



Joint Colusa Groundwater Authority and Glenn Groundwater Authority Board of Directors

Special Meeting Agenda

March 22, 2024 | 10:00 a.m.

225 North Tehama Street, Willows, CA 95988

Alternate Meeting Locations:

381 HCR 2424, Hillsboro, TX 76645

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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) (pg. 4)**

b. ***February 23, 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. 9)

a. **Discussion and concurrence on Groundwater Level Sustainable Management Criteria. (45 minutes)**

b. **Discussion on Land Subsidence monitoring network and Sustainable Management Criteria. (75 minutes)**

c. **Discussion and concurrence on formal agreement to develop a domestic well mitigation program. (30 minutes) (pg. 32)**

d. Discussion and concurrence on formal agreement to develop a demand management program (30 minutes) (pg. 48)

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: March 22, 2024

Background

The January 26, 2024 CGA/GGA Joint Board Meeting Minutes are attached.

The February 23, 2024 CGA/GGA Joint Board Meeting Minutes are being prepared for review and will be distributed under separate cover.

Recommendation

CGA and GGA Action: Approve 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.

Attachments

- January 26, 2024 CGA/GGA Joint Board Meeting Minutes (pg. 4)
- February 23, 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

Staff Report

To: CGA-GGA Joint Board

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

Date: March 22, 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.

The consultant team will share a summary of the Joint TAC discussions and Consultation Meetings with DWR, followed by discussion and concurrence on Groundwater Level Sustainable Management Criteria (SMC), discussion on Land Subsidence monitoring network and SMC, discussion and concurrence on formal agreement to develop a domestic well mitigation program, and discussion and concurrence on formal agreement to develop a demand management program.

Recommendation

1. Discuss and concur on Groundwater Level Sustainable Management Criteria.
2. Discuss Land Subsidence monitoring network and Sustainable Management Criteria and provide direction to consultant team.
3. Discuss and concur on formal agreement to develop a domestic well mitigation program.

4. Discuss and concur on formal agreement to develop a demand management program.

Attachments

- Presentation (draft) (pg. 11)
- Draft domestic well mitigation program agreement (pg. 32)
- Draft demand management program agreement (pg. 48)

DRAFT



Colusa Subbasin GSP Revisions

Joint GSA Board Meeting

March 22, 2024

Agenda

- 1. Timeline**
- 2. Overview of GSP Revisions**
- 3. Proposed Revisions:**
 - 1. Demand Management Program**
 - 2. Domestic Well Mitigation Program**
 - 3. Groundwater Level SMC**
 - 4. Subsidence Monitoring and SMC**
- 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 Released 04/19 – Joint GSA Board Meeting (Adopt Revised GSP) 04/22 – Submit Revised GSP

Overview of GSP Revisions

Takeaways from DWR Consultation Meetings (Through 03/14)

- DWR’s main concerns, priorities:
 - Existing conditions don’t indicate the subbasin is on track to reach sustainability.
 - Undesirable results (URs) must be justified (DWR senses that URs have happened).
- The revisions should focus on:
 - Developing management actions as means to address overdraft, groundwater (GW) conditions.
 - Revising the SMC for more justifiable URs, minimum thresholds (MTs).
- **Many proposed revisions discussed thus far are in line with DWR’s expectations** (domestic well mitigation, overdraft, groundwater level MTs/MOs, subsidence monitoring)
- **DWR is concerned about the potential for ongoing subsidence, is looking for:**
 - **Very stringent SMC and requirements around subsidence, AND/OR**
 - **Commitment to moving forward with enforceable demand management (GW allocations)**

March 22, 2024

Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

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Revised GSP Cover Letter and Implementation Timeline

- Preparing a cover letter for the Revised GSP outlining:
 - 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 timeline for GSP Implementation through Q1 2029, including:
 - Ongoing GSA coordination efforts (including GSA organizational structure)
 - 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

March 22, 2024

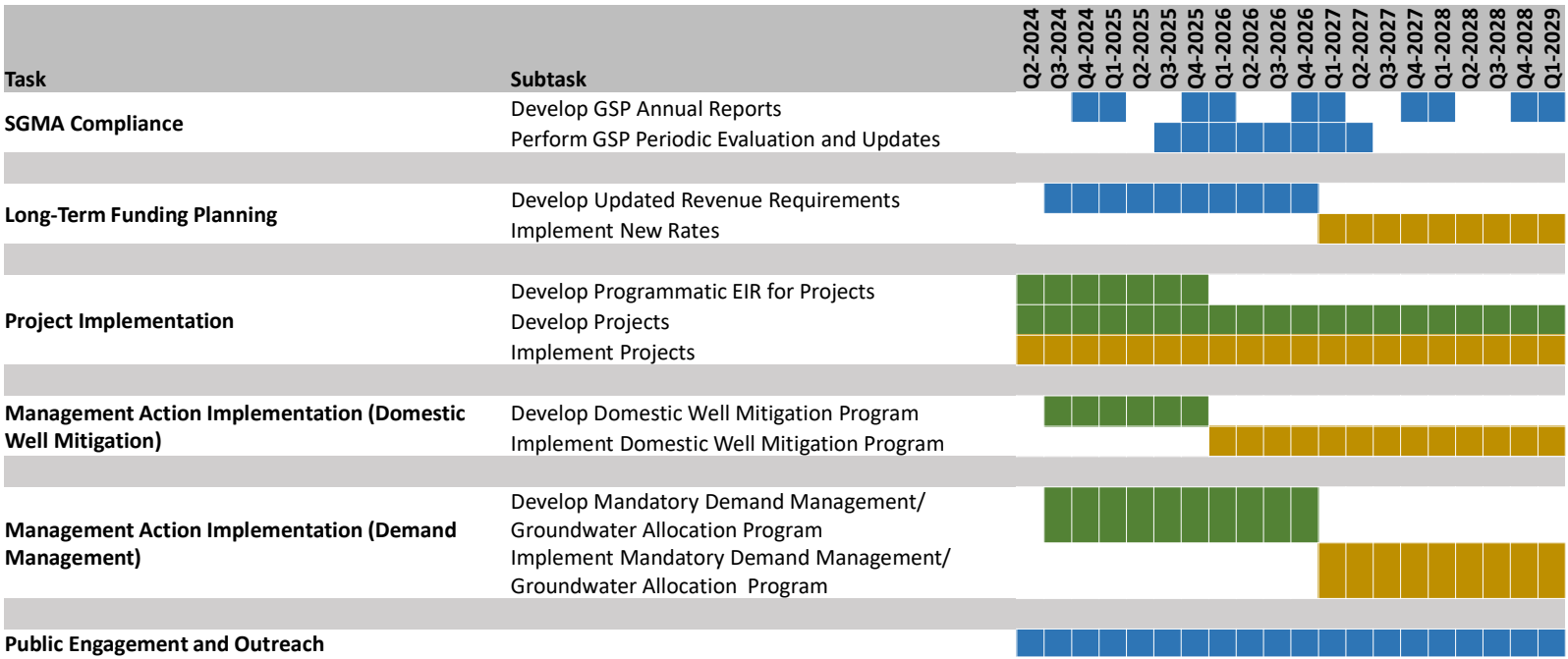
Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

6

Proposed 5-Year Workplan (Overview)

Legend:

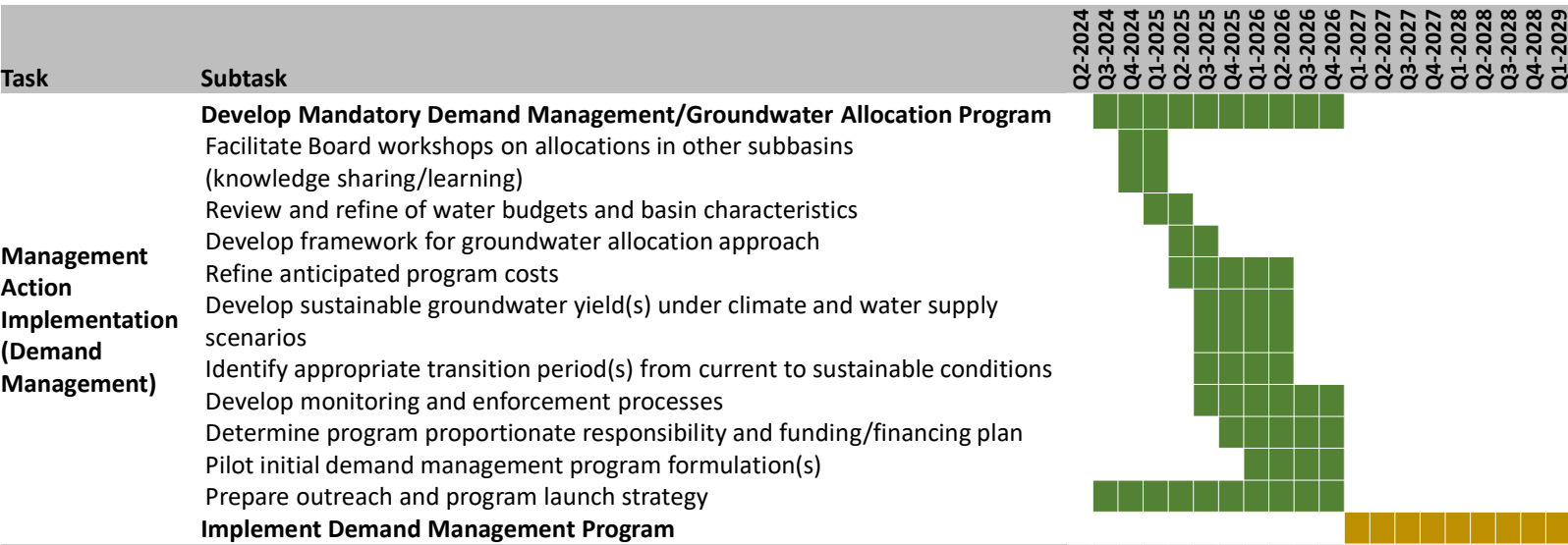
- Recurring/Ongoing Activity
- Planning/Development/Permitting/Construction
- Implementation



