



# Joint Colusa Groundwater Authority and Glenn Groundwater Authority Board of Directors

## Special Meeting Agenda

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

122 Old Highway 99W, Maxwell, CA 95955

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. 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.*

**3. Update on Water Year 2023 Annual Report** (10 minutes) (pg. 3)

**4. Colusa Subbasin Groundwater Sustainability Plan (GSP)** (90 minutes) (pg. 4)

- a. GSP revision schedule overview
- b. Discussion and concurrence on approaches for estimating overdraft.
- c. Discussion and concurrence on approach to update the Projects and Management Actions.
- d. Discussion on monitoring network and basis of Sustainable Management Criteria for land subsidence.

5. **Agreement 1173.04 between Davids Engineering, Inc. and Colusa Groundwater Authority Task Order 2 for Phase 2 Colusa Subbasin GSP Revisions (pg. 31)**
  - a. **\*Approve Davids Engineering Agreement 1173.04 Task Order 2 not to exceed \$186,221. (CGA)**
  - 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 Oder 2 not to exceed \$93,110.50 each.**
6. **Proposal from Thaddeus Bettner, Water Ecology LLC, for GSP Support Services (pg. 42)**
  - a. **\*Consider approval from Thaddeus Bettner, Water Ecology LLC, for strategic, policy, vision and implementation support for Colusa Subbasin GSP (approx. \$9,000/mo, duration TBD) (CGA)**
- 7.
8. **Member Reports and Comments**
- Adjourn**

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:** 3. Update on Water Year 2023 Annual Report

**Date:** January 26, 2024

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## Background

The consultant team (Davids Engineering and Luhdorff & Scalmanini Consulting Engineers) has been working diligently to prepare the 2023 Water Year Annual Report which is due April 1, 2024. A brief verbal update will be provided on the status of the report preparations. It is expected the Joint TAC will receive a presentation in February to review the technical components of the report and each GSA Board will receive presentations at their regular meetings in late February or early March.

## Recommendation

Information only.

## Attachments

- None

# Staff Report

**To:** CGA-GGA Joint Board

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

**Date:** January 26, 2024

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## 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 will provide the consultant team with policy guidance from the GSA Boards. The second phase will include 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 provide an overview of the GSP revision schedule, followed by discussion on the current and potential approaches for estimating overdraft in the Colusa Subbasin. The consultant team will also review Projects and Management Actions (PMA) and provide recommendations on an approach for updating and/or adding new PMAs. The team will also provide information relating to the monitoring network and the basis of Sustainable Management Criteria (SMC) for land subsidence. More detailed discussions on the land subsidence topic are expected to occur at a future Joint TAC and Joint Board meetings.

## Recommendation

1. Hear GSP revision schedule overview.

2. Discuss and concur on an approach for estimating overdraft and provide direction to the consultant team.
3. Discuss and concur on an approach to update Projects and Management Actions and provide direction to consultant team.
4. Discuss the monitoring network and basis of Sustainable Management Criteria for land subsidence and provide direction to consultant team.

## Attachments

- Presentation (draft) (pg. 6)
- Colusa Subbasin Projects and Management Actions DRAFT (April 2024): Tabular summary of PMAs from the Colusa GSP (Jan 2022), identifying those where more specificity can be added and suggestions for prioritization. (pg. 19)
- Sample MOU for a Domestic Well Mitigation Program: Sample MOU with agreement to develop a domestic well mitigation program, from the Approved Madera GSP. (pg. 21)

**DRAFT**



## **Colusa Subbasin GSP Revisions**

Joint GSA Board Meeting

January 26, 2024

# **Agenda**

- 1. Recap of DWR Consultation Meetings**
- 2. Proposed Revisions: Overdraft**
- 3. Proposed Approach: Projects and Management Actions**
- 4. Proposed Approach: Subsidence Monitoring, SMC Basis**
- 5. Next Steps and Timeline**

## Recap of DWR Consultation Meetings

## 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.

*Our discussions are focused only on these deficiencies and the efforts needed to resolve these sufficiently.*

## Takeaways from DWR Consultation Meetings

- DWR's main concerns, priorities:
  - Existing conditions don't indicate the subbasin is on track to reach sustainability.
  - Undesirable results (URs) to GW users and land users need to be more clearly defined and justified (DWR senses that those conditions are happening now).
- Potential GSP revision approaches raised by the Colusa Team seem conceptually aligned with DWR's expectations, but:
  - Projects and management actions (PMAs) are needed to mitigate overdraft, subsidence and groundwater level decline.
  - Actions are warranted immediately.
- The revisions should focus on:
  - Developing management actions as backstops to address overdraft, GW conditions.
  - Revising the SMC for more justifiable URs, minimum thresholds (MTs).

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Colusa Subbasin GSP Revisions – Joint GSA Board Meeting

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## Key Needs to Address Deficiencies

### Focus Today

- PMAs: DWR's main concern and focus, all other deficiencies tie into these.
  - PMAs to mitigate overdraft.
  - PMAs to mitigate domestic well impacts (e.g., municipal connections, well mitigation) until sustainability is reached.
  - PMAs to mitigate subsidence.
- Overdraft: Revise based on more recent empirical data (recurring evaluation is key)

### Focus in Next Meetings

- GWL:
  - Rephrase/revise URs and MTs to justify why those represent unreasonable conditions for domestic wells, GDEs.
  - Clarify relationship between GWL SMC and subsidence, if revised GWL SMC are lower than pre-SGMA levels.
- Subsidence:
  - Revise SMC, monitoring
    - Use InSAR
    - No long-term subsidence past 2042
  - Evaluate effects of subsidence on critical infrastructure
  - Rephrase/revise URs and MTs to justify why those represent unreasonable conditions for facilities, structures, etc.

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# Proposed Revisions: Overdraft

## GSP Water Budget Assumptions

**Table 3-9. Summary of Water Budget Assumptions Used for Historical, Current Conditions, Future Conditions, and Future Conditions with Climate Change at Two Times in the Future (i.e., 2030 and 2070)**

Water Budget	Analysis Period	Hydrology	Land Use	Water Supplies
Historical Simulation	1990-2015	Historical	Historical	Historical
Current Conditions Baseline	2016-2065	Historical (1966-2015)	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively, for water diversions; 2006-2015 average for urban demands
Future Conditions, No Climate Change Baseline	2016-2065	Historical (1966-2015) <b>50-years (23 CCR §354.18(c)(3)(A))</b>	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively, for water diversions; 2006-2015 average for urban demands
Future Conditions, 2030 Climate Change Baseline	2016-2065	Historical (1966-2015), adjusted based on 2030 climate change with central tendency	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively	Same as Current (see above), adjusted for 2030 climate change
Future Conditions, 2070 Climate Change Baseline	2016-2065	Historical (1966-2015), adjusted based on 2070 climate change with central tendency	Current (2013 and 2015) used for Shasta Non-Critical and Shasta Critical, respectively	Same as Current (see above), adjusted for 2070 climate change

Most recent (23 CCR §354.18(c)(1))

Most recent (23 CCR §354.18(c)(3)(B) and (C))

### DWR Concerns and Takeaways:

- The Subbasin must be managed for future/ongoing sustainability.
- GSP overdraft estimates do not account for recent conditions (e.g., land use, water demand).
- Revised overdraft estimate based on empirical data (e.g., GWL) is appropriate.
- **Recurring evaluation is key.**

## SGMA Regulations Related to Overdraft

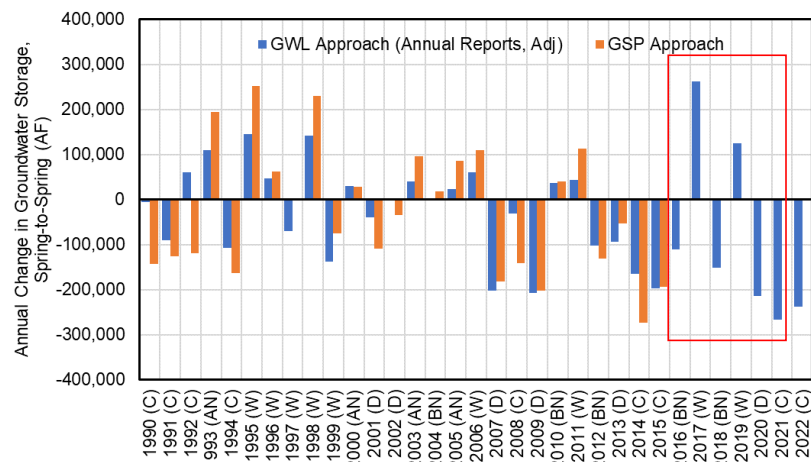
- 23 CCR § 354.18.(b)(5):  
 If overdraft conditions occur [...] include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions.
- 23 CCR § 354.44.(b)(2):  
 If overdraft conditions are identified [...] describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft.

