



Joint Colusa Groundwater Authority and Glenn Groundwater Authority Board of Directors

Special Meeting Agenda

April 12, 2024 | 10:00 a.m.

225 North Tehama Street, Willows, CA 95988

Alternate Meeting Locations:

381 HCR 2424, Hillsboro, TX 76645

Public input is welcome in person or via Microsoft Teams

Microsoft Teams meeting

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* Indicates an Action Item

1. Call to Order, Roll Call, and Introductions

2. Approval of Minutes (pg. 3)

- a. *January 26, 2024 CGA/GGA Joint Board Meeting Minutes (CGA, GGA)
- b. *February 23, 2024 CGA/GGA Joint Board Meeting Minutes (CGA, GGA)
- c. *March 22, 2024 CGA/GGA Joint Board Meeting Minutes (CGA, GGA)

3. Period of Public Comment

At this time, members of the public may address the Board Members regarding items that are not on the agenda but are of relevance. The Boards may not act on items not on the agenda.

4. Colusa Subbasin Groundwater Sustainability Plan (GSP) (pg. 13)

- a. Review Draft Revised Colusa Subbasin GSP. (45 minutes)
- b. *Review and consider approval of formal agreement committing to develop a domestic well mitigation program. (15 minutes) (CGA/GGA)
- c. *Review and consider approval of formal agreement committing to develop a demand management program (15 minutes) (CGA/GGA)

5. Member Reports and Comments

6. Adjourn

Note: Times listed on the agenda are for estimation purposes only.

A complete agenda packet, including back-up information, is available for inspection during normal business hours at 1213 Market Street, Colusa, CA 95932 or 225 N. Tehama St., Willows, CA 95988. The full agenda packet can also be found on the CGA and GGA websites: [Agendas and Minutes 2023 | Colusa Groundwater Authority \(CGA\)](#)
<https://www.countyofglenn.net/dept/planning-community-development-services/water-resources/glenn-groundwater-authority/gga>

In compliance with the Americans with Disability Act, if you require special accommodation to participate in this meeting, please contact the Carol Thomas Keefer, CGA Program Manager, at 650-587-7300 X17 or Glenn County Water Resources Division at 530-934-6540 prior to any meeting and arrangements will be made to accommodate you.

Staff Report

To: CGA-GGA Joint Board

Agenda Item: 2. Approval of Minutes

Date: April 12, 2024

Background

The January 26, 2024 CGA/GGA Joint Board Meeting Minutes are attached. The CGA approved these at the March 22, 2023 meeting; however, the GGA did not take action and should consider approval at this meeting.

The February 23, 2024 CGA/GGA Joint Board Meeting Minutes are attached.

The March 22, 2024 CGA/GGA Joint Board Meeting Minutes are being prepared for review and will be distributed under separate cover.

Recommendation

GGA Action: Approve of the January 26, 2024 CGA/GGA Joint Board Meeting Minutes.

CGA and GGA Action: Approve the February 23, 2024 CGA/GGA Joint Board Meeting Minutes.

CGA and GGA Action: Approve the March 22, 2024 CGA/GGA Joint Board Meeting Minutes.

Attachments

- January 26, 2024 CGA/GGA Joint Board Meeting Minutes (pg. 4)
- February 23, 2024 CGA/GGA Joint Board Meeting Minutes (pg. 9)
- March 22, 2024 CGA/GGA Joint Board Meeting Minutes (will be distributed under separate cover)



Joint Colusa Groundwater Authority and Glenn Groundwater Authority Board of Directors

Special Meeting January 26, 2024 | 10:00 a.m.

LOCATION: Sites Project Office, 122 Old Highway 99, Maxwell, CA 95955

The meeting was also conducted via teleconference; accessible via telephone, computer, smartphone or tablet.

MINUTES

In Attendance:

Colusa Groundwater Authority:

Director Members Present:	Alternate/2 nd Alternate Directors	Agency Representing:
X Gary Evans	X Janice Bell	County of Colusa
X Jesse Cain	Greg Ponciano	City of Colusa
X Kate Dunlap	Alfred Sellers, Jr.	City of Williams
Blake Vann		Glenn Colusa Irrigation District
X Frank Nobriga	X Shelly Murphy	Colusa County Water District
Zach Dennis	Dan Ruiz	Westside Water District
Jim Campbell	Lance Boyd	Provident Irrigation District
X Hilary Reinhard	X Bill Vanderwaal (10:11)	Reclamation District 108
Derrick Strain	Vacant	Reclamation District 479
X Jim Wallace	Lynell Pollock	Colusa Drain Mutual Water Company
X Darrin Williams		Private Pumper
Jeff Moresco		Private Pumper

Glenn Groundwater Authority:

Director Members Present:	Alternate/2 nd Alternate Directors	Agency Representing:
X Grant Carmon	Tom Arnold	County of Glenn
X Bruce Roundy	Pete Carr	City of Orland
	Ed Vonasek (2 nd)	City of Orland
X Gary Hansen	Tavis Beynon	City of Willows
Matt Deadmond	Vacant	Glide Water District
X John Amaro	Vacant	Glenn-Colusa Irrigation District
X Charles Schonauer	Emil Cavagnolo	Orland-Artois Water District
X Randy Hansen	Wade Danley	Kanawha Water District
X Mark Lohse	Seth Fiack	Monroeville Water District
Gary Enos	Jered Shipley	Princeton-Codora-Glenn Irrigation District/ Provident Irrigation District

Others in Attendance: Lisa Hunter (GGA), Kaitlyn Murray (GGA), Carol Thomas-Keefer (CGA), Ben King, Rod Bradford, Amy Williams, Arne Gustafson, Jeff Davids (Davids Engineering, Inc.), Katie Klug (Davids Engineering, Inc.), Valerie Kincaid (GGA Counsel), Alan Doud (CGA Counsel), Brandon Davison (DWR), M. Ward, Todd Bishop, Jenny Scheer, Glen, Ryan Fulton, Larry Maben, Erik Foraker, Lisa Porta, Craig Bradford, Jaime Lely, and Seth Lawrence.

1. Call to Order, Roll Call and Introductions (CGA Board and GGA Board)

Chair Williams (CGA) and Chair Hansen (GGA) called the meeting to order at 10:04 a.m. Attendance was noted above. A quorum of members was present from each respective Board.

2. Period of Public Comment

Chair Williams opened the floor to public comment for items not on the agenda.

Mr. Ben King noted that area subsidence issues are ongoing, and resources including water and funding for the Sites Reservoir Project could be used to help address these issues.

Chair Williams then moved up action items 5 and 6 on the agenda in order to accommodate directors who may need to leave the meeting early.

3. Agreement 1173.04 between Davids Engineering, Inc. and Colusa Groundwater Authority Task Order 2 for Phase 2 Colusa Subbasin GSP Revisions

a. *Approve Davids Engineering Agreement 1173.04 Task Order 2 not to exceed \$186,221.00 (CGA)

Ms. Lisa Hunter stated that Davids Engineering has prepared its Task Order 2 for the Phase 2 work on the GSP revisions. Phase 2 work includes development and preparation of the Plan revisions based on direction and feedback from the CGA and GGA boards and Joint Technical Advisory Committee during the Phase 1 work. She also noted that CGA is holding the contract with Davids Engineering for the work, so only the CGA Board will need to take action on this item. Ms. Katie Klug with Davids Engineering added this task will complete the GSP revision process and will bring the West Yost consultant team onto the project.

On motion made by Director Nobriga and seconded by Director Wallace, CGA approved Agreement 1173.04 Task Order 2 with Davids Engineering for Phase 2 GSP Revisions, in an amount not to exceed \$186,221.00.

AYES: Cain, Dunlap, Evans, Nobriga, Reinhard, Wallace, Williams
NOES: None
ABSTAIN: None
ABSENT: Campbell, Dennis, Moresco, Strain, Vann

b. *Approve a cost share on a 50/50 basis between the Colusa Groundwater Authority and Glenn Groundwater Authority for Davids Engineering Agreement 1173.04 Task Order 2 not to exceed \$93,110.50 each

Ms. Hunter explained that the work by Davids Engineering for the GSP revisions should be shared between CGA and GGA on a 50/50 basis. An equal share of the Phase 2 work amounts to \$93,110.50 for

each agency.

On motion made by Director Nobriga and seconded by Director Cain, CGA approved the 50/50 cost share of the cost of the Davids Engineering Agreement 1173.04 Task Order 2 for Phase 2 GSP revisions in amount not to exceed \$93,110.50.

AYES: Cain, Dunlap, Evans, Nobriga, Reinhard, Wallace, Williams
NOES: None
ABSTAIN: None
ABSENT: Campbell, Dennis, Moresco, Strain, Vann

On motion made by Director Carmon and seconded by Director Schonauer, GGA approved the 50/50 cost share of the cost of the Davids Engineering Agreement 1173.04 Task Order 2 for Phase 2 GSP revisions in amount not to exceed \$93,110.50.

AYES: Amaro, Carmon, G. Hansen, R. Hansen, Lohse, Roundy, Schonauer
NOES: None
ABSTAIN: None
ABSENT: Deadmond, Enos

4. Proposal from Thaddeus Bettner, Water Ecology LLC, for GSP Support Services

a. *Consider approval of proposal from Thaddeus Bettner, Water Ecology LLC, for strategic, policy, vision and implementation support for Colusa Subbasin GSP (approx. \$9,000/mo, duration TBD) (CGA)

Chair Williams stated that he had spoken with Mr. Thaddeus Bettner regarding support for the Colusa Subbasin GSP revisions to ensure acceptance of the revised Plan. Mr. Bettner has provided a proposal for support of near-term activities to prepare the GSP revisions, and could also be available to assist with implementation of various GSP activities. The services would last at least until the revised GSP is submitted in April, and then would be re-evaluated. Chair Williams added that he hopes GGA will also consider joining CGA in retaining Mr. Bettner's services.

Following discussion, on motion made by Director Nobriga and seconded by Director Wallace, CGA approved the proposal from Thaddeus Bettner, Water Ecology LLC, for GSP support services, at an estimated cost of \$9,000 per month through April 2024, with an additional term to be determined by the CGA board.

AYES: Cain, Dunlap, Evans, Nobriga, Reinhard, Wallace, Williams
NOES: None
ABSTAIN: None
ABSENT: Campbell, Dennis, Moresco, Strain, Vann

5. Update on Water Year 2023 Annual Report

Ms. Katie Klug and Mr. Jeff Davids, Davids Engineering (DE), provided an update on the preparation of the 2023 Annual Report. She added that a full report should be available for review by February 28, and presentations will be made to the two GSA boards.

6. Colusa Subbasin Groundwater Sustainability Plan (GSP)

a. GSP revision schedule overview

Ms. Klug discussed the results of the last two consultation meetings with DWR, reviewing the key deficiencies identified by DWR, and noting that DWR has indicated that revisions should focus on developing management actions as backstops to address overdraft and groundwater conditions, and the sustainable management criteria should be revised to better justify minimum thresholds for wells and minimize undesirable results.

b. Discussion and concurrence on approaches for estimating overdraft

Ms. Klug reviewed SGMA regulations relating to overdraft, including quantification and mitigation measures. She stated that DE is proposing that overdraft in the Colusa Subbasin be calculated based on the period of 2016 through 2021, not only because the period reflects recent conditions but also because water conditions were similar to those during the 50-year period of 1966 through 2015. It also excludes the extraordinary conditions in 2022. Ms. Klug then reviewed the proposed change to the method of determining overdraft, explaining that overdraft in the original GSP was determined through use of the groundwater model, but that model only ran data through 2015. DE now proposes to use a groundwater level approach, using actual changes in groundwater levels. Other GSAs had used this method for calculating overdraft, and DWR indicated it was an acceptable method. Ms. Klug then stated that the new overdraft calculation using the groundwater level method for the period 2016 through 2021 indicated an overdraft of -59,000 acre-feet per year (AFY), compared to -28,000 AFY as indicated in the original GSP based on the model results (nearly double the original overdraft calculation). Discussion followed regarding the proposed revision to the overdraft estimate, and it was agreed that the GSAs and DE would move forward with the proposed change in estimating overdraft and would discuss further with DWR to ensure concurrence.

c. Discussion and concurrence on approach to update the Projects and Management Actions

Ms. Klug stated that projects and managements actions (PMAs) are needed to address the revised overdraft, and, while the original GSP includes a variety of PMAs, these would require revisions to add timelines, benefits and project specifics to demonstrate their impact on overdraft. She noted that PMAs would also be required for domestic well impact mitigation and to address subsidence, and stated that DWR expects to see strong commitments toward measures to mitigate subsidence and well impacts in the event that projects alone are not sufficient, especially in the near term, including demand management. She recommended the “formal agreement approach” as the best opportunity to present a firm commitment to develop the management actions but allowing sufficient time to engage stakeholders and address legal, financial and operational issues. In response to a question from Mr. Wallace, Ms. Klug stated that a similar “formal agreement” approach was successfully presented in another basin’s GSP revisions, and the revised GSP was recently approved. She then presented a draft of a similar agreement that might serve as a basis for the Colusa Subbasin agreement structure. Following additional discussions regarding the potential sufficiency of a formal agreement to satisfy DWR’s requirements, Mr. Jeff Davids stated that he felt that a draft agreement could be presented to the group by next month if this proposed approach is acceptable. Considerable discussion followed regarding potential components of a well mitigation program as well as demand management options. Following additional discussion, the Joint Board concurred with moving forward with the “formal agreement” approach and having further discussions with DWR at the next consultation meeting.

d. Discussion on monitoring network and basis of Sustainable Management Criteria for land subsidence

Ms. Klug stated that the current subsidence monitoring network is the Sacramento Valley Benchmark Network, which has not been surveyed in full since 2017. DWR recommends utilizing Interferometric Synthetic Aperture Radar (InSAR) data and revise the SMC to ensure no subsidence past 2042. Discussion ensued on the accuracy of InSAR and the SMC related to subsidence. More discussion on this topic is expected to occur at the next Joint Board meeting.

