



Corning Sub-basin GSA Committee Meeting Materials April 14, 2021 | 9:30 am

Pursuant to Governor Newsom's Executive Order N-29-20 this meeting will be conducted by teleconference.

Zoom Information Join Zoom Meeting by computer, smartphone, or tablet at: https://cbuilding.zoom.us/j/97295519623	Join by phone: +1 669 900 6833 833 548 0282 US Toll-free
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1. Call to Order

The Chair will call the meeting to order.

2. Roll Call

Staff will conduct roll call.

3. *Approval of March 10, 2021 Meeting Minutes

Draft meeting minutes are attached.

Attachment:

- March 10, 2021 draft meeting minutes



Meeting Minutes

Regular Meeting of the Corning Sub-basin GSA Committee

Teleconference

March 10, 2021
9:30 am

Pursuant to Governor Newsom’s Executive Order N-29-20 this meeting was conducted by teleconference.

1. Call to Order

John Amaro called the meeting to order at 9:30 am.

2. Roll Call

	Party Representative	Member Agency
X	Tom Arnold (9:40 am)	County of Glenn
X	Grant Carmon	County of Glenn
X	John Amaro	Glenn-Colusa Irrigation District
X	Pete Knight	Glenn-Colusa Irrigation District
X	Julia Violich	Monroeville Water District
	Seth Fiack	Monroeville Water District

Lisa Hunter conducted roll call and confirmed a quorum of members were present, which is noted above. Ms. Hunter reviewed the meeting protocol for virtual participation.

3. *Approval of January 13, 2021 Meeting Minutes

A motion was made to approve the January 13, 2021 meeting minutes as presented.

Motion: Julia Violich; Second: Grant Carmon; Vote: Unanimous

Roll Call Vote:

Grant Carmon: Aye

John Amaro: Aye

Pete Knight: Aye

Julia Violich: Aye

4. Period of Public Comment

No comment

5. Staff Reports

Ms. Hunter provided a brief overview related to the Technical Support Services (TSS) multi-completion monitoring well. The well was completed with a total depth of 720 feet deep and monitored at discrete zones: deep 680-700 feet, deep/intermediate 520-530 feet, shallow/intermediate 330-340 feet, and shallow 40-50 feet.

Staff is also seeking to expand Facilitation Support Services (FSS) for additional public meetings and to extend the period of performance through the completion of the Groundwater Sustainability Plan (GSP).

Lastly, Ms. Hunter thanked all members of investing time and energy to participate and engage in the meetings, review materials, and offer their insight.

Mr. Amaro emphasized the importance of reviewing materials ahead of time, since they have been receiving important data that will be key for decisions coming up. Ms. Violich suggested building additional time for major discussions and to allow participants to express dissent on the recommendations made. Ms. Hunter responded that while the timeline is tight, time can be allocated for conversations through possible additional board meetings or by building time into existing meetings. Ms. Hunter suggested raising any red flags as early as possible through the public comment period. Once the final GSP draft is ready, it will be harder to make significant changes. Mr. Amaro encouraged others to attend all future CSAB meetings, as the technical team provides helpful materials, covers technical information in detail, and provides time to voice concern. Mr. Knight would like to understand fully how the Sustainable Management Criteria (SMC) for chronic lowering of groundwater levels work and how the technical team came up with the levels. Ms. Hunter shared that staff will determine how to adjust supporting materials and level of detail for the CSGSA meetings to support decision-making.

6. Corning Subbasin Advisory Board Report

Ms. Hunter provided an update from the February 3 and March 3, 2021 Corning Subbasin Advisory Board (CSAB) meetings. During the past two meetings, GSAs provided relevant updates, the technical consulting team reviewed the status and next steps for GSP development, and discussion focused on the Sustainable Management Criteria (SMC) for individual sustainability indicators. Specifically, the CSAB reviewed the Significant and Unreasonable Conditions Statements, Minimum Thresholds (MTs), Measurable Objectives (MOs), and options for Undesirable Results for Chronic Lowering of Groundwater Levels, Subsidence, and Streamflow Depletion SMCs. The CSAB made several recommendations to the GSA boards at the March 3 meeting including the four components of the SMC for the Chronic Lowering of Groundwater Levels sustainability indicator and a GSP completion and adoption timeline. Each is covered under a separate agenda item. The GSP development schedule is attached for reference. Opportunities for Board and public input were provided. The meeting materials, including presentations, agendas, and meeting summaries are available on the website at: www.corningsubbasingsp.org. The next meeting is scheduled for April 7, 2021 at 1:30 pm.

Ms. Violich shared it would be important to discuss the decisions that were recommended, particularly related to the proposed MTs. Are the recommendations providing enough leeway? Are they too stringent or not stringent enough? This discussion was continued in the next agenda item.

Mr. Knight asked the group whether there is any evidence of land subsidence in the Corning Subbasin. Mr. Amaro shared the CSAB had a productive discussion around land subsidence and identified a few areas of slight concern that would be closely monitored.

7. * Consider approval of CSAB recommendation to GSAs on Chronic Lowering of Groundwater Levels Significant and Unreasonable Conditions Statement

Ms. Hunter shared that at the March 3, 2021 CSAB meeting, the CSAB reviewed the four SMC components for the Chronic Lowering of Groundwater Levels sustainability indicator. The Significant and Unreasonable Conditions Statement is intended to be a broad statement of the conditions the Subbasin strives to avoid; it is applied to the entire Subbasin. Specifics on how the goals are achieved, and how local conditions are managed, are defined in other components of the SMCs.

The CSAB recommended the GSAs approve the Chronic Lowering of Groundwater Levels Significant and Unreasonable Conditions Statement:

Chronic lowering of groundwater levels is considered to be locally significant and unreasonable if it results in excessive financial burden or insufficient water supply to meet the needs of beneficial users in the Subbasin. Examples of excessive financial burden are significant and unreasonable costs for replacement of dry wells as well as pump lowering and additional energy costs for accessing groundwater at greater depths.

Ms. Hunter emphasized the importance for both GSAs to approve the same statement to be included in the Corning Subbasin GSP final draft. If changes are made at either GSA, the edits must also be approved by the other GSA.

Mr. Knight shared the statement is very broad and has trouble grasping its meaning. Mr. Amaro and Ms. Hunter clarified the Significant and Unreasonable Statement is intended to be broad, like a mission statement. The other components of the SMC will get into the details and quantitative data to set criteria, including the MT (lowest bracket), the MO (desired conditions), and the space in between as the margin of operations. The undesirable result statement will include both the qualitative statement and the quantitative criteria.

A motion was made to approve the Significant and Unreasonable Conditions Statement as presented.

Motion: Pete Knight; Second: Julia Violich; Vote: Unanimous

Roll Call Vote:

Grant Carmon: Aye
John Amaro: Aye
Pete Knight: Aye
Julia Violich: Aye
Tom Arnold: Aye

8. *Consider approval of CSAB recommendation to GSAs on Chronic Lowering of Groundwater Levels Minimum Threshold at each representative monitoring point to reflect what locally is significant and unreasonable

At the March 3, 2021 CSAB meeting, the CSAB reviewed the four SMC components for the Chronic Lowering of Groundwater Levels sustainability indicator. In the SGMA regulations,

the MT “refers to a numeric value for each sustainability indicator used to define undesirable results.” The MT is the minimum acceptable groundwater level at each representative monitoring point (RMP), or the value that the subbasin has identified not to be exceeded. The levels were set with consideration and a desire to protect shallow domestic wells to the extent possible. Because each RMP has its own MT, by design, it reflects differences in basin conditions.

The CSAB recommended the GSAs approve the Chronic Lowering of Groundwater Levels Minimum Threshold at each representative monitoring point to reflect what locally is significant and unreasonable:

Fall 2018 minimum groundwater level at each Representative Monitoring Point

Ms. Hunter shared it is important that both GSAs approve the same statement to be included in the Corning Subbasin GSP final draft. If changes are made at either GSA, the edits must also be approved by the other GSA.

Ms. Violich and Mr. Knight would like to better understand the number of wells and the process to determine the MT proposed, as it may be too aggressive and protective considering the downward trend illustrated. Ms. Hunter described the technical team looked at the well depth in the areas and compared to representative monitoring wells to ensure that the network is appropriately representing groundwater conditions. Based on CSAB feedback, the MT intends to be protective of domestic wells. Fall 2018 is considered a reasonable year to consider as an MT because some feel the basin was experiencing a significant amount of negative impacts. While some domestic wells were going dry, wells generally recovered or were replaced, so levels above the 2018 level will not likely cause negative results, but levels lower than 2018 may cause negative impacts. Ms. Hunter clarified the proposal is to set the level at Fall 2018 per individual monitoring well, even if it is not the well’s lowest measured point.

Mr. Amaro also expressed concern related to the downward trends illustrated in the wells shown. Ms. Violich and Mr. Amaro highlighted the importance of looking at all 65 wells and observing how many times the levels dipped below the threshold in the past. A member of the public shared he reviewed all hydrographs and noticed some variations between the western, eastern, and southern areas in the subbasin; thus, the GSAs might want to consider different management areas. He observed various wells dipped below the MT. While it is important to be protective of domestic wells, he suggested considering that many of these wells were not drilled to accommodate a series of dry years. Other subbasins (e.g., Madera) have set less stringent levels. In his mind, the proposed MT is too conservative, as it has already been exceeded in the past. It may be more pragmatic to provide mitigation support to vulnerable domestic well owners.

CSGSA Committee Members echoed concerns about setting too stringent levels, as they believe it will be very difficult to loosen the levels in the future (revise the MT in future GSP updates). They would prefer to set looser criteria and then strengthen in the future if needed. While they would like to be protective of domestic wells and consider mitigation projects for vulnerable wells, they would like to be mindful of other users, such as agriculture and recreation.

Ms. Hunter shared mitigation programs can be part of the Projects and Management Actions (PMAs) and how to fund the program would need to be developed. Further, she pointed out there is a statement about added flexibility during dry/critical dry years. Mr. Knight wondered whether the subbasin can set different SMC per area in the basin. Ms. Hunter shared there are different ways to set criteria, but the approach needs to be described and justified in the plan. Some basins are setting if/then statements in their SMCs.

Ms. Violich suggested deferring the decision on Items 8, 9, and 10 to a future meeting. Mr. Carmon and Mr. Knight agreed they would benefit from more time and research. Ms. Hunter suggested changing the meeting schedule to monthly meetings to accommodate additional review and discussion, rather than every other month. The Committee agreed and requested additional information, including how other subbasins are setting their SMCs and how many times the exceedance criteria (20% of wells below the proposed MT for 2 years) has been surpassed in the past. If possible, the CSGSA would like to have Lisa Porta (Montgomery & Associates) participate in the next meeting and review the data for each of the wells. Lastly, a member of the public requested access to all the monitoring well hydrographs. Ms. Hunter will bring these information requests to the technical consulting team.

9. *Consider approval of CSAB recommendation to GSAs on Chronic Lowering of Groundwater Levels Measurable Objective at each representative monitoring point to reflect a goal to achieve

At the March 3, 2021 CSAB meeting, the CSAB reviewed the four SMC components for the Chronic Lowering of Groundwater Levels sustainability indicator. In the SGMA regulations, the MO “refer to specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal for the basin.” The MO is the groundwater level goal at each RMP. The space between the MT and MO creates the margin of operational flexibility. Because each RMP has its own MO, by design, it reflects differences in basin conditions. To illustrate, see the slide presented to the CSAB on March 3 that was included as an attachment to Item 8 in the meeting packet.