## Proposed Revision to Current Overdraft Estimate

- Proposed current overdraft period: 2016-2021**

  - Same avg. water year conditions as 1966-2015 (GSP 50-Year avg. hydrology)
  - Similar avg. water supply as 1990-2015 (within 6% of GSP historical water budget)
- Propose re-evaluating overdraft via changes in GW storage** (based on changes in GW levels (GWL), *see blue bars to right*)
- Avg. spring change in GW storage (**GWL Approach**):

  - 1990-2015 (26 yr): -28,000 AF/yr (**GSP Approach avg.**)
  - **2016-2021 (6 yr): -59,000 AF/yr**
    - Proposed revision to current overdraft estimate



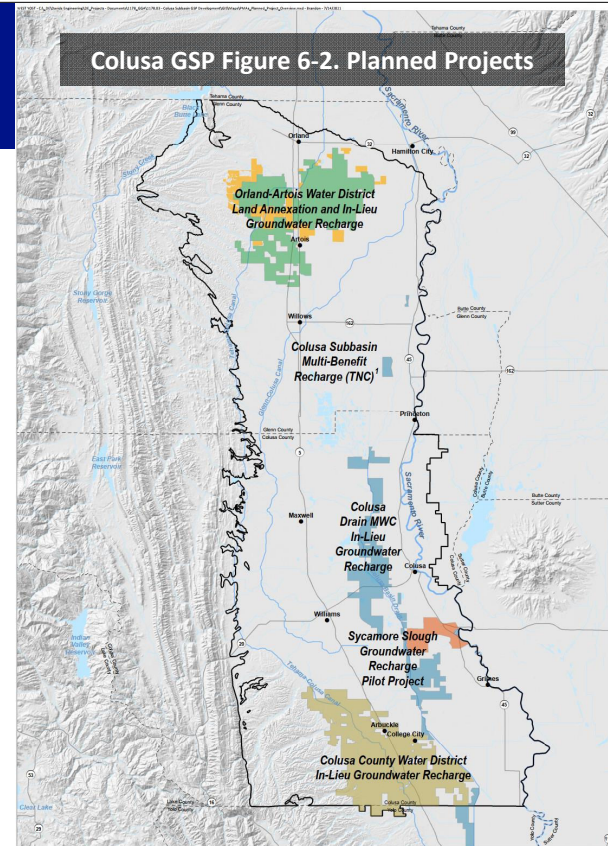
## Decision: Overdraft Revisions

- **Proposed period: 2016-2021 (6-year period)**
  - DWR has noted that the period isn't as important as the need for recurring evaluation
  
- **Proposed method: Quantify overdraft based on changes in GWL**
  - Approach consistent with Annual Report method, use to evaluate overdraft going forward
  - Same average overdraft as GSP historical water budget (1990-2015)
  
- **Proposed revision to current overdraft estimate: -59,000 AF/year**
  - Versus initial GSP water budgets ranging from -28,000 AF/year to 1,000 AF/year
  - Continue evaluating overdraft over time with changing conditions

## Proposed Approach: Projects and Management Actions

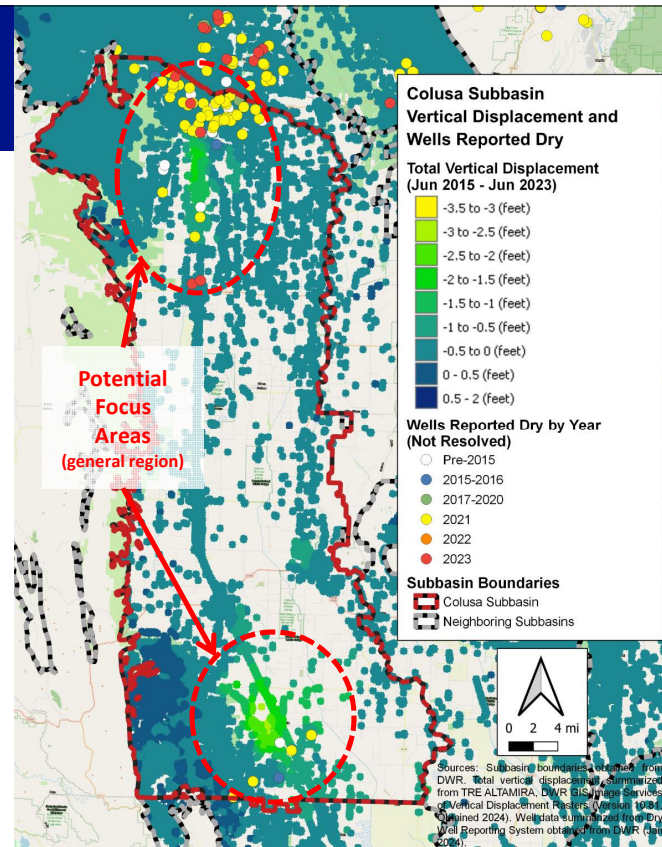
# Key Needs and Revisions

- **Need PMAs to mitigate overdraft**
  - Once implemented, Planned/Ongoing Projects can offset the revised overdraft (on average)
    - Average Annual Benefits = 91 TAF/yr
    - Revised Current Overdraft = -59 TAF/yr
- **Issues and proposed revisions:**
  - **PMAs lack urgency (timeline not clear or fast enough)**
  - **PMAs need to offset overdraft during drought**
  - Add strategy for backstops
    - Management Actions to mitigate overdraft
    - Potential Projects → Planned Projects
  - Add details to clarify Planned/Ongoing Projects
    - Lower priority, per DWR discussions



# Key Needs and Revisions

- **Need PMAs to address domestic well impacts (e.g., municipal connections, well mitigation)**
  - Heard from DWR: If GWL SMC are below pre-SGMA levels, wells impacted are the GSAs' responsibility.
  - Add strategy to mitigate domestic well impacts, with initial focus potentially in "focus areas."
- **Need PMAs to address subsidence**
  - Add strategy to mitigate subsidence, with initial focus potentially in "focus areas."



## Revisions (Summarized)

### Projects (LOWER PRIORITY)

Coordinate with  
GSAs, Proponents

- Add details to clarify Planned/Ongoing Projects
  - Clarify implementation timeline, support for estimated benefits
- Add strategy for project backstops (potential measures)
  - Potential Projects → Planned Projects
  - Adaptive management

### Management Actions (HIGHER PRIORITY)

GSA Decisions and  
Outreach Needed

- Add strategies for mitigating adverse groundwater conditions
  - Management actions to mitigate overdraft
  - Management actions to mitigate domestic well impacts until sustainability is reached
  - Management actions to mitigate subsidence
  - Adaptive management

## Management Actions: DWR Takeaways and GSA Decisions

- DWR is seeking more immediate plans for PMAs to mitigate overdraft, subsidence, and GWL impacts to domestic wells.
  - Domestic Well Mitigation Program
  - Demand Reduction or Management (range of options, action levels)
- Many GSA decisions needed to implement:
  - What actions will be prioritized and how? (Prioritization criteria? Phasing?)
  - Where will actions be advanced? (Subbasin-wide? GSA-wide? “Focus Areas”?)
  - Who will be responsible for implementing actions? (GSAs? Voluntary vs. compulsory?)
  - When will actions be advanced, and how much? (Specified timeline? Phases? Triggers?)
  - How will actions be funded/financed?



## Management Actions: Proposed Approach

- **“Formal agreement” (e.g., MOU) to develop and implement programs to mitigate adverse conditions** beginning by a specific date in the near-term
  - Domestic well mitigation
  - Demand reduction/management (mitigating overdraft, subsidence)
- Overview: Formal agreement for action by date certain, according to specific terms and conditions (e.g., agreement to potential program measures, responsibility/funding mechanisms, organizational structure and administration, etc.)
- Goals: Express clear commitment to action, while providing:
  - Time to work through legal, financial, operational, etc. details
  - Engage with member agencies, stakeholders
- Consistent with adaptive management under SGMA
- ***DWR finds the approach reasonable, but the details are what’s important***

## Consensus on Proposed Approach for PMA Revisions

- **Projects**
  - Add details to clarify **Planned/Ongoing Projects**
  - Add strategy for project backstops (potential measures)
- **Management Actions:**
  - Propose, refine, and agree to **“Formal agreement” (e.g., MOU) to develop and implement programs to mitigate adverse conditions beginning by a specific date in the near-term future**
    - Domestic well mitigation
    - Demand reduction/management (mitigating overdraft, subsidence)
  - Within formal agreement development process, specify:
    - Timeline
    - Potential program measures
    - Specific terms and conditions
    - Approach for developing organizational structure/admin
    - Approach for defining responsibility/funding mechanisms
  - **Planning to move forward with GSA staff/chairs to draft program details, review with DWR**

# Proposed Approach: Subsidence Monitoring and SMC Basis

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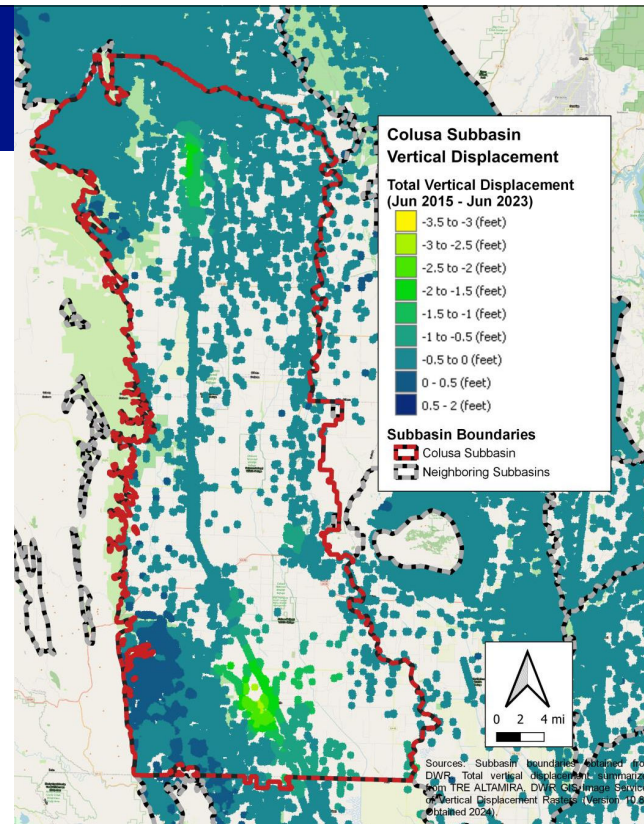
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## Subsidence Monitoring and SMC Basis

- Currently based on Sacramento Valley Benchmark Network (last surveyed 2017)
- **Recommended revisions, from DWR discussion:**
  - **Revise monitoring and SMC based on InSAR\***, until such a time as the benchmark network is surveyed
  - **Revise SMC to clarify SGMA requirement of no subsidence past 2042**
- **Evaluate effects of subsidence on critical infrastructure** (“Infrastructure Impacts Analysis”)
  - Identify critical infrastructure (e.g., TCC, I-5)
  - Collect any available data regarding subsidence impacts to critical infrastructure