Proposed 5-Year Workplan (Demand Mgmt)

Legend:

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



Management Action DRAFT Agreements Demand Management Program

DWR's Concerns About Demand Management Commitment

- DWR is concerned about the potential for ongoing subsidence, is looking for:
 - Very stringent SMC and requirements around subsidence, AND/OR
 - Commitment to moving forward with enforceable demand management (GW allocations)
- Language around Program measures leaves flexibility, but uncertainty in DWR's view
 - Need stronger, overt commitment to enforceable demand management ("will" implement)
 - Current phrasing: "Measures to be considered and moved forward for phased adaptive implementation (commensurate with issues) ...may include...allocations"
 - Proposed phrasing:
 - The GSAs commit to develop and prepare to implement enforceable demand management (GW allocations) according to the Program term.
 - If URs are still occurring (e.g., subsidence still exceeds the MTs), the GSAs are committed to begin implementing enforceable demand management (GW allocations) beginning in 2027.
 - Recognizing there will need to be a transition period (existing → sustainable conditions)

Demand Management: Discussion and Recommendation

- Proposed Revisions for Discussion
 - MOU reviewed by staff and counsel
 - Program developed by January 1, 2027 (implement with transition period)
 - Draft estimated annual cost of between \$0.5M to \$2.0M dollars (likely decreasing over time)
- Recommendation
 - Proceed with finalizing proposed formal agreement for Demand Management with proposed refinements to phrasing around commitment to enforceable demand management (GW allocations)

Management Action DRAFT Agreements Domestic Well Mitigation Program

Domestic Well Mitigation: Discussion and Recommendation

- Proposed MOU for Discussion
 - MOU reviewed by staff and counsel
 - Program developed by January 1, 2026
 - Draft estimated cost of between \$4M to \$7M dollars total (99 to 166 domestic wells, depending on GW Level SMCs)
- Recommendation
 - Proceed with finalizing proposed formal agreement for Domestic Well Mitigation

Proposed Revisions: Groundwater Level (GWL) SMC

Groundwater Level (GWL) SMC: Discussion and Recommendation

■ Proposed Revisions for Discussion

- MT: 2020-2022 Lows (Focus RMS) or 2020-2022 Lows minus Margin (10-25 FT) (Non-Focus RMS)
 - Estimated total of 99 impacted domestic wells in non-focus areas (~ \$4M)
- MO: 2011-2015 Average
- 2027 IM: MT minus 5 YR * Avg Annual GWL Decline (Focus RMS) or MT (Non-Focus RMS)
 - Estimated total of 67 impacted domestic wells in focus areas (~ \$3M)
- Undesirable Results (URs) definition and identification:
 - URs experienced if GWL declines lead to (1) unmitigated domestic water well impacts, (2) subsidence impacts, (3) environmental impacts (monitored based on dry well reports, GSP monitoring networks)
 - Spatial extent: Between 1 and 6 RMS wells (*pending meeting #5 with DWR on 03/25/2024*)
 - Temporal persistence: Two consecutive fall measurements exceeding MT

■ Recommendation

- Proceed with finalizing proposed Groundwater Level Sustainable Management Criteria (SMCs) incorporating feedback from meeting #5 with DWR on 03/25/2024

Proposed Revisions: Subsidence Monitoring and SMC

Subsidence Monitoring and SMC: Discussion and Recommendation

- Proposed Revisions for Discussion
 - MT: 0.1 FT/YR
 - MO: 0.0 FT/YR
 - Spatial extent for UR: 10 contiguous sections (each 1 square mile or 640 AC) with mean subsidence (InSAR) exceeding MT
 - Temporal persistence for UR: 2-year average exceeding MT
 - Evaluation of critical infrastructure including water supply, transportation, energy, and flood control
- Recommendation
 - Proceed with finalizing proposed formal agreement for Subsidence Monitoring and Sustainable Management Criteria (SMCs)

Summary of Recommendations

Summary of Recommendations

- Demand Management: Proceed with finalizing proposed formal agreement for Demand Management with refinements to phrasing around commitment to enforceable demand management (GW allocations).
- Domestic Well Mitigation: Proceed with finalizing proposed formal agreement for Domestic Well Mitigation.
- Groundwater levels: Proceed with finalizing proposed Groundwater Level Sustainable Management Criteria (SMCs) incorporating feedback from meeting #5 with DWR on 03/25/2024.
- Subsidence: Proceed with finalizing proposed formal agreement for Subsidence Monitoring and Sustainable Management Criteria (SMCs).

Next Steps

Next Steps and Timeline

- DWR Consultation Meeting #5 on 03/25
 - Discuss subsidence revisions, SMC further with DWR
 - Ask remaining questions (demand management, domestic well mitigation, GWL SMCs, subsidence SMCs)
- Draft Revised GSP to be released for review on April 1
- Meeting with Joint GSA Boards to review Draft Revised GSP on April 12
- Anticipating Revised GSP approval at a public hearing(s) in April, followed by submittal to DWR (before **April 23, 2024**)



Additional Slides

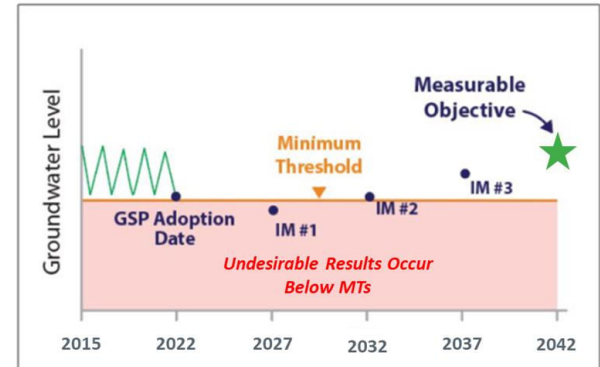
GSP Revision Process

- **Overdraft**
 - Move forward with overdraft revisions based on groundwater levels (Annual Report approach)
 - Provide for recurring evaluation each year (Annual Report)
- **Groundwater levels:**
 - Revise and clarify what constitute “significant/unreasonable” conditions (URs), with justification (particularly impacts to drinking water well users and relationship to subsidence)
 - Set MTs to avoid those undesirable results (MTs representing localized conditions)
- **Subsidence:**
 - Revise subsidence monitoring program for more frequent monitoring (benchmark survey vs. InSAR)
 - Quantify subsidence that would negatively impact identified critical infrastructure and land uses.
 - Clearly describe “significant/unreasonable” conditions (URs) for critical infrastructure and land uses.
 - Clearly justify how MTs relate to URs.
- **PMAs** (related to overdraft, groundwater levels, subsidence):
 - **Projects** (*lower priority*): Update available details on timeline, benefits
 - **Management Actions** (*higher priority*):
 - Prepare/sign formal agreements committing to domestic well mitigation and demand management.
 - Agreements should include a timeline, specific tasks/scope of each Program, estimated cost

Proposed Revisions: Groundwater Level (GWL) SMC (Detailed Background Information)

Relationship Between Sustainable Management Criteria (SMC)

- **Undesirable Results (URs):** Significant and unreasonable reduction of GWL, depletion of supply (*avoid*)
- **Minimum Thresholds (MTs):** GWL at RMS wells that, when exceeded, may cause URs (*avoid*)
- **Measurable Objectives (MOs):** GWL at RMS wells that reflect desired, sustainable conditions (*goal at 2042*)
- **Interim Milestones (IMs):** GWL targets, in five-year increments, representing the trajectory toward the MOs (*goals in 2027, 2032, 2037*)



Source: DWR, 2017. Sustainable Management Criteria Best Management Practices.