The CSAB recommended the GSAs approve the Chronic Lowering of Groundwater Levels Measurable Objective at each representative monitoring point to reflect a goal to achieve

Spring 2012 maximum groundwater level at each Representative Monitoring Point

The CSGSA deferred the approval of this CSAB recommendation to the following meeting.

10.*Consider approval of CSAB recommendation to GSAs on Chronic Lowering of Groundwater Levels Undesirable Results, as a combination of minimum thresholds

At the March 3, 2021 CSAB meeting, the CSAB reviewed the four SMC components for the Chronic Lowering of Groundwater Levels sustainability indicator. Undesirable Results (UR) are defined by using the metrics set in MTs for each RMP. The RMPs are shown in a slide shared at the March 3 CSAB meeting and included in the meeting packet. It is helpful to

note that a single exceedance of an MT may not result in a UR. The UR is set for the Subbasin rather than at each RMP.

The CSAB recommended the GSAs approve the Chronic Lowering of Groundwater Levels Undesirable Results as a combination of minimum thresholds.

An undesirable result occurs when more than 20% of groundwater elevations measured Representative Monitoring Point wells drop below the associated minimum threshold during two consecutive years. If the water year type is dry or critically dry then levels below the minimum threshold are not undesirable as long as groundwater management allows for recovery in average or better years.

[Note: there are 62 wells in the RMP network, so an example of an UR would be 13 wells exceeding MTs 2 years in a row]

The CSGSA deferred the approval of this CSAB recommendation to the following meeting.

11. *Consider approval of CSAB recommendation to GSAs on draft GSP Completion Process and Adoption Timeline

At the March 3, 2021 CSAB meeting, the CSAB reviewed and discussed a proposed schedule of milestones for the GSP completion and adoption timeline. It is important for both GSAs to commit to a schedule to ensure timely review and approvals of the Corning Subbasin GSP. The CSAB made a recommendation to the GSA Boards to approve the following GSP completion and adoption schedule:

- **August 5, 2021: 90-day notice to Cities and Counties, prior to public hearing**
 - *link to website with current draft sections (note: GSP does not need to be complete to post the notice)*
- **September 10, 2021: Public Release of Complete Draft GSP**
 - At August GSA meetings, authorize the CSAB to release the Public Draft GSP
 - At Sept. 1 CSAB meeting, recommend release of draft GSP for public review
 - *post full draft for 45-day public review (note: public review timeframe does not need to correspond to 90-day noticing)*
- **October 22, 2021: Draft GSP Public Review Ends**
 - *TBD: Schedule a public meeting in October to hear public comments on draft GSP*
- **November 2021: incorporate public comments and finalize GSP**

John Amaro: Aye
Pete Knight: Aye
Julia Violich: Aye

13. *Review and Consider Appointing Corning Subbasin Advisory Board Member(s)

Glenn County representative John Viegas has retired from his position as a Glenn County Board of Supervisor member. As such, a vacancy has been left on the Corning Subbasin Advisory Board (CSAB). Staff reviewed the requirements for appointing CSAB members and recommends reviewing current appointments and confirm and/or appoint three members to the CSAB. Current CSAB members are Julia Violich and Lisa Hunter. Ms. Hunter noted it may be beneficial to replace her role on the CSAB with a Board member or interested individual because she is also involved at the staff level in preparation of the meetings and GSP development and having a different perspective on the CSAB may be helpful.

Brian Mori, member of the public, expressed interest in playing a more active role. Mr. Carmon would be willing to step up as well.

Proposed CSAB Appointments:

- Julia Violich
- Brian Mori
- Grant Carmon
- John Amaro (Alternate)

A motion was made to appoint Grant Carmon, Brian Mori, Julia Violich and John Amaro (Alternate) to the CSAB.

Motion: Peter Knight; Second: Tom Arnold; Vote: Unanimous

Roll Call Vote:

Tom Arnold: Aye
Grant Carmon: Aye
John Amaro: Aye
Pete Knight: Aye
Julia Violich: Aye

14. Groundwater Sustainability Plan Development

- a. Receive update on Groundwater Sustainability Plan development

Overall, the GSP development grant is on track. Glenn County submitted Invoice 8 to DWR in December 2020 and has roughly \$432,000 remaining in that project. Regarding the contract with Montgomery & Associates, they have about \$280,000 remaining which accounts for work completed through December. Highlights of current work has been preparing the CSAB meetings, participating in inter-basin coordination meetings, reaching out to stakeholders and agencies, drafting GSP chapters, and reviewing comments and revisions received from the public, as well as continued technical work particularly on the SMCs. Draft GSP Chapters are available at the website: <https://www.corningsubbasingsp.org/> which include the Introduction, Plan Area,

Hydrogeologic Conceptual Model, Groundwater Conditions. The Draft Water Budget section will also be available for review soon.

b. Discussion on future CSGSA planning and communication

Staff would like to gather members' input on CSGSA meetings so far, what topics they consider most important to discuss during future meetings, and what information and resources would best support the committee's decision-making.

Ms. Violich suggested if possible, it would be very helpful to have Lisa Porta during some portions of the meeting for technical discussions. Ms. Hunter will consult with Lisa Porta and evaluate the budget. Mr. Carmon would like to see where other subbasins have set their SMC and the verbiage that has been used. Finally, Mr. Mori requested all graphs from the Representative Monitoring Well levels have lines added to show the 2018 Fall level (proposed MT) to be able to visually see how many years cross the threshold. He also noted that physical addresses for the wells would also be helpful.

15. Inter-basin Coordination Update

Ms. Hunter provided an overview of inter-basin coordination efforts so far. Staff from the Antelope, Bowman, Butte, Colusa, Corning, Los Molinos, Red Bluff, Sutter, Vina, Wyandotte Creek, and Yolo Subbasins continue to meet to discuss inter-basin coordination. Groundwater Sustainability Agencies (GSAs) are working together to establish a foundation for open and transparent inter-basin coordination and communication by developing tools to share and compile information in a consistent way, outline a process to identify and resolve issues, and document coordination efforts. Efforts are moving towards establishing a framework for sustained inter-basin coordination throughout GSP implementation. The goal is to develop shared language to be inserted to each GSP to describe how coordination and communication will take place.

More information can be found on a webpage hosted by Butte County at: <https://www.buttecounty.net/waterresourceconservation/Sustainable-Groundwater-Management-Act/Inter-basin-Coordination>

16. Corning Sub-basin GSA Committee Member Reports and Comments

No comments.

17. Next Meeting

With the approval of the revised meeting schedule (above), the next meeting is scheduled for April 14, 2021 at 9:30 am.

18. Adjourn

The meeting was adjourned at 10:52 am.

4. Period of Public Comment

Members of the public are encouraged to address the Corning Sub-basin GSA Committee. Public comment will be limited to three minutes. No action will be taken on items under public comment.

5. Staff Reports

Staff from members of the Corning Sub-basin GSA will provide relevant updates. Reminders and clarifications may be made, and direction may be provided to staff.

6. Corning Subbasin Advisory Board Report

The Corning Subbasin Advisory Board (CSAB) met on April 7, 2021. During the past meeting, GSAs provided relevant updates and the technical consulting team reviewed the status and next steps for GSP development and the key takeaways from projected Water Budgets. Discussion during the meeting focused primarily on the Sustainable Management Criteria (SMC) and potential Projects and Management Actions (PMA). Below is a summary of the key topics reviewed and main discussion highlights provided by Montgomery & Associates, the lead consultant for GSP development.

The GSP development schedule is attached for reference. Opportunities for Board and public input were provided. The meeting materials, including presentations, agendas, and meeting summaries are available on the website at: www.corningsubbasingsp.org. The next meeting is scheduled for May 5, 2021 at 1:30 pm.

Advisory Board members may provide additional updates.

Attachments:

- April 7, 2021 CSAB Discussion and Feedback Summary
- GSP Development Schedule
- Initial Inventory of Potential Projects and Management Actions
- April 7, 2021 CSAB Presentation Slides

CSAB Discussion and Feedback Summary from 7 April 2021 Meeting

Key topics reviewed:

- Review feedback and options for path forward on groundwater level SMC
- Review Land Subsidence SMC
- Review Projected Water Budgets and Introduction to Storage Decline SMC
- Initial Review of Potential Projects and Management Actions

1. Groundwater SMC Path Forward

CSAB members decided it was appropriate to convene a special workshop/CSAB public meeting to spend more time on just the chronic lowering of groundwater levels SMC topic with the outcome to have an agreeable SMC that can be considered at an upcoming CSAB meeting. Proposed meeting dates are week of April 19th or week of April 26th.

2. Subsidence SMC Update:

CSAB reviewed options for SMC and provided input on the following:

- Significant and Unreasonable Statement:
 - *Inelastic land subsidence that adversely impacts fixed infrastructure and is caused solely by lowering of groundwater levels occurring in the subbasin is significant and unreasonable*
- Minimum Threshold:
 - *The minimum threshold for subsidence solely due to lowered groundwater elevations is no more than 0.5 feet of cumulative subsidence over a 5-year period (beyond the measurement error), which on an annual basis would be 0.1 ft on average.*
 - Additional information that was reviewed:
 - over the 30-yr implementation horizon this would add up to 3 ft of cumulative subsidence
 - the maximum subsidence measured in the Corning subbasin was 0.4 ft over 9 years (2008-2017)
- Measurable Objective:
 - *The measurable objective for inelastic subsidence solely due to lowered groundwater elevations is zero throughout the subbasin, in addition to any measurement error.*
 - **** if In-SAR data is used, the measurement error is 0.1 ft and any measurement of 0.1 ft or less would not be considered inelastic subsidence.*

3. Storage Decline SMC:

CSAB generally agreed to use groundwater levels as a proxy for this indicator. This is a similar approach to what other GSPs in the Sacramento Valley are proposing.

4. Initial Review of Potential Projects and Management Actions

A comprehensive draft list of potential projects and management actions was developed for CSAB and public review (posted on the Corning GSP website). Received initial input from CSAB to refine the list and prioritize projects for the GSP. This will be included in the draft Projects and Management Actions Section of the GSP.

CSAB Schedule & Objectives

The Corning Sub-Basin Advisory Board (CSAB) will meet monthly on the first Wednesday of the month from 1:30 to 3:30 pm (4:00 pm starting March 2021). Meetings are planned from April 2020 through approximately December 2021. This meeting schedule outlines the anticipated schedule and the key discussion topics for each meeting. It will be updated to reflect the most current information, as warranted.