\* InSAR = Interferometric Synthetic Aperture Radar



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## Next Steps and Timeline

## Next Steps and Timeline

- **Joint TAC Meeting on 02/09**
  - Provide technical details and resources to support PMA revisions, GSA decisions
  - Discuss SMC revisions
- **DWR Consultation Meeting #3 in February**
  - Discuss details of management actions and raise questions
  - Discuss SMC revision approaches
  - Receive feedback from DWR on acceptability
  - *Schedule subsequent DWR meeting*

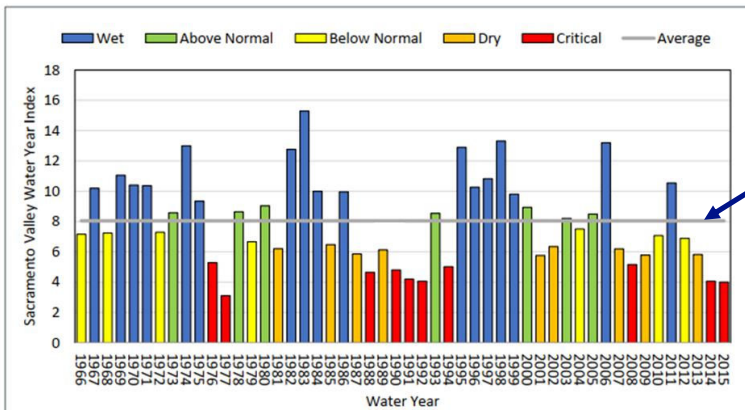




# Additional Slides

## Average Water Year and Water Supply Conditions

- Proposed current overdraft period: 2016-2021**
  - Average water year conditions the same as 1966-2015 (GSP 50-Year long-term average hydrologic period)
  - Average water supply within 6% of 1990-2015 average



Notes: The average index is 8.1, which is the same as the average for the entire period of record from 1906 through 2019.

Figure 3-38. Sacramento Valley Water Year Index and Water Year Types for a 50-year Period from 1966 to 2015

Period (Years)	Avg. Sac. Valley Water Year Index	Avg. Water Supply (Diversions, AF/yr)	Comment
1966-2015 (50 yr)	8.0	<i>Not available (GSP water budgets began 1990)</i>	GSP 50-Year long-term average hydrologic period
1990-2015 (25 yr)	7.6	1,168,000 AF/yr	GSP historical water budget period
2016-2021 (6 yr)	8.0	1,238,000 AF/yr	Closest to the 1966-2015 average of periods ending in 2021 (prior to initial GSP submittal)

## Potential Measures For Domestic Well Mitigation

- **Mitigation actions:**
  - Short-term solutions in emergencies, such as delivery of bottled water and/or water tanks.
  - Setting well pump at deeper depths, replacement of well pump, or well replacement.
  - Residential water treatment equipment.
  - Well consolidation (many to one).
  - Connection to or development of public water systems to serve impacted communities.
  - Municipal service connection.
- **Other actions:**
  - Well permitting/ordinances to spatially and vertically isolate new wells to minimize impact on wells.

## Potential Measures For Demand Reduction/Management

- **Voluntary Measures**
  - Dry farming
  - Fallowing
  - Multi-benefit land repurposing (e.g., recharge basins, recreational spaces, renewable energy, habitat)
- **Non-Voluntary Measures**
  - Land use restrictions
  - Well/pumping restrictions
  - Allocations
  - Water market/trading and/or fee structures

**Colusa Subbasin GSP Projects and Management Actions (Jan 2022)**  
**With Suggestions for Added Specificity and Prioritization in GSP Revisions (Apr 2024)**

GSP	Project or Management Action	Status	Name	Proponent	Type (If Indicated)	Benefit to Management Zones*	Suggest Added Specificity (Timeline, Benefits)	Suggest Prioritization ("Planned" Now or If Trigger)	Note	Average Annual Benefit (AF/year, If Specified)
Colusa	Project	Planned	Colusa County Water District (CCWD) In-Lieu Groundwater Recharge	CCWD	In-lieu Groundwater Recharge	Yes	X		Currently Planned	27,000
Colusa	Project	Planned	Colusa Drain MWC (CDMWC) In-Lieu Groundwater Recharge	CDMWC	In-lieu Groundwater Recharge	Potentially	X		Currently Planned	28,000
Colusa	Project	Planned	Subbasin Multi-Benefit Groundwater Recharge	CGA/GGA/TNC	Direct Groundwater Recharge	Potentially			Currently Planned	5,200
Colusa	Project	Planned	Orland-Artois Water District (OAWD) Land Annexation and Groundwater Recharge	OAWD	Direct and In-lieu Groundwater Recharge	Yes	X		Currently Planned	22,500
Colusa	Project	Planned	Sycamore Slough Groundwater Recharge Pilot Project	Landowner	Direct Groundwater Recharge				Currently Planned	500
Colusa	Project	Ongoing	Reclamation District 108 (RD108) and CCWD Agreement for Five-Year In-Lieu Groundwater Recharge Project	RD108/CCWD	In-lieu Groundwater Recharge	Yes	X		Currently Ongoing	8,000
Colusa	Project	Ongoing	Glenn-Colusa Irrigation District (GCID) Strategic Winter Water Use for Groundwater Recharge and Multiple Benefits	GCID	Direct and In-lieu Groundwater Recharge				Currently Ongoing	TBD
Colusa	Project	Ongoing	Sycamore Marsh Farm Direct Recharge Project	Landowner	Direct Groundwater Recharge				Currently Ongoing	TBD
Colusa	Project	Ongoing	GCID Expansion of In-Basin Program for In-lieu Groundwater Recharge	GCID	In-lieu Groundwater Recharge	Potentially	X		Currently Ongoing	TBD
Colusa	Project	Ongoing	Orland Unit Water Users Association (OUWUA) Irrigation Modernization for Increased Surface Water Delivery and Reduced Groundwater Pumping	OUWUA	In-lieu Groundwater Recharge	Yes	X		Currently Ongoing	TBD
Colusa	Management Action	Ongoing	Urban Water Conservation in Willows	California Water Service - Willows	Management Action				Currently Ongoing	2
Colusa	Project	Potential	GCID In-lieu Groundwater Recharge	GCID	In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	Westside Streams Diversion for Direct or In-lieu Groundwater Recharge	CGA/GGA	Direct and In-lieu Groundwater Recharge	Potentially	X	X	Potential SB122 connection	TBD
Colusa	Project	Potential	Sites Reservoir	Sites Project Authority	Direct and In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	Delevan Pipeline Colusa Basin Drainage Canal System (Colusa Drain) Intertie	Landowner	Direct and In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	Orland Unit Water Users Association (OUWUA) Flood Water Conveyance	OUWUA	Direct Groundwater Recharge	Yes	X	X	Potential SB122 connection	TBD
Colusa	Project	Potential	OAWD Direct Groundwater Recharge	OAWD	Direct Groundwater Recharge					TBD
Colusa	Project	Potential	Sycamore Slough Colusa Drain Multi-Benefit Recharge Project	Landowner	Direct Groundwater Recharge					TBD
Colusa	Project	Potential	Tehama-Colusa Canal Trickle Flow to Ephemeral Streams	RD108	Direct Groundwater Recharge	Potentially	X	X		TBD
Colusa	Project	Potential	Enhanced Infiltration of Precipitation on Agricultural Lands	CGA/GGA	Direct Groundwater Recharge					TBD
Colusa	Project	Potential	Colusa Subbasin Flood-MAR	CGA/GGA	Direct Groundwater Recharge	Potentially	X	X	Potential SB122 connection	TBD
Colusa	Project	Potential	Reclamation District 108 "Boards In" Program	RD108	Direct Groundwater Recharge	Potentially	X	X		1,800
Colusa	Project	Potential	Colusa County Public Water System Water Treatment Plant	Landowner	In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	GCID Water Transfers to Tehama-Colusa Canal Authority (TCCA) CVP Contractors	GCID	In-lieu Groundwater Recharge					TBD

**Colusa Subbasin GSP Projects and Management Actions (Jan 2022)  
With Suggestions for Added Specificity and Prioritization in GSP Revisions (Apr 2024)**

GSP	Project or Management Action	Status	Name	Proponent	Type (If Indicated)	Benefit to Management Zones*	Suggest Added Specificity (Timeline, Benefits)	Suggest Prioritization ("Planned" Now or If Trigger)	Note	Average Annual Benefit (AF/year, If Specified)
Colusa	Project	Potential	Colusa Subbasin In-lieu Recharge & Banking Program	South Valley Water Resources Authority	In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	Sycamore Marsh Farm In-lieu Recharge Project	Landowner	In-lieu Groundwater Recharge					TBD
Colusa	Project	Potential	Westside Off-stream Reservoir and In-Lieu Groundwater Recharge	TCCA Contractors	In-lieu Groundwater Recharge					TBD
Colusa	Management Action	Potential	Domestic Well Mitigation Program	CGA/GGA	Management Action	Yes	X	X	Identified by DWR	TBD
Colusa	Management Action	Potential	Drought Contingency Planning for Urban Areas	CGA/GGA/Cities	Management Action					TBD
Colusa	Management Action	Potential	Long-Term Demand Management Action	CGA/GGA	Management Action	Yes	X	X	Identified by DWR (Long/Short-Term not specified)	TBD
Colusa	Management Action	Potential	Strategic Short-Term Demand Management	CGA/GGA	Management Action	Yes	X	X	Identified by DWR (Long/Short-Term not specified)	TBD
Colusa	Management Action	Potential	Well Abandonment Outreach and Funding Program	CGA/GGA	Management Action					TBD
Colusa	Management Action	Potential	Preservation of Lands Favorable for Recharge	CGA/GGA	Management Action					TBD
Colusa	Management Action	Potential	Review of County Well Permitting Ordinances	CGA/GGA	Management Action	Yes	X	X		TBD
Colusa	Management Action	Potential	Reduce Non-beneficial Evapotranspiration/Invasive Species Eradication	CGA/GGA	Reduce Demand					TBD
Colusa	Management Action	Potential	Development of a Dedicated Network of Shallow Monitoring Wells for GDE Monitoring	CGA/GGA	Management Action, Closing Data Gaps					TBD

\* Management Zones refer to areas of the subbasin where PMAs will be focused to address the most significant subsidence, groundwater level impacts, and adverse groundwater conditions. These would be generally delineated around the Orland-Artois area and Arbuckle-College City area.