Groundwater Level (GWL) SMC: Deficiency Recap

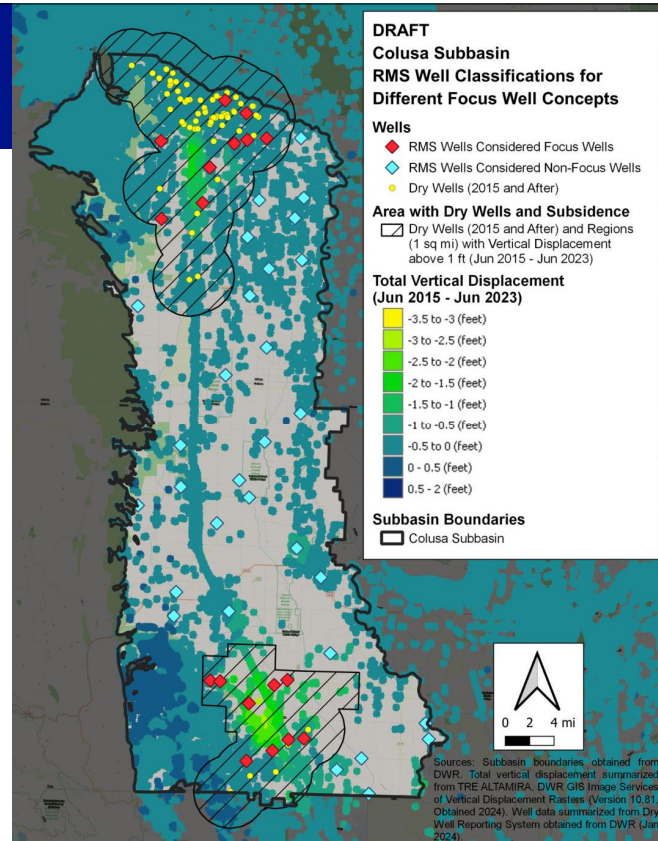
- “The GSP does not establish SMC for chronic lowering of groundwater levels in a manner substantially compliant with the GSP regulations.”
- **Key Needs:**
 - Clearly justify **why URs and MTs represent significant and unreasonable conditions**, especially for domestic well users and GDEs, and **why conditions before then do not**. (*Requires rephrasing UR definitions and revising MTs.*)
 - Show clear consideration of PMAs that will supply alternate supplies of water and mitigate impacts to domestic wells (e.g., municipal connections, well mitigation).
 - Clarify **relationship between GWL SMC and subsidence**, if revised GWL SMC are lower than historical (pre-SGMA) levels.

GWL SMC: Proposed Revisions to URs

- **Revise definition to speak to conditions that occurred in 2020-2022:**
 - “A result that would cause a significant and unreasonable reduction in sustainable groundwater supplies to meet beneficial uses and users’ needs over the planning and implementation horizon of this GSP.”
 - Beneficial uses/users include well users, environmental users (including GDEs), land uses/users, property interests, etc.
 - **Experienced if GWL declines result in:**
 - **Domestic well impacts (dry/reduced supply) that are unmitigated** (eval. based on WCRs, compare to 2020-2022 especially)
 - **Adverse impacts to subsidence conditions** at rates observed since SGMA (especially 2020-2022)
 - Evaluated by the subsidence monitoring network
 - Conditions that fail to meet the subsidence interim milestones (IMs) or that approach the MTs
 - **Adverse impacts to the environment**
 - Evaluated by the interconnected surface water (ISW) monitoring network
 - Conditions that fail to meet the ISW IMs or that approach the ISW MTs
- Provides clearer, justifiable basis for impacts to beneficial uses and users, subsidence and the GWL causing impacts.

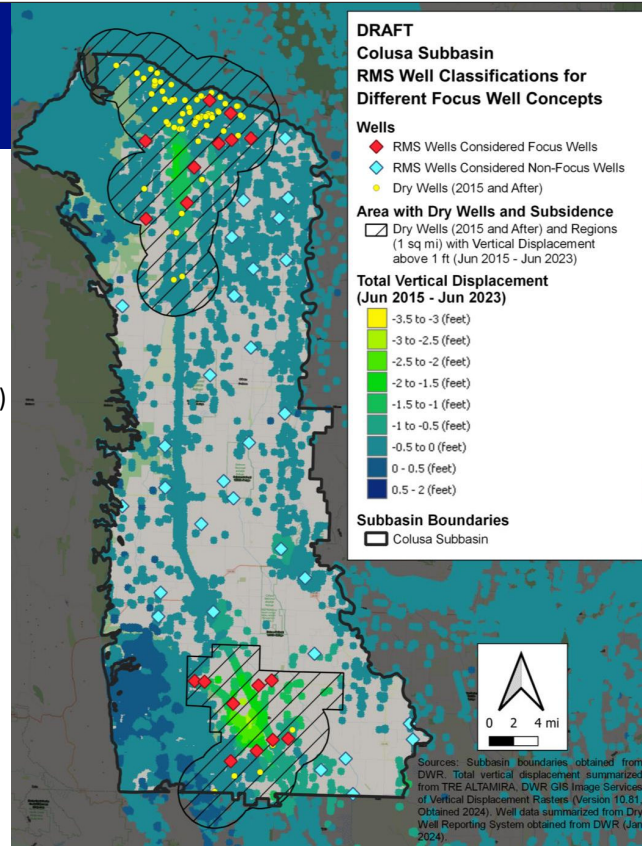
GWL SMC: Proposed Revisions to MTs

- **Minimum Thresholds (MTs):** Based on 2020-2022 GW elevations
 - **“Focus RMS Wells”:** MT is the 2020-2022 low (in areas with dry wells and/or subsidence since 2015)
 - **“Non-Focus RMS Wells”:** MT is the 2020-2022 low – margin (margin is 10-25 feet depending on local conditions) (in areas without dry wells and/or subsidence since 2015)
 - Margin selected to be protective of well impacts and subsidence (whichever is more limiting)
 - Analysis conducted for each RMS well, analyzing:
 - Risk of surrounding well impacts (in Thiessen polygon)
 - Risk to subsidence (based on GWL-subsidence)
- **URs occur if 1-6 out of 48 RMS wells exceed their MTs for two consecutive fall measurements**
 - 1-6 RMS wells, pending meeting #5 with DWR on 03/25/2024



GWL SMC: Proposed Revisions to MOs, IMs

- Measurable Objectives (MOs): Avg. pre-SGMA GW elev. (2011-2015)
- Interim Milestones (IMs): bridging MTs → MOs
 - “Focus RMS Wells”:
 - 2027: IM is at a level below the MT determined by the last 20-year rate of GWL change (MT – 5 yr*(2004-2023 avg. ft/yr)
 - 2032: IM is at the MT
 - 2037: IM is 50% between the MT → MO
 - “Non-Focus RMS Wells”:
 - 2027: IM is at the MT
 - 2032: IM is 33% between MT → MO
 - 2037: IM is 67% between MT → MO
- Avoiding MTs and achieving IMs/MOs is supported by PMAs, including demand management

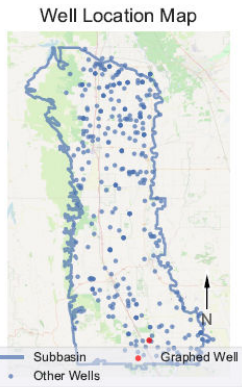


March 22, 2024

Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

29

COLUSA Subbasin - State Well Number (SWN): 13N01W07G001M (Focus RMS Well)