Date	Key Meeting Topics	CSAB Meeting Objectives
2020		
Apr	<ul style="list-style-type: none"> • CSAB Overview • GSP Development • Groundwater Data • Overview of Data Management System and Model • Sustainable Management Goal Example • Interests & Concerns 	<ul style="list-style-type: none"> • Provide background on Corning GSP framework • Collection of groundwater data • Collection of interests • Introduce potential Sustainability Goal for Subbasin • Public Comment
June	<ul style="list-style-type: none"> • Draft Hydrogeologic Conceptual Model and groundwater conditions • Modeling platform selection • GSP review process 	<ul style="list-style-type: none"> • CSAB Recommendations and questions for Hydrogeologic Conceptual Model and Groundwater Conditions • Make a recommendation on model platform to use for GSP work • Public Comment
July	<ul style="list-style-type: none"> • Current and Historical draft Water Budgets • Model overview • Potential management areas 	<ul style="list-style-type: none"> • Review of what is perceived as historic and current unsustainable groundwater use based on water budget • Public Comment
Aug	<ul style="list-style-type: none"> • Monitoring Networks • Overview of Sustainable Management Criteria and approach to development • Draft Sustainability Goal 	<ul style="list-style-type: none"> • Answer questions on monitoring networks • Gather initial feedback on process for developing SMCs • Discuss Sustainability Goal • Public Comment
Sept	<ul style="list-style-type: none"> • Groundwater Level SMC discussion #1 - background on Groundwater Levels SMC • Proposed approaches for MT and MO 	<ul style="list-style-type: none"> • Input on proposed approaches for MT and MO development • Public Comment
Oct 7	<ul style="list-style-type: none"> • Groundwater Level SMC discussion #2 - proposed groundwater level MT and MO • Initial Discussion on Potential Projects and Management Actions 	<ul style="list-style-type: none"> • Recommendations on proposed groundwater level MT and MO • Input on Projects and Actions • Public Comment
Nov 4	<ul style="list-style-type: none"> • Integrated Model Updates • Overview of current, historical and projected water budgets 	<ul style="list-style-type: none"> • Answer questions on modeling and water budgets • Public Comment
Dec 2	<ul style="list-style-type: none"> • Open Discussion on GSP Sections 1 and 2 	<ul style="list-style-type: none"> • Receive feedback on Draft GSP Sections 1 and 2 provided and available on Corning GSP website • Answer any additional GSP questions
2021 - Proposed		
Jan 6	<ul style="list-style-type: none"> • Open Discussion on GSP Section 3 	<ul style="list-style-type: none"> • Receive feedback on Draft GSP Section 3 provided and available on Corning GSP website • Answer any additional GSP questions

Feb 3	<ul style="list-style-type: none"> • Depletion of interconnected surface water SMC discussion #1 - background on Subbasin streams and introduction to SMC • Overview of Groundwater Dependent Ecosystems (GDEs) approach • Land subsidence SMC discussion #1 – background on Subbasin conditions and introduction to SMC 	<ul style="list-style-type: none"> • Input on significant and unreasonable conditions and initial discussion on MT development • Public Comment
Mar 3	<ul style="list-style-type: none"> • Depletion of interconnected surface water SMC discussion #2 – review SMC approaches • Land subsidence SMC discussion #1 – review SMC approaches 	<ul style="list-style-type: none"> • Input on proposed approaches for MT and MO development • Discussion of undesirable results • Potential recommendations to GSA Boards for Lowering of GWLs SMC • <i>Public Comment</i>
Apr 7	<ul style="list-style-type: none"> • Land subsidence SMC discussion #2 – review SMC approaches • Review projected water budgets and GSP requirements; introduction to storage SMC • Initial discussion on potential projects and management actions 	<ul style="list-style-type: none"> • Input on significant and unreasonable conditions and initial discussion on MT development • Potential recommendations to GSA Boards for subsidence SMC • Input on potential projects and management actions • <i>Public Comment</i>
May 5	<ul style="list-style-type: none"> • Discussions and development of SMCs for Groundwater Quality <i>[with handout]</i> • Review SMC approaches for Interconnected SW depletion SMC 	<ul style="list-style-type: none"> • Input on proposed approaches for MT and MO development • Potential recommendations to GSA Boards on water quality SMC • <i>Public Comment</i>
June 2	<ul style="list-style-type: none"> • Present initial predicted impacts to groundwater conditions based on projects and management actions. • Revised List of Projects & Management Actions • Introduction to funding mechanisms 	<ul style="list-style-type: none"> • Potential recommendations to GSA Boards on groundwater levels, storage, and depletion of interconnected surface water SMC • Input on final list of Projects & Management Actions • Input on funding mechanisms • <i>Public Comment</i>
July 7	<ul style="list-style-type: none"> • Present predicted impacts to groundwater conditions based on projects and management actions. • Compare against draft MT and MO for applicable Sustainability Indicators 	<ul style="list-style-type: none"> • Input on revisions of draft projects and management actions based on predicted impacts and comparison for sustainability indicators • <i>Public Comment</i>
Aug 4	<ul style="list-style-type: none"> • Review Projects & Management Actions and effects on Sustainable Management Criteria • Re-evaluate funding mechanisms • Discuss priority actions for plan implementation • Review data gaps 	<ul style="list-style-type: none"> • Potential recommendations to GSA Boards on Projects and Management Actions to reach and maintain sustainability • Recommendations on funding mechanisms • Input on Plan Implementation and addressing data gaps • <i>Public Comment</i>
Sept 1	<ul style="list-style-type: none"> • Review final draft GSP 	<ul style="list-style-type: none"> • Approve release of Draft GSP for public review
Oct	<i>Draft Final GSP posted on website for public review – no meeting</i>	
Nov 10	<ul style="list-style-type: none"> • Review public comments on GSP 	<ul style="list-style-type: none"> • Recommendations on incorporation of policy-based comments

		<ul style="list-style-type: none"> • Potential recommendations to GSA Boards
Dec	<ul style="list-style-type: none"> • Recommendation for Adoption of Groundwater Sustainability Plan to Groundwater Sustainability Agencies 	<ul style="list-style-type: none"> • Recommendations for Adoption of Groundwater Sustainability Plan to Groundwater Sustainability Agencies • <i>Public Comment</i>

Acronyms:

- CSAB: Corning Subbasin Advisory Board
- GSA: Groundwater Sustainability Agency
- GSP: Groundwater Sustainability Plan
- MT: Minimum Threshold
- MO: Measurable Objective
- SGMA: Sustainable Groundwater Management Act
- SMC: Sustainable Management Criteria

Corning Subbasin GSP: Initial Inventory of Potential Projects and Management Actions

This document contains the following information:

Section	Description
Projects	This table lists potential projects related to groundwater and water resources management, that could be implemented in the Corning Subbasin. Projects are generally considered physical actions that require CEQA, such as recharge or surface water delivery facilities.
Management Actions	This table lists potential management actions related to groundwater and water resources management, that could be implemented in the Corning Subbasin. Management actions are policy or management tools that relate to reduced
Screening Criteria	This table lists potential screening criteria that will help us rank the projects and identify the most feasible and applicable for the GSP implementation.

Projects are grouped into preliminary categories (but not sorted in any way):

Demand Management
Flood Risk Reduction/ Enhanced Recharge
Surface Water Conveyance
Supply Augmentation

Management Actions are grouped into preliminary categories (but not sorted in any way):

Grower Education
Supply Augmentation
Demand Management
Domestic Well Management
Policy and Ordinances
Well Data Tracking

Category	Project Type	Purpose	Description of Potential Projects(s)	Examples of Existing or Future Projects
Demand Management	Residential water use efficiency improvements	Decrease residential and commercial water demand in the Subbasin	Examples: Incentives for urban, residential, and commercial projects like high efficiency appliance rebates, lawn removal, low-water landscape installation, rain barrels, graywater reuse, etc.	
Demand Management	Land management for irrigation efficiency	Optimize land management to decrease the agricultural water demand in the Subbasin	Examples: Soil mapping to customize irrigation timing and duration. For example, the clay areas can be set to water more frequently at shorter durations while the more silty areas have longer watering durations with longer periods between watering. Soil amendments to improve moisture retention. Crop selection based on irrigation water availability.	
Flood Risk Reduction/Enhanced Recharge	Levee setback and stream channel restoration	Prevent flooding, increase groundwater recharge, and restore more natural conditions along streams	Increase groundwater levels, provide wildlife habitat, lower water temperatures in the Sacramento River, and provide better conditions for ecosystem function.	Hamilton City levee setback and floodplain restoration on Sacramento River RCDTC side channel and habitat enhancement on Sacramento River
Flood Risk Reduction/Enhanced Recharge	City of Corning stormwater improvements	Decrease flood risk and increase groundwater recharge	City dry wells at La Mesa Ct., Rio Bravo Ct., Rio Vista Ct., Rio Del Rey Ct., and others reportedly fail to keep up with flash flooding. Localized flooding has been reported on North Street between Edith and Toomes Avenue, on Edith Avenue between Colusa and Solano Streets, on Fig Land and Chicago between railroad tracks and West Street (including flooding from Woodson Bridge at 6th Street), Jellys Ferry Road, and Saron Fruit Colony Road.	Existing project that would need to be enhanced - plan for dry well rehabilitation
Flood Risk Reduction/Enhanced Recharge	Runoff reduction, watershed restoration, fire restoration	Reduce amount of runoff and increase groundwater recharge; reduce potential for water quality impacts.	Restoration of watersheds burned in 2020 wildfire (and other future wildfires) and restore unused grazing land in western Subbasin	
Surface Water Conveyance	Invasive plant removal from creekbeds and irrigation conveyance canals	Improve conveyance capacity and reduce flood risk.	Many small tributaries in the watersheds have decreased conveyance, high levels of siltation, and diminished flood-carrying capacity due to invasive vegetation (arundo, tamarisk, Himalayan blackberry) overgrowth. Debris-clearing is a challenge due to environmental permitting restrictions. Cal IPC (Invasive Plant Society) identified Glenn County as one of the hardest hit Arundo/Tamarisk invasive weeds areas. Main areas include Thomes Creek and Stony Creek. Also reduces ET and allows for more water in the shallow groundwater area; restoring conditions for GDEs and native riparian species.	On an intermittent basis, State Conservation Camp crews contract with the Glenn County Public Works department to conduct hand reductions of Arundo vegetation within the Lower Stony Creek stream channel near the city of Orland as well as upstream of state and county bridges that cross the stream channel. These consist of hand cutting and burning of vegetation. City of Corning also works on maintain channels within the City.