**MEMORANDUM OF UNDERSTANDING ESTABLISHING A DOMESTIC WELL MITIGATION PROGRAM FOR THE MADERA SUBBASIN OF THE SAN JOAQUIN VALLEY GROUNDWATER BASIN**

This Memorandum of Understanding (“MOU”) is entered into this \_\_\_ day of \_\_\_\_\_ 2023 (the “Effective Date”), by and between the Groundwater Sustainability Agencies of the COUNTY OF MADERA (“COUNTY”), the CITY OF MADERA (“CITY”), the MADERA IRRIGATION DISTRICT (“MID”), , the MADERA WATER DISTRICT (“MWD”), and the GRAVELLY FORD WATER DISTRICT (“GFWD”), collectively hereinafter referred to as the “Parties,” or individually as the “Party.”

**RECITALS**

- A. **WHEREAS**, groundwater and surface water resources within the Madera Subbasin of the San Joaquin Valley Groundwater Basin (DWR Bulletin 118 No. 5-22.06) (Subbasin) are vitally important resources, in that they provide the foundation to maintain and fulfill current and future environmental, agricultural, domestic, municipal, and industrial needs, and to maintain the economic viability, prosperity, and sustainable management of the Subbasin; and
- B. **WHEREAS**, agriculture has been prominent in making Madera County one of the world’s foremost agricultural areas and plays a major role in the economy of Madera County; and
- C. **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
- D. **WHEREAS**, the Subbasin has been designated by the California Department of Water Resources (DWR) as a high-priority subbasin in a condition of critical groundwater overdraft and is subject to the requirements of SGMA; and
- E. **WHEREAS**, SGMA requires that all medium and high priority groundwater basins in California be managed by a Groundwater Sustainability Agency (GSA), or multiple GSAs, and that such management be implemented pursuant to an approved Groundwater Sustainability Plan (GSP), or multiple GSPs; and
- F. **WHEREAS**, there are seven GSAs within the Subbasin as set-forth in Exhibit A; and
- G. **WHEREAS**, County, City, MID, and MWD have developed one GSP; Root Creek Water District has developed one GSP; GFWD has developed one GSP; and New Stone Water District has developed one GSP, such that the Subbasin is governed by four separate GSPs unified through the Subbasin Coordination Agreement; and
- H. **WHEREAS**, in January 2020, the Parties submitted four GSPs to DWR; and

- I. **WHEREAS**, the Parties agree, and as SGMA allows, a transition to sustainability over the 20-year GSP Implementation Period is in the best overall interest of the Subbasin, although this approach is expected to result in some continued groundwater level declines during the GSP Implementation Period; and
- J. **WHEREAS**, the Parties agree that as a result of the continued decline in groundwater levels anticipated to occur over the GSP Implementation Period, there may be adverse impacts to some domestic and municipal wells in the Subbasin; and
- K. **WHEREAS**, the Parties acknowledge that the number of domestic and municipal wells dewatered during implementation of the GSP (prior to 2040) is heavily dependent on precipitation and snowpack during that time period; and
- L. **WHEREAS**, the Parties acknowledge that wet conditions may result in few dewatered wells; and
- M. **WHEREAS**, the Parties acknowledge that substantial numbers of domestic and municipal wells may be dewatered if prolonged drought occurs during implementation of the GSP, while project and management actions are still being developed and implemented; and
- N. **WHEREAS**, the Parties acknowledge that they cannot control groundwater conditions not caused by regional groundwater conditions; and
- O. **WHEREAS**, the Parties do not intend to resolve or otherwise mitigate for issues related to normal wear and tear; and
- P. **WHEREAS**, the Parties as part of their future analysis agree to review potential impacts to both domestic and municipal wells in the Subbasin; and
- Q. **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.”
- R. **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 and consider mitigation for domestic and municipal well impacts resulting from declining groundwater levels that occur from groundwater management activities outlined in the four GSPs through development of a Domestic Well Mitigation Program (Program) as follows:

## AGREEMENT

1. **POTENTIAL PROGRAM MITIGATION MEASURES.** Potential Program mitigation measures may include, but are not limited to:
  - a. Short-term solutions in emergencies, such as delivery of bottled water and/or water tanks.
  - b. Setting well pump at deeper depths, replacement of well pump, or well replacement.
  - c. Residential water treatment equipment.
  - d. Connection to or development of public water systems to serve impacted communities.
  - e. Municipal service connections.
  
2. **PROPORTIONATE RESPONSIBILITY.** The Parties agree to work cooperatively together to determine the proportionate responsibility of each Party.
  
3. **FUNDING.** The Parties agree to fund the Program on an annual basis consistent with the final determination of each Party's proportionate responsibility.
  
4. **PROGRAM DEVELOPMENT COMMITTEE.** The Parties shall establish a Program Development Committee (Committee) that will oversee Program development. The Committee shall include at least one technical staff representative from each of the Parties. The Committee will define the purpose, objectives, roles, responsibilities, requirements, and potential outcomes of the Program. Items for consideration and development by the Committee include, but are not limited to:
  - a. Definitions
  - b. Property eligibility
  - c. Property owner eligibility
  - d. Program application process
  - e. Preferred contractors
  - f. Preliminary inspection process
  - g. Program form development
  - h. Priority
  - i. Eligible mitigation
  - j. Non-eligible mitigation
  - k. Maximum mitigation award
  - l. Recordation of mitigation award
  
5. **PROGRAM ORGANIZATIONAL STRUCTURE.** To aid the Committee in Program development and implementation, a DRAFT Program organizational structure is as shown in Exhibit B. That shown in Exhibit B is only a DRAFT and shall not limit or otherwise constrain the Committee in their analysis.

6. **PROGRAM IMPLEMENTATION.** To aid the Committee in Program development and implementation, a DRAFT implementation flowchart is as shown in Exhibit C. That shown in Exhibit C is only a DRAFT and shall not limit or otherwise constrain the Committee in their analysis.
  
7. **TERM.** The Program shall be developed within the first 5 years of GSP implementation (by 2025) and upon implementation, shall continue for the duration of the GSP Implementation Period, until groundwater sustainability is achieved and/or as otherwise directed by the Parties.
  
8. **PROGRAM MANAGEMENT.** Program management shall be facilitated by one of the Parties. If one of the Parties doesn't elect to program management duties and through recommendation of the Coordination Workgroup and approval of the Parties, Program management shall be facilitated through a third party.
  
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 the 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 in this Section 16. The addresses and addressees noted below are the Party's designated address and addressee for deliver or mailing notices.

To Madera County:	County of Madera Stephanie Anagnoson 200 W 4 <sup>th</sup> Street, 4 <sup>th</sup> Floor Madera, CA 93637
To MID:	Madera Irrigation District Thomas Greci 12152 Road 28 1/4 Madera, CA 93637
To GFWD:	Gravelly Ford Water District Don Roberts 18811 Road 27 Madera, CA 93638
To City:	City of Madera



Keith Helmuth  
428 East Yosemite Avenue  
Madera, CA 93638

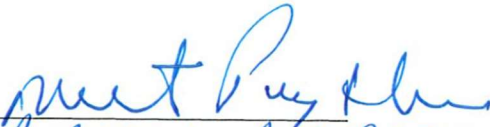
To MWD:

Madera Water District  
Melanie J. Aldridge  
1663 N. Schnoor Street, Suite 105  
Madera, CA 93638

Any Party may, by written notice to each of the other Parties, 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.