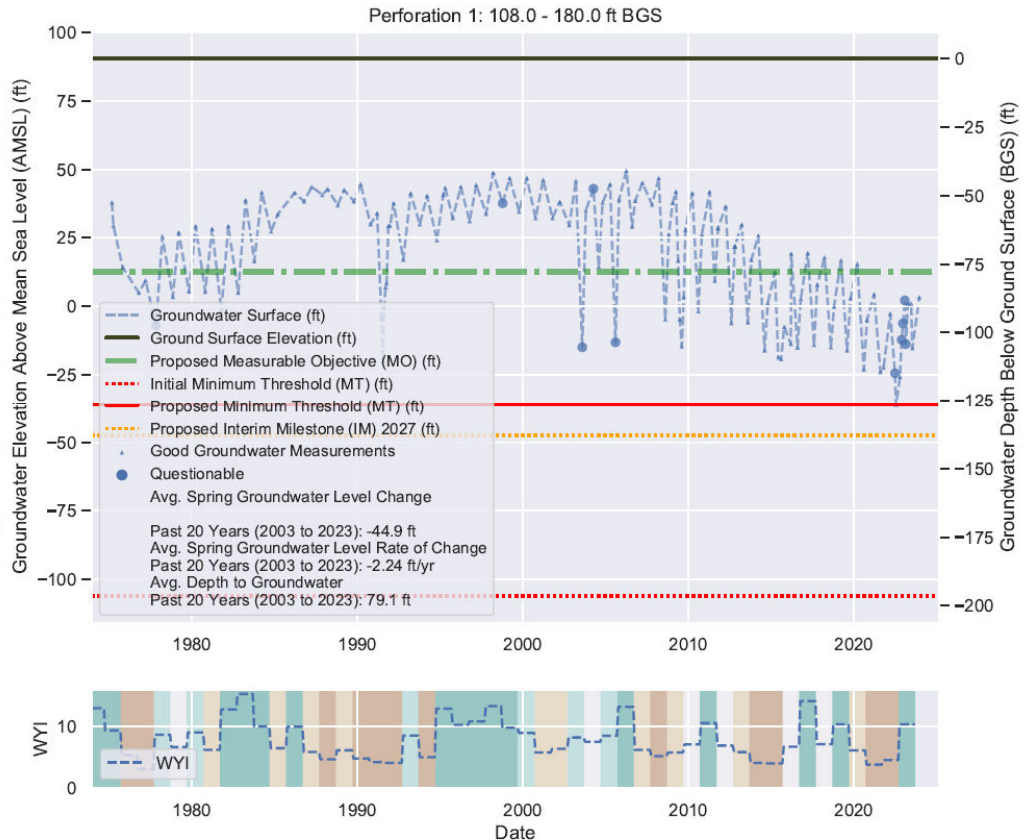
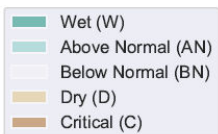


Sustainable Management Criteria:

Proposed IM (2027) = -47.4 ft AMSL
 Proposed MO = 12.7 ft AMSL
 Proposed MT = -36.2 ft AMSL

Minimum Threshold is the 2020-2022 low.

Sacramento Valley Water Year Index (WYI) shown on lower right. Meaning of colors defined below.

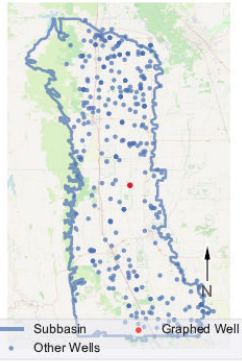


March

30

COLUSA Subbasin - State Well Number (SWN): 17N02W09H004M (Non-Focus RMS Well)

Well Location Map

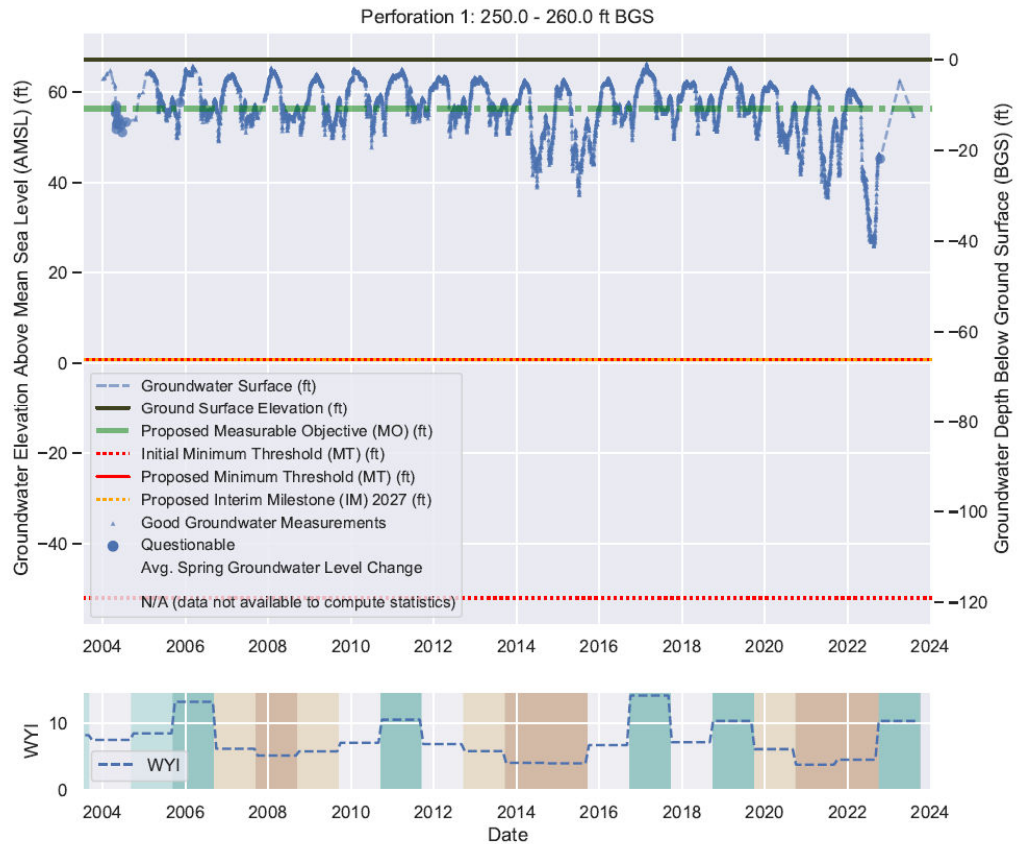
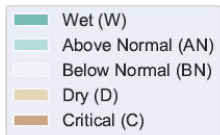


Sustainable Management Criteria:

Proposed IM (2027) = 0.9 ft AMSL
 Proposed MO = 56.2 ft AMSL
 Proposed MT = 0.9 ft AMSL

Minimum Threshold is the 2020-2022 low minus a margin (25.0 FT).

Sacramento Valley Water Year Index (WYI) shown on lower right. Meaning of colors defined below.



Well Impacts Analysis

Potential Well Impacts at MTs (Compared to Impacts of 2020-2022 Lows)

Actual Impacts Will be Mitigated by the Domestic Well Mitigation Program

Scenario	Potential Domestic Well Impacts at MTs (% All Domestic Wells)
Initial GSP MTs (lower of 20% domestic well impacts, or 50% below historical range)	589 (16%) <i>No mitigation commitment</i>
Proposed MT Revision <ul style="list-style-type: none"> Focus RMS Wells: 2020-2022 Low Non-Focus RMS Wells: 2020-2022 Low – 10-25 ft (margin selected through well-by-well analysis to avoid risk of well impacts and risk of subsidence, whichever is limiting) 	99 (3%) <i>Mitigation commitment</i>
Proposed IM Revision (2027) <ul style="list-style-type: none"> Focus RMS Wells: Elevation below the MT determined by the last 20-year rate of GW elevation change (MT – 5*(2004-2023 Rate)) Non-Focus RMS Wells: Equal to MT 	67 (2%) <i>Mitigation commitment</i>
Proposed MT and IM Revision: Total Potential Domestic Well Impacts	166 (5%) <i>Mitigation commitment</i>

- Scenarios describe groundwater elevations at RMS wells
- Potential domestic well impacts consider all available well completion reports (WCRs), incorporating a 20 ft buffer above the bottom perf.

Proposed Approach: Subsidence Monitoring and SMC (Detailed Background Information)

Land Subsidence: Deficiencies Identified by DWR

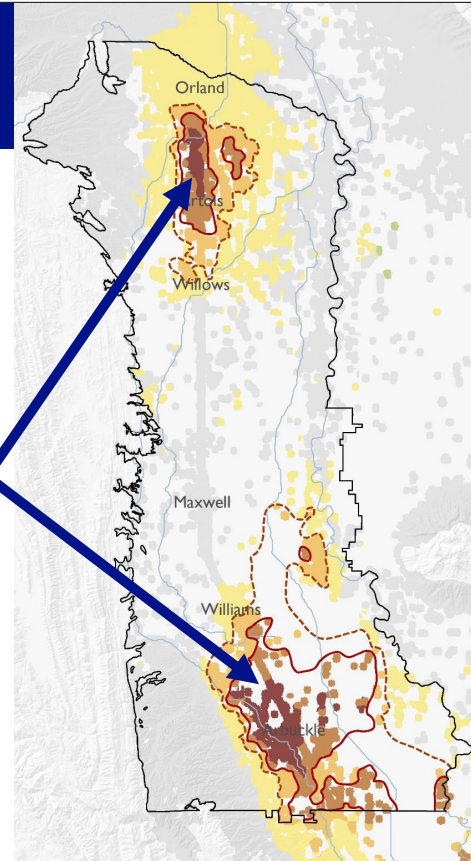
- **DWR’s Position:**
 - “The GSP does not establish SMC for land subsidence in a manner substantially compliant with the GSP regulations.”
- **DWR Requirements:**
 - Revise subsidence monitoring program (benchmark survey v. InSAR).
 - Quantify subsidence that would negatively impact functionality of identified critical infrastructure and land uses.
 - Clearly describe how significant and unreasonable conditions lead to URs for critical infrastructure and land uses.
 - Clearly justify how MTs relate to URs.
 - Identify PMAs that would minimize or eliminate subsidence.

