

CGA/GGA Joint Technical Advisory Committee Meeting

MEETING AGENDA

August 13, 2021 | 1:00 p.m.

Due to safety concerns and directives from the Governor and Federal Government related to COVID-19,
This meeting will be held remotely ONLY.

Join Zoom Meeting

<https://csus.zoom.us/j/88950173338>

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Please see Meeting Hints and Tips at the end of the agenda.

* Indicates an Action Item

1. Call to Order, Roll Call, and Introductions

2. Approval of Minutes (CGA TAC, GGA TAC)

- a. * June 11, 2021 CGA/GGA Joint TAC Meeting

3. Period of Public Comment

At this time, members of the public may address the Technical Advisory Committee (TAC) Members regarding items that are not on the agenda but are of relevance. The TACs may not act on items not on the agenda.

4. Colusa Subbasin Groundwater Sustainability Plan Development

- a. Groundwater Sustainability Plan schedule
b. Financing and Funding Mechanisms—Presentation and discussion

5. Well Monitoring Pilot Program—Update and discussion

6. Grant Funding

- a. **Current Project Agreements —Status and discussion**
b. *Unallocated Grant Funding—Status, discussion, and possible recommendation

- 7. September 10, 2021 Meeting**
- 8. Member Reports and Comments**
- 9. Adjourn**

A complete agenda packet, including back-up information, is available for inspection during normal business hours at 100 Sunrise Blvd., Suite A, 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:

<https://colusagroundwater.org/>

<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 CGA Board or Subcommittee meetings, please contact the Colusa County Water Resources Division at 530-458-0719 or Glenn County Water Resources Division at 530-934-6540 prior to any meeting and arrangements will be made to accommodate you.

Remote Meeting Hints and Tips

PLEASE NOTE: For increased meeting security protections,

- All attendees will be placed into a Zoom Waiting Room at the start of the meeting. The meeting facilitator and/or technical staff will admit participants as they appear in the waiting room. To the extent possible and to minimize uncertainty of who participants in the Waiting Room are, participants are encouraged to enter their name when they enter Zoom so the meeting facilitation staff and GSA coordinators can confirm meeting participants.
- Also, as with all recent Joint TAC meetings, for memorialization purposes, this meeting will be recorded and participants will be required to agree to that in order to participate. Participants will be prompted at the start of the meeting to agree to this.

To make the upcoming meeting effective, please read all the following.

1. The process will feel “clunky”. There will be inevitable pauses, stalls, re-sets, particularly when participants want to comment, we have to vote or take a straw poll. This may be frustrating and that’s completely understandable. Please be patient as we work together in this “new normal” approach.
2. To minimize challenges, we will open the online meeting 15-20 minutes in advance. Please log in during that time so we can walk you through the set up and get you familiarized with things. You may also want to go to Zoom (the virtual meeting tool) the day before and familiarize yourself with it.
3. Regarding personal settings, it will be VERY helpful for us to know in advance if you plan to log in via a computer, smart phone, or land line.
4. Regarding the “RAISE HAND” tool. You’ll find this if you click on the “Participants” icon. When that menu opens, you’ll see the names (or phone numbers) of everyone in the meeting. At bottom of that menu, you’ll see a button that says “RAISE HAND”. We will use this feature to let the facilitator know if you want to make a comment, so it is VERY important that you familiarize yourself with this.
5. If you’ve joined online (rather than just through the toll free phone number), we ask that during the meeting you keep your Zoom microphone on “Mute”. If you are using an organization’s landline, please do NOT put your phone on “Hold”.

CGA/GGA Joint Technical Advisory Committee Meeting
Agenda Packet

August 13, 2021

CGA/GGA Joint Technical Advisory Committee Meeting

MEETING MINUTES

June 11, 2021 | 1:00 p.m.

Due to safety concerns and directives from the Governor and Federal Government related to COVID-19,
This meeting was held remotely ONLY.