County of Madera

  
ROBERT L. POYTARESS  
CHAIRMAN PRO-TEM

3.21.23  
Date

Madera Irrigation District

  
Thomas Greci

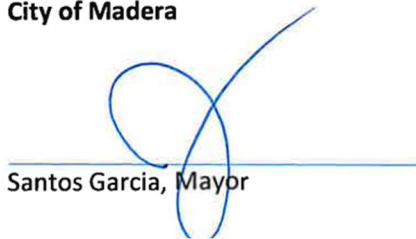
3/21/2023  
Date

Gravelly Ford Water District

  
Don Roberts

3-21-23  
Date

City of Madera

  
Santos Garcia, Mayor

March 21, 2023  
Date

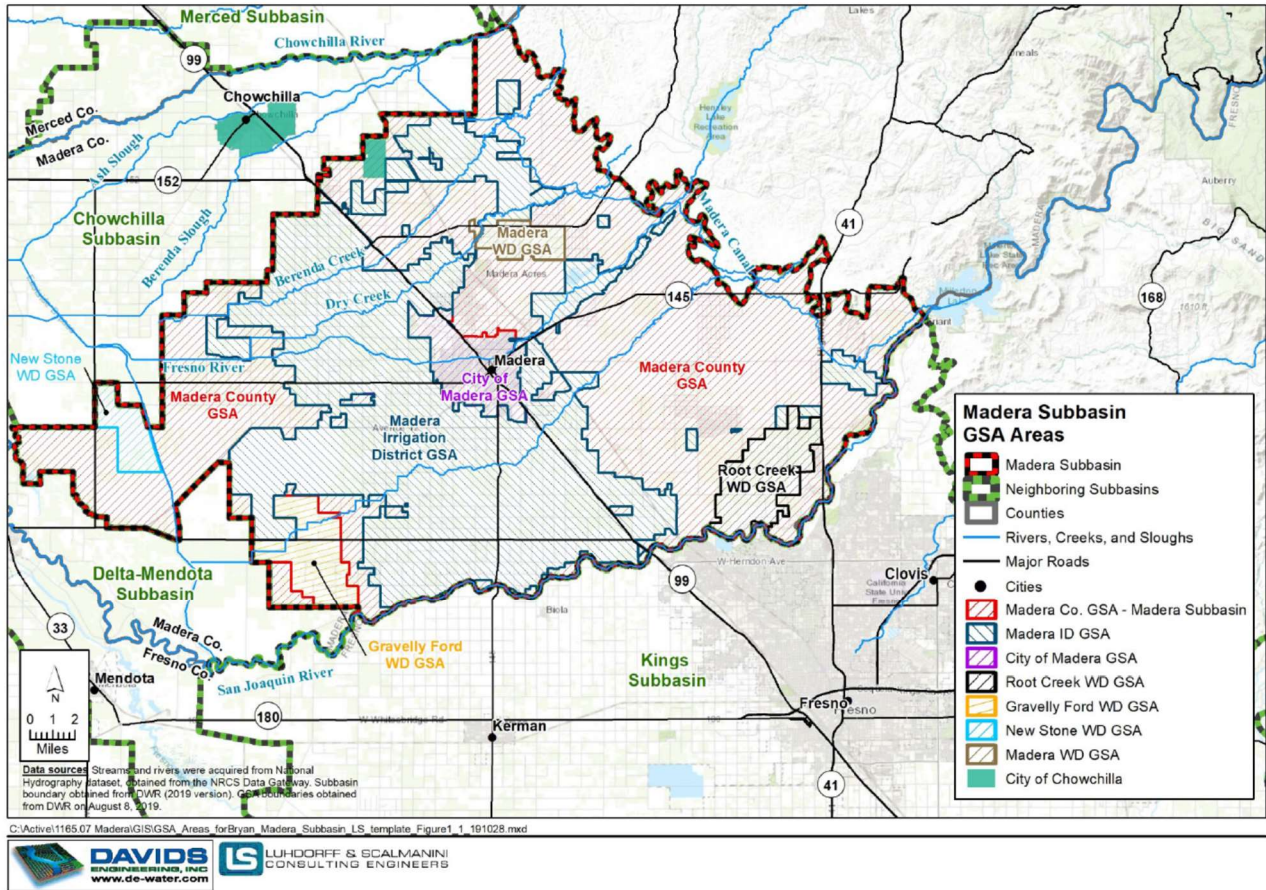
Madera Water District

  
Phil Janzen

3-21-23  
Date

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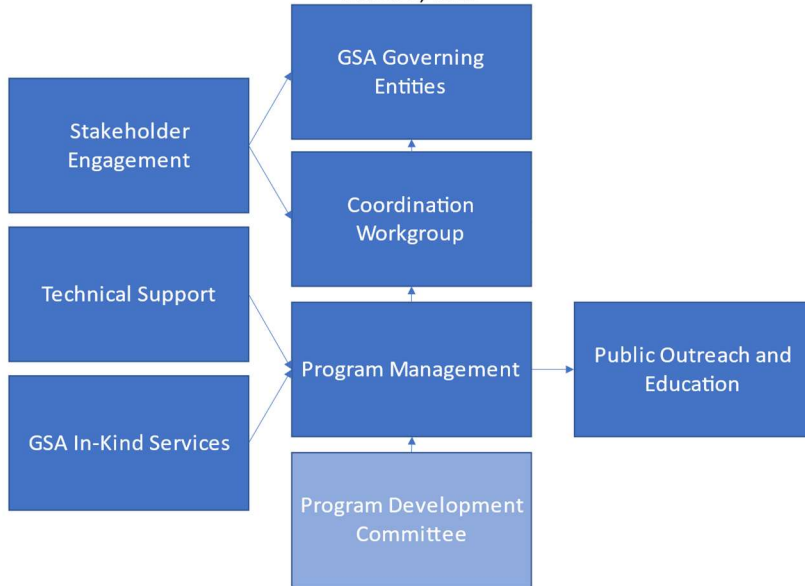
# EXHIBIT A



## EXHIBIT B

**DRAFT**

### Madera Subbasin – Domestic Well Mitigation Program Organizational Structure March 5, 2023



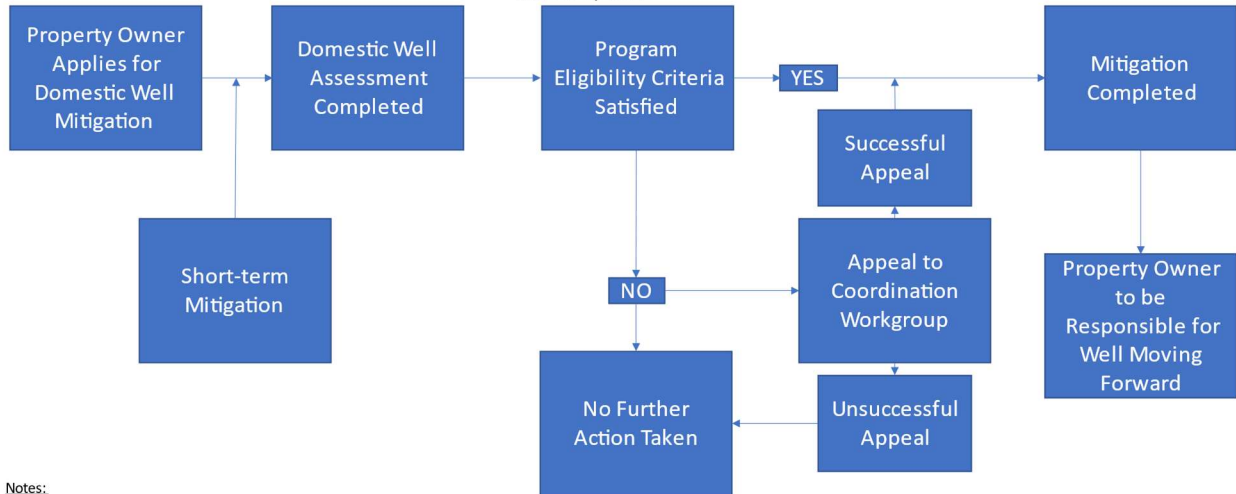
Notes:

1. That shown herein is subject to revision by the Parties.
2. Public Outreach and Engagement is a necessary component as outlined 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."
3. The Madera Subbasin Coordination Workgroup is defined in the Madera Subbasin Coordination Agreement entered into January 22, 2020.

## EXHIBIT C

**DRAFT**

### Madera Subbasin – Domestic Well Mitigation Program Implementation Flowchart March 5, 2023



**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.
2. That shown herein is subject to revision by the Madera Subbasin GSAs.
3. The 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."

# Staff Report

**To:** CGA-GGA Joint Board

**Agenda Item:** 5. Agreement 1173.04 between Davids Engineering, Inc. and Colusa Groundwater Authority Task Order 2 for Phase 2 Colusa Subbasin GSP Revisions

**Date:** January 26, 2024

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## Background

On October 26, 2023, DWR completed their initial evaluation of the Colusa Subbasin GSP and determined that the GSP is “incomplete” pursuant to Section 355.2(e)(2) of the GSP Regulations, initiating a 180-day period for the GSAs to address three identified deficiencies by April 23, 2024:

- DWR finds that the GSP does not include a reasonable assessment of overdraft conditions and a reasonable means to mitigate overdraft,
- DWR finds that the sustainable management criteria (SMC) for chronic lowering of groundwater levels (GWL) are not substantially compliant with the GSP regulations, and
- DWR finds that the SMC for subsidence are not substantially compliant with the GSP regulations.

The GSP revisions are being completed in a two-phased manner, in which:

- Phase 1 focuses on: (1) reviewing the deficiencies that DWR identified with the GSAs, (2) discussing policy and technical alternatives for addressing the deficiencies with the GSAs and DWR, and (3) initiating work on required technical revisions.
- Phase 2 focuses on: (1) completion of technical revisions informed by the GSAs’ policy and technical decisions, (2) meeting with the GSAs, DWR, and the public to discuss the GSP revisions, (3) preparing and receiving feedback on the draft Revised GSP, and (4) completing the final Revised GSP for adoption by the GSA Boards of Directors (GSA Boards) and submitting the adopted Revised GSP to DWR before the April 23, 2024 deadline.

The attached Task Order 02 covers the work to be completed by DE in Phase 2 of the proposed GSP revision process.

Tasks include:

1. Participate in Coordination Meetings with GSA Staff and Representatives
2. Participate in Meetings with GSAs to Discuss Policy and Technical Alternatives
3. Participate in Meetings with DWR to Review Policy and Technical Approaches

4. Complete GSP Revisions
  - 4.1. Support Revisions to Projects and Management Actions (PMAs)
  - 4.2. Support Revisions to Overdraft Estimates
  - 4.3. Support Revisions to Groundwater Level (GWL) Sustainable Management Criteria (SMC)
  - 4.4. Support Revision to Subsidence SMC and Monitoring

The cost of Phase 2 will be billed on a time and materials basis not to exceed \$186,221 without prior written authorization. If the GSAs share the cost evenly, the cost to each GSA would not exceed \$93,110.50 each.

## Recommendation

1. CGA: Approve Agreement 1173.04 between Davids Engineering, Inc. and Colusa Groundwater Authority Task Order 2 for Phase 2 Colusa Subbasin GSP Revisions.
2. CGA: 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 Oder 2 not to exceed \$93,110.50 each.
3. GGA: 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 Oder 2 not to exceed \$93,110.50 each.