Revised Subsidence Monitoring

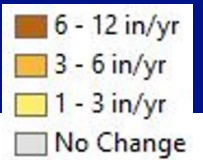
- **Current Monitoring:**
 - Sacramento Valley Benchmark Network
- **Proposed Monitoring:**
 - InSAR* provided by DWR

* InSAR = Interferometric Synthetic Aperture Radar

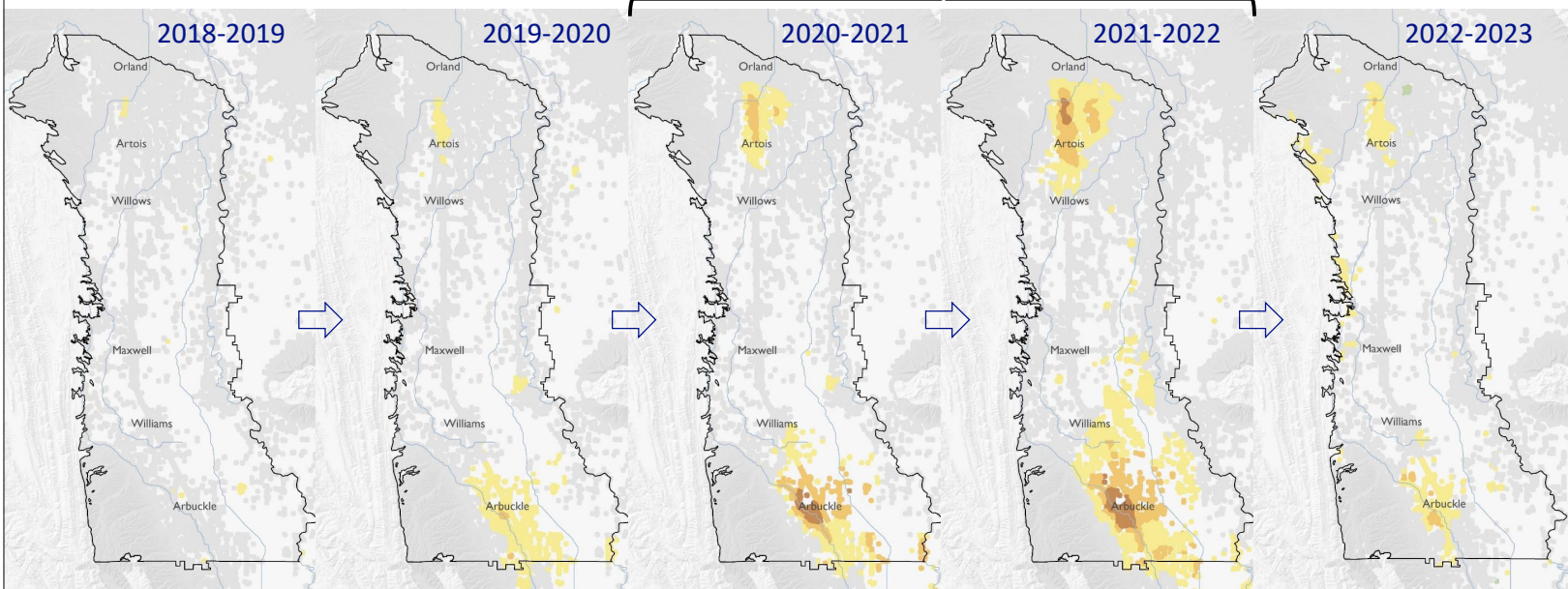
Exceeds
MT



Annual Subsidence: October 2018 – October 2023



Rates peaked in 2020-2022



Subsidence SMC: Undesirable Results (URs)

Current UR Definition (Jan 2022):

- "...A result that would cause *significant and unreasonable impacts* to critical infrastructure over the planning and implementation horizon of this GSP."
- "...Experienced if groundwater withdrawal causes inelastic land subsidence that substantially interferes with the condition or functionality of critical infrastructure within the Subbasin..."

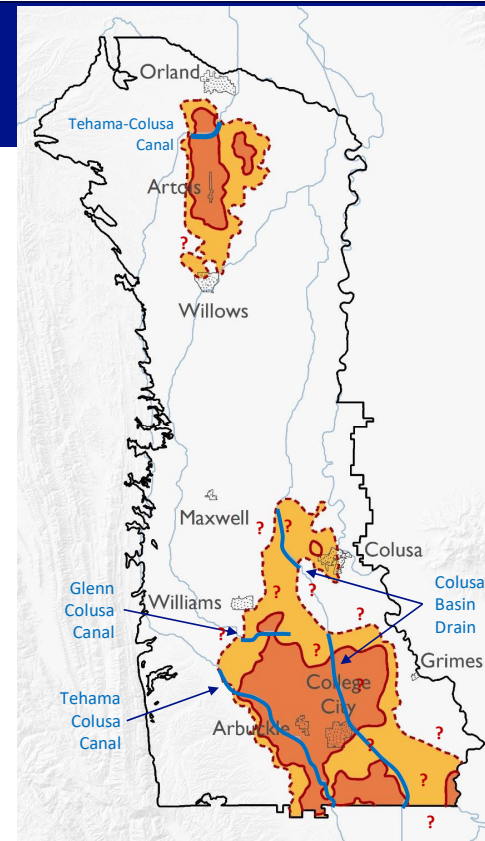
Proposed UR Revisions:

- Describe URs and impacts to beneficial users:
 - Identify critical infrastructure and land uses.
 - Describe significant/unreasonable conditions.
 - Quantify subsidence that would negatively impact functionality of critical infrastructure and land uses.
- Justify criteria for identifying (e.g., MT values and exceedance)

Subsidence SMC: Undesirable Results (URs)

Critical Infrastructure and Land Uses:

- Major Water Supply Conveyance (e.g., Tehama-Colusa Canal)
- Agricultural Wells
- Drinking Water Supply Wells
- Oil & Gas Infrastructure
- Transportation
- Flood Control



Subsidence SMC: Undesirable Results (URs)

Significant/Unreasonable Conditions:

- Damage or loss of freeboard within water conveyance infrastructure
- Collapsed wells
- Impacts to health and safety needs (drinking water)
- Impacts to agricultural economy
- Damage to major roads and pipelines

No impacts to canals reported to date.

Verbal reports of irrigation well collapse during 2014-2015 but not 2020-2022.

Discussion and coordination is currently underway.

Subsidence SMC: Proposed Revisions

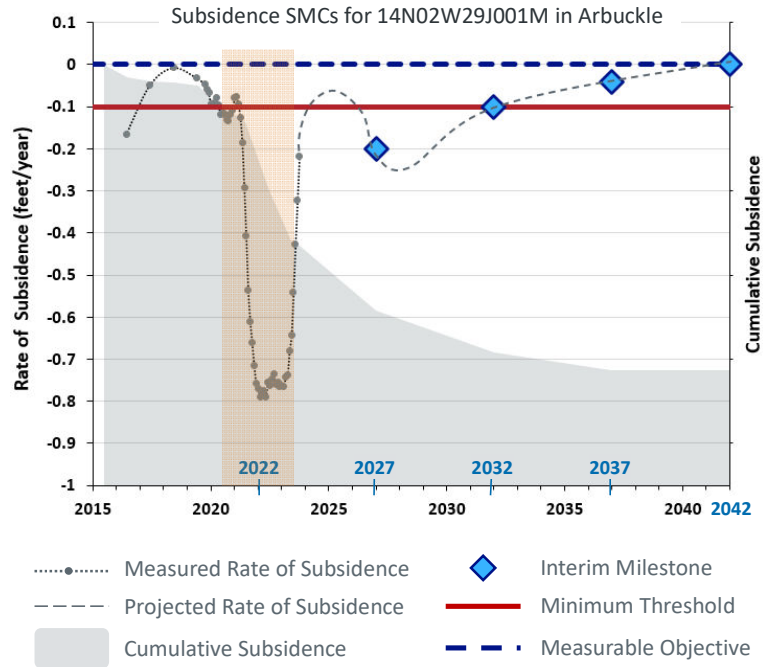
Land Subsidence SMC	Subsidence Monitoring	Unreasonable Result	Minimum Threshold	Interim Milestones	Measurable Objective
Current Definition (Jan 2022)	Benchmarks	20% Benchmarks exceed MT	0.5 ft/5yr	0.25 ft/5yr for each IM	0.25 ft/5yr
Proposed Revision	InSAR Data	Average rate of subsidence exceeds MT in 10 or more contiguous PLS Sections (any configuration) 2 years in a row*	0.1 ft/yr	2027: 0.3 ft/yr 2032: 0.1 ft/yr 2037: 0.08 ft/yr 2042: 0 ft/yr	0 ft/yr

* An average rate of subsidence above the MT in 10 or more contiguous PLS Sections (in any configuration) that occurs the water year preceding the Annual Report will trigger a watch notice. An undesirable result will occur if the MT is exceeded for a second year in 10 or more contiguous PLS Sections (in any configuration, and not necessarily the configuration of the preceding year[s]).

