BUTTE SUBBASIN ADVISORY BOARD (BAB) MEETING (2/25/21)

Meeting Brief

- The Butte Subbasin Advisory Board (BAB) met on February 25, 2021. The meeting took place virtually, due to ongoing Covid-19 concerns.
- **Groundwater Dependent Ecosystems (GDEs):** K. Peterson (Butte County) provided an overview presentation describing GDEs, approach, status of effort & next steps. The BAB members and public participants asked questions and provided feedback [Access GDE Presentation].
- **Sustainable Management Criteria (SMC) & Projects and Management Actions (PMA)**: B. Clark (Davids Engineering) provided a presentation covering Representative Monitoring Networks, draft approach to establish Minimum Thresholds (MT) and Measurable Objectives (MO), PMA approach & initial criteria, and PMA solicitation form distribution & possible deadline for PMA submission. The BAB and public participants provided input [Access SMC Presentation |Draft Sustainability Goals and Undesirable Results Statements | PMA solicitation page].
- **Updates:** Groundwater Sustainability Agencies (GSAs) and adjacent subbasins provided updates on Groundwater Sustainability Plan (GSP) development. M. Rivera-Torres (CBI) presented a brief overview of ongoing inter-basin coordination efforts in the Northern Sacramento Valley [access slides | access flyer | access website].
- **Next Steps**: The Butte Subbasin Advisory Board (BAB) will continue to meet the fourth Thursday of every other month. The next meeting will be on April 22, 2021 from 1-3 PM.

Action Items

Item	Lead Person(s)	Completion
Share legal implications of recharge document with the BAB.	Management Committee & CBI	Access Here
Share an estimate of vulnerable wells at the proposed 20th percentile MT.	Byron Clark (Davids Engineering)	By next BAB meeting.
Provide feedback for the Butte Subbasin Factsheet [Access Here]	BAB Members	By next BAB meeting.

Summary

The Butte Subbasin Advisory Board (BAB) met on February 25, 2021 via video conference, as a result of COVID-19. Below is a summary of key themes and next steps discussed at the meeting. This document is not intended to be a meeting transcript. Rather, it focuses on the main points covered during the group's discussions. The video-conference meeting recording is available at the Butte Subbasin website [Video].

1. Welcome, Introductions, Agenda & Meeting Summary Review

T. Carlone (CBI Facilitator) welcomed participants and reviewed the meeting agenda. BAB members confirmed the December BAB meeting summary [Access Here].

2. Public Comment for Items Not on the Agenda

A public participant expressed concern with potential artificial recharge, particularly that proposed by water purveyors outside of Butte County. In his view, inter-basin coordination discussions should address artificial recharge. Lastly, he recommended the BAB members study the Legal Implications of Potential Projects and

Management Actions document prepared by Paul Gosselin (Butte County) and Valerie Kincaid (Vina Legal Counsel) for the Vina Subbasin [Access Here].

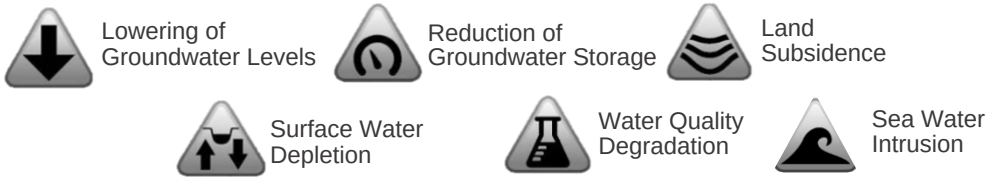
3. Groundwater Dependent Ecosystems (GDEs)

K. Peterson (Butte County) provided an overview presentation describing GDEs, their importance, and SGMA requirements associated with GDEs [Access Slides]. GDEs are communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the surface. GDEs are considered beneficial users of groundwater and can be affected by chronic lowering of groundwater levels and by surface water depletion. SGMA requires GSAs to identify GDEs within the basin and assess the impacts to those GDEs, as specified in Section 353.2 [§ 354.16. Groundwater Conditions], utilizing DWR data or the best available information. In addition, K. Peterson outlined the approach used to identify GDEs in the Butte Subbasin, the status of the effort and an overview of next steps.

4. Sustainable Management Criteria (SMC) & Projects & Management Actions (PMA)

B. Clark (Davids Engineering) gave a presentation covering Representative Monitoring Networks, Draft Minimum Thresholds and Measurable Objectives, PMA approach & initial criteria, and PMA solicitation form distribution & possible deadline for PMA submission [Access SMC Presentation |Draft Sustainability Goals and Undesirable Results Statements | PMA solicitation page].