## Attachments

- Agreement 1173.04 between Davids Engineering, Inc. and Colusa Groundwater Authority Task Order 2 (pg. 33)



# Task Order for Professional Engineering Services

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**To:** Carol Thomas-Keefer  
Program Manager  
Colusa Groundwater Authority

**From:** Katherine Klug  
Davids Engineering, Inc.

**Date:** January 19, 2024

**Project name:** Colusa Subbasin GSP Revisions

**Project #:** 1173.04

**Task name:** Phase 2 Revisions

**Task order #:** 02

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Davids Engineering, Inc. (DE or CONSULTANT) is pleased to provide this proposal to the Colusa Groundwater Authority (CGA or CLIENT) to complete the Phase 2 Revisions for the Colusa Subbasin Groundwater Sustainability Plan (GSP). The objective of the Phase 2 Revisions is to address deficiencies identified by the California Department of Water Resources (DWR) in their October 26, 2023, determination letter. DE will retain West Yost (WY) as a subconsultant to support the Phase 2 Revisions.

Pursuant to the Task Order Agreement for Professional Services between CLIENT and CONSULTANT dated November 17, 2023, CLIENT desires and CONSULTANT agrees to perform the professional services according to the scope of services, schedule and costs defined in Sections 3 of this Task Order 02.

## 1 Task Order Overview and Objective

On October 26, 2023, DWR completed their initial evaluation of the Colusa Subbasin GSP and determined that the GSP is “incomplete” pursuant to Section 355.2(e)(2) of the GSP Regulations, initiating a 180-day period for the GSAs to address three identified deficiencies by April 23, 2024:

- DWR finds that the GSP does not include a reasonable assessment of overdraft conditions and a reasonable means to mitigate overdraft,
- DWR finds that the sustainable management criteria (SMC) for chronic lowering of groundwater levels (GWL) are not substantially compliant with the GSP regulations, and
- DWR finds that the SMC for subsidence are not substantially compliant with the GSP regulations.

The GSP revisions are being completed in a two-phased manner, in which:

- Phase 1 focuses on: (1) reviewing the deficiencies that DWR identified with the GSAs, (2) discussing policy and technical alternatives for addressing the deficiencies with the GSAs and DWR, and (3) initiating work on required technical revisions.
- Phase 2 focuses on: (1) completion of technical revisions informed by the GSAs' policy and technical decisions, (2) meeting with the GSAs, DWR, and the public to discuss the GSP revisions, (3) preparing and receiving feedback on the draft Revised GSP, and (4) completing the final Revised GSP for adoption by the GSA Boards of Directors (GSA Boards) and submitting the adopted Revised GSP to DWR before the April 23, 2024 deadline.

This Task Order 02 covers the work to be completed by DE in Phase 2 of the proposed GSP revision process.

## 2 Task Order Approach

DE proposes to complete the work under this Task Order 02 in close coordination with GSA staff and with clear and timely direction from the GSA Boards and the GSA Joint Technical Advisory Committee (TAC) received during the meetings defined in the scope of services (Section 3). Work under this Task Order 02 will be coordinated to the extent possible with concurrent efforts to develop the Colusa Subbasin GSP Annual Report for Water Year 2023. Anticipated points of coordination with the Annual Report efforts are noted in the scope of services below.

## 3 Task Order Description

### 3.1 Scope of Services

The scope of services to be performed by DE is organized into four (4) tasks as described below:

#### **Task 1. Participate in Coordination Meetings with GSA Staff and Representatives**

This task includes regular coordination meetings with GSA staff and the GSA Board Chairs and Vice Chairs to discuss topics required to advance the GSP revisions process.

- Meet biweekly (anticipating a total of six meetings from February-April) with GSA staff and the GSA Board Chairs and Vice Chairs to discuss the GSP revision process, required technical revisions, and coordination needed for GSA and DWR meetings (***DE participation to be coordinated with Annual Report efforts***). It is assumed that DE will attend meetings virtually, that DE will summarize and share action items and outcomes of meetings with GSA staff, and that WY will not attend the recurring biweekly meetings.
- Prepare for and participate in five additional meetings with GSA staff, scheduled on an as-needed basis at the request of GSA staff. It is assumed that DE and WY will attend meetings virtually, and that DE will summarize and share action items and outcomes of meetings with GSA staff.

#### **Task 2. Participate in Meetings with GSAs to Discuss Policy and Technical Alternatives**

This task encompasses the effort required to frame necessary policy and technical decisions that must be made by the GSAs to move forward with addressing the three deficiencies identified by DWR.

- Prepare summaries of policy and technical approaches, recommendations, and associated supporting materials for twice-monthly meetings with the GSAs (six total in February-April, including meetings with the GSA Boards and Joint TAC). It is assumed that DE will be responsible for preparing technical materials and will provide those materials to GSA staff for circulation among the GSAs. It is assumed that GSA staff will lead the scheduling and coordination of the GSA meetings, and will lead the processes needed to reach GSA decisions.
- Participate in said meetings to discuss policy and technical alternatives. It is assumed that DE will have one in-person attendee for all meetings and that WY will have one in-person attendee at 3 meetings. Other attendees will participate virtually.

### **Task 3. Participate in Meetings with DWR to Review Policy and Technical Approaches**

This task will support the GSAs in meeting with DWR to discuss the three identified deficiencies and the proposed policy and technical approaches for addressing those deficiencies.

- Prepare summaries of policy and technical recommendations and associated supporting materials for two meetings with DWR and the GSAs (anticipated in February-March). It is assumed that CONSULTANT will be responsible for preparing the meeting agenda and technical materials and will provide those materials to GSA staff for circulation among the GSAs and DWR, as desired. It is assumed that GSA staff will lead the scheduling and coordination of the DWR meeting.
- Participate in said meetings to discuss policy and technical approaches. It is assumed that DE and WY will attend meetings virtually.

### **Task 4. Complete GSP Revisions**

Efforts under this task will complete the GSP revisions, in alignment with the direction of the GSAs and feedback received from DWR on the proposed GSP revisions. In completing this task, DE will:

- Complete the technical work outlined in the subtasks below.
- Complete the GSP revisions to incorporate technical work into the GSP document, including:
  - Redline edits
  - Clean compiled edits and appendices
- Provide support for GSA adoption of the revised GSP, as needed.
- Prepare all materials to upload and submit the revised GSP to DWR prior to the April 23, 2024 deadline.

#### **Subtask 4.1. Support Revisions to Projects and Management Actions (PMAs)**

Efforts under this subtask will support the GSAs in making the policy decisions and technical updates needed to revise the PMAs.

- Prepare technical materials, summaries of guidance documents, and information gathered from other GSPs and SGMA-related PMAs to support the GSAs in framing and making the policy decisions needed to advance PMAs for the GSP revisions, consistent with feedback from DWR. Information will be prepared in coordination with Task 2.
- Prepare technical summaries and recommendations related to PMA updates, potentially including but not limited to:
  - Updates to refine planned/ongoing PMAs in the initial GSP.

- Updates to incorporate new PMAs, including demand management and/or domestic well mitigation. It is assumed that DE will support the GSAs' legal counsels in developing draft agreement materials for proposed management actions to be submitted with the revised GSP (no later than 04/23/2024).
- Updates to descriptions of PMAs pertaining to subsidence, as required, potentially including a subsidence sensitivity analysis project.
- Coordinate with the GSAs and proponents to update descriptions of planned/ongoing PMAs. ***(Updates to be coordinated with Annual Report efforts)***
- Coordinate with the GSAs and proponents to update descriptions of plans and processes for implementing new PMAs, potentially including:
  - Strategic planning for implementation of management actions.
  - Prioritization for implementing potential PMAs.
- Incorporate updated discussion of PMAs into the revised GSP, inclusive of comments and feedback from the GSAs. It is anticipated that content will be updated in multiple sections of the GSP to reinforce discussion of subsidence, groundwater levels, overdraft, and potential impacts to beneficial uses and users of groundwater and land.

#### **Subtask 4.2. Support Revisions to Overdraft Estimates**

Efforts under this subtask will support the GSAs in revising the current overdraft estimate for the Colusa Subbasin.

- Prepare revised current overdraft estimate based on groundwater levels, consistent with recent conditions in the Subbasin and guidance received from DWR during Phase 1 of the GSP revisions process.
- Incorporate revised current overdraft estimate and related discussion into the GSP text, inclusive of comments and feedback from the GSAs.

#### **Subtask 4.3. Support Revisions to Groundwater Level (GWL) Sustainable Management Criteria (SMC)**

Efforts under this subtask will support the GSAs in reviewing and revising the GWL SMC for the Colusa Subbasin in relation to groundwater conditions and impacts to beneficial uses and users of groundwater.

- Prepare technical summaries and recommendations to support the GSAs in framing and making decisions to update and/or revise the GWL SMC, consistent with feedback from DWR. Information will be prepared in coordination with Task 2.
- Recommend updated undesirable result definitions for the GSAs to consider. It is anticipated that updates will reference potential domestic well impacts and the minimum threshold (MT) definition.
- Recommend potential updates to GWL MTs for the GSAs to consider. It is anticipated that the updates may consider:
  - Revisions to existing MT definitions
  - New MTs based on GWLs relative to overdraft conditions
  - New MTs based on historical GWLs
  - MTs in different potential "Focus Zones" in the Subbasin
- Incorporate revised GWL SMC into the revised GSP, including tables, figures, and maps describing the revised SMC relative to beneficial uses and users of groundwater.

#### **Subtask 4.4. Support Revisions to Subsidence SMC and Monitoring**

Efforts under this subtask will support the GSAs in reviewing and revising the subsidence SMC and monitoring network for the Colusa Subbasin, with consideration for impacts to land uses and users.