7. Member Reports and Comments

Director Schonauer reported that Emil Cavagnolo is retiring as the General Manager of the Orland-Artois Water District, and the District has hired Justin Dahl as its new General Manager. Mr. Dahl will begin his new position in February.

8. Adjourn

The meeting was adjourned at 12:58 p.m.

DRAFT



COLUSA SUBBASIN

Joint Colusa Groundwater Authority and Glenn Groundwater Authority Board of Directors

Special Meeting February 23, 2024 | 10:00 a.m.

LOCATION: Sites Project Office, 122 Old Highway 99, Maxwell, CA 95955

Alternate Location: 381 HCR 2424, Hillsboro, TX 76645

The meeting was also conducted via teleconference; accessible via telephone, computer, smartphone or tablet.

MINUTES

In Attendance:

Colusa Groundwater Authority:

Director Members Present:	Alternate/2 nd Alternate Directors	Agency Representing:
Gary Evans	Janice Bell	County of Colusa
X Jesse Cain	Greg Ponciano	City of Colusa
X Kate Dunlap	X Alfred Sellers, Jr.	City of Williams
Blake Vann		Glenn Colusa Irrigation District
X Frank Nobriga	R Shelly Murphy	Colusa County Water District
Zach Dennis	Dan Ruiz	Westside Water District
Jim Campbell	Lance Boyd	Provident Irrigation District
X Hilary Reinhard	Bill Vanderwaal	Reclamation District 108
Derrick Strain	Vacant	Reclamation District 479
X Jim Wallace	Lynell Pollock	Colusa Drain Mutual Water Company
X Darrin Williams		Private Pumper
X Jeff Moresco		Private Pumper

Glenn Groundwater Authority:

Director Members Present:	Alternate/2 nd Alternate Directors	Agency Representing:
X Grant Carmon	Tom Arnold	County of Glenn
X Bruce Roundy	R Pete Carr	City of Orland
	Ed Vonasek (2 nd)	City of Orland
X Gary Hansen	R Tavis Beynon	City of Willows
X Matt Deadmond	Vacant	Glide Water District
X John Amaro	Vacant	Glenn-Colusa Irrigation District
X Charles Schonauer	Justin Dahl	Orland-Artois Water District
Randy Hansen	Wade Danley	Kanawha Water District
X Mark Lohse	Seth Fiack	Monroeville Water District
Gary Enos	X Jered Shipley	Princeton-Codora-Glenn Irrigation District/ Provident Irrigation District

Directors attending remotely are designated with “R” and are not counted toward a quorum, do not vote, and are considered members of the public.

Others in Attendance: Lisa Hunter (GGA), Kaitlyn Murray (GGA), Carol Thomas-Keefer (CGA), Jeff Davids (Davids Engineering, Inc.), Katie Klug (Davids Engineering, Inc.), Valerie Kincaid (GGA Counsel), Alan Doud (CGA Counsel), Brandon Davison (DWR), Ben King, Arne Gustafson, M. Ward, Jenny Scheer, Lisa Porta, Jaime Lely, Steve Geiger, Jim Brobeck, Anna Reimer (West Yost), Denise Carter, Ken Loy (West Yost), Bill Davis

1. Call to Order, Roll Call and Introductions (CGA Board and GGA Board)

Chair Williams (CGA) and Chair Hansen (GGA) called the meeting to order at 10:04 a.m. Attendance was noted above. A quorum of members was present from each respective Board.

2. Approval of Minutes

Chair Williams reported that approval of minutes from the January 26, 2024 Special Joint Meeting would be deferred to a future meeting.

3. Period of Public Comment

Chair Williams opened the floor to public comment for items not on the agenda.

Mr. Ben King spoke on a matter regarding Colusa County Flood Control District Zone 3 pertaining to landowners investing in Sites reservoir for dry year water supplies and their ability to sell that water. He expressed concern that the water would leave the area and urged the two GSA boards to stay engaged in the matter as it relates to subbasin sustainability.

4. Update on Water Year 2023 Annual Report

Ms. Katie Klug and Mr. Jeff Davids, Davids Engineering (DE), provided a brief overview of highlights from the 2023 Annual Report, including the calculated change in storage for 2023 (an increase of 34,000 acre-feet) versus 2022 (a decrease of 214,000 acre-feet). He also reviewed various hydrographs showing differences in water level recovery depending on location and discussed subsidence data. The draft report will be finalized over the next few weeks and submitted to DWR by no later than April 1, 2024.

5. Colusa Subbasin Groundwater Sustainability Plan (GSP)

a. Discussion and concurrence on approach to develop a domestic well mitigation program

Ms. Klug discussed the results of the three prior consultation meetings with DWR, reviewing the key deficiencies identified by DWR, and noting that DWR has indicated that revisions should focus on developing management actions as backstops to address overdraft and groundwater conditions, and the sustainable management criteria should be revised to better justify minimum thresholds for wells and minimize undesirable results. To date, DWR and the joint GSA boards have discussed and concurred on a revised approach to determining overdraft as well as a conceptual “formal agreement” approach for developing management actions relating to groundwater levels and mitigating well impacts. GSP projects would also need to be updated with timelines and benefits. Ms. Klug stated that today’s meeting would focus on further development of PMAs, especially technical aspects of proposed management actions, and on SMC for groundwater levels. She noted that discussion on subsidence-related SMC would occur at a future meeting.

Ms. Klug then noted that, in addition to refining project descriptions and benefits as well as adding new projects, management actions would be developed to address 1) domestic well mitigation, and 2) demand management. She reviewed the potential program measures for domestic well mitigation, such as emergency solutions, deepening wells, and lowering pumps, as well as program considerations and limitations, such as temporary program status, well evaluation and eligibility process, and coordination

with county ordinances. She also reviewed available data to estimate the number of potentially impacted wells and the various potential items that may be included in the program (i.e., application process, priority, mitigation awards, etc.). Ms. Klug also noted that DWR's guidelines for well mitigation have been incorporated in the program components. Discussion followed on developing program parameters for mitigation, funding for the program, and timeline for implementation. Following additional discussion, the two GSA boards concurred with the proposed approach to develop a well mitigation program.

b. Discussion and concurrence on approach to develop a demand management program

Ms. Klug then reviewed the potential measures for a demand management program, including immediate implementation of voluntary measures (including dry farming, fallowing, incentivized land use changes, and multi-benefit land repurposing) as well as phased adaptive implementation (including water use allocations and land use/zoning restrictions in cooperation with counties). She then reviewed items to consider in developing the program, including a program implementation process, public outreach and engagement, and implementation of phased measures. Phased measures may need determinations on applicable areas, sustainable yield, transition period to achieve sustainability, processes and timelines for putting measures into place, and monitoring and enforcement. Following discussion on various considerations, the two GSA boards concurred with the proposed approach to develop a demand management program.

c. Discussion and concurrence on Groundwater Level Sustainable Management Criteria

Ms. Klug reviewed key needs relating to revisions to Groundwater Level Sustainable Management Criteria (SMC), including justification of how Undesirable Results (URs) and Minimum Thresholds (MTs) represent significant and unreasonable conditions, compared to previous conditions; and clarifying the relationship between Groundwater Level SMC and subsidence. She stated that, in addition to updating the UR definitions, the revisions would need to clarify at what level do the unreasonable conditions occur, and suggested referring to conditions during 2020-2022, including number of dry wells reported, reduction in pumping capacity, need to deepen wells and/or lower pumps, and adverse impacts to the environment. She indicated that tying revisions to specific 2020-2022 conditions would provide a justifiable basis for explaining impacts to beneficial uses, connection to subsidence, and setting MTs.

Ms. Klug then reviewed the proposed revisions to Groundwater Level SMC, noting that well impacts varied throughout the subbasin, with greater impacts in the Orland/Artois and Arbuckle areas, so it was reasonable to suggest that MTs should also vary depending on area. Areas with dry wells and/or subsidence since 2015 are referred to as "focus areas," and would have MTs set at the 2020-2022 low, while areas outside the "focus areas" would have MTs set at the 2020-2022 low plus 10 feet. Measurable Objectives (MOs) would be the average pre-SGMA (2011-2015) groundwater levels, and Interim Milestones (IMs) would be established to bridge the MTs and the MOs to reach sustainable conditions. Ms. Hilary Reinhard expressed concerns about setting MTs at the 2020-2022 low for some areas where groundwater levels do not necessarily justify those MTs, and Mr. Davids suggested that the specific data should be reviewed before the focus areas were defined and MTs were established. Considerable discussion followed regarding the establishment of MTs as low as 2020-2022 levels and how best to recognize different conditions within the subbasin. Ultimately, the CGA and GGA boards concurred that the consultant team should move ahead with development of Groundwater Level SMC that included "focus areas" as discussed with MTs set at a level to be determined, as well as MTs proposed for areas outside the "focus areas" with those MTs plus an appropriate margin based on subbasin conditions. It was agreed that additional work would be done on the SMC, and more data would be presented at the March 8 Joint Technical Advisory Committee meeting for further discussion.

d. Discussion on monitoring network and basis of Sustainable Management Criteria for land subsidence

Discussion on this item was deferred to a future meeting.

6. Member Reports and Comments

None.

7. Adjourn

The meeting was adjourned at 2:07 p.m.

DRAFT

Staff Report

To: CGA-GGA Joint Board

Agenda Item: 4. Colusa Subbasin Groundwater Sustainability Plan (GSP)

Date: April 12, 2024

Background

On October 26, 2023, the Department of Water Resources (DWR) issued a letter informing the Groundwater Sustainability Agencies (GSAs) of its determination of the Colusa Subbasin GSP to be “incomplete”. The letter outlined specific deficiencies and recommended corrective actions which include:

- a) Re-evaluation of the overdraft conditions in the Subbasin using the most recent data, and include projects and management actions to mitigate overdraft;
- b) Providing a more detailed explanation and justification of the sustainable management criteria for groundwater levels, particularly minimum thresholds and measurable objectives, and quantify the effects of those criteria on beneficial uses; and
- c) Providing a more detailed explanation and justification of sustainable management criteria, monitoring method, and projects and management actions related to land subsidence.

The consultant team (Davids Engineering) has been retained to complete the Colusa Subbasin GSP Revisions to address the identified deficiencies. The work has been broken into two phases, the first of which provides the consultant team with policy guidance from the GSA Boards. The second phase includes the plan revisions based on the policy direction provided in Phase 1.

The CGA/GGA Joint TAC received presentations from the consultant team and engaged in discussion on the identified deficiencies in order to provide recommendations to the GSA Boards throughout the revision process. Consultation Meetings were held with DWR, which also guided the GSP revision process.

The consultant team will share a summary of the Colusa Subbasin GSP revisions and timeline for implementation. Discussion will also be held on the draft formal agreements with commitments to develop a domestic well mitigation program and a demand management program. The GSAs may consider approval of the agreements, if satisfied with the content, or they provide additional direction and consider approval at the April 19, 2024 meeting.

Recommendation

1. Discuss Colusa Subbasin GSP revisions.
2. Review and consider approval of formal agreement to develop a domestic well mitigation program.
3. Review and consider approval of formal agreement to develop a demand management program.

Attachments

- Presentation (draft) (pg. 15)
- Cover Letter (pg. 21)
- Draft domestic well mitigation program agreement (pg. 30)
- Draft demand management program agreement (pg. 46)

DRAFT



Colusa Subbasin GSP Revisions

Joint GSA Board Meeting

April 12, 2024

Agenda

- 1. Timeline**
- 2. Overview of GSP Revisions**
- 3. Overview of Comments and Feedback**
- 4. Next Steps**

Timeline

Feb 2024	02/09 – Joint TAC Meeting 02/16 – DWR Meeting #3 02/23 – Joint Board Meeting
Mar 2024	03/08 – Joint TAC Meeting 03/14 – DWR Meeting #4 03/22 – Joint Board Meeting 03/25 – DWR Meeting #5
Apr 2024	04/01 – Draft Revised GSP for Review 04/09 – Comments on Draft Revised GSP 04/12 – Joint GSA Board Meeting (Review Draft Revised GSP and Comments) 04/16 – Final Revised GSP Completed 04/19 – Joint GSA Board Meeting (Adopt Revised GSP) 04/22 – Submit Revised GSP

Overview of GSP Revisions

Deficiencies As Outlined in DWR's Review Letter

1. **Overdraft:** “The GSP does not include a reasonable assessment of overdraft conditions and reasonable means to mitigate overdraft.”
2. **Groundwater Levels:** “The GSP does not establish sustainable management criteria (SMC) for chronic lowering of groundwater levels in a manner substantially compliant with the GSP regulations.”
3. **Subsidence:** The GSP does not establish SMC for land subsidence in a manner substantially compliant with the GSP regulations.