1. Call to Order, Roll Call, and Introductions

The meeting was called to order at approximately 1:00 p.m.

Dave Ceppos with the Census and Collaboration Program opened the meeting and went over some housekeeping and logistical items.

In Attendance:

Committee Members:

GGA: Emil Cavagnolo, David Kehn, Mark Lohse, Zac Dickens, Don Bills

CGA: Denise Carter, Bill Vanderwaal (joined late), Thad Bettner, Jim Wallace, Deke Dormer, Ben King, , Brandon Davison (DWR, ex-officio)

Others in Attendance: Lisa Hunter (GGA Staff), Mary Fahey (CGA Staff), Dave Ceppos, Consensus and Collaboration Program [CCP]), Danaka DeBow (CCP), Grant Davids (Davids Engineering, Inc.), Ken Loy (West Yost Associates), Sajit Singh (CGA), Duncan MacEwan (ERA Economics), Micah Eggleton (Woodard & Curran), Arne Gustafson, Brandon Ertis, Harry Ferdon, Holly (no last name), Holly Dawley (GCID), Jim Brobeck, Lenore Kitts, Leland Meibeyer, Leslie Nerli (GGA), Matt (no last name), Michael Bolzowski, M. Washington (TFE), Ryan Soden, Susan Silveira, Shelly Murphy (CGA), Tom (no last name)

2. Approval of Minutes (CGA TAC, GGA TAC)

- a. **May 13, 2021 CGA/GGA Joint TAC Meeting**
- b. **May 19, 2021 CGA/GGA Joint TAC Meeting**

GGA: Mr. Lohse moved to approve the minutes from the May 13, 2021 CGA/GGA Joint TAC Meeting and the May 19, 2021 CGA/GGA Joint TAC Meeting. Mr. Cavagnolo seconded and the motion passed per roll call vote.

- David Kehn- Aye
- Emil Cavagnolo- Aye
- Mark Lohse- Aye
- Zac Dickens- Aye
- Don Bills- Aye

CGA: Mr. Bettner moved to approve the minutes from the May 13, 2021 CGA/GGA Joint TAC Meeting and the May 19, 2021 CGA/GGA Joint TAC Meeting. Mr. Wallace seconded and the motion passed per roll call vote.

Denise Carter- Aye
Thad Bettner- Aye
Jim Wallace- Aye
Deke Dormer- Abstain
Ben King- Abstain

3. Period of Public Comment

No Public comment.

4. Colusa Subbasin Groundwater Sustainability Plan Development:

List of Acronyms:

CEQA – California Environmental Quality Act
GDE - Groundwater Dependent Ecosystems
GSA – Groundwater Sustainability Agency
GSP – Groundwater Sustainability Plan
MO – Measurable Objective
MT – Minimum Threshold
PMAs – Projects and Management Actions
PPT – Powerpoint Presentation
SGMA – Sustainable Groundwater Management Act
SMC – Sustainable Management Criteria
TAC – Technical Advisory Committee
UR – Undesirable Result

4. a. Sustainable Management Criteria (SMCs)

i. Degraded Water Quality - Action

Ken Loy presented the suggested revised approach to setting SMCs for degraded water quality: The Joint TAC previously approved an approach at the April 9, 2021 meeting. In this approach we identify water quality as a data gap in 2022 and improve monitoring between 2022 and 2027 and set quantitative SMCs in 2027 GSP update. Based on legal counsel and review of already submitted GSPs, this approach no longer appears adequate and should be revised.

- Revised approach:
 - Maximize reliance on existing WQ monitoring and regulatory programs.
 - Identify and address data gaps.
 - Set quantitative SMCs to the extent possible with limited data.
 - Monitor from 2022-2027
 - Review, refine, and expand quantitative SMCs in 2027 GSP update.

Background on degraded water quality

- Groundwater in the Colusa basin is generally good with some local exceedances
 - One containment plume (hydrocarbons) that is monitored by Department of Toxic Substances Control.
 - Domestic wells and small water systems, or public water supply wells, can be naturally affected by naturally occurring magnesium or arsenic.