- Prepare technical summaries and recommendations to support the GSAs in framing and making decisions to update and/or revise the subsidence SMC and monitoring network.
- Recommend updated undesirable result definitions for the GSAs to consider. It is anticipated that updates will reference “critical infrastructure,” to be discussed and recommended to the GSAs.
- Review and potentially recommend updates to subsidence MTs for the GSAs to consider.
- Recommend updates to the subsidence monitoring network for the GSAs to consider. It is anticipated that updates will incorporate available InSAR (interferometric synthetic aperture radar) information from DWR.
- Draft a brief, initial Infrastructure Sensitivity Assessment (Assessment). The Assessment will gather available information to discuss existing and potential subsidence impacts to critical infrastructure, recognizing existing data gaps. Content would include:
  - Identification of critical infrastructure (with maps),
  - Identification of existing impacts of subsidence to critical infrastructure, based on available information,
  - Description of potential future impacts of subsidence to critical infrastructure, and
  - Description of the characteristics of subsidence in the subbasin, to the extent known.
- Incorporate revised subsidence SMC, monitoring information, and infrastructure sensitivity assessment into the revised GSP.

### **3.2 Deliverables**

The following deliverable(s) will be provided to CLIENT:

1. Technical materials to facilitate meetings with GSAs and to frame GSA technical and policy decisions (Tasks 1 and 2)
2. Technical materials to facilitate meetings with DWR (Task 3)
3. Draft technical work products and materials regarding policy decisions related to:
  - a. PMA revisions (Subtask 4.1), including framework for implementing new PMAs
  - b. Overdraft revisions (Subtask 4.2)
  - c. GWL SMC revisions (Subtask 4.3)
  - d. Subsidence SMC and monitoring revisions (Subtask 4.4), including Infrastructure Sensitivity Assessment
4. Draft revised GSP incorporating technical work products and outcomes of policy decisions, including:
  - a. Redline edits
  - b. Clean compiled edits and appendices
5. Final revised GSP and materials needed to upload and submit to DWR prior to the April 23, 2024 deadline.

### 3.3 Assumptions

The following assumptions were made while developing this proposal. To the extent that these assumptions do not hold true, the effort and therefore the cost and schedule required to perform the services could be affected.

1. All work set forth in this proposal is limited to the 180-day review period.
2. CLIENT will be the lead for scheduling and coordinating meetings with the GSAs, Joint TAC, and DWR.
3. CONSULTANT will be responsible for documenting all technical and policy decisions made by the GSAs for review and approval by staff.
4. CONSULTANT attendance at the specified number of meetings identified in the scope of services is included, assuming attendance by two DE staff members at each meeting. DE assumes one in-person attendee and one remote attendee at each meeting with the GSA Boards and Joint TAC, and two remote attendees for each GSA staff meeting and DWR meeting.
5. CLIENT will be the lead for all stakeholder outreach.
6. CLIENT will be responsible for preparing and providing notice to cities and counties within the GSP area at least 90 days prior to the public hearing for GSP adoption (per California Water Code §10728.4).
7. The GSA Boards and Joint TAC will make clear decisions and give clear directions to the CONSULTANT on the proposed content of the revised GSP during the same meeting in which decisions or direction are sought by the CONSULTANT.
8. The work defined in Task Order 02 will progress to meet milestones on the timeline defined in the Schedule section of this Task Order 02.
9. CLIENT will provide legal review and/or assistance as may be required.
10. CONSULTANT will support the CLIENT's legal counsel in developing draft agreement materials for proposed management actions to be submitted with the revised GSP (no later than 04/23/2024).
11. Progress and decisions in the development of GSP PMAs will be driven by the GSAs.
12. CLIENT will provide review of draft work products and feedback in a timely manner.
13. One round of review of the draft revised GSP is included, assuming that GSA staff, Joint TAC members, and Board members will have the opportunity to review the draft revised GSP during the review period.
14. Any and all work performed under this proposal shall be on a time and materials basis consistent with CONSULTANT's rate schedule then in effect.
15. Any work requested by CLIENT and performed by CONSULTANT outside the scope set forth herein will result in additional fees charged at CONSULTANT's rates then in effect.
16. All deliverables will be provided in electronic format.
17. Completion of the work set forth in this proposal does not guarantee acceptance of the revised GSP by DWR.

### 3.4 Schedule

DE proposes to complete the work defined in Task Order 02 by April 23, 2024, concluding with submittal of the Revised GSP to DWR. The work defined in Task Order 02 will progress to meet milestones on a

timeline as defined in Table 1. Delays in the notice to proceed from CLIENT will result in corresponding delays or shifts to the subsequent milestones. Schedule implications or deviations from the milestone dates that occur during the work will be made known to CLIENT as soon as practicable.

*Table 1. Task Order 02 Milestones and Milestone Dates.*

<b>Milestone</b>	<b>Milestone Date</b>	<b>Note</b>
Phase 2 Notice to Proceed	January 26, 2024	Joint Board Meeting date
Joint TAC Meeting	February 9, 2024	Meeting to discuss recommendations for PMA process and SMC revisions.
DWR Meeting #3	February 2024 – Date TBD	Meeting to discuss proposed approach for PMA process and SMC revisions.
GSA Board Meeting	February 23, 2024	Meeting to recommend and make decisions on PMA process and SMC revisions.
Joint TAC Meeting	March 8, 2024	Meeting to discuss recommendations for SMC revisions.
DWR Meeting #4	March 2024 – Date TBD	Meeting to discuss proposed approach for SMC revisions and PMA topics as needed.
Joint GSA Board Meeting	March 22, 2024	Meeting to recommend and make decisions on SMC revisions.
Draft Revised GSP Provided for Review	March 27, 2024	Draft Revised GSP materials provided to GSAs for review
Comments Received on Draft Revised GSP	April 9, 2024	Comments received from GSAs
Joint TAC Meeting	April 12, 2024	Meeting to review Revised GSP, next steps.
Final Revised GSP	April 16, 2024	Final Revised GSP materials prepared for submittal to DWR
Joint GSA Board Meeting	April 19, 2023 (Date TBD)	Revised GSP adoption hearing.
Submittal of Revised GSP	April 22, 2024	Submittal of Revised GSP to DWR, ahead of April 23, 2024 deadline.
Phase 2 Conclusion	April 23, 2024	Conclusion of GSP revisions work, transmittal of all deliverables.

### 3.5 Costs

CONSULTANT costs associated with performing this Task Order 02 will be billed to the CLIENT on a time and materials basis not to exceed \$186,221 without prior written authorization (Table 2). While estimated costs are based on a detailed task-by-task buildup, actual project costs will not necessarily be tracked on a task basis, nor will individual task budgets constrain charges for work performed up to the total estimated budget.

## 4 Task Order Signatures

### Approved for CLIENT

Signed: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

### Accepted for Davids Engineering, Inc.

Signed: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Table 2. Task Order 02 Cost Summary.

Colusa Subbasin GSP Revisions - Phase 2 Revisions															
Project Task/Subtask	Labor Costs										Labor Costs Subtotal (\$)	Current IRS Mileage (\$ /mile)	Direct Costs Subtotal (\$)	Total Cost (\$)	
	DE - Senior Principal Engineer	DE - Principal Engineer	DE - Supervising Engineer	DE - Associate Engineer I	DE - Staff Engineer I	DE - Assistant Engineer I	DE - Associate Project Assistant	WYA - Principal Hydrogeologist II	WYA - Associate Geologist II	WYA - Senior Geologist I					
	\$262	\$249	\$228	\$188	\$163	\$121	\$108	\$322	\$243	\$272					
<b>Task 1 - Participate in Coordination Meetings with GSA Staff and Representatives</b>															
Prepare for and participate in biweekly standing meeting with GSA staff (6 meetings)			2	2								\$832			\$832
<i>Time coordinated with Annual Report efforts</i>															
Prepare for and participate in additional meetings with GSA staff (5 meetings)			10	10				10	10	10		\$12,530			\$12,530
<b>Task 1 Subtotals</b>			12	12				10	10	10		\$13,362			\$13,362
<b>Task 2 - Participate in Meetings with GSAs to Discuss Policy and Technical Alternatives</b>															
Prepare summaries of policy and technical alternatives, recommendations, and associated supporting materials for GSAs (6 meetings)	2	4	12	12			2	4	12	12		\$14,196			\$14,196
Participate in twice-monthly meetings with GSAs (Joint TAC and Boards) (6 total, DE attending all and WY attending 3 in-person)			32	32				20	12	12		\$25,932	840	\$563	\$26,495
<b>Task 2 Subtotals</b>	2	4	44	44			2	24	24	24		\$40,128	840	\$563	\$40,691
<b>Task 3 - Participate in Meetings with DWR to Review Policy and Technical Approaches</b>															
Prepare summary of policy and technical recommendations and associated supporting materials for DWR and GSA discussion			4	12				2	2	2		\$4,842			\$4,842
Participate in two meetings with GSAs and DWR			4	4				4	4	4		\$5,012			\$5,012
<b>Task 3 Subtotals</b>			8	16				6	6	6		\$9,854			\$9,854
<b>Task 4 - Complete GSP Revisions</b>															
<b>Subtask 4.1. Support Revisions to PMAs</b>															
Prepare materials to support the GSAs in framing and making PMA-related policy decisions, consistent with feedback from DWR	<i>Time included in Task 2 and 3 budget.</i>														
Prepare technical summaries and recommendations to refine planned/ongoing PMAs in the initial GSP, and coordinate with proponents.			8	20			20	8	12	8		\$15,672			\$15,672
Prepare technical summaries, recommendations, and framework to incorporate new PMAs, including demand management and/or domestic well mitigation.	2	4	8	16			8	4	4	4		\$10,668			\$10,668
Incorporate updated discussion of PMAs into the revised GSP	2	4	8	20			10	4				\$8,746			\$8,746
<b>Subtask 4.2. Support Revisions to Overdraft Estimates</b>															
Prepare revised current overdraft estimate based on groundwater levels			2	2								\$832			\$832
<i>Effort primarily completed in Phase 1 and coordinated with Annual Report efforts</i>															
Incorporate revised current overdraft estimate and related discussion into the revised GSP			2	8			4					\$2,392			\$2,392
<b>Subtask 4.3. Support Revisions to GWL SMC</b>															
Prepare materials to support the GSAs in framing and making GWL SMC decisions, consistent with feedback from DWR	<i>Time included in Task 2 and 3 budget.</i>														
Recommend updated undesirable result definitions for the GSAs to consider			2	4				4	4	4		\$4,556			\$4,556
Recommend potential updates to GWL MTs for the GSAs to consider			8	16			16	8	28	8		\$18,324			\$18,324
Incorporate revised GWL SMC into the revised GSP			2	20			8	4	8	12	8	\$13,284			\$13,284
<b>Subtask 4.4. Support Revisions to Subsidence SMC and Monitoring</b>															
Prepare materials to support the GSAs in framing and making subsidence SMC and monitoring network decisions, consistent with feedback from DWR	<i>Time included in Task 2 and 3 budget.</i>														
Recommend updated subsidence undesirable result definitions			4	4				4	4	4		\$5,012			\$5,012
Recommend potential updates to subsidence MTs			2	4				2	4	4		\$3,912			\$3,912
Recommend updates to the subsidence monitoring network			2	2				2	4	4		\$3,536			\$3,536
Draft a brief, initial Infrastructure Sensitivity Assessment			8	32				8	44	8		\$23,284			\$23,284
Incorporate revised subsidence SMC, monitoring, and Assessment into the revised GSP			2	20			8	4	6	12	6	\$12,096			\$12,096
<b>Task 4 Subtotals</b>	4	8	58	168			70	16	54	128	58	\$122,314			\$122,314
<b>SubTotals</b>	6	12	122	240			70	18	94	168	98	\$185,658	\$563		\$186,221