*Revisions were focused only on these deficiencies and the efforts needed to resolve these sufficiently (including **Projects and Management Actions**).*

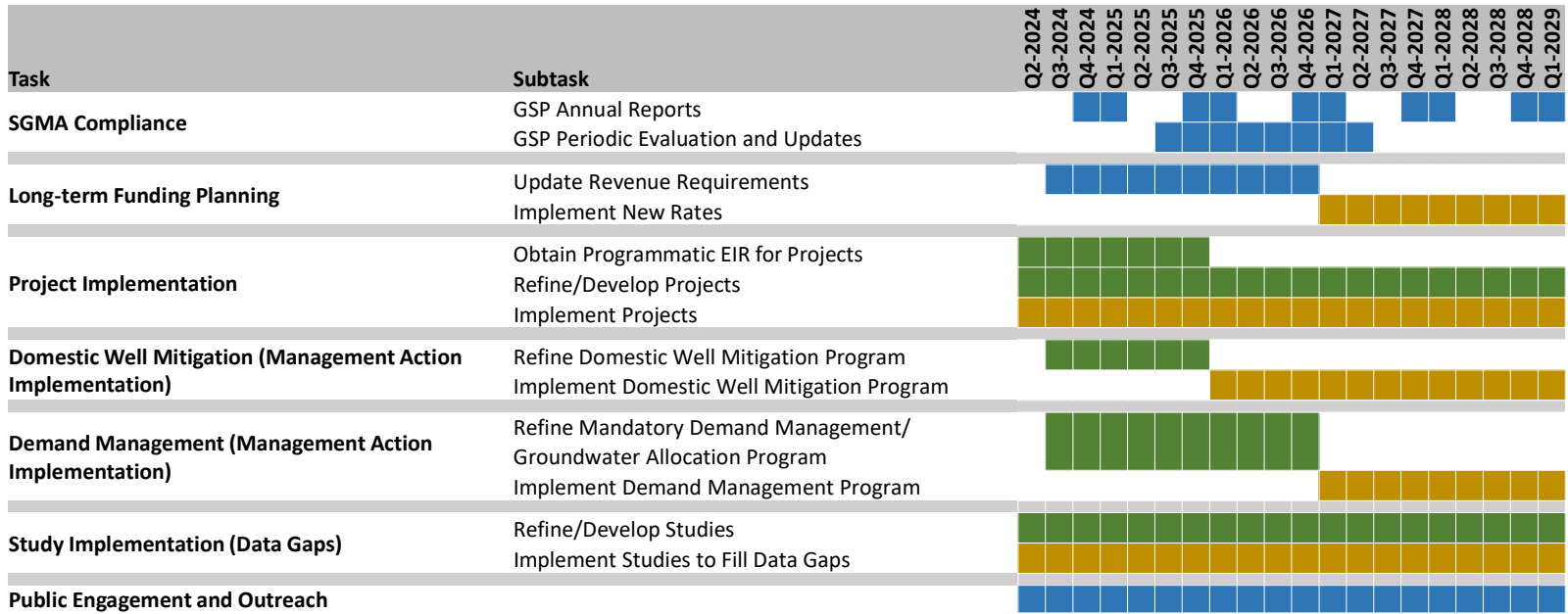
Revised GSP Cover Letter and Implementation Timeline

- Cover letter for the Revised GSP:
 - GSP development and revisions processes
 - Summary of key GSP revisions, including (but not limited to):
 - Commitment to demand management
 - Commitment to domestic well mitigation
 - SMC revisions to address DWR's identified deficiencies (GWL, subsidence)
 - 5-year workplan for GSP Implementation through Q1 2029, including:
 - Ongoing GSA coordination efforts (including GSA organizational structure)
 - GSA capacity-building (for GSP implementation)
 - Funding/financing discussions
 - Project implementation (recharge projects, etc.)
 - Management action tasks and timelines (domestic well mitigation and demand management)
 - SGMA reporting and compliance activities (Annual Reports, 2027 GSP evaluation, etc.)
 - Public outreach and engagement

5-Year Workplan (Overview)

Legend:

- Recurring/Ongoing Activity
- Planning/Development/Permitting/Construction
- Implementation



Summary of Revisions

- **Timeline:** Cover letter with timeline for actions to be taken during GSP implementation to move projects and management actions forward.
- **Projects and Management Actions:**
 - **Demand Management Program Memorandum of Understanding (MOU)** – Expressing the GSAs’ commitment to developing the program in 2024-2026 and implementing mandatory actions no later than Jan 2027 if undesirable results are still occurring.
 - **Domestic Well Mitigation Program MOU** – Expressing the GSAs’ commitment to developing and implementing the program no later than Jan 2026.
 - Brief updates to other projects with information from Annual Reports.
- **Overdraft:**
 - **Revised overdraft estimate** based on recent measured groundwater levels
 - ~60 TAF/year (2016-2021 groundwater conditions)
 - **Provision for recurring evaluation of overdraft** each year in the Annual Report (as part of existing groundwater level monitoring and groundwater storage calculations)

Summary of Revisions (Continued)

Groundwater Levels:

- **Revised undesirable results** to speak to specific significant/unreasonable conditions (pointing to 2020-2022, well impacts and subsidence).
- **Revised SMC for Focus/Non-Focus RMS wells** (*Summary to right*)
- **Updates to Interim Milestones:**
 - **Non-Focus Wells:** Maintain sustainable conditions (MOs).
 - **Focus Wells:** Provide buffer for potential decline by 2027 (i.e., “yellow line” based on 03/25 DWR discussion), recovering thereafter (→ MOs).

SMC	Initial GSP (January 2022)	Revised GSP (April 2024)
Undesirable Result	Occurs when 25% of RMS wells (12 of 48) continuously fall below their MT for 24 consecutive months	Occurs when any 12.5% of RMS wells (any 6 of 48) fall below their MT for two consecutive fall minimum measurements.
Minimum Threshold (MT)	The lower of: 1. The elevation corresponding to the 20th percentile of nearby domestic well depths, OR 2. 50% of measured historical groundwater elevation range below the historical measured low elevation.	Focus RMS wells: MTs set to 2020-2022 minimum groundwater elevation. Non-focus RMS wells: MTs set to 2020-2022 minimum groundwater elevation, minus a 15-25 ft margin (set based on local analyses of potential well impacts and subsidence risk, whichever is limiting).
Measurable Objective (MO)	Mean of the most recent 5 years of available groundwater elevation measurements up to 2020.	All RMS wells: 2011-2015 average groundwater elevation.
Interim Milestones (IM)	Equal to MO in all years (2027, 2032, and 2037)	Focus RMS wells: Groundwater elevations calculated as: 2027: MT - 5 years * 20-year avg rate of groundwater elevation change at the RMS well (2003-2023) 2032: MT 2037: MT + 1/2 * (MO - MT) Non-focus RMS wells: MO (2027, 2032, 2037)

Summary of Revisions (Continued)

Subsidence:

- **Revised monitoring based on InSAR** to provide for more frequent monitoring, with opportunity for benchmark checks.
- **Revised undesirable results** to speak to specific significant/unreasonable impacts to critical infrastructure (from analyses and discussions with infrastructure managers).
- **Revised minimum thresholds** set with a clear connection to undesirable results (i.e., rate by section, and cumulative maximum subsidence of 2 ft).
- **Provision for “yellow light” and “red light” triggers**, outlining specific actions that will guide the GSAs’ subsidence response and mitigation efforts.

SMC	Initial GSP (January 2022)	Revised GSP (April 2024)
Undesirable Result	20% or more monitoring sites (benchmarks) experience subsidence rates above the MT	Cumulative subsidence averaged over 1 PLSS section exceeds 2 feet from January 2024, OR Average rate of subsidence in 10 or more contiguous PLSS sections, in any configuration, exceeds 0.1 feet per year in two consecutive years.
Minimum Threshold (MT)	0.5 feet per five years	Cumulative Subsidence MT: 2 feet from January 2024 Rate of Subsidence MT: 0.1 feet per year
Measurable Objective (MO)	0.25 feet per five years	0 feet per year
Interim Milestones (IM)	Equal to MO in all years (2027, 2032, and 2037)	January 2027: 0.3 feet per year (maximum rate of subsidence averaged over 2015-2023) January 2032: 0.1 feet per year (MT) January 2037: 0.08 feet per year (75 percent of the MT)

Next Steps

April 12, 2024

Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

13

Next Steps

- Final Revised GSP anticipated to be completed on April 16, 2024
- Final Revised GSP approval at a public hearing(s) on April 19, 2024
- Submittal to DWR anticipated on April 22, 2024
 - Before **April 23, 2024 deadline**



April 12, 2024

Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

14



April 23, 2024

Paul Gosselin
Deputy Director for Sustainable Groundwater Management
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

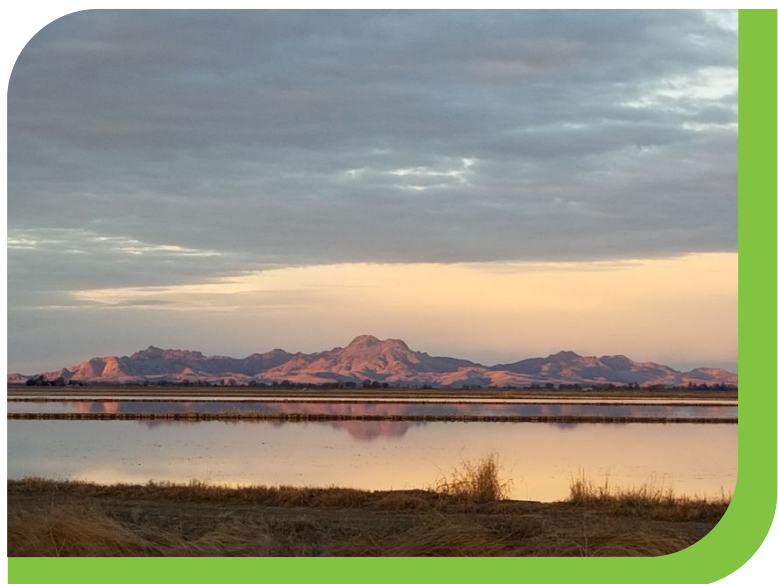
Sent Electronically

RE: Revisions to the 2022 Colusa Subbasin Groundwater Sustainability Plan

Dear Mr. Gosselin:

In January 2022, the Colusa Groundwater Authority (CGA) Groundwater Sustainability Agency (GSA) and the Glenn Groundwater Authority (GGA) GSA jointly submitted an initial Groundwater Sustainability Plan (Initial GSP) for the Colusa Subbasin (Subbasin) to the California Department of Water Resources (DWR). The Initial GSP outlined the CGA's and GGA's (jointly referred to as the GSAs) plan to achieve and maintain sustainable groundwater conditions in the Subbasin by 2042, consistent with the Sustainable Groundwater Management Act (SGMA). Development of the Initial GSP was completed through extensive technical efforts and stakeholder engagement processes spanning more than two years. Subsequent GSP revisions in 2023-2024, leading to this Revised GSP, have likewise been made through a public-facing process with consideration of stakeholder comments at public GSA governing body meetings, GSA Technical Advisory Committee (TAC) meetings, and public hearings. The Initial GSP submitted in January 2022 and this Revised GSP are the product of these public processes and reflect a balance of local interests across a broad and diverse cross-section of stakeholders and beneficial uses and users of groundwater in the Subbasin.

The GSAs pursued development of the Initial GSP utilizing the best available science, data, and credible information for making decisions leading up to 2022. Unfortunately, drought conditions in 2020-2022 coincided with the development, and subsequent approval, of the Initial GSP, a timing that did not permit complete evaluation and inclusion of data from those years in the Initial GSP. The circumstances of that period – including historic reductions in surface water supply allocations – contributed to groundwater conditions that differed vastly from those observed in the historical and current periods evaluated in the Initial GSP. Sustained



and improved access to contract surface water supplies is critical and inextricably tied to groundwater sustainability, and is necessary for the ongoing vitality of the Subbasin and its communities.

On October 26, 2023, DWR completed its evaluation of the Initial GSP and transmitted a letter to the GSAs communicating its determination that the Initial GSP was “incomplete” pursuant to Section 355.2(e)(2) of the GSP Regulations (please see enclosed).¹ As noted in DWR’s October 26, 2023 letter, the GSAs had 180 days, the maximum allowed by GSP Regulations, to address three identified deficiencies and submit the Revised GSP to DWR by April 23, 2024. A summary of the three deficiencies identified in DWR’s October 26, 2023 letter is as follows:

- **DWR found that the Initial GSP did not include a reasonable assessment of overdraft conditions and a reasonable means to mitigate overdraft,**
- **DWR found that the sustainable management criteria (SMC) for chronic lowering of groundwater levels were not substantially compliant with the GSP regulations, and**
- **DWR found that the SMC for subsidence were not substantially compliant with the GSP regulations.**

The GSAs worked closely and cooperatively with DWR to develop the Revised GSP, and met with DWR five (5) times from December 2023 through March 2024. **Table 1** outlines the DWR consultation meeting dates and the primary topics discussed in each meeting.

Table 1. Summary of DWR Consultation Meetings during Colusa Subbasin GSP Revisions.

Meeting Date	Primary Topic(s)
December 19, 2023	Overview of deficiency topics and approaches for resolution
January 22, 2024	Overdraft revisions, proposed approach for projects and management action revisions
February 16, 2024	Domestic well mitigation and demand management programs, groundwater level sustainable management criteria
March 14, 2024	Subsidence monitoring and sustainable management criteria, groundwater level sustainable management criteria
March 25, 2024	Subsidence monitoring and sustainable management criteria, demand management program

For each of the consultation meetings, the GSAs provided DWR staff with a detailed agenda and/or questions or materials for discussion ahead of time in an effort to solicit a meaningful and productive discussion. The provided agendas and materials are enclosed with this cover letter.

¹ California Code of Regulations (CCR), Title 23 Waters, Division 2 Department of Water Resources, Chapter 1.5 Groundwater Management, Subchapter 2 Groundwater Sustainability Plans.

The GSAs appreciate DWR staff's willingness to work cooperatively through the identified deficiencies, including open discussion about the subsequent corrective actions that would be necessary to facilitate DWR's approval of the Revised GSP. The GSAs want to thank DWR for their cooperative stance and thoughtful direction on each of the deficiencies.

This Revised GSP has been developed in consideration of the feedback received from DWR and robust discussions among the GSA Boards, TACs, and public regarding each of the deficiency topics. The GSAs have worked diligently during the 180-day consultation period to carefully and thoroughly develop the Revised GSP as a comprehensive response to DWR's identified deficiencies with the Initial GSP.