Subsidence SMC: Measurable Objective (MO) & Minimum Thresholds (MT)

Proposed Revisions:

- Measurable Objective:
 - 0 ft/yr
- Minimum Threshold:
 - 0.1 ft/yr
- Interim Milestones:
 - 2027: 0.3 ft/yr
 - 2032: 0.1 ft/yr
 - 2037: 0.08 ft/yr
 - 2042: 0 ft/yr
- SMCs Evaluated Over:
 - 2 consecutive years
 - 10 or more contiguous PLS Sections



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

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.

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:

- \$XX for Program startup (years 1-2), and \$XX for Program administration thereafter (years 3+)
- \$XX for Program mitigation measures, assuming (for planning purposes), that approximately XX wells may require mitigation and that the cost of mitigation per well is approximately \$XX, on average, although the precise number and costs of mitigation are subject to refinement during Program development.

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: (contact person)

To Glenn Groundwater Authority GSA: (contact person)

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.

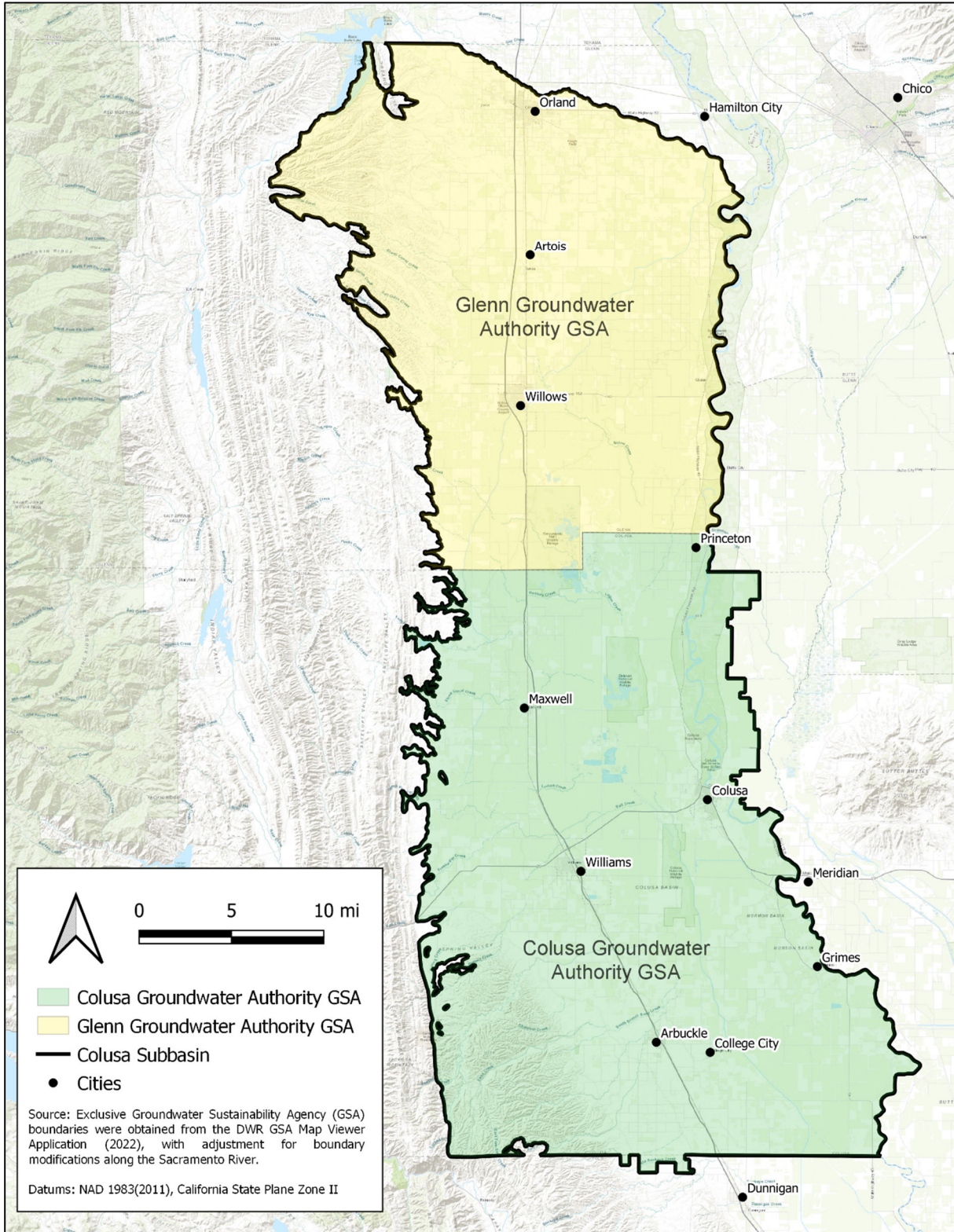


Exhibit B.
Colusa Subbasin Domestic Well Mitigation Program
DRAFT Organizational Structure.