The SMC is the umbrella that includes: Sustainability Goal (qualitative), Undesirable Results (quantitative), Minimum Thresholds (quantitative), and Measurable Objectives (quantitative). Overall, sustainability is demonstrated by the avoidance of Undesirable Results for the six sustainability indicators below. What is considered "significant and unreasonable" is determined by local GSAs and stakeholders.

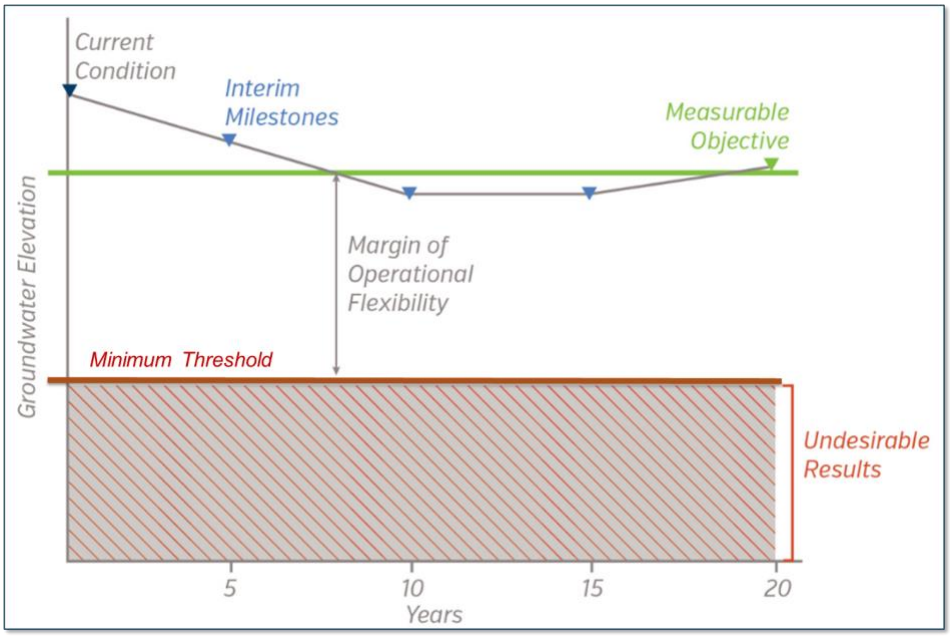


Draft Minimum Thresholds and Measurable Objectives

B. Clark (Davids Engineering) emphasized that while the Sustainability Goal and Undesirable Results Statements are qualitative, the group will now transition towards quantitative criteria per monitoring site. Each undesirable result must include the following elements:

a) **Description of Undesirable Results:** what constitutes a "significant and unreasonable" condition
b) **Minimum Threshold (MT):** quantitative definition of groundwater conditions at a representative monitoring site at which undesirable results may begin to occur
c) **Measurable Objective (MO):** quantitative definition that reflects the basin's desired groundwater condition and allows the GSAs to achieve sustainability goals within 20 years
d) **Interim Milestones (IM):** track 5-year progress towards managing groundwater to the MOs

See figure below for an example. The area between the MT and MO represents the operation flexibility. B. Clark presented options for setting SMC per sustainability indicator.



Questions & Comments:

- In response to a BAB member's question, B. Clark clarified that exceeding one MT at one representative monitoring location does not necessarily constitute an undesirable result. The subbasin will locally define what percentage of exceedances in the entire subbasin over a certain period of time would constitute as an unreasonable and undesirable condition.

Groundwater Levels:

Minimum Thresholds & Measurable Objectives

- **Where?** Uniquely set for each representative monitoring well.
- **Why?** Potential significant and unreasonable conditions include dewatering of domestic wells, increased pumping costs, and impacts to GDEs.
- **What?** Supporting information includes depth of nearby wells, historical observed water levels, and nearby potential GDEs.
- **How?** The approach proposed is to consider a combination of various factors per site. The subbasin can consider adding additional monitoring to assess impacts to potential GDEs.

B. Clark shared that potential thresholds could be set using the following options: (1) possible GDE threshold, (2) maximum historical well depth with perhaps an added range, (3) minimum recommended Domestic Well Depth, and (4) 20% depth of nearby domestic wells.

Discussion:

- A BAB member shared that what other adjacent subbasins establish as significant and unreasonable conditions, particularly related to GDEs, could affect conditions in the Butte Subbasin. B. Clark responded that substantial groundwater drawdown in neighboring subbasins could impact the Butte Subbasin's ability to avoid the MTs. Voluntary inter-basin coordination agreements are specified in DWR regulations but not required. Further, B. Clark shared that CBI facilitators funded by the Department of

Water Resources (DWR) Facilitation Support Services (FSS) are helping convene inter-basin coordination meetings among Northern Sacramento Valley subbasin staff.