Summary of Revisions

In an effort to streamline DWR's review of the Revised GSP, the GSAs have prepared the following summary of revisions made in response to each of the identified deficiencies. The GSAs have also prepared a more detailed matrix (enclosed) that outlines each of the defined deficiencies, a general description of the deficiency, the corrective action recommended by DWR, where the deficiency was addressed in the Revised GSP, how the deficiency was addressed in the Revised GSP, and the corresponding direction from DWR that informed the revision.

As you will see, and consistent with your recommendations, the GSAs are proposing significant Policy and Program proposals that will result in significant changes to the Revised GSP that include, but are not limited to:

Projects and Management Actions

- Development and execution of a **Demand Management Program Memorandum of Understanding (MOU)** that clearly outlines the foundational components, anticipated scope, and estimated cost of the demand management program and groundwater allocation in the Subbasin, and the GSAs' commitment to further refine the program over the next two years with implementation commencing no later than January 1, 2027 if both boards agree to implement the program based on overall benefits or if undesirable results are still occurring in the Subbasin. The program is being refined with the goal of addressing and preventing overdraft, groundwater level decline, and subsidence and related undesirable results during the GSP Implementation Period, as defined in the Revised GSP, by reducing demand for groundwater in the Subbasin. See Section 6.3.6 and Appendix 6E of the Revised GSP for details.
- Development and execution of a **Domestic Well Mitigation Program MOU** that clearly outlines the foundational components, anticipated scope, and estimated cost of the program, and the GSAs' commitment to further refine the program over the next year with the program beginning no later than January 1, 2026. The program is being refined in order to mitigate undesirable results for drinking water well users that may occur during the GSP implementation period

while the GSAs implement other projects and management actions (PMAs) to achieve sustainability. See Section 6.3.7 and Appendix 6F of the Revised GSP for details.

- Updates to other GSP projects to include new, available details regarding the scope, timeline, and benefits of planned and proposed projects that would help to mitigate overdraft, stabilize and bolster groundwater levels, and reduce subsidence.

Overdraft

- Revision of the Subbasin overdraft estimate through analysis of empirical groundwater elevation data from representative monitoring site (RMS) wells in the Subbasin over a more recent, current period from 2016-2021. This analysis resulted in a revised overdraft estimate of 62,000 acre-feet per year. The revision is consistent with the approach used to quantify groundwater storage changes in the Colusa GSP Annual Reports.
- Provision for recurring evaluation of overdraft in the Subbasin each year in the Annual Report, based on newly available data from RMS wells, and use of this information to inform adaptive management of the Subbasin through adaptive implementation of PMAs.

Groundwater Level Sustainable Management Criteria (SMC)

- Revision and clarification of what constitutes undesirable results (URs) related to groundwater levels, particularly in regard to drinking water well users, subsidence, and other beneficial uses and users of groundwater. Revisions include quantitative supporting information and justification, including analysis of conditions in the Subbasin during the 2020-2022 drought period.
- Revision of the groundwater level SMC (**Table 2**) to provide for:
 - Clear representation and evaluation of local conditions in different areas of the Subbasin, distinguishing between:
 - “Focus RMS wells” (18 of 48 total): RMS wells in areas where URs have occurred already, as observed by nearby subsidence and/or domestic wells impacts during the 2020-2022 drought period.
 - “Non-Focus RMS wells” (30 of 48 total): RMS wells in areas where URs have not occurred, as observed by the same metrics.
 - Minimum thresholds (MTs) that are clearly related to and will avoid URs:
 - Focus RMS wells: MTs set to 2020-2022 lows, when URs occurred.
 - Non-focus RMS wells: MTs set to 2020-2022 lows, minus a 15-25 ft margin set based on local analyses of potential well impacts and subsidence risk to determine a threshold beyond which URs may occur.
 - Subbasin-wide URs occur when 12.5% (6 of 48) RMS wells in the Subbasin exceed their MTs for two consecutive fall minimum values.

- Measurable objectives (MOs) that represent pre-SGMA conditions (2011-2015 average).
- Interim milestones (IMs):
 - Focus RMS wells: IMs set to provide a realistic path from current conditions to the MOs, given the GSAs’ plans for domestic well mitigation and implementation of PMAs, including demand management.
 - Non-focus RMS wells: Set to the MOs

Table 2. Revisions to the Groundwater Level Sustainable Management Criteria.

SMC	Initial GSP (January 2022)	Revised GSP (April 2024)
Undesirable Result	Occurs when 25% of RMS wells (12 of 48) continuously fall below their MT for 24 consecutive months	Occurs when any 12.5% of RMS wells (any 6 of 48) fall below their MT for two consecutive fall minimum measurements.
Minimum Threshold (MT)	The lower of: 1. The elevation corresponding to the 20th percentile of nearby domestic well depths, or 2. 50% of measured historical groundwater elevation range below the historical measured low elevation.	<u>Focus RMS wells</u> : MTs set to 2020-2022 minimum groundwater elevation. <u>Non-focus RMS wells</u> : MTs set to 2020-2022 minimum groundwater elevation, minus a 15-25 ft margin (set based on local analyses of potential well impacts and subsidence risk, whichever is limiting).
Measurable Objective (MO)	Mean of the most recent 5 years of available groundwater elevation measurements up to 2020 (a fixed value, not a rolling average).	<u>All RMS wells</u> : 2011-2015 average groundwater elevation.
Interim Milestones (IM)	Equal to MO in all years (2027, 2032, and 2037)	<u>Focus RMS wells</u> : Groundwater elevations calculated as: 2027: $MT - 5 \text{ years} * 20\text{-year average rate of groundwater elevation change at RMS well (2003-2023)}$ 2032: MT 2037: $MT + 1/2 * (MO - MT)$ <u>Non-focus RMS wells</u> : MO (2027, 2032, and 2037)

Subsidence Monitoring and SMC

- Revision of the subsidence monitoring program to provide for more frequent monitoring of conditions using Interferometric Synthetic Aperture Radar (InSAR) data.
- Evaluation of observed subsidence impacts on critical infrastructure, land uses, other beneficial uses and users or groundwater through a stakeholder-driven evaluation process. This evaluation process will be repeated annually moving forward by a **Colusa Subbasin Critical Infrastructure Working Group** to ensure that critical infrastructure managers and their respective observations and interests are properly integrated into sustainable groundwater management decisions.
- Revision and clarification of what constitutes undesirable results (URs) related to subsidence, particularly in regard to critical infrastructure, land uses, and other beneficial uses and users of groundwater. Importantly, this led to the establishment of an **additional criterion for a subsidence-related UR if more than two feet of cumulative subsidence occurs within any single Public Land Survey System (PLSS) section** (i.e., one square mile or 640 acres) subsequent to January 2024 in order to be protective of critical infrastructure (e.g., water supply canals) in the Subbasin.
- Revision and clarification of the subsidence SMC (**Table 3**) to provide for:
 - MTs that are clearly related to and will avoid URs based on analyses of critical infrastructure.
 - MOs that represent sustainable conditions with no long-term subsidence.
 - IMs that provide a realistic path from current conditions to the MOs, given the groundwater level SMC and the GSAs' planned PMAs, including demand management.

Table 3. Revisions to the Subsidence Sustainable Management Criteria.

SMC	Initial GSP (January 2022)	Revised GSP (April 2024)
Undesirable Result	20% or more monitoring sites (benchmarks) experience subsidence rates above the MT	<p><u>Cumulative subsidence</u> averaged over 1 PLSS section exceeds 2 feet from January 2024, OR</p> <p><u>Average rate of subsidence</u> in 10 or more contiguous PLSS sections, in any configuration, exceeds 0.1 feet per year in two consecutive years.</p>
Minimum Threshold (MT)	0.5 feet per five years	<p><u>Cumulative Subsidence MT:</u> 2 feet from January 2024</p> <p><u>Rate of Subsidence MT:</u> 0.1 feet per year</p>
Measurable Objective (MO)	0.25 feet per five years	0 feet per year
Interim Milestones (IM)	Equal to MO in all years (2027, 2032, and 2037)	<p>January 2027: 0.3 feet per year (maximum rate of subsidence averaged over 2015-2023)</p> <p>January 2032: 0.1 feet per year (MT)</p> <p>January 2037: 0.08 feet per year (75 percent of the MT)</p>

Five-Year Timeline for GSP Implementation

The GSAs recognize the clear need for urgent action to mitigate overdraft, groundwater level decline, and subsidence during the GSP Implementation Period in order to achieve and maintain sustainable groundwater conditions in the Subbasin by 2042.

To that end, **the GSAs have developed the following timeline that will guide GSP implementation activities through the next five years, starting in the second quarter of 2024 (Q2 2024) and running through the first quarter of 2029 (Q1 2029) (Table 4).** The GSAs are committed to moving forward with GSP implementation actions, including:

- SGMA compliance (annual reports, periodic evaluations and updates)
- Long-term funding planning (Paying for GSP implementation)
- Project implementation
- Management action implementation, including **tasks and timelines for development and implementation of the domestic well mitigation and demand management programs** (a more detailed version of the five-year timeline is included as an enclosure).
- Study implementation in order to continue closing critical data gaps
- **Public engagement and outreach**

Table 4. Summarized Five-Year Timeline for GSP Implementation, including SGMA Compliance, Long-term Funding Planning, Project Implementation, Domestic Well Mitigation (Management Action Implementation), Demand Management (Management Action Implementation), Study Implementation, and Public Engagement and Outreach. A more detailed version of the timeline is included as an enclosure.

Task	Subtask	Q2-2024	Q3-2024	Q4-2024	Q1-2025	Q2-2025	Q3-2025	Q4-2025	Q1-2026	Q2-2026	Q3-2026	Q4-2026	Q1-2027	Q2-2027	Q3-2027	Q4-2027	Q1-2028	Q2-2028	Q3-2028	Q4-2028	Q1-2029	
SGMA Compliance	GSP Annual Reports			■	■			■	■			■	■			■	■			■	■	
	GSP Periodic Evaluation and Updates						■	■	■	■	■	■	■	■	■							■
Long-term Funding Planning	Update Revenue Requirements		■	■	■	■	■	■	■	■	■	■										
	Implement New Rates													■	■	■	■	■	■	■	■	■
Project Implementation	Obtain Programmatic EIR for Projects	■	■	■	■	■	■	■														
	Refine/Develop Projects	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Implement Projects	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Domestic Well Mitigation (Management Action Implementation)	Refine Domestic Well Mitigation Program		■	■	■	■	■	■														
	Implement Domestic Well Mitigation Program									■	■	■	■	■	■	■	■	■	■	■	■	■
Demand Management (Management Action Implementation)	Refine Mandatory Demand Management/Groundwater Allocation Program		■	■	■	■	■	■	■	■	■	■										
	Implement Demand Management Program													■	■	■	■	■	■	■	■	■
Study Implementation (Data Gaps)	Refine/Develop Studies	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Implement Studies to Fill Data Gaps	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Public Engagement and Outreach		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Legend:

Recurring/Ongoing Activity
Planning/Development/Permitting/Construction
Implementation

The GSAs have laid out ambitious steps to implement the GSP and to achieve groundwater sustainability in the Subbasin. This timeline provides a clear plan for moving forward with those actions. To avoid any delay in implementation while awaiting DWR's response to this submittal, the Boards are committed to jointly meeting, coordinating, and moving forward with the tasks laid out in this timeline following the submittal of this Revised GSP.

As is evidenced by the GSAs' ongoing actions to implement the Initial GSP since its submittal in January 2022, and the subsequent aggressively protective revisions included in this Revised GSP, the GSAs remain steadfast in their commitment to locally-led sustainable management of groundwater resources in the Subbasin. Should you have any questions or concerns, please feel free to contact me via phone at 530.934.6540 or email at lhunter@countyofglenn.net.

Sincerely,

Lisa Hunter
Colusa Subbasin GSP Plan Manager

Enclosures: Summary of Changes in the Revised Colusa Subbasin GSP
Detailed Five-Year Timeline for GSP Implementation
Copy of October 26, 2023, Letter from DWR
December 19, 2023, Meeting Agenda and Materials
January 22, 2024, Meeting Agenda and Materials
February 16, 2024, Meeting Agenda and Materials
March 14, 2024, Meeting Agenda and Materials
March 25, 2024, Meeting Agenda and Materials
Revised Colusa Subbasin GSP

cc: Colusa Groundwater Authority Board of Directors
Glenn Groundwater Authority Board of Directors

MEMORANDUM OF UNDERSTANDING
ESTABLISHING A DOMESTIC WELL MITIGATION PROGRAM
FOR THE COLUSA SUBBASIN OF THE SACRAMENTO VALLEY GROUNDWATER BASIN

Highlighted content has been refined with feedback received as of April 1, 2024.

This Memorandum of Understanding (“MOU”) is entered into on this ___ day of ___ 2024 (the “Effective Date”), by and between the Groundwater Sustainability Agencies (“GSAs”) of the COLUSA GROUNDWATER AUTHORITY (“CGA”) and the GLENN GROUNDWATER AUTHORITY (“GGA”), collectively hereinafter referred to as the “Parties,” or individually as the “Party.”