Category	Project Type	Purpose	Description of Potential Projects(s)	Examples of Existing or Future Projects
Surface Water Conveyance	Surface water conveyance and irrigation infrastructure improvements	Allow for additional surface water use. Allow for conjunctive use groundwater management, decrease reliance on groundwater. Improve irrigation efficiency	Examples: Irrigation system improvements needed to utilize surface water for drip irrigation of orchards. Typical system components required for a dual source system are a surface water irrigation “turnout” or point of delivery to the field, a pipeline or ditch to convey water from the turnout to a pump station, a pump or pumps for pressurization, and filtration. Improvements in the Subbasin may include installation of regulating reservoirs, filters or treatment (for algae), and pressurize systems for drip irrigation. SCADA improvements and install VFDs on pumps to improve and maintain delivery pressures.	
Surface Water Conveyance	Increase inter-basin surface water transfers or exchanges to benefit Corning Subbasin surface water use	Increase surface water use to decrease reliance on groundwater; e.g. Utilize full TCCA allocation in wet years using groundwater recharge, groundwater banking, or conjunctive use program	Promote inter-basin transfers or exchanges with Settlement Agreement contractors (GCID, Provident, Princeton, RD108). Subsidize surface water costs to make it cheaper than groundwater, for use within Corning Subbasin. Examples: There are available surface water rights in the Subbasin that are not utilized. About 120,000 acre-ft of allocated water in the TCCA canal system has been available in wet years but not used (note, estimate includes land in other Subbasins).	History of transfer from settlement agreement contractors; successfully done in Corning Water District
Supply Augmentation	Groundwater recharge through: 1. Recharge through unlined canals and natural drainages 2. Dedicated recharge basin 3. ASR wells	Groundwater recharge to augment groundwater in storage for conjunctive use.	Examples: Recharge of groundwater with excess surface water in wet years for use in dry years. Areas identified northwest of Hamilton City and near the City of Corning have suitable surficial geology, low enough water levels to support recharge, and access to surface water. Target areas would be connected to water districts with excess water (CWD, OUWUA, TCWD) and served by water conveyance infrastructure such as OUWUA northside canal, Corning Canal, TCC, and GCID Main Canal. Could potentially use 18 new supply wells in large Eucalyptus Grove in Tehama County for ASR project if surface water can be conveyed to them. Utilize creek beds, conveyance structures such as unlined Corning Canal and laterals, agricultural fields, recharge basins, dry wells etc. to recharge groundwater with surface water flood flows. Potentially install storage reservoir to aid in capturing flood flows for recharge.	Separate projects by geography: 1. Corning area from Corning, TCC Canals 2. Capay from Stony Creek or TCC Canal 3. ASR in new supply wells drilled in old eucalyptus grove
Supply Augmentation	Recycled water program	Use treated wastewater as a resource for irrigation or recharge	Use City of Corning treated wastewater for groundwater recharge, urban, and agricultural irrigation	City of Red Bluff uses recycled water to help with irrigation along I-5.
Supply Augmentation	Well deepening or replacement program	Provide funding and resources to deepen or replace domestic or irrigation wells that go dry, replace overly shallow or inefficient irrigation wells, connect domestic properties to existing public supply systems where feasible.	Fewer shallow domestic and irrigation wells allows for deeper acceptable water levels in some parts of Subbasin. Examples and priorities: 1. Domestic well replacement 2. Irrigation well replacement 3. Residential property connection to public supply system.	Yuba County domestic well replacement program example.

Category	Project Type	Purpose	Description of Potential Projects(s)	Examples of Existing or Future Projects
Supply Augmentation	Import water from other Tehama County Subbasins	Use available surplus water from programs upstream of Corning Subbasin for use to recharge aquifer	Examples: 1. Red Bluff treated wastewater divert directly to Corning Canal (1,000 ac-ft/yr) - then could be used for recharge in the winter or directly by growers or Districts along the way 2. Trout Unlimited GW substitution transfers 3. Same project with TNC could happen on GW substitution transfers	
Supply Augmentation	Off-stream temporary storage on private lands of flood waters	Obtain surface water rights on Subbasin ephemeral streams to store winter flood flows in off-stream reservoirs/ponds to use for irrigation in the summer	This would help take more wells out of production, if the irrigation supply comes from other sources (groundwater could be emergency supply) - provides for in-lieu recharge, instead of direct recharge.	Other areas in the state already use this approach, to divert winter flows to use later (e.g. Sonoma Valley Basin)

Preliminary Draft

Category	Management Actions	Purpose	Description	Examples of Existing Programs and Actions
Grower Education	Grower education and incentives to improve water use efficiency	Improve water use efficiency through better farming practices, and incentivize use of surface water over groundwater, when possible.	Teach growers the value of improved irrigation practices, such as using surface water when available, replacing inefficient wells, adding organic amendments to improve moisture retention, soil mapping for custom irrigation timing and duration. Groundwater users cooperative to coordinate pumping schedules.	Glenn County Voluntary Groundwater Users Cooperative
Supply Augmentation	Incentivize growers to use full surface water allocations within Corning Subbasin Water Districts	Use all surface water available in the Subbasin before pumping groundwater for optimal water supply use	Since the 2013-2015 drought, Districts have not been able to sell all their allocated surface water to in-district growers, as growers have opted to turn to groundwater for irrigation supply due to a more reliable supply, ease of use, well investments made, and adaptability to modern irrigation infrastructure for tree crops. It is important to incentivize growers to use surface water when available to allow for the groundwater levels to recover in-between drought years when surface water is not available.	
Demand Management	Conversion to less water intensive crops	Reduce water use	Reduce water use while continuing to promote agriculture land use	A tiered pumping fee and allocation structure is being implemented in Salinas Valley
Demand Management	Pumping fees	Reduce groundwater pumping and fund projects and actions if pumping is not curtailed.	Tiered fee structure for groundwater extractions to incentivize reduced groundwater use, if the planned Projects and Management Actions are insufficient to reach and/or maintain sustainability	A tiered pumping fee and allocation structure is being implemented in Salinas Valley
Demand Management	Pumping restrictions	Reduce groundwater pumping	Curtailed and/or restricted groundwater extractions if the planned Projects and Management Actions are insufficient to reach and/or maintain sustainability	A tiered pumping fee and allocation structure is being implemented in Salinas Valley
Demand Management	Well metering	Better understand actual groundwater pumped in the subbasin	Metering larger agricultural wells would help better assess total pumped groundwater in the Subbasin to evaluate against sustainable yield and better manage continued sustainability of the Subbasin.	Wells owned and operated by water districts already meter and track total well pumping
Demand Management	Water market for surface water and groundwater exchange	Efficient water resources management.	Trading mechanism for groundwater pumping credits to allow for flexibility in water use to meet demands in Subbasin but remain within overall sustainable yield. Used in conjunction with pumping restrictions. Allows for growers to acquire water needed to irrigate crops that require additional pumping than allocated amount.	
Demand Management	Land fallowing program	Reduce total irrigated land in Subbasin	Curtailed and/or restricted groundwater extractions if the planned Projects and Management Actions are insufficient to reach and/or maintain sustainability (last resort activity).	San Joaquin Valley / Tulare Basin fallowing programs

Category	Management Actions	Purpose	Description	Examples of Existing Programs and Actions
Domestic Well Management	Provide information and resources for protection of domestic wells	Reduce impacts to domestic well owners	Provide domestic well owners resources and funding for well testing, inspection, and replacement. Target well owners in locations where domestic wells are known to go dry or have water quality impacts.	
Domestic Well Management	Dry domestic well tracking system, for each county	Reduce impacts to domestic well owners	Better manage assistance to domestic well owners when water levels drop and wells go dry; identify if wells need to be replaced and provide information on well replacement	DWR dry well tracking system; initial county systems that need to be updated.
Policy and Ordinances	Land use change restrictions/management	Coordinate with counties to restrict land use changes that increase water demand in the Subbasin	Land use restrictions if the planned Projects and Management Actions are insufficient to reach and/or maintain sustainability. Primarily focused on new ag lands development, to restrict growth in areas with no surface water supply.	County general plans coordination
Policy and Ordinances	County water use ordinance	Coordinate with counties to develop policies that align with sustainable groundwater management goals	Possible ordinance include regulations and limits for groundwater use, export, and illegal diversion of surface water. Could instill additional guidelines during the well permitting process to reduce nearby competition between wells (i.e. suggestions regarding total well depth, depth of well perforations, and location of a new well relation to existing wells). Primarily for ag wells to be protective of local domestic wells near-by.	
Policy and Ordinances	Review county well permitting ordinances	Review existing ordinances and assess if additional well permitting requirements are warranted - follow updated DWR well construction recommendations (Bulletin 74).	Develop better well permitting and installation program, to help protect water quality, allow for better screening, and avoid interference or impacts on neighboring wells	
Well Data Tracking	Well registration program	Collect well locations, screening information, and pumping data for use in GSP updates.	Require well registration and pump metering to track water use.	
Well Data Tracking	Well completion database for Tehama and Glenn Counties - County well inventory (location, depth, in service or not)	Improve understanding of well distribution, construction and hydrogeology. Potentially useful for filling monitoring data gaps. Refine the location and distribution of all wells within the Tehama County portion of the Subbasin; knowing that the DWR information is not accurate and outdated	Review well completion reports and GIS data, check with well owners if data are correct. Could use similar approach to what occurred in Glenn County with County and Prop 1 grant funding. Compile information on new wells in DMS, including location, purpose, construction information, and hydrogeology. Identify abandoned wells or wells no longer in use to properly abandon.	

Potential Screening Criteria
Capital Cost
O&M Cost
Recharge Benefit (Characterize in-subbasin and outside subbasin benefits)
Other Benefit (WUE, habitat, reduced flood risk)
Potential impacts (such as environmental, or to other beneficial users)
Status of Implementation (i.e. feasibility study complete, pilot project, EIR...)
Water Source(s) and Legal Authority
Undesirable Results/Sustainability Indicators
Permitting and Regulatory Compliance
Administration logistics
Water availability
General feasibility
Public acceptance
Beneficial users that benefit from project

Preliminary Draft



Corning Subbasin Groundwater Sustainability Plan

Technical Presentation

Presented to Corning Subbasin Advisory Board
04/07/2021 | Teleconference



Prepared by



DWR Updates and Outreach Materials

■ New DWR materials:

<https://water.ca.gov/Programs/Groundwater-Management/Assistance-and-Engagement>

■ Introduction to Groundwater and SGMA Video:

[Groundwater: California's Vital Resource](#)

(https://www.youtube.com/watch?v=Vtr07_bZKlg)

■ Interactive Groundwater Story Map:

[Groundwater: Understanding and Managing this Vital Resource](#)

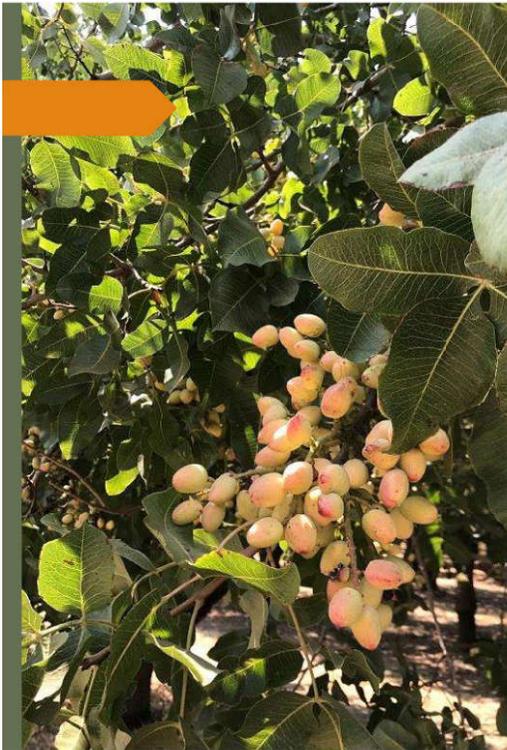
(<https://storymaps.arcgis.com/stories/ff075c25b77e4b1d95ce86a82bf0fe96>)

■ How to Report Domestic Wells Going Dry:

- Use DWR's online Household Water Supply Shortage Reporting System.
- To report a water supply shortage, go to the MyDryWaterSupply webpage: <https://mydrywatersupply.water.ca.gov/report/>

