GSP Monitoring Network
As the GSP Monitoring network is developed it should work with the counties existing monitoring networks as a foundation to build on to meet the GSP monitoring needs. The monitoring network should be updated and implemented in conjunction with the Counties and any other agencies that have been monitoring wells in the Cuyama to take advantage of private well agreements that are already in place (saving costs) and to ensure that wells represent priority areas of concern.

As a resident of the western region (whose well has been monitored over the past 3 years by Santa Barbara County), I would like to give an example and express concern for decisions that are reflected in the GSP that did not take the County's monitoring data into account. The wells being monitored by Santa Barbara County in Cottonwood Canyon show different trends: those along Cottonwood Creek drainage remain stable or are rising; those wells further to the west (including ours) show a downward trend (loss of storage). Yet the wells identified for the monitoring network have multiple wells along the creek drainage and only ours as a well in this area outside of this drainage.

Furthermore I am specifically concerned about the Northwest Threshold Region and its potential impact on the entire western region of the Basin. Land in this region has been converted to intensive irrigation in the past three years. Chapter sections 5.2.1 and 5.2.2: Description says it is "most likely in full condition". However, actual monitoring of these wells has shown that the groundwater level has decreased over 80 feet in just a few years of pumping. Furthermore the minimum threshold in this region allows many wells to draw down an additional 20 feet, and in some cases more than an additional 100 feet. The formula used for Interim Milestones will allow the Northwest region to have a target of lowering the ground level every 5 years. Santa Barbara County, who has also been monitoring these wells, reports that "All data for [these] production wells indicate dropping water levels and recharge does not appear to be sufficient to counter pumping demands." . Two of those years (2016-17 and 2018-19) had above average precipitation.

Recommendations:
• The monitoring network should be updated and implemented in conjunction with the Counties and any other agencies that have been monitoring wells in the Cuyama Basin.
• The Minimum Thresholds and Interim Milestones for the Northwest Threshold region should be reviewed and adjusted based on Santa Barbara County's data.

Thank you.

Comments on the Groundwater Sustainability Plan for the Cuyama Basin
by Sue Blackshear, resident
at Quail Springs Permaculture Center off Hwy 33

I am a relatively new resident of the Cuyama Basin, just over 3 years, but I've been closely following the development of the GSP from the beginning and hope that a successful plan is arrived at soon.

1. I am first of all concerned with the inevitable higher cost and poorer quality of water for a community of moderate to low income in the basin. The GSA and the Water District have already spent a lot of money in attempting to create a good plan. Who should pay the bills?

a.) The maps showing water overdraft in the GSP Plan show clearly extreme overdraft in the Central Region, while other regions are in relative balance.

The over-drafters in the Central Region should pay a larger share of the increased cost for water. They did nothing illegal by drilling extremely deep and using ancient water and causing wells to go dry or others to have to drill deeper for their own water. But that is no longer acceptable. The rules need to change. Others in the valley, in relative balance, should not financially bail out the Central Region, although all will benefit from a plan that improves the water situation.

b.) Water quality needs to be addressed more fully in the GSP, not just saline. Some say that the water in the basin has always been bad. Studies show that nitrates, arsenic and boron are in higher quantities with deeper drilling. The water is becoming more unsafe for drinking by the local
community.

Although SIGMA may not require certain changes, we need to think beyond mere profit from the land. That kind of thinking will turn our basin into a desert. Those who live elsewhere and have headquarters elsewhere, where the profit goes, need to think as though they were residents here. Choose to be better stewards of the land.

c.) The GSP does nothing to encourage and assure that those responsible for the extreme overdraft remain in place to fix the problem that they helped create over a period of years. Companies could stay and use this as a PR opportunity, by doing some meaningful land restoration, leaving some land for native vegetation, protecting more groundwater dependent ecosystems, changing some of their production to less water intensive crops, improving irrigation practices to cut waste; etc.

2. Groundwater Dependent Ecosystems. The GSP shows little concern for groundwater dependent ecosystems. People who have lived a long time in

this area know the beauty of native birds, plants and animals that once thrived here. They still thrive in some areas. We still have them at Quail Springs. But with the slow trajectory for reduction of water use in the GSP, all of the GDEs will be compromised.

3. Chapter 7. Projects and Management Actions. I am not confident that this Plan will do anything to improve water conditions for the local population. Too many of the greatest water users live elsewhere and don't have a real stake in the community.

Thank you for your consideration,

Sue Blackshear
Quail Springs Permaculture Center
35070 Hwy 33
Maricopa, CA 93252
sueblackshear@yahoo.com
805-754-2943

November 6, 2019

Derek Yurosek, Chairperson
Cuyama Basin Groundwater Sustainability Agency
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309

RE: Cuyama Basin Draft GSP Public Comment

Dear Mr. Yurosek:

On behalf of Grimmway Farms, I submit these comments regarding the Cuyama Basin GSA's draft Groundwater Sustainability Plan (Draft GSP). Family-owned for 50 years and headquartered in Bakersfield, Grimmway Farms is a global produce leader and the world's largest producer of carrots. Grimmway supplies more than 65 organic, USA-grown crops and brands include Cal-Organic Farms and Bunny-Luv. Grimmway has always been committed to caring for customers and employees, honoring sustainable practices and preserving natural resources for future generations.

Grimmway recognizes and appreciates the efforts put forth by the GSA in preparing the Draft GSP. Grimmway has representation on the Cuyama Basin Water District and GSA boards and has encouraged its representative to support the Draft GSP in order to meet SGMA regulations and deadlines in a timely manner. It is clear, however, that not all information has been gathered to accurately determine the sustainable yield for Cuyama basin, nor a framework developed to equitably share that sustainable yield amongst water users in the basin. Due to this gap in information and mechanics of implementing the GSP, Grimmway reserves its right to provide further comments and contributions to the plan as missing information is collected and the plan is developed further, either directly or through its representative on the water district and GSA board.