RECITALS

- A. **WHEREAS**, groundwater and surface water resources within the Colusa Subbasin of the Sacramento Valley Groundwater Basin (DWR Bulletin 118 No. 5-021.52) (Subbasin) are vitally important resources, in that they provide the foundation to maintain and fulfill current and future agricultural, domestic, environmental, industrial, and municipal needs, and to maintain the economic viability, prosperity, and sustainable management of the Subbasin; and
- B. **WHEREAS**, in 2014 the California Legislature passed a statewide framework for sustainable groundwater management, known as the Sustainable Groundwater Management Act, California Water Code § 10720-10737.8 (SGMA), pursuant to Senate Bill 1168, Senate Bill 1319, and Assembly Bill 1739, which was approved by the Governor on September 16, 2014. and went into effect on January 1, 2015; and
- C. **WHEREAS**, the Subbasin has been designated by the California Department of Water Resources (DWR) as a high-priority subbasin and is subject to the requirements of SGMA; and
- D. **WHEREAS**, SGMA requires that all medium and high priority groundwater basins in California be managed by a GSA, or multiple GSAs, and that such management be implemented pursuant to an approved Groundwater Sustainability Plan (GSP), or multiple GSPs; and
- E. **WHEREAS**, the Colusa Subbasin is being managed by two GSAs whose boundaries are as set-forth in **Exhibit A**; and
- F. **WHEREAS**, the CGA and GGA have collectively developed one GSP, such that the Subbasin is managed under one GSP; and
- G. **WHEREAS**, on January 28, 2022, the Parties submitted the GSP to DWR; and
- H. **WHEREAS**, on October 26, 2023, DWR determined the GSP was incomplete and would require revisions prior to being determined as adequate under SGMA; and
- I. **WHEREAS**, SGMA defines sustainability as the management of groundwater that can be maintained during the 20-year GSP Implementation Period without causing undesirable results; and

- J. **WHEREAS**, under SGMA the GSAs are responsible for managing the Subbasin under the GSP to achieve and maintain sustainability according to conditions after SGMA was effective that are caused by groundwater management in the Subbasin; and
- K. **WHEREAS**, the Parties acknowledge that sustainable management may result in some groundwater level decline during the GSP Implementation Period prior to achieving sustainable groundwater conditions in the Subbasin by or before 2042 as described in the Revised GSP and this decline may give rise to adverse impacts to some domestic wells and shallow wells that supply drinking water users (e.g., public water systems and state small water systems) in the Subbasin (collectively hereinafter referred to as the “drinking water wells”); and
- L. **WHEREAS**, the Parties acknowledge that the number of drinking water wells that may be adversely impacted during the 20-year GSP Implementation Period (prior to 2042) is heavily dependent on hydrologic conditions, including precipitation and snowpack during that time period; and
- M. **WHEREAS**, the Parties acknowledge that the number of drinking water wells that may be adversely impacted during the 20-year GSP Implementation Period (prior to 2042) may be affected by implementing projects and management actions in the Subbasin; and
- N. **WHEREAS**, the Parties recognize that in order to obtain a determination that the Colusa GSP is adequate, DWR is seeking a firm commitment from the Parties to develop well mitigation and related actions to address impacts caused by their management of the Subbasin; and
- O. **WHEREAS**, the Parties acknowledge SGMA does not require GSAs to develop well mitigation programs; and
- P. **WHEREAS**, the Parties acknowledge that SGMA requires sustainable groundwater management; however, SGMA does not make GSAs responsible for injury from overdraft, nor does it require or assign any liability to GSAs to provide, ensure, or guarantee any level of drinking water quality or access; and
- Q. **WHEREAS**, the Parties acknowledge that the consideration, adoption, or implementation of any mitigation program will be limited to impacts related to GSA management, will not extend to mitigation issues related to the effects of normal wear and tear on drinking water wells and appurtenances, and will include express disclaimer that the GSAs cannot be held liable for any impacts from overdraft; and
- R. **WHEREAS**, the Parties acknowledge that well mitigation and related actions will be implemented in coordination with other programs in the Subbasin related to mitigating and resolving well issues and impacts, as applicable, including County-administered programs; and
- S. **WHEREAS**, the Parties have reviewed and considered the content and recommendations set-forth by Self-Help Enterprises, Leadership Counsel for Justice and Accountability, and the Community Water Center in their publication titled, “Framework for a Drinking Water Well Impact Mitigation Program;” and

- T. **WHEREAS**, the Parties have reviewed and considered the content and recommendations set-forth by DWR in its guidance document, “Considerations for Identifying and Addressing Drinking Water Well Impacts.”
- U. **NOW, THEREFORE**, in consideration of the mutual promises, covenants and conditions contained herein and these Recitals, which are hereby incorporated herein by this reference, the Parties agree to review, consider, and undertake mitigation actions for drinking water well impacts resulting from declining groundwater levels and subsidence that occur from GSA management activities during the GSP Implementation Period, through development and implementation of a Domestic Well Mitigation Program (Program) as follows:

AGREEMENT

1. PROGRAM ELIGIBILITY AND APPLICATION

Program eligibility criteria will be finalized, potentially including:

- Property eligibility (within Subbasin)
- Eligible mitigation versus non-eligible mitigation (what will and will not be covered) based on evaluation of whether issues are related to groundwater management, which may include evaluation of:
 - a. Groundwater levels
 - b. Timing of groundwater decline
 - c. Groundwater quality
 - d. Well casing
 - e. Well depth
 - f. Minimum threshold exceedances
 - g. Historical overdraft
 - h. Recent hydrology
 - i. Recharge programs
- Acute, short-term mitigation
- Chronic, long-term mitigation
- Identified areas of concern where minimum threshold exceedances and/or undesirable results have been documented.

Program application process (how property owners will apply to and be approved to participate in the Program):

- The Parties will draft an application, the purpose of which is to support determining eligibility, prioritization, well owner agreement, award, and early implementation.

Prioritization (order in which applications are processed and funding is allocated)

- Initial applications will be prioritized based on the date of submittal.

The Parties will consider whether there are other reasons to consider prioritization of well-mitigation, including, but not limited to, groundwater quality, number of people served, availability of interim supplies, and office of emergency services service.

The Parties will also specify non-eligible services, potentially including, but not limited to:

- Ongoing maintenance
- Landscaping
- Repair or replacement of piping/infrastructure associated with moving water from the repaired well itself to any other location

2. PROGRAM MITIGATION MEASURES

Program mitigation measures may include, but are not limited to:

- Short-term solutions in emergencies, such as delivery of bottled water and/or water tanks. (Considered only for temporary mitigation while other actions are in progress.)
- Deepening existing drinking water wells, or otherwise rehabilitating or replacing such wells (including abandonment of existing wells).
- Lowering pumps in existing drinking water wells, or replacing pumps in existing wells.
- Drinking water well consolidation (many-to-one).
- Connection to or development of public water systems to serve impacted communities.
- Connection to municipal water systems.

The Parties agree that the appropriate Program mitigation measures for each mitigated well will be informed by and determined following a structured, programmatic initial well evaluation process involving (but not limited to):

- Inspection of the conditions of the drinking water well, including assessment of the current or anticipated operational issue(s) associated with the well and underlying causes of those impacts.
- Determination that the well impacts are related to groundwater management during the GSP Implementation Period (e.g., not related to effects of normal wear and tear on drinking water wells)
- Determination and recommendation of an appropriate mitigation strategy (i.e., one of the potential Program mitigation measures above).

The Program is considered a temporary solution to mitigating domestic well impacts before achieving and maintaining sustainable groundwater conditions (by 2042).

The Program and implementation of program mitigation measures will be coordinated with other applicable programs in the Subbasin, including County-administered programs.

The parties anticipate that mitigation will occur only once for each well, and will be appropriate to and commensurate with the actual or anticipated well impacts resulting from groundwater management during the GSP Implementation Period. By way of example only, if a well is dry due to groundwater level decline, and deepening that well is the appropriate Program mitigation measure, the well will be deepened below the minimum threshold of the associated representative monitoring site well to reduce the likelihood that the same well impacts will not occur again during GSP implementation.

It is also anticipated that potential Program measures may include, but will not be limited to, well permitting or ordinances to spatially and vertically isolate new wells to minimize adverse impacts on existing drinking water wells. The design and implementation of such measures would be coordinated with existing and/or new County well permitting processes and ordinances.

The Parties agree that SGMA does not make GSAs responsible for injury from overdraft (i.e., the GSAs do not extract groundwater), nor does it require or assign any liability to GSAs to provide, ensure, or guarantee any level of drinking water quality or access.

3. PROPORTIONATE RESPONSIBILITY

The Parties agree to cooperate in good faith to determine each Party's proportionate responsibility for Program activities undertaken in connection with this Agreement.

4. FUNDING AND FINANCING

The Parties agree to fund the Program on an annual basis, commensurate with the scope of the Program and consistent with the final determination of each Party's proportionate responsibility, as determined in the manner provided for herein. Annual funding may be placed in one or more interest-bearing account(s) managed by one or both of the Parties, depending on whether the Program is managed by one of the Parties for the whole Subbasin, or each Party for their respective portion of the Subbasin, or a third party.

Estimated expenses for the Program are anticipated to range between \$3.5 to \$6 million for Program mitigation measures, assuming (for planning purposes), that approximately 166 drinking water wells may require mitigation. However, the estimated number of drinking water wells that may require mitigation and the estimated costs of mitigation are subject to refinement during Program development and will also depend on groundwater conditions within the Subbasin during GSP implementation.

However, these numbers are only estimated for planning purposes and are subject to revision during Program development.

It is anticipated that the Program funding will come from one, or a combination, of the following sources established by the Parties:

- Reserve fund

- GSA fees and assessment
- Funds generated through implementation of other projects and management actions (e.g., fines and/or penalties)
- County/state/federal funding, as available
- Other sources, as identified

5. BUDGET CYCLE AND REVIEW

The budget cycle of the Program shall be on a calendar year basis. Not less than once per year, the Parties shall convene a meeting to review Program implementation progress in that year and plan for Program implementation in the subsequent year.

6. TERM

The Program shall be developed and implementation shall begin no later than January 1, 2026 (the Program start date). The Program shall cover eligible mitigation as of the Program start date, and shall continue thereafter until groundwater sustainability is achieved during the GSP Implementation Period, or as otherwise directed by the Parties.

7. PROGRAM IMPLEMENTATION AND MANAGEMENT

Program management shall be facilitated by either:

- One of the Parties for the whole Subbasin; or
- Each Party, for their respective portion of the Subbasin.

Program management may be facilitated through a third party upon consent of both Parties.

The Parties agree that Program implementation governance may include the following:

- Program Implementation Committee (comprised of at least two representatives from each Party); or
- Advisory Committee (could include beneficial users, community organizers, non-governmental organizations, preferred contractors, and/or well drillers)
- GSA Boards of Directors.

To aid the Parties in Program development and implementation, a DRAFT Program organizational structure is as shown in **Exhibit B** and a DRAFT Program implementation flowchart is as shown in **Exhibit C**. That shown in **Exhibit B and Exhibit C** is only a DRAFT and shall not limit or otherwise constrain Program development and implementation.

While Program management decisions will be the responsibility of the Parties, it is anticipated that Program management will be coordinated with the management of other programs in the Subbasin related to mitigating and resolving drinking water well issues and impacts, as applicable, including County-administered programs.

8. WELL OWNER AGREEMENTS

After application, eligibility, and mitigation development, mitigation will need to be accompanied by a well owner agreement that includes several components, including but not limited to the following:

- Mitigation award (how will the costs of mitigation be reviewed and approved);
- Recordation of mitigation award;
- Post-mitigation responsibility (property owner to be responsible for operations, maintenance and repair of drinking water well);
- Indemnification of the GSA;
- Easement or land use permissions

9. ENVIRONMENTAL REVIEW

The Parties agree to cooperatively complete any environmental review as may be determined necessary for Program implementation. Any costs associated with environmental review shall be per the proportionate share as set-forth in this MOU.

10. NOTICES

All notices required or permitted by this MOU shall be made in writing, and may be delivered in person (by hand or by courier) or may be sent regular, certified, or registered mail or U.S. Postal Service Express Mail, with postage prepaid, or by facsimile transmission, or by electronic transmission (email) and shall be deemed sufficiently given if served in a manner specified herein.

The addresses and addressees noted below are the Party's designated address and addressee for deliver or mailing notices.

To Colusa Groundwater Authority GSA: Carol Thomas-Keefer, Program Manager
1213 Market Street
Colusa, CA 95932

To Glenn Groundwater Authority GSA: Lisa Hunter, Program Manager
225 North Tehama Street
Willows, CA 95988

Any Party may, by written notice to the other Party, specify a different address for notice. Any notice sent by registered or certified mail, return receipt requested, shall be deemed given on the date of delivery shown on the receipt card, or if no delivery date is shown, three days after the postmark date. If sent by regular mail, the notice shall be deemed given 48 hours after it is addressed as required in this section and mailed with postage prepaid. Notices delivered by United States Express Mail or overnight courier that guarantee next day delivery shall be deemed given 24 hours after delivery to the Postal Service or overnight courier. Notices

transmitted by facsimile transmission or similar means (including email) shall be deemed delivered upon telephone or similar confirmation of delivery (confirmation report from fax machine is sufficient), provided a copy is also delivered via personal delivery or mail. If notice is received after 4:00 p.m. or on a Saturday, Sunday or legal holiday, it shall be deemed received on the next business day.

IN WITNESS WHEREOF, the Parties have caused this MOU to be executed, each signatory hereto represents that he/she has been appropriately authorized to enter into this MOU on behalf of the Party whom he/she signs.

Colusa Groundwater Authority GSA

_____ Date

Glenn Groundwater Authority GSA

_____ Date

Exhibit A. Map of Colusa Subbasin GSAs.