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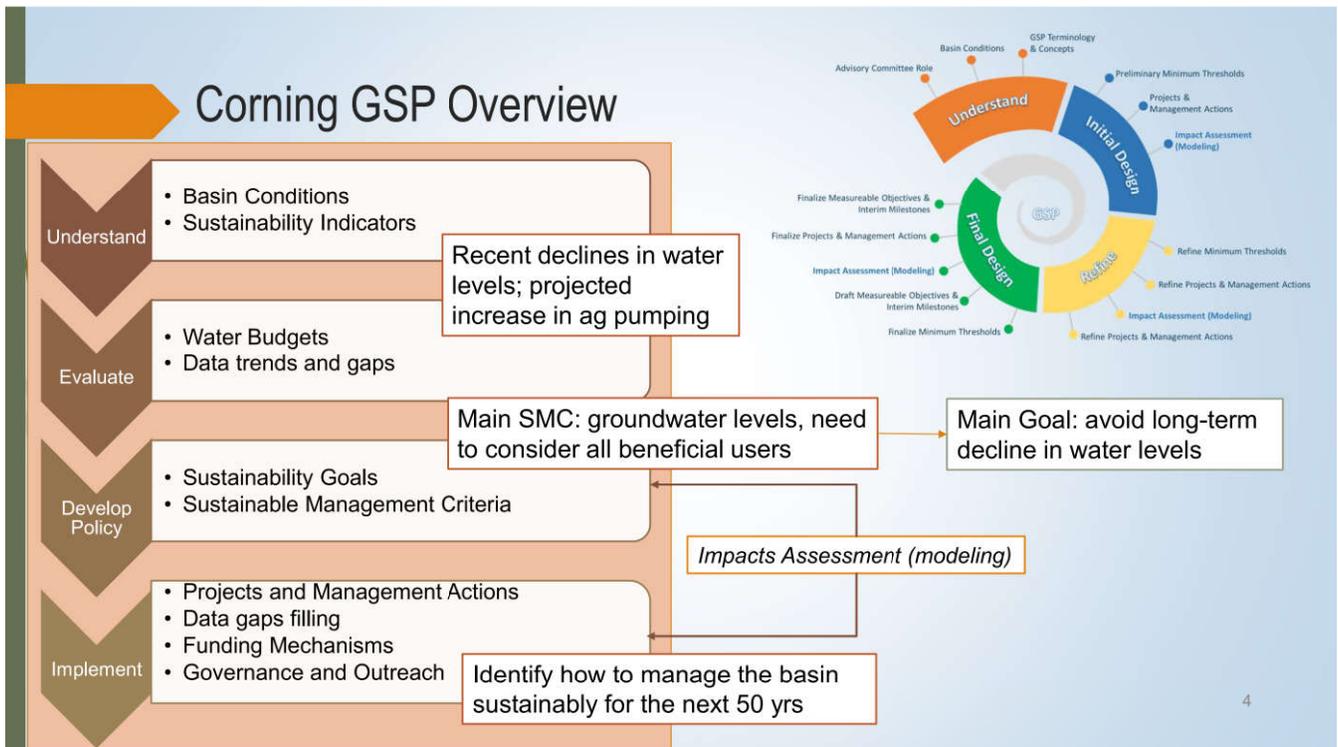


Today's Meeting

- Review feedback and options for path forward on groundwater level SMC
- Review Land Subsidence SMC
 - Potential recommendations
- Review Projected Water Budgets and Introduction to Storage Decline SMC
- Initial Review of Potential Projects and Management Actions

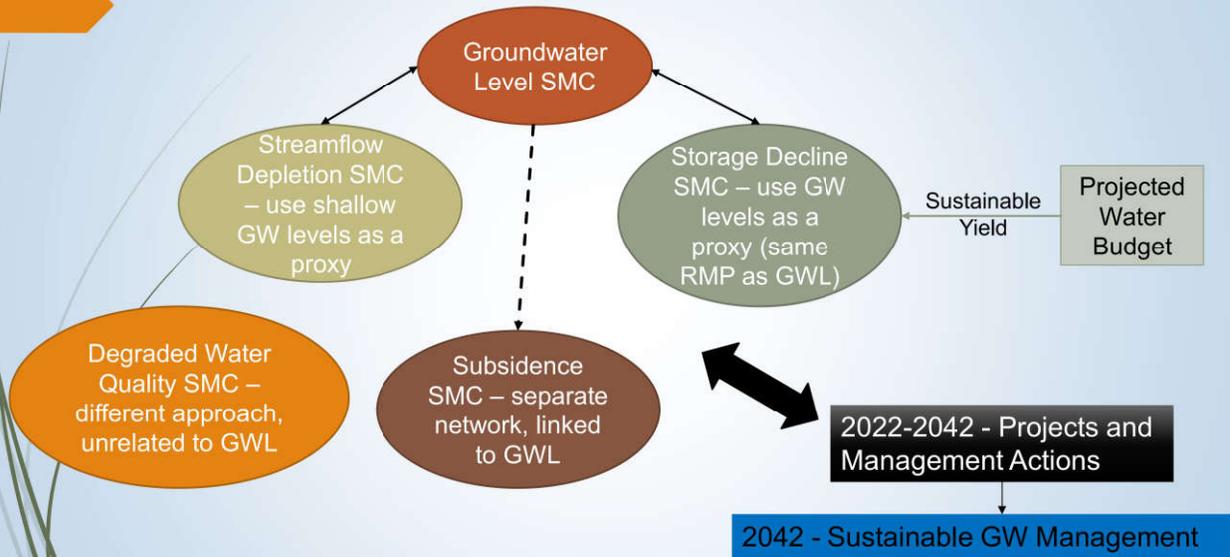
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Interaction and Integration of SMCs With Main Components of GSP



Next Steps on Groundwater Level SMC

Process

Receive feedback on goals and beneficial users

Develop initial approach and analyze data

Apply approach to each RMP well (unique MO & MT at each well)

Refine MOs and MTs, develop URs

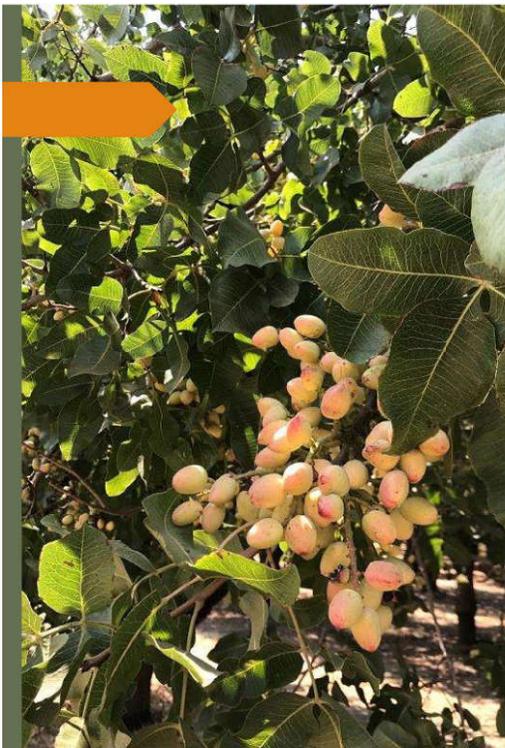
Reminder of Initial Approach

- 1. Significant and unreasonable Conditions Statement:**
 - Chronic lowering of groundwater levels is considered to be locally significant and unreasonable if it results in excessive financial burden or insufficient water supply to meet the needs of beneficial users in the Subbasin. Examples of excessive financial burden are significant and unreasonable costs for replacement of dry wells as well as pump lowering and additional energy costs for accessing groundwater at greater depths.
- 2. Minimum Threshold at each representative monitoring point to reflect what locally is significant and unreasonable:**
 - Fall 2018 minimum groundwater level at each Representative Monitoring Point
- 3. Measurable Objective at each representative monitoring point to reflect a goal to achieve:**
 - Spring 2012 maximum groundwater level at each Representative Monitoring Point
- 4. Undesirable Results, as a combination of minimum thresholds:**
 - An undesirable result occurs when more than 20% of groundwater elevations measured at Representative Monitoring Point wells drop below the associated minimum threshold during two consecutive years. If the water year type is dry or critically dry then levels below the minimum threshold are not undesirable as long as groundwater management allows for recovery in average or better years.
 - [Note: there are 62 wells in the RMP network, so this would result in 13 wells exceeding MTs 2 years in a row]



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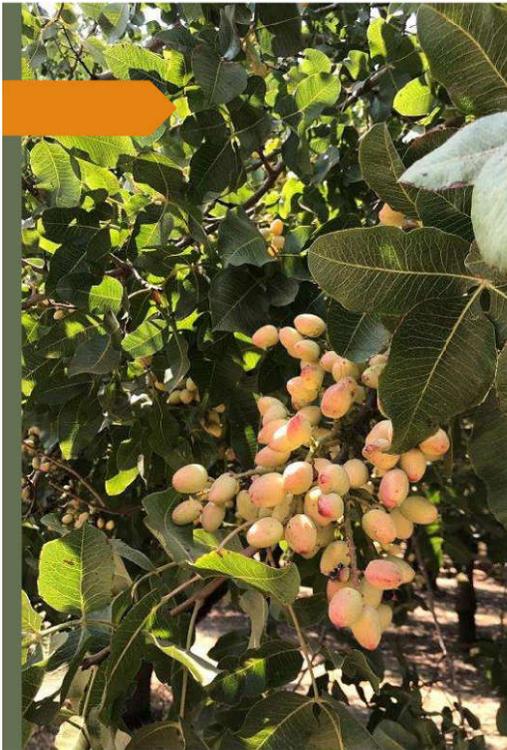


Feedback Received

- CSAB approved these initial SMC at 3/3 meeting
- Corning Sub-basin GSA approved the Significant and Unreasonable Conditions Statement, but rejected the criteria
 - Some felt the values are too protective and may not be achievable in the long-term. Some suggested 2 approaches be used to help differentiate the differences in the subbasin (Sac River area, Westside).
- Tehama County Groundwater Commission did not approve any of the SMC
 - Asked that the CSAB further review the approach. Comments related to additional discussion and possible refinement of the MO and MT before seeing if the Conditions statement or UR make sense.
- Public Comments:
 - Need to look at additional data and realize that water levels have been dropping and current levels are much deeper than before the 15 yr drought, that is the new reality.