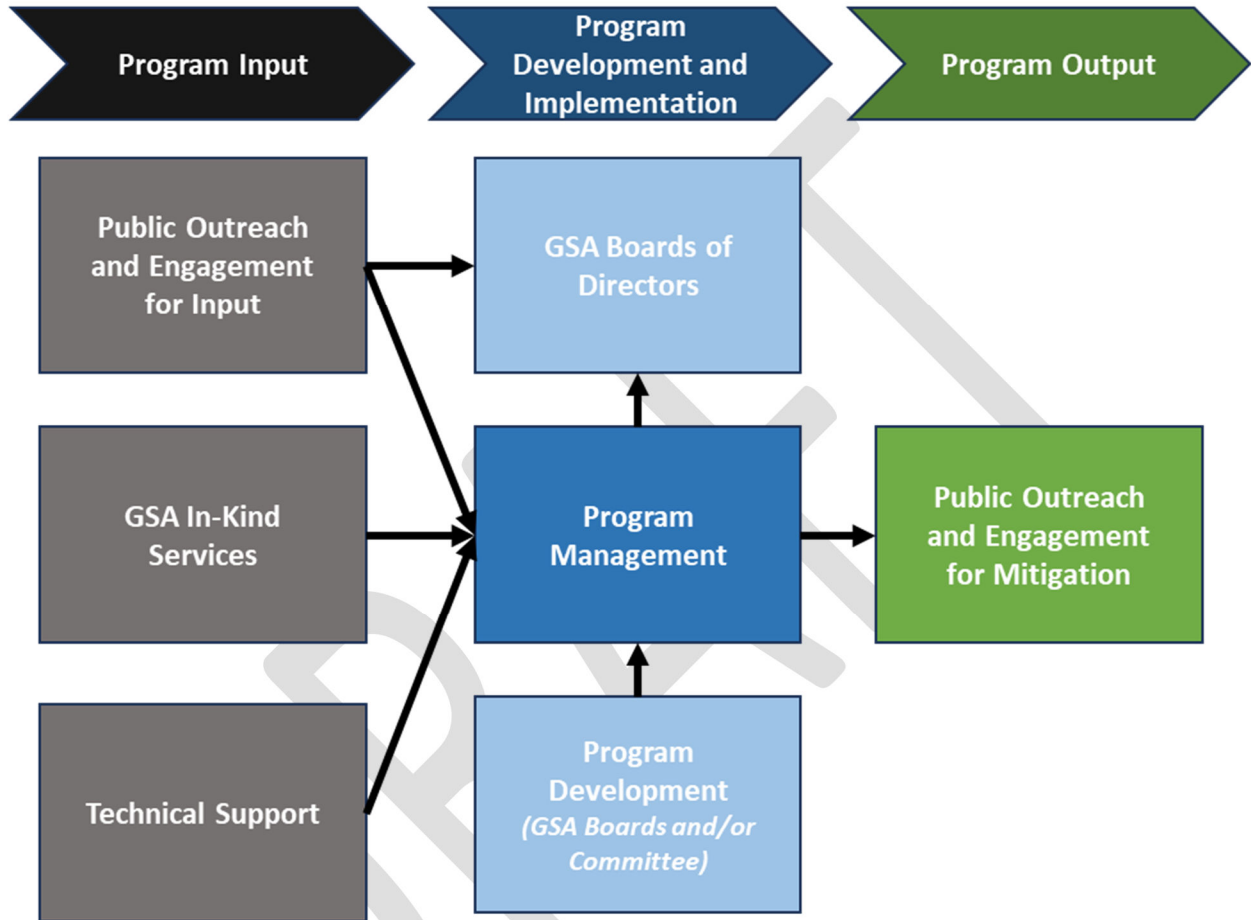
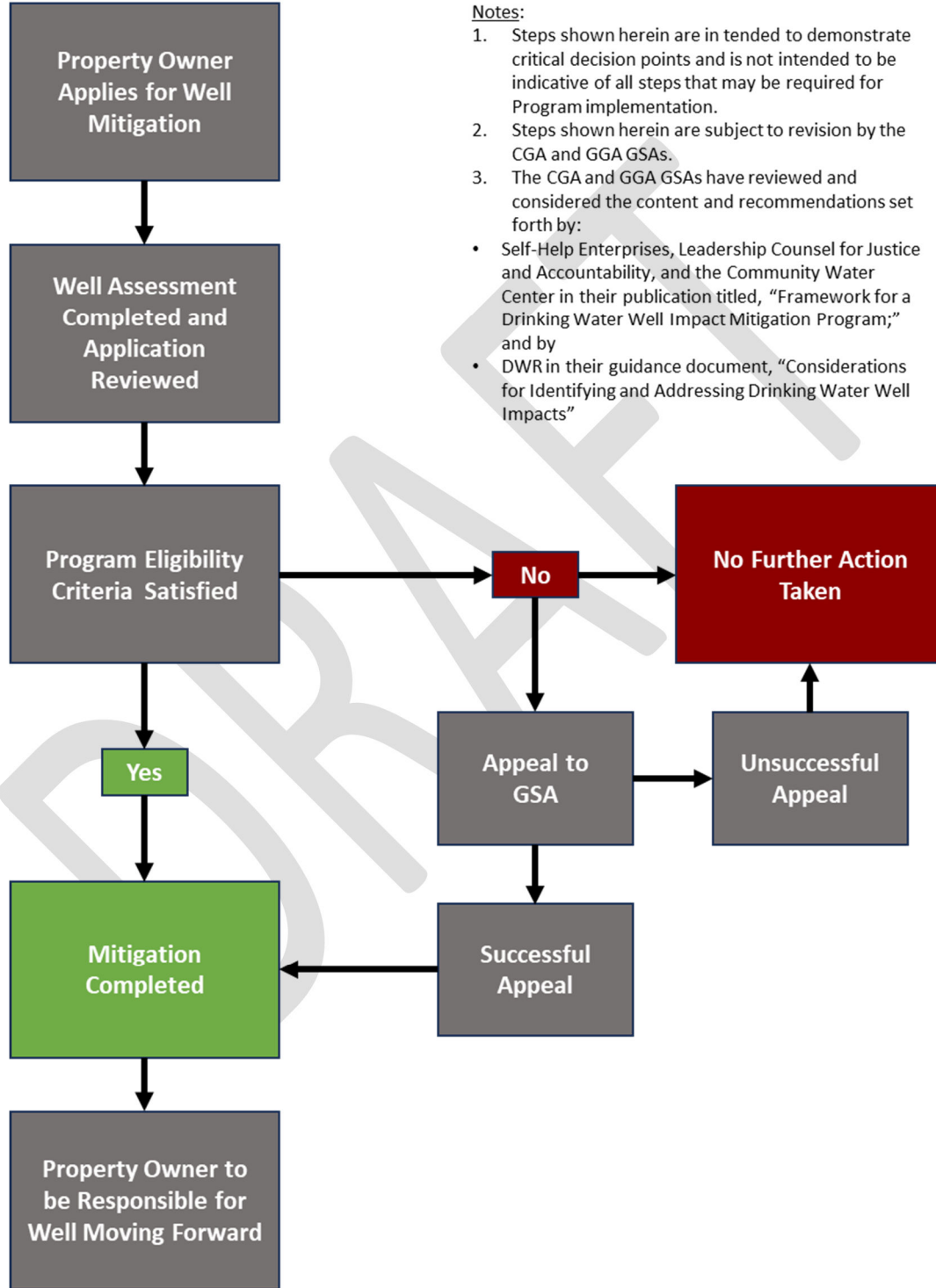


Exhibit C. Colusa Subbasin Domestic Well Mitigation Program DRAFT Implementation Flowchart.



Notes:

1. Steps shown herein are intended to demonstrate critical decision points 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.
3. The CGA and GGA GSAs 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 by
 - DWR in their guidance document, "Considerations for Identifying and Addressing Drinking Water Well Impacts"

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)

***** DRAFT EXAMPLE FOR DISCUSSION *****

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					

***** DRAFT EXAMPLE FOR DISCUSSION *****

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 FOR DISCUSSION *****

- 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

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:

- Measures to be considered and moved forward for **immediate implementation (at the Program start date)**. Measures may include, but are not limited to, the following voluntary measures for reducing demand:
 - 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)

- Measures to be considered and moved forward for **phased adaptive implementation** (i.e., develop the actions further so that they are ready to implement in phases, commensurate with issues). Measures may include, but are not limited to:
 - Allocations, considering:
 - Well restrictions, in coordination with the Counties
 - Pumping restrictions, in coordination with the Counties
 - Water market/trading and/or fee structures

- The Parties agree that phased adaptive implementation measures are to be 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).

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:
 - Measures for immediate implementation (i.e., measures that will move forward at the Program start date)
 - Measures for phased adaptive implementation (i.e., measures that will be developed further so that they are ready to implement in phases, commensurate with issues)
- 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.

9. 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: (contact person)

To Glenn Groundwater Authority GSA: (contact person)

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.