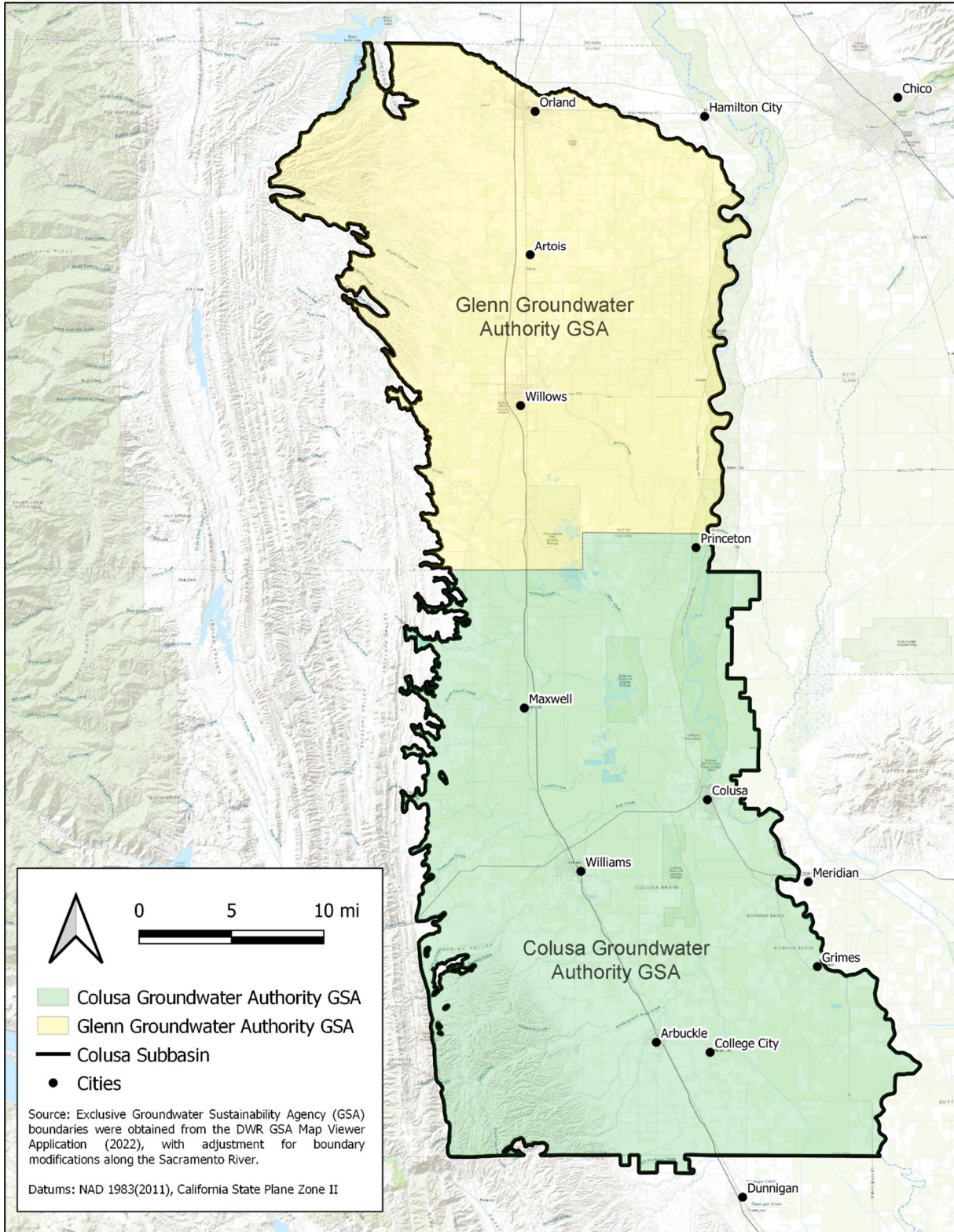


Exhibit B.
Colusa Subbasin Domestic Well Mitigation Program
DRAFT Organizational Structure.

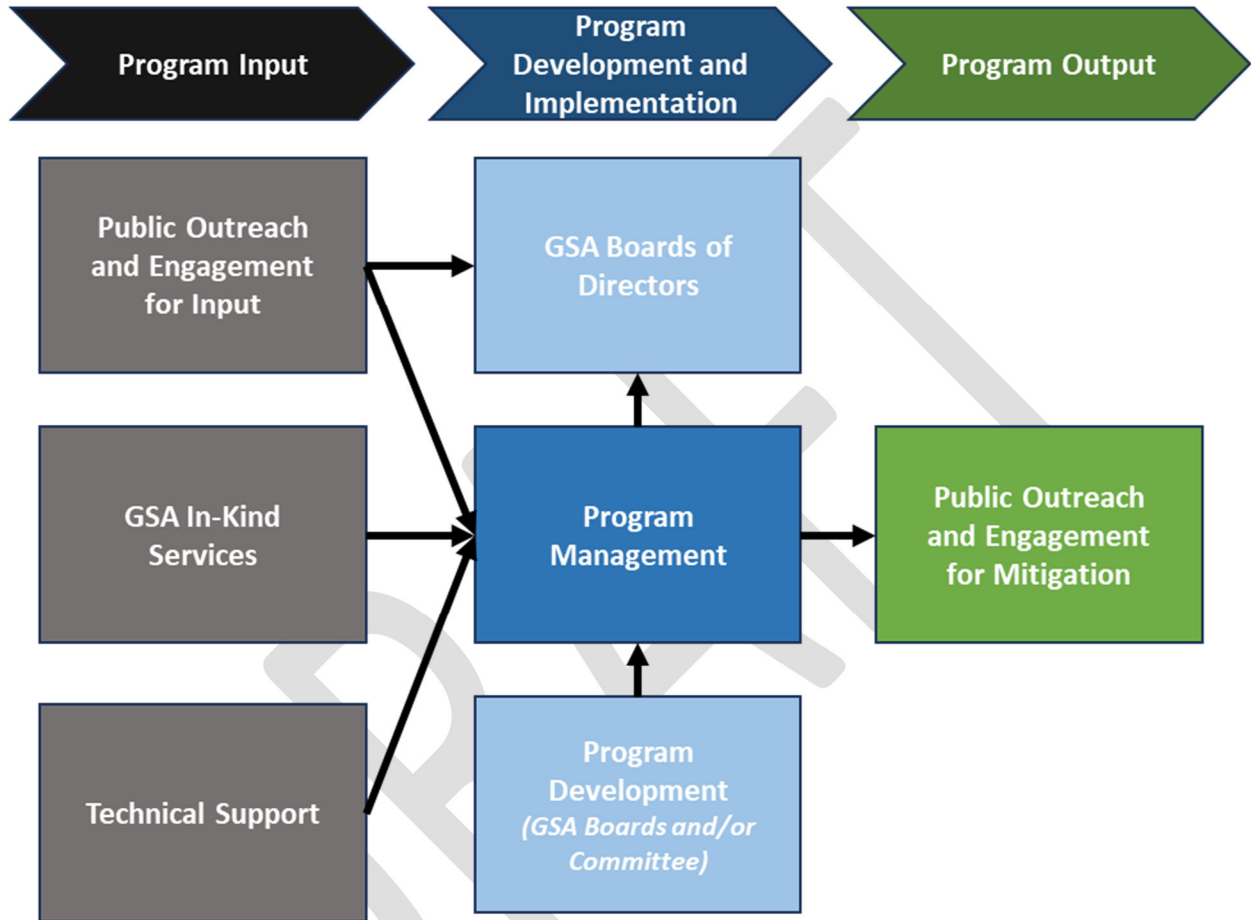
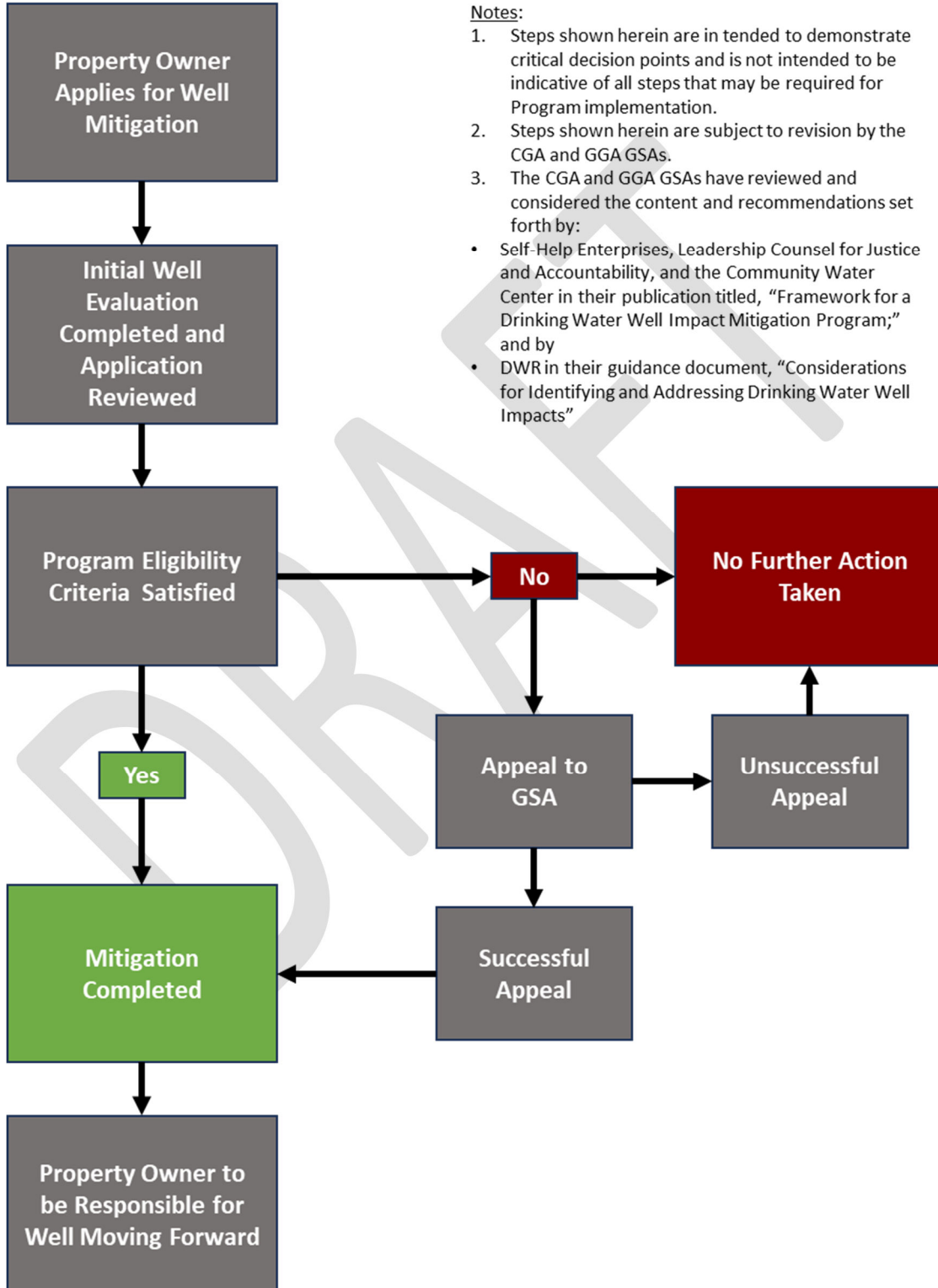


Exhibit C.

Colusa Subbasin Domestic Well Mitigation Program DRAFT Implementation Flowchart.



Colusa Subbasin Domestic Well Mitigation Program

Program Application

Developed/Revised <Date>

Background: The Domestic Well Mitigation Program (Program) is a cooperative effort funded and implemented by the Groundwater Sustainability Agencies (GSAs) in the Colusa Subbasin (Subbasin) through a Memorandum of Understanding (MOU). The purpose of the Program is to mitigate impacts to domestic wells and shallow wells that supply drinking water users (e.g., public water systems and state small water systems, collectively referred to as “drinking water wells”) resulting from declining groundwater levels and subsidence that occur from groundwater management activities outlined in the Subbasin Groundwater Sustainability Plan (GSP) during the 20-year GSP implementation period (through 2042, or until sustainable groundwater conditions are reached).

Through creation and implementation of this Program, the GSAs will facilitate mitigation measures for drinking water wells.

Instructions: Sections 1 and 2 of this Program Application shall be completed by the property owner of record (Applicant). Completion of this Program Application by the Applicant is not a guarantee of Program eligibility and does not bind the GSAs to provide mitigation as may be afforded under this Program. This Program Application is intended to initiate the review process. Should the Applicant qualify for mitigation under the Program, additional consultation, analysis, and documentation will be required.

Well incident report: Prior to submission of this Program Application, the Applicant shall submit a well incident report or equivalent report of well impacts to the County in which the well is located.

Initial well evaluation: Prior to submission of this Program Application, the Applicant shall obtain an initial drinking water well evaluation using one of the Licensed Preferred Contractors. A list of Licensed Preferred Contractors may be obtained by contacting the Program Manager as shown below. The initial drinking water well evaluation must clearly identify and document the current or anticipated operational issue(s) associated with the well for which mitigation is being sought. If the Applicant is awarded mitigation under the Program, the cost of the initial well evaluation may be reimbursed.