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Options for Path Forward

- Convene a special workshop/CSAB public meeting to spend more time on just the chronic lowering of groundwater levels SMC topic with the outcome to have an agreeable SMC that can be considered at an upcoming CSAB meeting.
- Proposed dates:
 - week of April 19th during the day
 - April 26th or 27th in the evening

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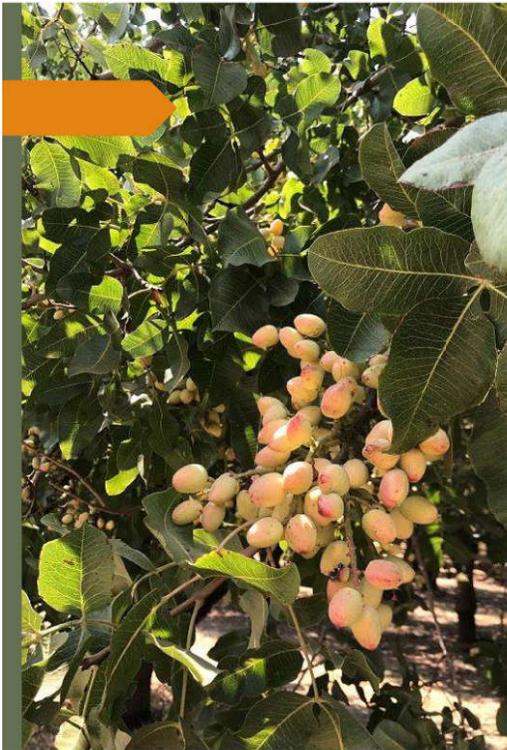
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Land Subsidence SMC

MONTGOMERY
& ASSOCIATES

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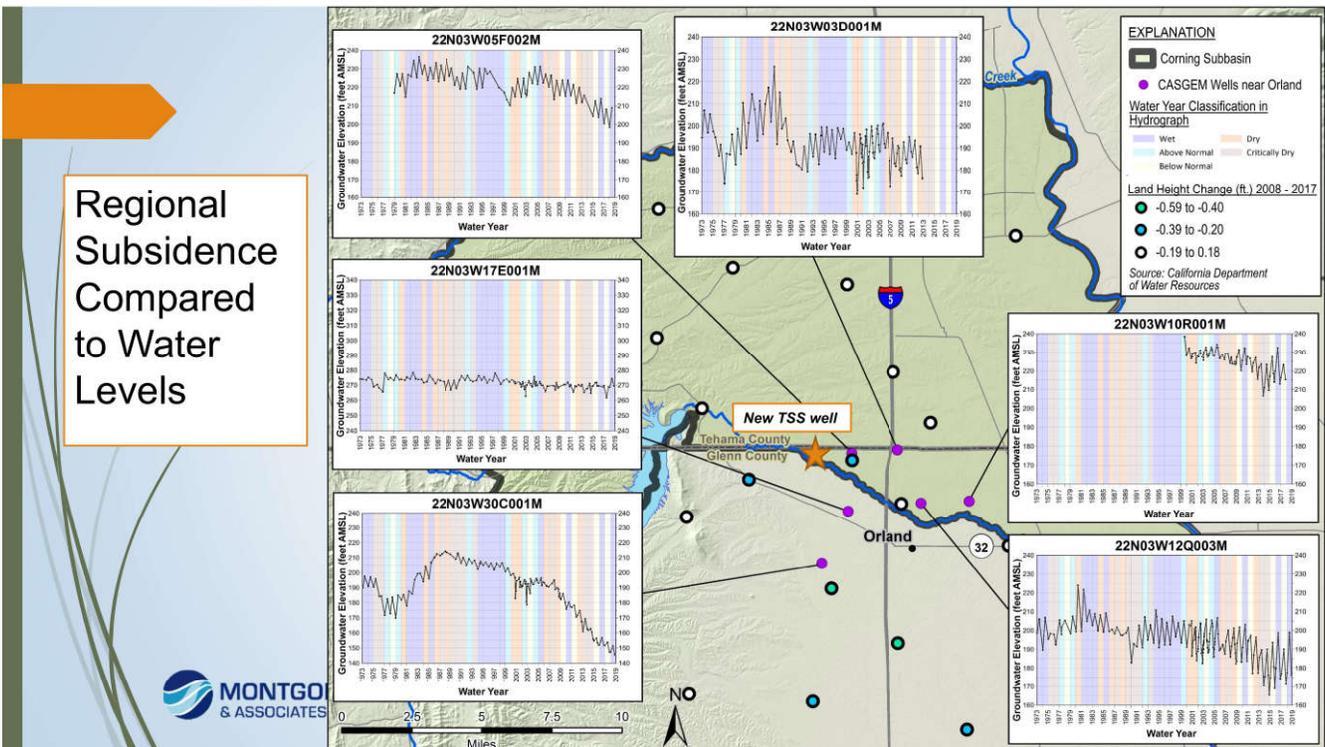


GSP Regulations - Subsidence

- Section 354.28(c)(5) of the Regulations states that “The minimum threshold for land subsidence shall be the **rate and extent of subsidence** that **substantially interferes with surface land uses** and may lead to undesirable results”
- The defined metric from the GSP regulations for measuring total subsidence is the **rate of change in ground surface elevation**. This can be measured with extensometers, continuous GPS stations, levelling surveys, or Interferometric Synthetic-Aperture Radar (InSAR) data.

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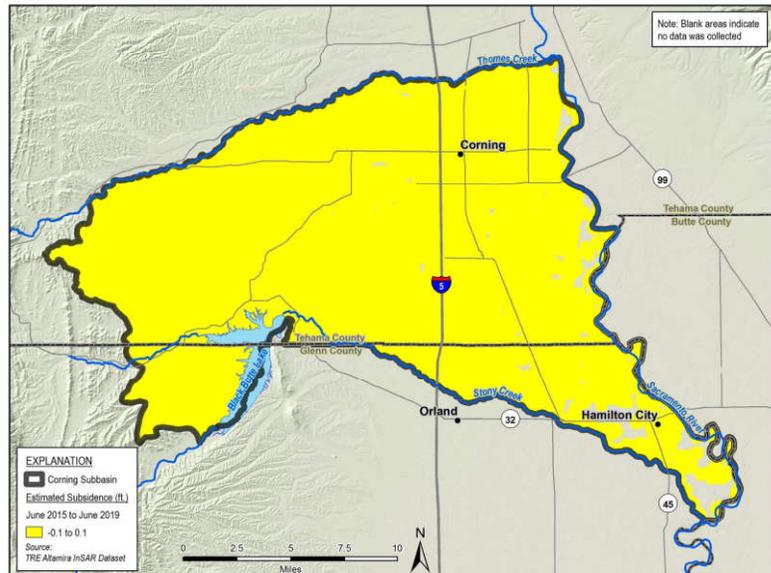
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Subsidence Data for Monitoring Network – DWR In-SAR

- Essentially no subsidence (± 0.1 ft) measured by satellite in Subbasin between 2015 and 2019

This is the monitoring network for subsidence monitoring and SMC development in the GSP.



Subsidence - Significant and Unreasonable Conditions

Statement:

- Inelastic land subsidence that impacts infrastructure and is caused by lowering of groundwater levels occurring in the subbasin is significant and unreasonable.*



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Subsidence Minimum Thresholds

The value you do not want to cross at 2042. (2022 to 2042 is a transition phase)

- ▶ Quantitative value that is used to define an undesirable result at **each representative monitoring point (In-SAR subsidence monitoring grid)**
- ▶ **Options to review:**
 1. *The minimum threshold for inelastic subsidence due to lowered groundwater elevations is zero throughout the subbasin. To account for error in the InSAR data, the annual minimum threshold is set to 0.1 feet of subsidence per year, while maintaining no subsidence.*
 2. *The minimum threshold for subsidence due to lowered groundwater elevations is no more than **0.4 feet** of cumulative subsidence **over a 5 year period** (in addition to 0.1 ft InSAR error) – on an annual basis this would be **0.18 ft** on average. [over the 30-yr implementation horizon this would add up to 2.4 ft of cumulative subsidence]*
 3. *The minimum threshold for subsidence is **0.133 feet per year**. This is the rate that results in less than 1 ft of cumulative subsidence over the 30-yr implementation horizon (in addition to 0.1 ft InSAR error).*

[note that the maximum subsidence measured in the Corning subbasin was 0.4 ft over 9 years (2008-2017)]

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Subsidence Measurable Objective

The goal to reach at sustainability, in 20 years.

- ▶ Assume the goal is for no subsidence in the subbasin at sustainability.
- ▶ **Measurable Objective:**
 - ▶ *The measurable objective for inelastic subsidence due to lowered groundwater elevations is zero throughout the subbasin. To account for error in the InSAR data, the annual measurable objective is set to 0.1 feet of subsidence per year, while maintaining no subsidence.*

Undesirable Results

Combination of Minimum Thresholds

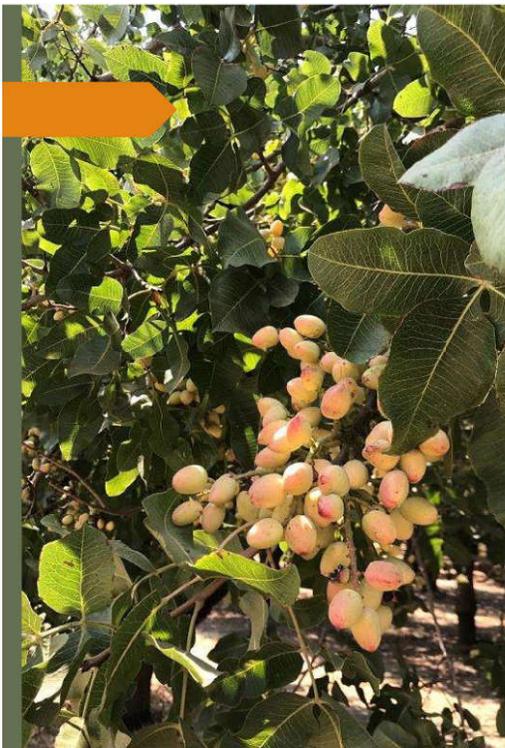
Example:

Any exceedance of a minimum threshold is an undesirable result, if the exceedance is irreversible and caused by lowering groundwater elevations.



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Subsidence Discussion

- ▶ CSAB comments
- ▶ Public comments
- ▶ Potential Action Item



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Subsidence Recap and Potential Action Item

- Recommendation to the GSA Boards on Subsidence SMC

Significant and Unreasonable Conditions Statement:

Inelastic land subsidence that impacts infrastructure and is caused by lowering of groundwater levels occurring in the subbasin is significant and unreasonable.

Minimum thresholds – pick one of the presented options or a modified option

Measurable objectives – 0.1 ft of long-term subsidence to account for InSAR measurement error (zero effective inelastic subsidence)

Undesirable results

Any exceedance of a minimum threshold is an undesirable result, if the exceedance is irreversible and caused by lowering groundwater elevations.