- A BAB alternate asked whether the consultants have an estimate of the number of how many domestic wells would go dry at the proposed alternatives to help guide discussion. B. Clark could bring an estimate of vulnerable wells at the proposed level for future meetings. A. Shadley (WCWD) reminded participants that groundwater conditions in the Butte Subbasin are different and more stable than in adjacent subbasins.
- A BAB member asked about the proposed strategy on monitoring well depths. B. Clark shared that the map in the slides provided show existing monitoring wells. The Subbasin could also identify data gaps to fill during GSP implementation. In terms of water levels, the GSAs will have the information about the wells associated with nearest monitoring wells to the extent that well owners fill their well logs.

Groundwater Storage

Minimum Thresholds & Measurable Objectives

- **Where?** Could be set/estimated for the basin as a whole?
- **Why?** Potential significant and unreasonable condition, including dewatering of fresh water aquifer.
- **What?** Supporting information include ~30 MAF freshwater in storage. Since the GSAs are unable to monitor storage directly, protection of water levels expected to avoid undesirable results in storage.
- **How?** Use water levels as proxy for storage.

The GSAs would continue to update the model to estimate change in groundwater storage and use monitoring to show there is no groundwater storage depletion.

Discussion:

- BAB members expressed concern related to current snowpack projections, which will lead to reduced surface water supply and increased pumping. The information showed in the model did not include the most recent estimates and may not leave the subbasin prepared for expected dry conditions. B. Clark shared that while the Basin Setting Chapter covers through 2018, monitoring activities will continue to be updated on a continuous basis moving forward through implementation. A BAB member suggested ensuring financial resources are available to increase monitoring.
- BAB members highlighted the graphics presented are very helpful and clear to explain the concept to the public.

Groundwater Quality:

Minimum Thresholds & Measurable Objectives

- **Where?** Developed uniquely for each representative monitoring well.
- **Why?** Potential significant and unreasonable condition, including adverse impacts to drinking water and crop yields. The primary water quality concern that falls under the GSAs purview in the subbasin is salinity.
- **What?** Supporting information including Maximum Contaminant Levels (MCLs) for Drinking Water, crop tolerance to avoid yield loss, and historical observations.
- **How?** The GSAs could consider establishing criteria tied to MCLs for drinking water, Crop Tolerance, and Historical Conditions. The subbasin could consider adding additional monitoring.

Surface Water Depletion:

Minimum Thresholds & Measurable Objectives

- **Where?** Estimated by model and using available monitoring data.
- **Why?** Basin Setting results show streams are gaining from groundwater, which could result in reduced gains from increased groundwater demands. Potential significant and unreasonable conditions include adverse impacts to beneficial users of surface water.
- **What?** Reductions in streamflow due to additional pumping.
- **How?** The approach to follow could be further evaluating potential depletions from projected water budgets relative to current conditions, identifying existing stream gages and monitoring wells to track levels over time, incorporating management action into the 2022 GSP to provide for additional monitoring over time, and evaluate stream impacts based on groundwater level MTs and MOs.

Discussion

- A BAB representative highlighted this SMC does not seem like an issue. B. Clark shared it would depend on one's perspective, as decreased gains to stream could lead to reduced flows to the Sacramento River and the Delta. Locally, these reductions do not have too much of an impact on local conditions due to historical surface water use and high water table levels.
- Another BAB member asked why a small portion of the model shows a negative number. B. Clark responded there is a high level of uncertainty in the western boundary, as the Sacramento River is the boundary for the model. This issue has been identified as a data gap, which needs further exploration. A BAB alternate suggested inter-basin coordination could help address the data gap. They asked what information is needed to assess impacts on the other side of the river. B. Clark shared there are some tools available, particularly regional models used in other subbasins that simulate what happens on both sides. Other sources of information include DWR water contour maps, which indicate flow direction.
- Lastly, a BAB representative asked whether current analysis includes the adverse impacts to water quality and quantity caused by recent wildfires in the area. B. Clark answered they have not evaluated such impacts yet, but they anticipate impacts related to increased runoff.

PMA Approach & Initial Criteria

B. Clark gave a presentation focused on Projects and Management Actions (PMA), the approached proposed in the subbasin, initial criteria, and PMA solicitation form. PMAs are the "toolbox" of activities to avoid or address sustainability concerns. This toolbox could include projects at various stages of development (planned, proposed, or concept) to be implemented as needed. Some management actions could be put in place to fill data gaps.