One-time Fee: Costs associated with determining Program eligibility shall be covered by the Applicant through a one-time fee of \$100. Review of this Program Application will not be initiated until receipt of the one-time fee is received by the Program Manager. If the Applicant is awarded mitigation under the Program, the one-time fee may be reimbursed. Payments shall be delivered to and made payable to:

(Contact Info for Domestic Well Mitigation Program Manager/Contact Person)

1. Applicant Information					
Last Name: Last Name		First Name: First Name		Middle: Middle Name	
Mailing Address: Mailing Address			City: City	State: CA ZIP: ZIP	
Property Address: Property Address			City: City	State: CA ZIP: ZIP	
Phone: Phone Number		Secondary Phone: Phone Number		County: County	
E-mail Address: E-mail Address				Date: Date	

2. Property Information					
Parcel Number: Parcel Number			Do you live on Property? <input type="checkbox"/> Yes <input type="checkbox"/> No		Number of Occupants at Dwelling: # of Occupants
Well Primary Purpose is to Meet Domestic Needs? <input type="checkbox"/> Yes <input type="checkbox"/> No		Well completion report and any other well construction information attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Have you participated in the program previously for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		Initial Well Evaluation Completed and Summary Documentation Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is Temporary Mitigation Necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No	Status of Well? <input type="checkbox"/> Producing <input type="checkbox"/> Not Producing <input type="checkbox"/> Underperforming	Depth of Well: Well Depth	Depth to Water: Depth to Water	Age of Well: Age of Well	Pump Capacity in GPM (when well was producing at normal capacity): GPM
Reasons for Current or Anticipated Dry Well: Please describe reason(s) for current or anticipated dry well					

3. To be Completed by Program Manager		
Program Application Received by:	Date of Receipt:	Program Application Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No
Initial Well Evaluation Included? <input type="checkbox"/> Yes <input type="checkbox"/> No	Review Applicability and Nexus to other Regional Programs	
Program Application Referred to:	One-time fee received? <input type="checkbox"/> No <input type="checkbox"/> Yes: Check Number: _____	

DRAFT

Colusa Subbasin Domestic Well Mitigation Program

DRAFT Initial Well Evaluation Outline To Be Completed by Licensed Preferred Contractor

The Initial Well Evaluation (Evaluation) is a formal, structured assessment of each drinking water well for which enrollment in the Domestic Well Mitigation Program is sought. The objectives of the Evaluation are to:

- Inspect the conditions of the well, including an assessment of the current or anticipated operational issue(s) associated with the well and underlying causes of those impacts.
- Determine that the well impacts are related to groundwater management during the GSP Implementation Period (e.g., not related to normal wear and tear)
- Determine and recommend an appropriate mitigation strategy (i.e., one of the potential Program mitigation measures identified in the MOU).

It is anticipated that the Evaluation will assess and address the following topics, although this list is subject to revision during Program development:

- Property Owner and Location Information
 - Name and contact information of property owner
 - Name and contact information of contact at well location (if different)
 - Well location (address, assessor's parcel number of parcel where well is located, coordinates identifying where well is located)
 - Nearest municipal or public water system (name, distance; mapping tool may be useful)
 - Nearest groundwater level RMS well (SWN, distance; mapping tool may be useful)
- Well Information
 - Well completion report number of well
 - State well number of well
 - Date drilled
 - Well construction details
 - Borehole information (depth, diameter)
 - Casing information (depth, diameter, material, wall thickness)
 - Gravel pack information (if it is gravel packed, depth interval of gravel pack)
 - Sanitary seal information (depth)
 - Perforation details (number, intervals, type, where pump is currently installed)
 - Remaining operational life expectancy of well, given well construction conditions and date drilled
- Pump Information
 - Date installed

***** DRAFT EXAMPLE *****

- Pump equipment (type, make, model)
- Pump installation (depth)
- Meter equipment (if meter is installed, type, make, model)

- Current Well Performance and Maintenance
 - Current depth to water (static, versus pumping)
 - Current discharge (rate in GPM)
 - Description of well/pump maintenance (if applicable, name of contractor)

- Well Issues
 - Has the well experienced past or current issues with regard to well yield, water levels, or other issues? (description)
 - Under current conditions, is the well currently:
 - Dry? (yes/no, description)
 - Likely to go dry? (yes/no, description)
 - Underperforming? (yes/no, description)
 - Timeline for conditions:
 - When did conditions start?
 - How long have conditions been experienced? (duration, chronic versus intermittent)
 - What are the recent groundwater elevations and trends at the nearest RMS well? (mapping tool and link to Annual Report hydrographs may be useful)
 - Maximum groundwater elevation in last 12 months
 - Minimum groundwater elevation in last 12 months
 - Average spring groundwater level rate of change over the past 20 years (rate in feet/year, from the Annual Report hydrographs)
 - Description of local conditions at the well or other applicable local information (with documentation and supporting references, as applicable)
 - Given the available information, what is the apparent cause of the well issues?

- Potential corrective action(s) to mitigate well issues:
 - Short-term, temporary mitigation (e.g., delivery of bottled water and/or water tanks while other actions are in progress)
 - Deepening existing wells, or otherwise rehabilitating or replacing wells (including abandonment of existing wells)
 - Lowering pumps in existing wells, or replacing pumps in existing wells
 - Well consolidation (many-to-one)
 - Connection to or development of public water systems to serve impacted communities
 - Connection to municipal water systems

Memorandum of Understanding
ESTABLISHING A DEMAND MANAGEMENT PROGRAM
FOR THE COLUSA SUBBASIN OF THE SACRAMENTO VALLEY GROUNDWATER BASIN

Highlighted content has been refined with feedback received as of April 1, 2024.

This Memorandum of Understanding (“MOU”) is entered into on this ___ day of ___ 2024 (the “Effective Date”), by and between the Groundwater Sustainability Agencies (“GSAs”) of the COLUSA GROUNDWATER AUTHORITY (“CGA”) and the GLENN GROUNDWATER AUTHORITY (“GGA”), collectively hereinafter referred to as the “Parties,” or individually as the “Party.”

RECITALS

- A. **WHEREAS**, groundwater and surface water resources within the Colusa Subbasin of the Sacramento Valley Groundwater Basin (DWR Bulletin 118 No. 5-021.52) (Subbasin) are vitally important resources, in that they provide the foundation to maintain and fulfill current and future agricultural, domestic, environmental, industrial, and municipal needs, and to maintain the economic viability, prosperity, and sustainable management of the Subbasin; and
- B. **WHEREAS**, in 2014 the California Legislature passed a statewide framework for sustainable groundwater management, known as the Sustainable Groundwater Management Act, California Water Code § 10720-10737.8 (SGMA), pursuant to Senate Bill 1168, Senate Bill 1319, and Assembly Bill 1739, which was approved by the Governor on September 16, 2014. and went into effect on January 1, 2015; and
- C. **WHEREAS**, the Subbasin has been designated by the California Department of Water Resources (DWR) as a high-priority subbasin and is subject to the requirements of SGMA; and
- D. **WHEREAS**, SGMA requires that all medium and high priority groundwater basins in California be managed by a GSA, or multiple GSAs, and that such management be implemented pursuant to an approved Groundwater Sustainability Plan (GSP), or multiple GSPs; and
- E. **WHEREAS**, the Colusa Subbasin is being managed by two GSAs whose boundaries are as set-forth in **Exhibit A**; and
- F. **WHEREAS**, the CGA and GGA have collectively developed one GSP, such that the Subbasin is managed under one GSP; and
- G. **WHEREAS**, on January 28, 2022, the Parties submitted the GSP to DWR; and
- H. **WHEREAS**, on October 26, 2023, DWR determined the GSP was incomplete and would require revisions prior to being determined as adequate under SGMA; and
- I. **WHEREAS**, SGMA defines sustainability as the management of groundwater that can be maintained during the 20-year GSP Implementation Period without causing undesirable results; and

- J. **WHEREAS**, under SGMA the GSAs are responsible for managing the Subbasin under the GSP to achieve and maintain sustainability according to conditions after SGMA was effective that are caused by groundwater management in the Subbasin; and
- K. **WHEREAS**, the Parties acknowledge that sustainable management may result in some groundwater level decline during the GSP Implementation Period prior to achieving sustainable groundwater conditions in the Subbasin by or before 2042 as described in the Revised GSP; and
- L. **WHEREAS**, the Parties agree that during the GSP Implementation Period it will be necessary to implement projects and management actions to achieve and maintain sustainable groundwater conditions in the Subbasin by or before 2042; and
- M. **WHEREAS**, the Parties acknowledge that successful implementation of planned GSP projects to achieve their intended recharge benefits during the 20-year GSP Implementation Period (prior to 2042) is dependent on adherence to the planned implementation timelines; and
- N. **WHEREAS**, the Parties acknowledge that successful implementation of planned GSP projects to achieve their intended recharge benefits during the 20-year GSP Implementation Period (prior to 2042) is dependent in part on uncertainties related to hydrologic conditions, including precipitation and snowpack, and available water supply during that time period; and
- O. **WHEREAS**, the Parties acknowledge that implementation of management actions will be necessary to offset these uncertainties related to project implementation and project benefits to ensure that sustainable groundwater conditions are achieved in the Subbasin by or before 2042; and
- P. **WHEREAS**, the Parties acknowledge that wet hydrologic conditions and faster implementation of projects may result in diminished need for management actions, and
- Q. **WHEREAS**, the Parties acknowledge that dry hydrologic conditions, prolonged drought, and delayed implementation of projects may result in an accelerated need for management actions; and
- R. **WHEREAS**, the Parties recognize that in order to obtain a determination that the Colusa GSP is adequate, DWR is seeking a firm commitment from the Parties for their consideration of management action(s) to address and mitigate overdraft, groundwater level decline, and subsidence during their management of the Subbasin; and
- S. **WHEREAS**, the Parties acknowledge that they cannot control groundwater conditions not caused by actions within the Subbasin; and
- T. **WHEREAS**, the Parties acknowledge that SGMA requires sustainable groundwater management; however, SGMA does not make GSAs responsible for injury from overdraft; and
- U. **WHEREAS**, the Parties acknowledge that management action(s) to address and mitigate overdraft, groundwater level decline, and subsidence will be implemented in coordination with other related programs in the Subbasin and in the region, as applicable.

V. **NOW, THEREFORE**, in consideration of the mutual promises, covenants and conditions contained herein and these Recitals, which are hereby incorporated herein by this reference, the Parties agree to review, consider, and undertake mitigation actions for demand management through development of a Demand Management Program (Program) as follows:

AGREEMENT

1. PROGRAM MEASURES

The Program is anticipated to include some subset of the following Program measures for demand reduction:

- **Voluntary Measures:** The Parties will consider and move forward voluntary measures for immediate implementation (at the Program start date, specified in Section 5). Measures may include, but are not limited to:
 - Best management practices (agronomic practices, soil moisture monitoring and management, delayed irrigation and/or regulated deficit irrigation, runoff capture, etc. to reduce groundwater extraction)
 - Water conservation (focusing on activities to reduce consumptive use and groundwater extraction)
 - Encouraging use of all available surface water in lieu of groundwater pumping
 - Multi-benefit land repurposing (e.g., recharge basins, renewable energy, habitat, recreational spaces)
 - Incentivized land use changes that provide net groundwater benefit
 - Dry farming
 - Fallowing (not associated with groundwater substitution transfers)
- **Adaptive Mandatory Measures:** The Parties commit to refining and preparing to implement mandatory measures between the date this MOU is fully executed and the Program start date. If undesirable results are still occurring in the Subbasin at the Program start date (specified in Section 5), the Parties commit to implementing mandatory measures for demand reduction no later than the Program start date. Measures will include, but are not limited to:
 - Groundwater allocations, considering:
 - Groundwater extraction or use restrictions, in coordination with the Counties
 - Well extraction restrictions, in coordination with the Counties
 - Water markets/trading and/or penalties and fee structures
- The Parties agree that adaptive mandatory measures are to be adaptively implemented commensurate with:
 - The amount of demand reduction required.

- The issue(s) facing the area(s) where the measure(s) are to be implemented, considering, but not confined to:
 - Options for regional implementation of certain actions (around a “Focus Area” where undesirable results are occurring), and/or
 - Options for Subbasin-wide implementation of certain actions (equal treatment of the Subbasin as a whole).
- The Parties agree that, under SGMA, GSAs do not have the authority to modify or otherwise change groundwater rights. Additionally, SGMA does not make the GSAs responsible for injury from overdraft (i.e., the GSAs do not extract groundwater), nor does it require or assign any liability to GSAs to provide, ensure, or guarantee any level of drinking water quality or access.

2. PROPORTIONATE RESPONSIBILITY

The Parties agree to cooperate in good faith to determine each Party’s proportionate responsibility for Program activities undertaken in connection with this Agreement.

3. FUNDING AND FINANCING

The Parties agree to fund the Program on an annual basis, commensurate with the scope of the Program and consistent with the final determination of each Party’s proportionate responsibility, as determined in the manner provided for herein. Annual funding may be placed in one or more interest-bearing account(s) managed by one or both of the Parties, depending on whether the Program is managed by one of the Parties for the whole Subbasin, or each Party for their respective portion of the Subbasin, or a third party.

Estimated expenses for the Program are anticipated to range between \$1-2 million for Program startup (years 1 through 3), and \$0.5-1 million for Program administration (e.g., management, monitoring, enforcement) thereafter (years 4+). However, these numbers are only estimated for planning purposes and are subject to revision during Program development.

It is anticipated that the Program funding will come from one, or a combination, of the following sources established by the Parties:

- Reserve fund
- GSA fees and assessment
- Funds generated through implementation of other projects and management actions (e.g., fines and/or penalties)
- County/state/federal funding, as available
- Other sources, as identified

4. BUDGET CYCLE AND REVIEW

The budget cycle of the Program shall be on a calendar year basis. Not less than once per year, the Parties shall convene a meeting to review Program implementation progress in that year and plan for Program implementation in the subsequent year.

5. TERM

The Program shall be developed and implementation shall begin no later than January 1, 2027 (the Program start date). Upon implementation, the Program shall continue in perpetuity unless otherwise directed by the Parties.

6. PROGRAM DEVELOPMENT

The Parties shall, as part of Program development, agree to define the Program's purpose, objectives, scope, roles and responsibilities, requirements, and potential outcomes.

The anticipated goal of the Program is to address and mitigate overdraft, groundwater level decline, and subsidence and related undesirable results during the GSP Implementation Period, as defined in the Revised GSP, by reducing demand for groundwater in the Subbasin.