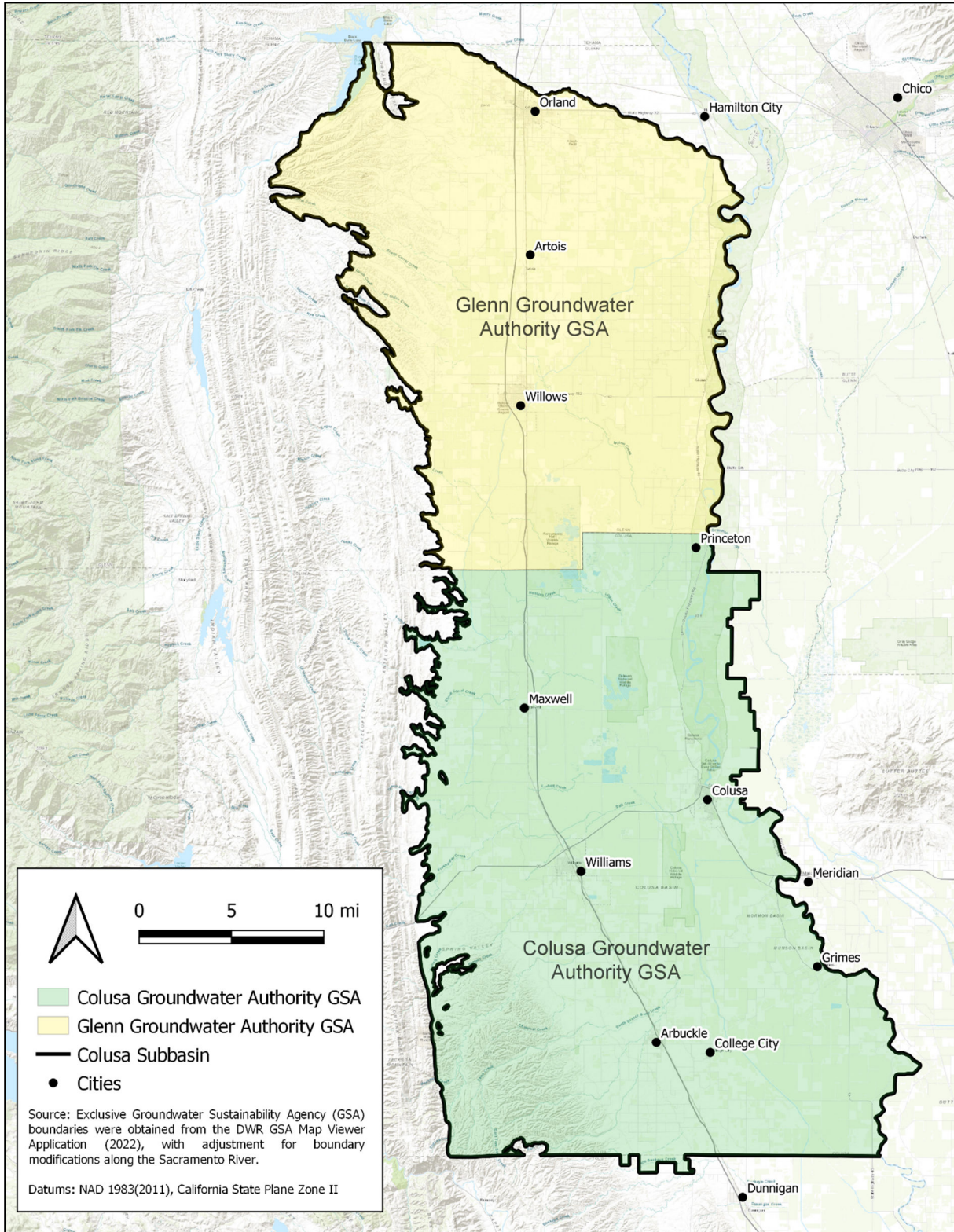


Exhibit B.
Colusa Subbasin Demand Reduction Program
DRAFT Organizational Structure.

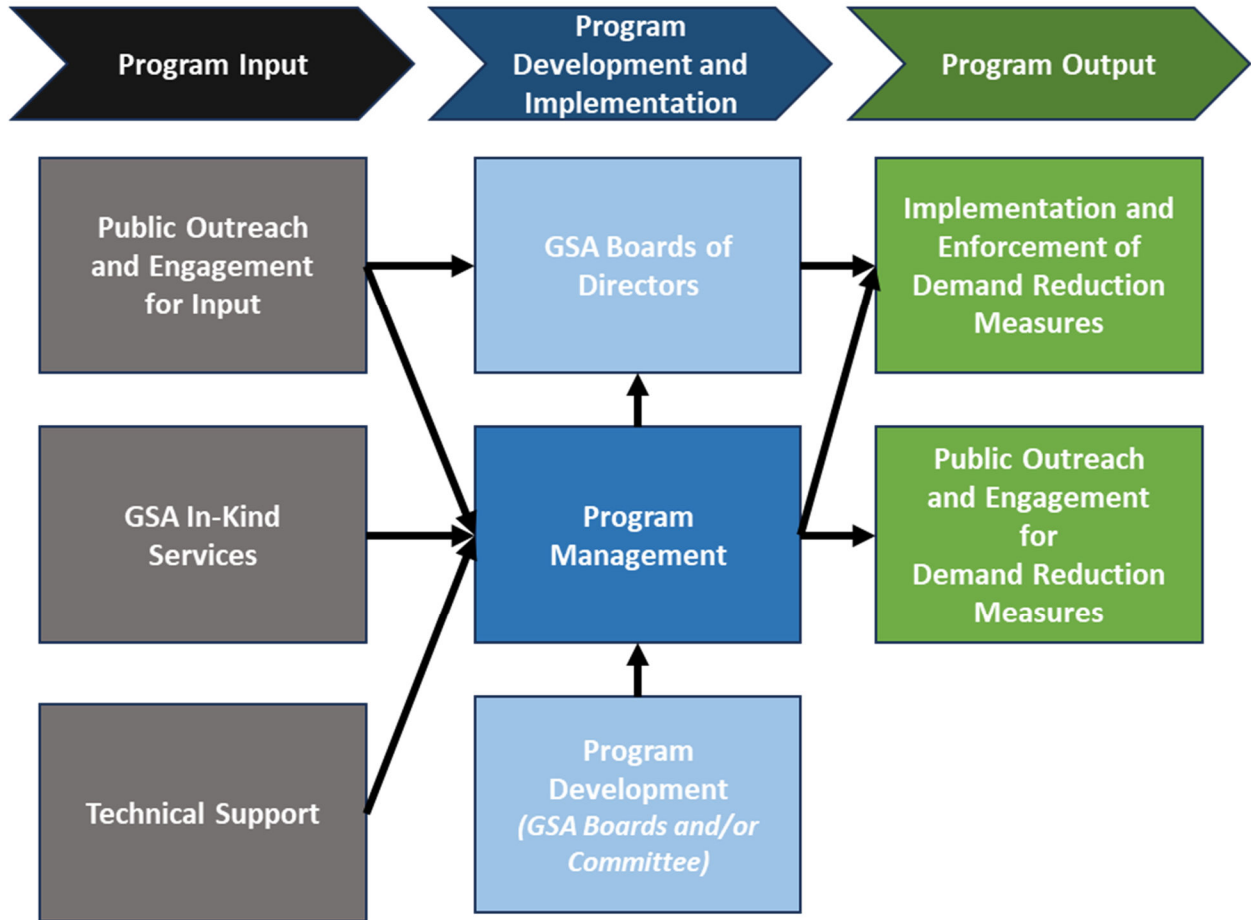
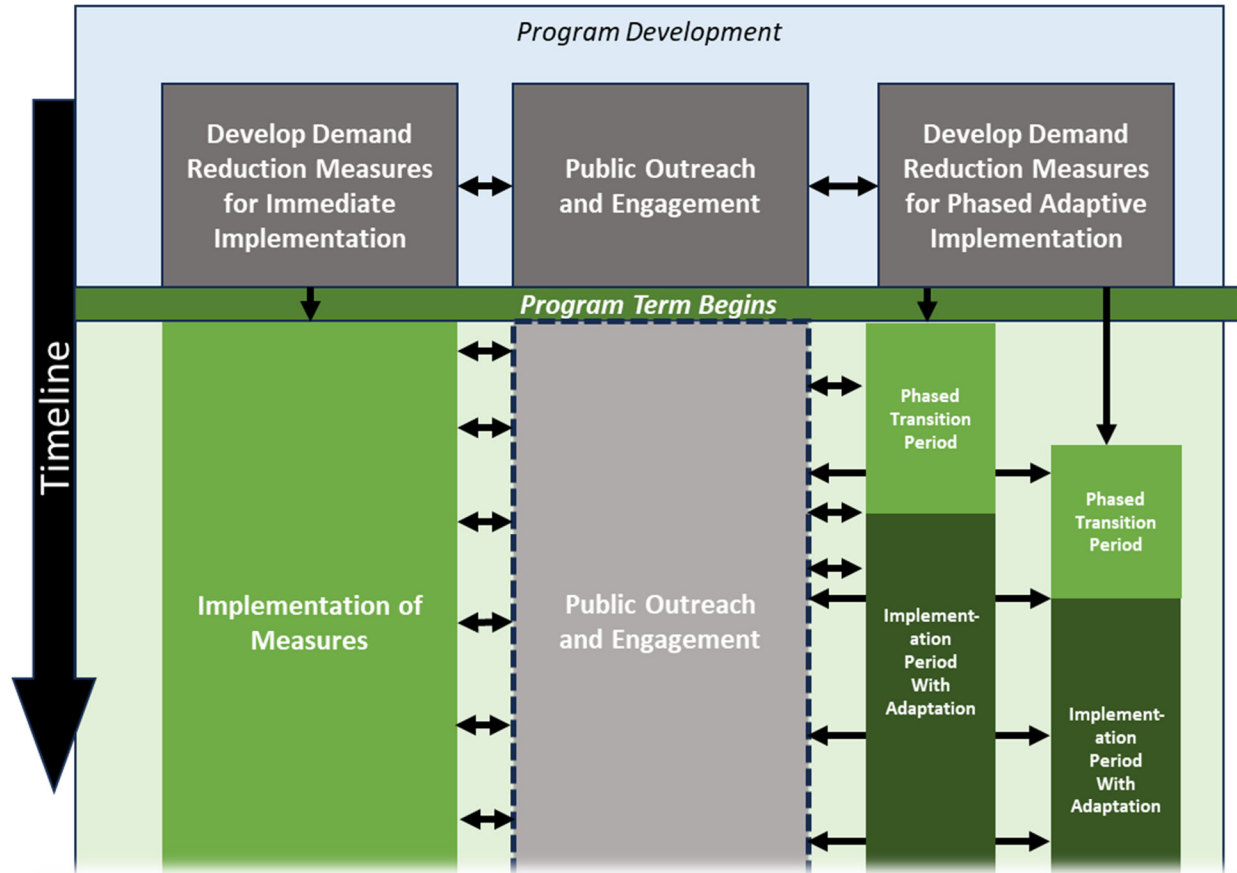


Exhibit C. Colusa Subbasin Demand Reduction Program DRAFT Implementation Flowchart.



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.