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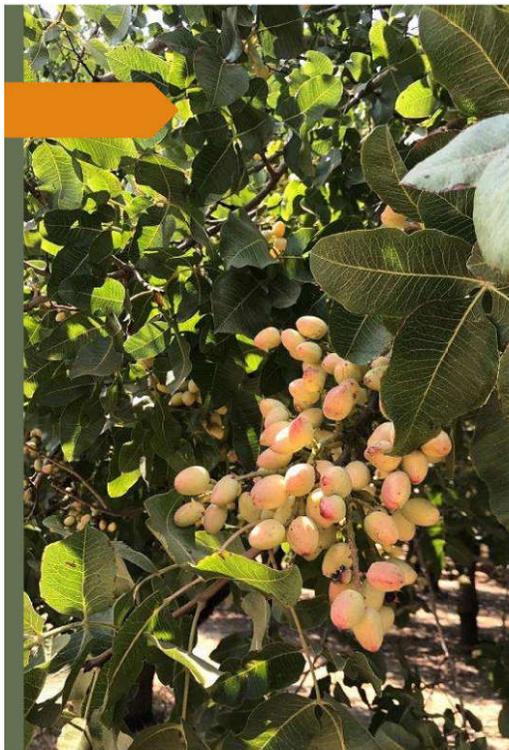
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Projected Water Budgets and Introduction to Storage SMC



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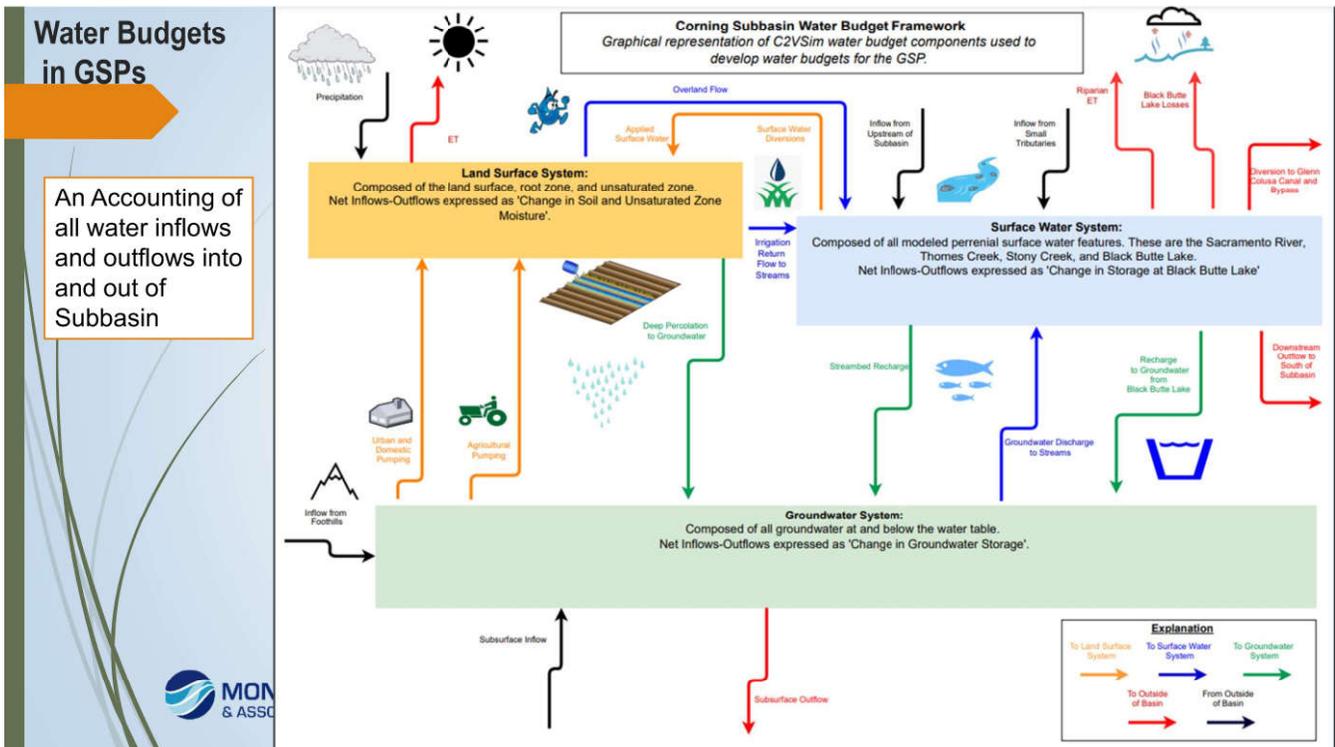
Water Budgets in GSPs

Background presented at 11/4/2020 CSAB Meeting

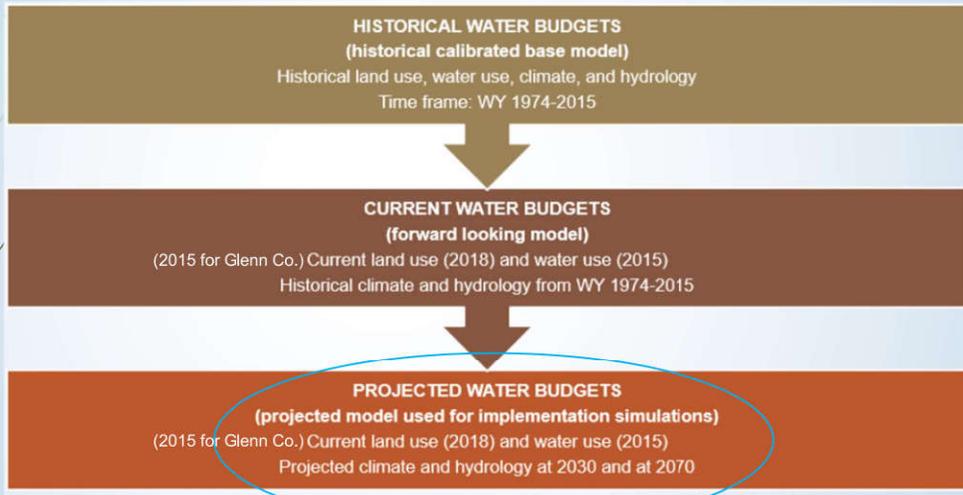
- ▶ Big picture understanding of subbasin water flows and trends in storage changes over time
- ▶ Water budgets developed as annual estimates, by water year (no seasonal variation) and summarized as average annuals under historical, current and projected conditions
- ▶ Background information to complement Hydrogeologic Conceptual Model and groundwater conditions
- ▶ A balanced water budget does not prove sustainability; it is only 1 component that helps identify aquifer interactions (need to look at sustainable management criteria as well)

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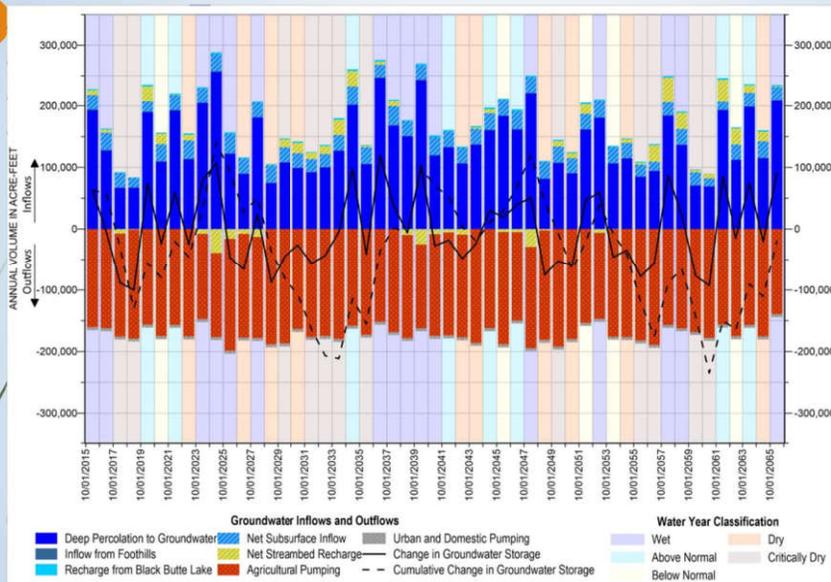
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Water Budget Time Frames in GSPs



Projected 2070 Groundwater Budget

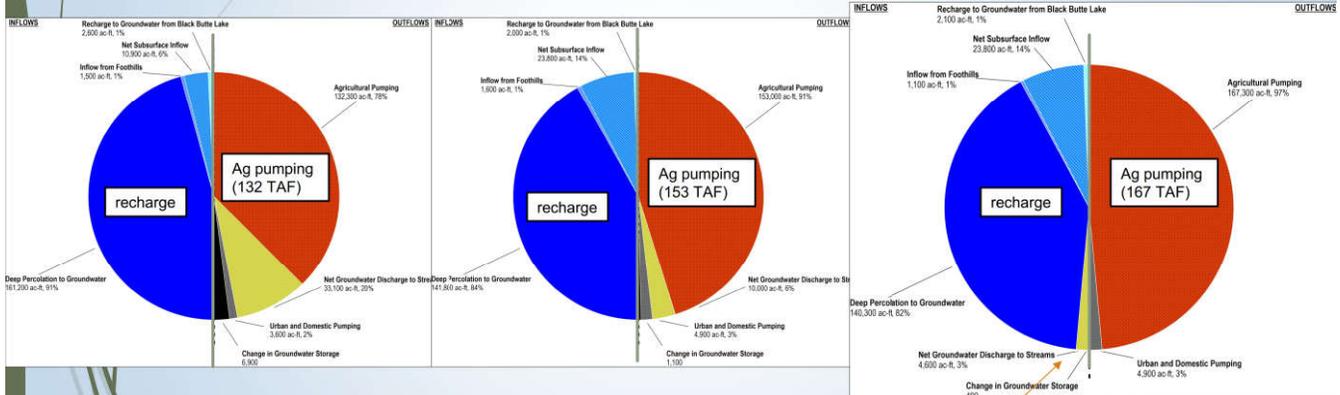


Groundwater Budgets – Average Annual Comparisons

Historical Groundwater Budget

Current Groundwater Budget

Projected 2070 Groundwater Budget



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GW pumping induces more stream leakage

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Reduction of Groundwater Storage – GSP Regulations

- “The minimum threshold for reduction of groundwater storage shall be a **total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results**. Minimum thresholds for reduction of groundwater storage shall be **supported by the sustainable yield of the basin**, calculated based on historical trends, water year type, and projected water use in the basin.”
- The goal is effectively to **pump within the sustainable yield** and have “**zero long-term change in storage once sustainability is reached**”.



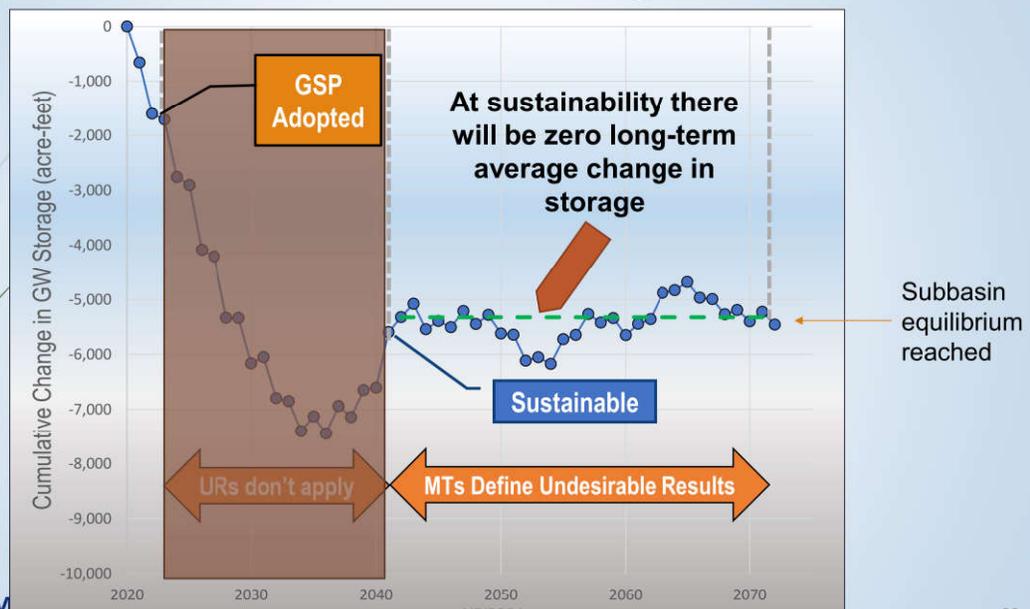
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What is Sustainable Yield?

- ▶ The sustainable yield of the Subbasin is **an estimate of the quantity of groundwater that can be pumped on a long-term average annual basis without causing undesirable results.**
 - ▶ Basin-wide pumping within the sustainable yield estimate is neither a measure of, nor proof of, sustainability.
 - ▶ Sustainability under SGMA is only demonstrated by avoiding undesirable results for the applicable sustainability indicators.