Items for consideration during Program development include, but are not limited to:

- Definitions
- Program measures, including:
 - Voluntary Measures for immediate implementation (i.e., measures that will move forward at the Program start date)
 - Adaptive Mandatory Measures (i.e., measures that the Parties commit to refining and preparing to implement, such that they are ready to implement no later than the Program start date if undesirable results are still occurring in the Subbasin)
- Public outreach and engagement process
- Coordination of Program with other related programs in the Subbasin and in the region, as applicable
- Implementation considerations and protocol for phased adaptive implementation measures:
 - Identification of area(s) where measures are applicable
 - Determination of sustainable yield for those areas
 - Determination of an appropriate transition period from current to sustainable conditions (prior to 2042), considering uncertainties of the basin setting and of the timelines for other projects.
 - Process and timeline for implementing phased measures.
 - Process and timeline for evaluating and adapting measures to respond to changing conditions (in annual reports and periodic GSP evaluations).
 - Considerations for allocation development and enforcement, as applicable, related to consumed versus extracted groundwater
 - Monitoring and enforcement process

- Funding and financing, including the planned annual Program funding responsibilities of each Party (see Section 3).

These items shall be defined in a Program agreement to be agreed to and signed by the Parties according to the term indicated below.

7. PROGRAM IMPLEMENTATION AND MANAGEMENT

Program management shall be facilitated by either:

- One of the Parties for the whole Subbasin; or
- Each Party, for their respective portion of the Subbasin.

Program management may be facilitated through a third party upon consent of both Parties.

The Parties agree that Program implementation governance may include the following:

- Program Implementation Committee (comprised of at least two representatives from each Party); or
- Advisory Committee (could include beneficial users, community organizers, and/or non-governmental organizations)
- GSA Boards of Directors.

To aid the Parties in Program development and implementation, a DRAFT Program organizational structure is as shown in **Exhibit B** and a DRAFT Program implementation flowchart is as shown in **Exhibit C**. That shown in **Exhibit B and Exhibit C** is only a DRAFT and shall not limit or otherwise constrain Program development and implementation.

While Program management decisions will be the responsibility of the Parties, it is anticipated that Program management will be coordinated with the management of other programs in the Subbasin and region related to demand reduction, as applicable, including County-administered programs.

8. ENVIRONMENTAL REVIEW

The Parties agree to cooperatively complete any environmental review as may be determined necessary for Program implementation. Any costs associated with environmental review shall be per the proportionate share as set-forth in this MOU.

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IN WITNESS WHEREOF, the Parties have caused this MOU to be executed, each signatory hereto represents that he/she has been appropriately authorized to enter into this MOU on behalf of the Party whom he/she signs.

Colusa Groundwater Authority GSA

Date

Glenn Groundwater Authority GSA

Date

Exhibit A. Map of Colusa Subbasin GSAs.

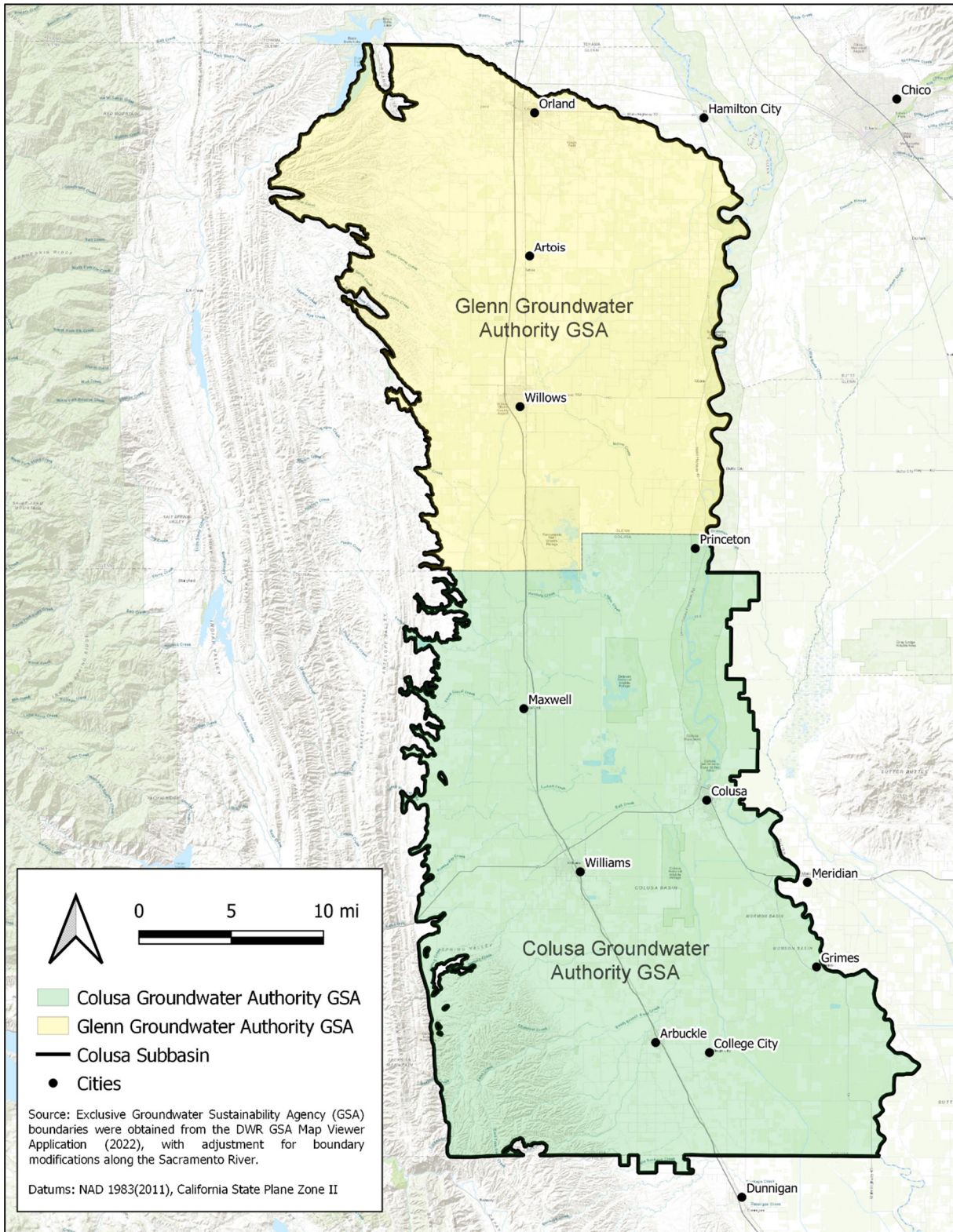


Exhibit B.
Colusa Subbasin Demand Reduction Program
DRAFT Organizational Structure.

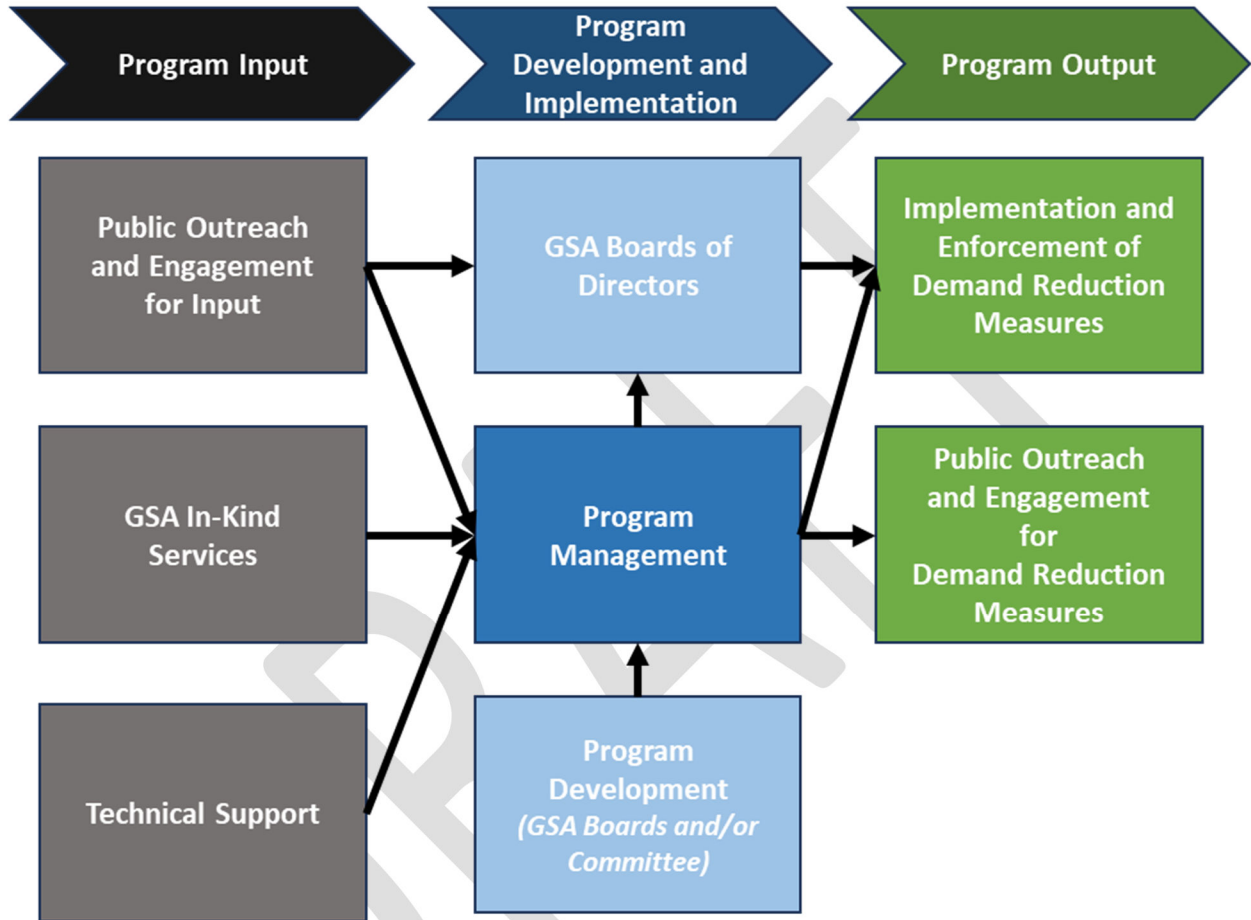
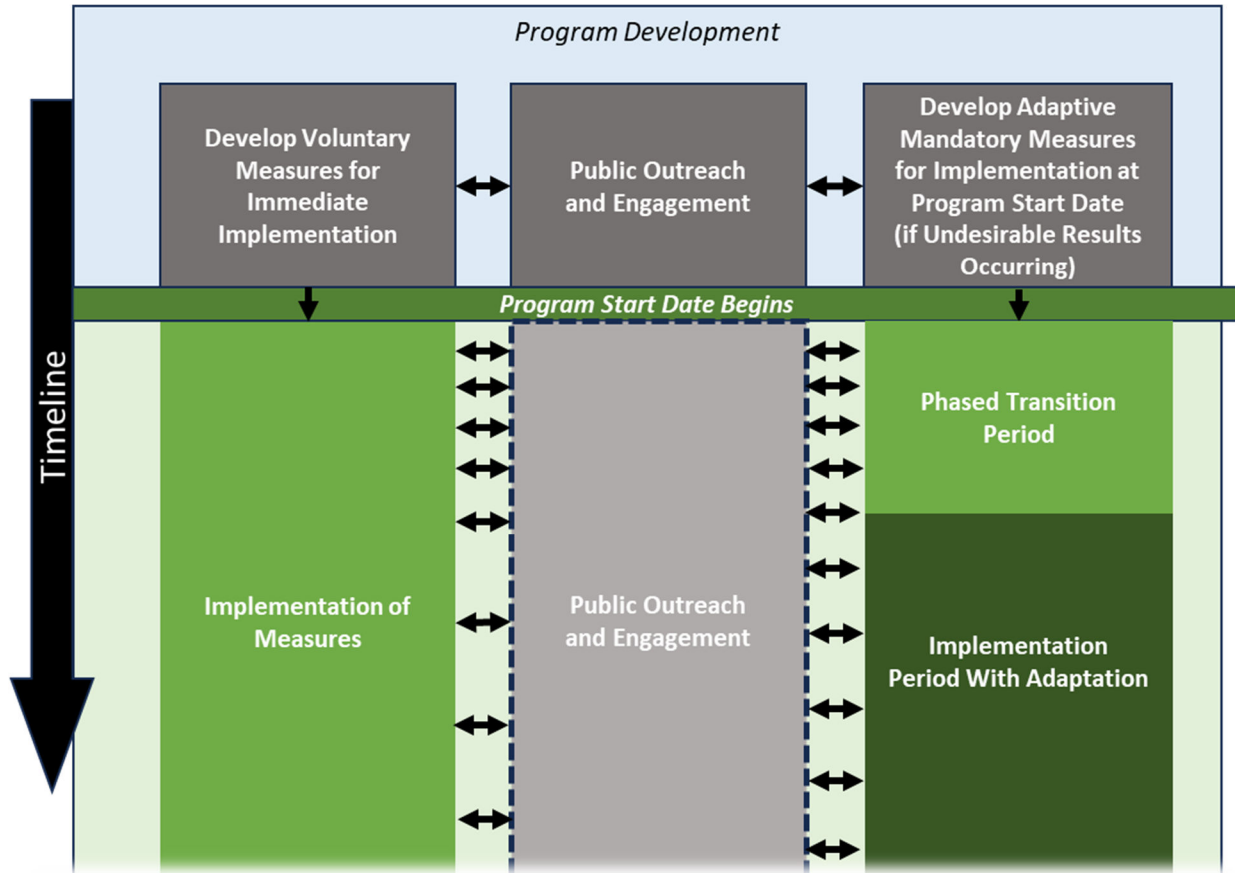


Exhibit C.

**Colusa Subbasin Demand Reduction Program
DRAFT Implementation Flowchart.**



Notes:

1. Steps shown herein are intended to demonstrate critical components and is not intended to be indicative of all steps that may be required for Program implementation.
2. Steps shown herein are subject to revision by the CGA and GGA GSAs.