# Staff Report

**To:** CGA Board

**Agenda Item:** 6. Proposal from Thaddeus Bettner, Water Ecology LLC, for GSP Support Services

**Date:** January 26, 2024

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## Background

Following consultation with the CGA Chairman, and in recognition of the short timeframe provided to develop and submit a revised GSP to DWR, Thaddeus Better, Water Ecology LLC, has submitted a proposal to provide support for the revisions, approval and implementation of the Colusa Subbasin GSP. Mr. Bettner's experience in the area and knowledge of the subbasin could provide valuable assistance and critical support in coordinating the development and approval of a revised GSP. The proposal is in draft form, as Mr. Bettner would work with CGA to further develop and refine the scope of his work and responsibilities. His services are proposed at approximately 40 hours per month at a rate of \$225.00 per hour (approximately \$9,000 per month). The contract would extend through the end of the GSP update period (April) and possibly beyond, pending further action and approval by the CGA Board.

## Recommendation

The CGA Board should consider approval of the proposal from Thaddeus Bettner, Water Ecology LLC, to provide strategic, policy, vision and implementation support for the Colusa Subbasin GSP, at a cost of approximately \$9,000 per month through April 2024 or longer, subject to the Board's determination.

## Attachments

- Proposal from Thaddeus Bettner, Water Ecology LLC, for Colusa Subbasin GSP support (pg. 43)

# Proposal and Scope

**TO:** Darrin Williams, Chair, Colusa Groundwater Authority

**FROM:** Thaddeus Bettner, Water Ecology LLC

**DATE:** 1/11/2024

## Background

The Colusa Groundwater Authority (CGA) is responsible for implementing the Colusa Basin Groundwater Sustainability Plan (CBGSP) in the portion of the basin overlying the area of Colusa County. With the Glenn Groundwater Authority (GGA) overlying the balance of the basin, it is imperative that the two Authorities work in alignment and in conjunction to implement the CBGSP, which both agencies have approved. The Colusa Basin is one of the largest basins in the state serving a region that has multiple beneficial uses and effective implementation of the GSP will ensure the long-term goal of groundwater sustainability is met in the basin for the benefit of all groundwater users, residents, and the environment.

The sustainability goal for the Subbasin from the CBGSP is:

*...to maintain, through a cooperative and partnered approach, locally managed sustainable groundwater resources to preserve and enhance the economic viability, social well-being and culture of all Beneficial Uses and Users, without experiencing undesirable results.*

## Proposal

This proposal is for assisting the CGA with strategic, policy, vision and implementation of the CBGSP, with the ability to also join with the GGA in joint implementation as determined by the two GSA Boards.

The proposal focuses on three-time frames:

### Immediate (1-4 months)

Respond to Department of Water Resources October 26, 2023 determination of incomplete status with the Goal of having DWR making a finding the Plan is complete.

- Form GSA small group strike team to meet with DWR on bi-weekly basis
- Identify Policy and Technical Solutions
- Meet with GSA Boards to discuss and approve Policy Decisions
- Task Technical Teams to implement Policy Solutions
- Obtain qualified Approval from DWR that plan will be accepted
- Pursue CGA-GGA Joint Board meetings and alternative Decision-Making structure

### Intermediate (4-10) months

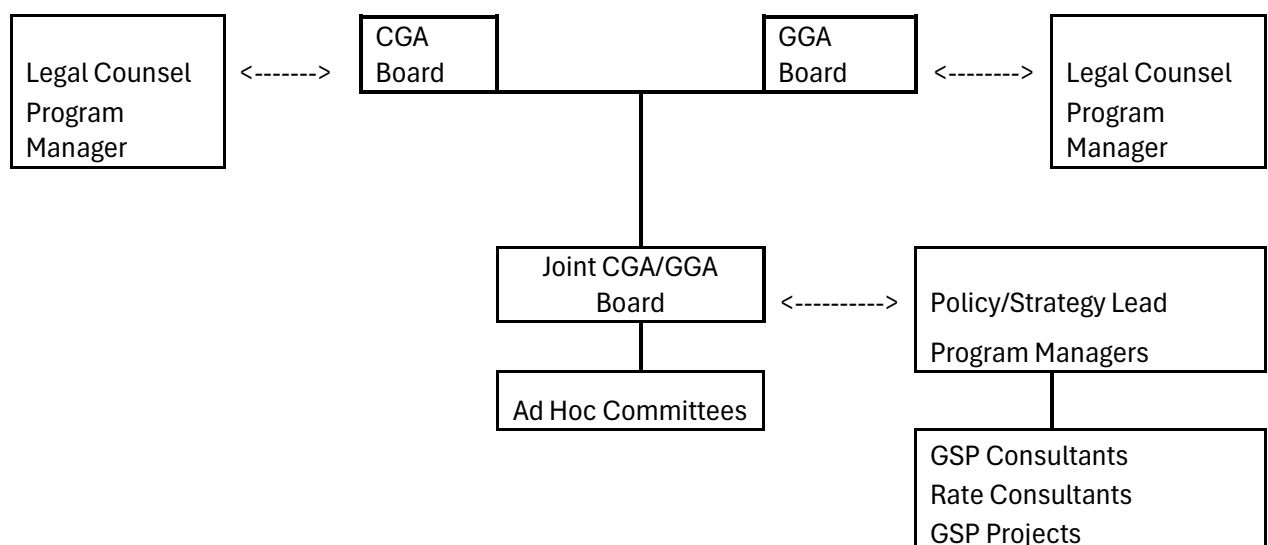
- Address any outstanding issues with DWR based on response CGA/GGA response letter

- Develop Vision, Tracking, and Report Card for the CGA Board to understand what is in the CBGSP which includes a proactive analysis of all commitments, timelines, and costs.
- Coordinate with Consultant Team to develop the proper level of reporting to the Board and ensure the CGA Board is spending its time on Policy related issues that are supported by the right level of Technical Support
- Work with Consultants on the appropriate level of Technical Support and develop longer term budgets for activities based on the Report Card Timelines and Deliverables
- Meet with CGA Board Members individually to discuss their perspectives on the CGA, CBGSP, and overall SGMA related matters.
- Meet with CGA Board Agencies
- Continue with Joint CGA-GGA Board meetings
- Coordinate with Colusa County on County Roles and responsibilities related to land use planning, Prop 218, well permitting and groundwater “police” authorities

Longer Term (10-18 Months)

- Ensure all commitments made to DWR for complete status are being met
- Continue with Joint Board Meetings
- Evaluate longer-term staffing needs and appropriate structure for the CGA and GSP implementation. Meet with other GSAs that are fully staffed and apply similar structure to the CGA and budget need.
- Re-evaluate Prop 218 rate process and cost allocations
- Begin to develop water supply enhancement projects as well as demand management scenarios, coordinate with the County on land use planning scenarios and county wide permitting processes
- Obtain DWR or SWRCB grant or revolving loan funding to address well replacement for safe drinking water
- Add additional Subsidence Monitoring

Draft Organizational structure map/outline



## General Scope of Services

Duties could include:

1. Develop a 5-year plan to implement GSP and prepare for 5-year update
  - a. Develop schedule of tasks (will need to be revised as needed)
  - b. Develop a timeline including critical deliverables
  - c. Develop annual implementation budget
  - d. Plan Board, TAC meeting topics and potential guest speakers
2. Help move general tasks forward with planning of action items
3. Support Ad-hoc committees with technical information and guidance materials
4. Interview member agencies and water districts on their understanding and goals for the GSP moving forward and how that can be reconciled with the 5-year GSP update
5. Assist with reviewing and responding to DWR evaluation of the GSP when they come in towards late 2023
6. Implement general GSP implementation tasks,
7. Discuss and review options for a Water Allocation Framework
8. Support policy development, as needed (such as discussions on land use and well permitting with the Counties)

## Budget

My Capacity/Availability is for an average of 10 hours per week or 40 hours monthly on average at a current rate of \$225/hour. I'm open to working on an hourly basis or monthly retainer basis per the Board direction and would track time spent and activities which would be included in a monthly invoice.