Water budget projections based on the Butte Basin Groundwater Model (BBGM) estimate increased pumping of ~47 thousand acre-feet per year, but only a decrease in groundwater storage of ~2 thousand acre-feet per year. This indicates that the balance may be primarily coming from decreased gains to streams. It is still not clear what projects may be needed; yet the technical team suggests incorporating a variety of projects to implement as needed. The subbasin has gathered PMA ideas from GSA managers and has put out an online form to gather additional ideas from the public, categorized in the table below. The forms are available in the Butte Subbasin website [Access PMA solicitation page]. So far, the subbasin has received 21 ideas, for which the types and categories of PMAs are summarized in the table below:

Projects	• Distribution System Modernization • Diversion Improvements • Dual Source Irrigation Systems
Management Actions	• Improved Outflow Measurement • Groundwater Monitoring Wells
Other Ideas	• GDE Monitoring via Satellite • Additional Stream Gages and Paired Shallow Monitoring Wells • Expanded Groundwater Quality Monitoring in Areas of Concern

Possible screening and ranking criteria to prioritize potential PMAs could include initial and ongoing costs, benefits relative to Sustainability Indicators, other benefits or potential impacts, status (e.g., concept, feasibility, designed, shovel-ready), legal authority, and stakeholder acceptance.

Discussion

- A BAB alternate was curious about the rationale behind gathering PMAs in the Butte Subbasin before MTs or MOs have not been set. B. Clark clarified that projects have been gathered by the GSA Managers from existing Agricultural Water Management Plans. The idea is to put together a suite of PMAs that could help the basin to achieve sustainability, regardless of where the MTs and MOs are set.

5. Updates

GSA & Updates:

Representatives from the GSAs did not share any updates. The facilitation team pointed participants to the Butte Subbasin Factsheet developed to support public outreach and engagement [Access Here]. The facilitation team encouraged BAB representatives and public participants to provide feedback via email at mriveratorres@cbi.org.

Inter-basin Coordination Update

CBI provided a brief update on inter-basin coordination efforts in the Northern Sacramento Valley Region. Staff and consulting teams from 11 subbasins (Antelope, Bowman, Butte, Colusa, Corning, Los Molinos, Red Bluff, Sutter, Vina, Wyandotte Creek, and Yolo) met on February 1st to reflect on shared learnings from efforts so far and priorities moving forward. Meeting materials are available on the website, including a document describing modeling tools used for SGMA in the Northern Sacramento Valley (NSV) and a flyer describing inter-basin coordination efforts [access slides | access flyer | access compiled modeling tools document]. More information can be found at https://www.buttecounty.net/waterresourceconservation/Sustainable-Groundwater-Management-Act/Inter-basin-Coordination.

Discussion

- A BAB alternate asked when the inter-basin meetings would be open to the public, as there are some public participants with expertise interested in providing input. The facilitator shared that while these meetings so far have been convening staff and sometime consulting teams, the subbasin representatives will continue to provide updates and gather public input at their respective public venues, such as the advisory groups, including the BAB.

Next Meeting

The Butte Subbasin Advisory Board will continue to meet the fourth Thursday of every other month. The next meeting will be on April 22, 2021 from 1-3 PM.

Meeting Participants

Butte Subbasin Advisory Board, Staff & Consultant Meeting Attendance

Participant	Representation/Affiliation	Present
Butte Subbasin Advisory Board (BAB) Members		
Cheryl Gordon	Biggs-West Gridley Water District	Y
Eugene Massa, Jr. (alternate)	Biggs-West Gridley Water District	Y
Tod Kimmelshue	Butte County	Y
Debra Lucero (alternate)	Butte County	Y
Pete Righero	Butte Water District	Y
Shelly Davis (alternate)	Butte Water District	N
James (Bo) Sheppard	City of Biggs	Y
Mark Sorensen (alternate)	City of Biggs	Y
Michael Farr	City of Gridley	Y
Denise Carter	Colusa Groundwater Authority	N
Jeff Moresco (alternate)	Colusa Groundwater Authority	N
Ken Hahn	Glenn County	N
Grant Carmon (alternate)	Glenn County	Y
Hans Heckert	Reclamation District 1004	Y
Terry Bressler (alternate)	Reclamation District 1004	N
Dany Robinson	Reclamation District 2106	N
Gary Stone	Richvale Irrigation District	Y
Sean Earley (alternate)	Richvale Irrigation District	Y
Greg Johnson	Western Canal Water District	Y
Anjanette Shadley (alternate)	Western Canal Water District	Y
Groundwater Sustainability Agency (GSA) Staff (not included above)		
Christina Buck	Butte County	Y
Paul Gosselin	Butte County	Y
Mary Fahey	Colusa Groundwater Authority	Y
Lisa Hunter	Glenn County	Y
Ted Trimble	Western Canal Water District	N
Facilitation Team		
Tania Carlone	Consensus Building Institute	Y
Mariana Rivera-Torres	Consensus Building Institute	Y
Technical Consultant		
Byron Clark	Davids Engineering	Y

Participant	Representation/Affiliation	Present
Other Agency Representatives		
Debbie Spangler	CA Department of Water Resources	Y

Approximately 11 members of the public attended the on-line meeting.