Thank you for your time and consideration, as well as for your tireless efforts to help find a sustainable path forward for groundwater pumping in the Cuyama Basin.

Finest Regards,

Matthew D. Vickery
Director of Land and Water Resources

Bolthouse℠
LAND COMPANY, LLC

November 6, 2019

HAND DELIVERED

Taylor Blakslee
Cuyama Basin Groundwater Sustainability Agency
4900 California Avenue, Tower B, Second Floor
Bakersfield, California 93309

Re: Cuyama Basin Draft Groundwater Sustainability Plan – Public Comment

Dear Mr. Blakslee:

Bolthouse Land Company, LLC ("BLC") wishes to extend its appreciation and commendation to the Cuyama Basin Groundwater Sustainability Agency ("CBGSA") for the time and effort its members and consultants have spent researching and preparing the proposed Cuyama Basin Groundwater Sustainability Plan ("GSP"). BLC firmly believes that groundwater sustainability in the Cuyama Basin is an important and necessary step towards ensuring the long term viability of the Cuyama Valley. BLC, as a landowner in the Cuyama Valley, is committed to working towards the groundwater sustainability goals set forth in the Sustainable Groundwater Management Act.

BLC has completed its review of the proposed GSP and would like to offer the following comments to the CBGSA's draft GSP.

1. Allocation Methodology

BLC has concerns about the proposed GSP's lack of any information relating to how the reduction in groundwater pumping will be achieved. The GSP, in its current form, is silent with respect to the basis upon which the safe yield will be allocated between the many users of the groundwater resource. The failure to include a defined allocation methodology in the proposed GSP that will stand up to legal scrutiny makes the GSP, in our view, susceptible to a potential legal challenge. Accordingly, BLC hereby advises the CBGSA of its intent to reserve its right to comment or challenge the final plan and implementation of the plan once an allocation methodology is included in the GSP and approved by the CBGSA. BLC believes that any allocation methodology that is ultimately approved must comport with longstanding legal principles governing California water rights.

2. Uncertainty of the Model

BLC continues to hold the opinion that the data (or lack thereof) relied upon by the CBGSA's consultants for purposes of establishing the safe yield within the Basin is incomplete due to gaps in, among other things, a firm grasp of the unique characteristics of the aquifer, reliable pumping history and historical well monitoring. BLC believes that even small errors in the assumptions incorporated into the model will result in incorrect conclusions that are not reflective of the actual safe yield within the Basin and which could lead to overestimation of the cutbacks necessary to achieve sustainability. As with BLC's

P.O. Box 20157, Bakersfield, CA 93390 • 11601 Bolthouse Drive, Suite 200, Bakersfield, CA 93311
Ph: 661.323.4005 • Fax: 661.323.4006
BolthouseProperties.com

concerns with respect to the allocation methodology, BLC is hereby advising the CBGSA of BLC's intent to reserve its right to comment or challenge the approved GSP based upon the aforementioned data gaps and assumptions made by the model prepared by the CBGSA and its consultants.

BLC, as a stakeholder in the Cuyama Basin, is committed to working with the CBGSA and other stakeholders towards achieving a sustainability glidepath that is fair, equitable and science based. BLC believes it is in the best interest of all landowners, large and small, for the CBGSA to adhere closely to applicable groundwater law, including existing case law, during the allocation determination process in a best effort to avoid the long and costly process of a legal challenge to the GSP.

We recognize that the development of a workable and sound GSP is the goal of the CBGSA and its consultants. BLC is mindful of the many challenges involved in task as complex as the development of a Basin wide groundwater plan and remains committed to assisting the CBGSA.

Thank you again for your efforts,

DANIEL T. CLIFFORD
Vice-President

DTC:nv

Cuyama Basin Groundwater Sustainability Agency

Groundwater Sustainability Plan Public Hearing

Verbal Comments
November 6, 2019

Commenter	**Written Comment Ref No.**	**Comment**
Brenton Kelly, Quail Springs Permaculture Center	7a	The GSP underestimates the groundwater deficit. Brenton Kelly provided verbal comments summarizing his written comments submitted previously. The written comments are included in the GSP public comments.
Steve Gliessman, Condor's Hope Ranch, Cottonwood Canyon	10a/11b	Steve Gliessman provided additional written comments and verbally summarized those comments. The written comments are included in the GSP public comments.
Robbie Jaffe, Resident, Farmer in westside and member of the CBGSA SAC	10a/12b	Robbie Jaffe provided additional written comments and verbally summarized those comments. The written comments are included in the GSP public comments.
Pamela Baczuk, Cuyama Valley Community Association (CVCA)	8a	Pamela Baczuk read a statement on behalf of the CVCA and is included in the GSP public comments.
Sue Blackshear, Resident, Quail Springs Permaculture Center	13b	Sue Blackshear provided verbal comments summarizing her written comments submitted. The written comments are included in the GSP public comments.

Matt Klinchuch, Cuyama Basin Water District (CBWD)		Matt Klinchuch commented that the CBWD expressed concerns about the high cost for GSA administration, potential project and management actions, and added that the implementation timeline should be more flexible.
Steve Pearson, Quail Springs Permaculture Center		Steve Pearson commented that the GSP should include funding of water supplies for disadvantaged communities and include the monitoring of additional constituents (not just TDS).
George Cappello, Grimmway Farms	16b	George Cappello provided written comments on the GSP and are included in the GSP public comments.
Daniel Clifford, Bolthouse Land Company	17b	Daniel Clifford provided written comments on the GSP and are included in the GSP public comments.