Reduction in Groundwater Storage SMC



Change in Storage – Method for SMC Development

- Even though the GSP Regulations mention the minimum threshold as being a total volume of groundwater that can be withdrawn, there are different ways to establish and calculate the appropriate metric:

1) Calculating the annual change in storage directly:

For example: Using groundwater elevation data from monitoring network, then developing contour maps to calculate the annual change in storage by assuming a storage coefficient and aquifer thickness

2) Calculating the annual pumped water, and comparing it to the sustainable yield

High degree of uncertainty, as only public water suppliers are currently reporting metered usage. Would need to estimate an approximate amount of pumping for ag wells based on estimated demand by crop, and domestic wells based on per capita use.

Using Groundwater Levels as a Proxy for Storage SMC

- Using groundwater elevation data from the monitoring network essentially provides for the use of groundwater levels as a proxy.
- The rationale here is that groundwater in storage is directly proportional to groundwater elevation, and holding consistent groundwater elevations is equivalent to no change in storage.
- The advantage of using this metric is that it is simple to establish a minimum and objective amount of water in storage in the Subbasin by mimicking the groundwater elevation minimum thresholds and measurable objectives
- In order for this metric to achieve GSP Regulation requirements for change in storage, it is advisable to include statements that pumping within the Basin will remain within the sustainable yield.*



CSAB Input: Reduction of GW Storage SMC – Significant and Unreasonable Conditions

- ▶ **Develop Significant & Unreasonable Statement – Review and provide feedback**

- ▶ Example Statement:

- *Reduction of groundwater in storage that causes significant and unreasonable impacts to the long-term sustainable beneficial use of groundwater in the basin, as determined by:*

1. *Long-term reductions in groundwater storage; or*
2. *Pumping exceeding the sustainable yield*

- ▶ **Are you supportive of using groundwater-levels as a proxy for the groundwater storage SMC?**



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Potential Projects and Management Actions

Initial Review

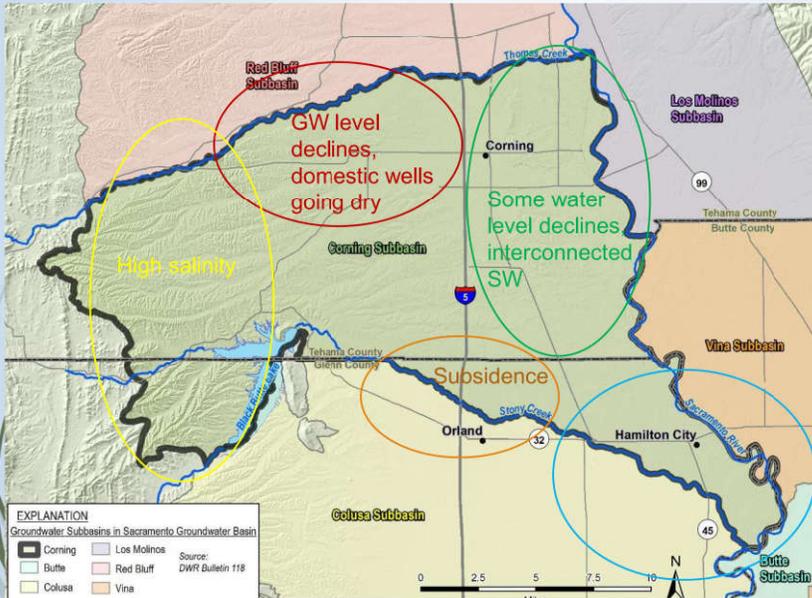


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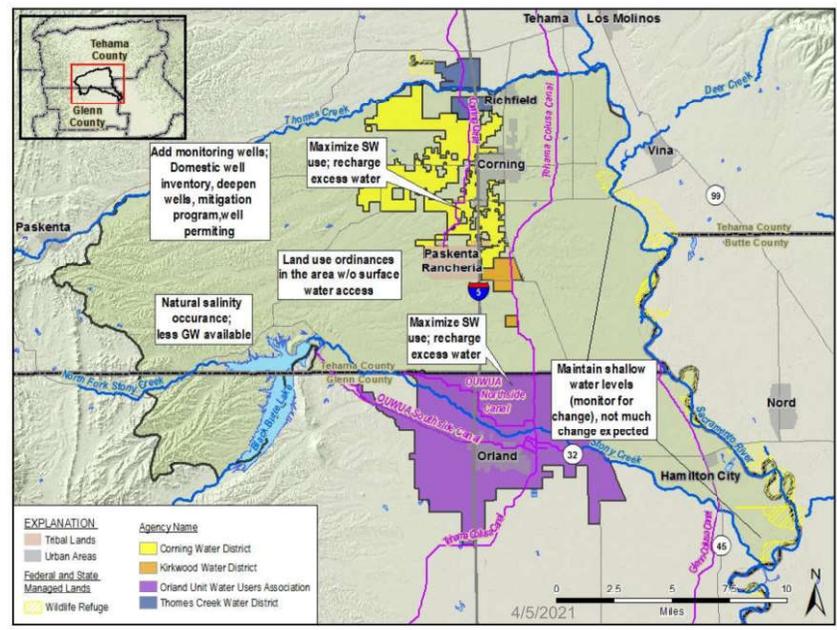
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Subbasin has a few areas with groundwater concerns or protection needs



Shallow water levels, interconnected surface water



Potential Projects will Assist with Sustainability - Collaboration with Water Districts and USBR

Potential Management Actions

1. Demand Management
 - ▶ Land management policies or land use ordinances to limit ag growth in certain areas with GW level declines
 - ▶ Pumping fees/restrictions in drought years
2. Supply Augmentation
 - ▶ Incentivize use of SW when available
 - ▶ Allow for easier transfer between OUWUA, USBR, and TCCA in various areas of the basin
3. County Policies
 - ▶ Land use change restrictions
 - ▶ Water use ordinance
 - ▶ Well Permitting
4. Resources for shallow domestic well replacement



Questions and Feedback on List of Potential Projects and Management Actions?

- ▶ Anything missing?
- ▶ What projects should we prioritize in the GSP?



Projects and Management Actions (PMAs) Next Steps

- ▶ Develop short list of PMAs that should be further developed at conceptual level and described in GSP
- ▶ Develop model simulations to assess potential projects and impacts on water levels
 - ▶ Use the 2070 projected model run as a baseline
 - ▶ Example simulation: assume all available surface water (per current CVP and OUP allocations) are used, to see how much groundwater is still required; assess by water year type.
- ▶ Compare water level outputs with PMA simulations to baseline to see how much water levels are projected to increase or stabilize with the projects.
- ▶ Review and adjust groundwater level minimum thresholds and measurable objectives as needed and develop interim milestones.



GSP Completion Schedule

Reminders on Next Steps

Upcoming CSAB Meetings and Proposed Topics

Date	Key Meeting Topics	CSAB Meeting Objectives
May 5	<ul style="list-style-type: none"> Discussions and development of SMCs for Groundwater Quality Review outcome of groundwater level depletion SMC special meeting Review SMC approaches for Interconnected SW depletion SMC 	<ul style="list-style-type: none"> Input on proposed approaches for MT and MO development Potential recommendations to GSA Boards on groundwater quality SMC
June 2	<ul style="list-style-type: none"> Present initial predicted impacts to groundwater conditions based on projects and management actions. Revised List of Projects & Management Actions Introduction to funding mechanisms 	<ul style="list-style-type: none"> Potential recommendations to GSA Boards on groundwater levels, storage, and depletion of interconnected surface water SMC Input on final list of Projects & Management Actions Input on funding mechanisms
July 7	<ul style="list-style-type: none"> Review predicted impacts to groundwater conditions based on projects and management actions. Compare against draft MT and MO for all Sustainability Indicators 	<ul style="list-style-type: none"> Input on revisions of draft projects and management actions based on predicted impacts and comparison for all sustainability indicators
Aug 4	<ul style="list-style-type: none"> Review Projects & Management Actions and effects on Sustainable Management Criteria Re-evaluate funding mechanisms Discuss priority actions for plan implementation Review data gaps 	<ul style="list-style-type: none"> Potential recommendations to GSA Boards on Projects and Management Actions to reach and maintain sustainability Recommendations on funding mechanisms Input on Plan Implementation and addressing data gaps

Receive public comments at each meeting

GSP Section Reviews

GSP Section	Status	Review Schedule
1 - Introduction	Draft complete, incorporating comments	Public review draft, Sept. 2021
2 - Plan Area	Draft complete, incorporating comments	Public review draft, Sept. 2021
3 - Basin Setting	Draft complete, incorporating comments	Public review draft, Sept. 2021
4 – Water Budgets	Draft complete	CSAB review expected by 4/9
5 - Monitoring Network	Draft almost complete	CSAB review in April
6 – Sustainable Management Criteria	Draft of groundwater levels section developed	Complete draft for CSAB review in May or June
7 - Projects and Management Actions	Draft list of projects and management actions developed	Complete draft for CSAB review in July
8 – Plan Implementation	Assembling data gaps; reviewing options for funding mechanisms	Discussion at August meeting; include in Public review draft, Sept. 2021
Executive Summary and Draft GSP		Draft to public: 9/10/2021 (CSAB will review complete draft during public review)

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End of Meeting



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7. Groundwater Sustainability Plan development

a. Receive update on Groundwater Sustainability Plan development, grant agreement, and project agreement

Staff will provide a brief status update of GSP development, grant agreement, and project agreement. Direction may be provided.

b. Sustainable Management Criteria

- i. Revisit past CSAB recommendations to GSAs and path forward to develop Chronic Lowering of Groundwater Level Sustainable Management Criteria
- ii. CSAB discussion on Land Subsidence Sustainable Management Criteria

Members of the CSGSA Committee will revisit past CSAB recommendations to the GSAs and path forward related to the development of the Chronic Lowering of Groundwater Levels SMC. This includes Minimum Thresholds (MT), Measurable Objectives (MOs), and options for Undesirable Results for Chronic Lowering of Groundwater Levels.

In addition, CSGSA members will review the CSAB discussion on Land Subsidence SMC, synthesized in the CSAB summary above.

8. Inter-basin Coordination Update

Staff from the Antelope, Bowman, Butte, Colusa, Corning, Los Molinos, Red Bluff, Sutter, Vina, Wyandotte Creek, and Yolo subbasins continue to meet to discuss inter-basin coordination. Groundwater Sustainability Agencies (GSAs) are working together to establish a foundation for open and transparent inter-basin coordination and communication. Efforts are moving towards establish a framework for sustained inter-basin coordination throughout GSP implementation. Staff began initial discussion related to desired outcomes, shared concerns, and priorities for long-term inter-basin coordination. Public input will be gathered at existing public GSA meetings.

More information can be found on a webpage hosted by Butte County at:

<https://www.buttecounty.net/waterresourceconservation/Sustainable-Groundwater-Management-Act/Inter-basin-Coordination>

9. Corning Sub-basin GSA Committee Member Reports and Comments

Members of the CSGSA Committee are encouraged to share information, reports, comments, and suggest future agenda items. Action cannot be taken on matters brought up under this item.

10. Next Meeting

The next meeting will be **May 12, 2021 at 9:30 am.**

11. Adjourn

The meeting will be adjourned.