- Existing regulatory programs address most local water quality concerns.
- The GSP will document methodology for coordination between GSAs and existing water quality regulatory programs.

Mr. Loy presented the proposed Statement of Significant and Unreasonable Degradation of Water Quality: *Significant and unreasonable degradation of water quality occurs when GSP projects or management actions cause an increase in the concentration of applicable constituents of concern in groundwater supply wells that lead to adverse impacts on beneficial uses or users of groundwater.*

Mr. Loy then explained that salinity from anthropogenic sources is already addressed through the Central Valley Salt and Nitrate Management Plan (CVSalts), however, mobilization of naturally-occurring connate (i.e., saline) water from below the base of fresh water or along faults as a result of GSP PMAs or groundwater development may need to be addressed. For example, the faulting and uplifts around the Sutter Buttes. Based on this, the Consultant recommendation is to adopt SMCs for salinity to support existing regulatory programs and water quality standards.

Other existing monitoring networks include:

- California Rice Commission Irrigated Lands Regulatory Program Well (12 wells)
- Sacramento Valley Water Quality Coalition Groundwater Monitoring Wells (4 Wells)
- Public Supply Wells Monitored for Division of Drinking Water Compliance (7 of 29 active wells; not shown on map).

Mr. Loy said that there is currently inadequate historical data available and the monitoring network may be expanded using existing or new wells, as needed to address data gaps.

Recommendation for Degraded Water Quality (Salinity) MOs, MTs, and UR

- MO: 700 $\mu\text{S}/\text{cm}$ (Ag water quality standard, California standard)
- MT, higher of
 - 900 $\mu\text{S}/\text{cm}$ (recommended California Secondary Maximum Containment Level), OR
 - Pre 2015 historical maximum
- UR: 25% (currently 6 of 23) representative monitoring wells fall below the minimum threshold for two consecutive years.
- Data gaps and necessary improvements to the network will be documented in the GSP.

Discussion:

Mr. Wallace asked about the conversion between $\mu\text{S}/\text{cm}$ and Total Dissolved Solids (TDS) ppm and how these numbers relate to historical measurements in representative monitoring wells.

Mr. Loy and Mr. Davids responded:

$\mu\text{S}/\text{cm}$ should be divided by 1,000 and multiplied by 640 to calculate and approximate TDS in ppm (Example: $-700 \mu\text{S}/\text{cm} / 1,000 * 640 = 448 \text{ TDS ppm}$). Historical graphs need to be developed still.

Mr. Davison (DWR) recommended that the technical team and TAC review DWR responses to submitted GSPs (Cuyama Valley and Paso Robles), specifically the Degraded Water Quality sections, in preparation for Colusa GSP SMCs. Mr. Ceppos asked if a GSA could reference an existing regulatory program and coordinate

with that program to address a water quality concerns. Mr. Davison said if this is justified and clearly explained, it would probably be sufficient.

Mr. Bettner asked where in the subbasin the MOs or MTs will likely be exceeded first. Mr. Loy stated that since representative monitoring wells (RMWs) are spread across the subbasin, exceedances will most likely occur in a localized area and show up in one RMW and subsequently be addressed before it shows up in another RMW.

Mr. King commented on multiple items, including degradation of groundwater quality (naturally occurring arsenic), HCM, connate water, the influence of PMAs on water quality, and analysis of degraded water quality across the Sacramento Valley as well as a data gap east of the Sacramento River.

Mr. Loy answered that these items are important, but the collective focus needs to be on meeting the requirements of the GSPs. Also, management of the basin is not to improve a pre-existing water quality condition, but to avoid water quality degradation resulting from PMAs and to maintain GW quality for beneficial uses.

Mr. Ceppos mentioned a White Paper by Stanford's Water in the West that addresses responsibilities of different parties, agencies, and programs for addressing water quality issues:
<https://stacks.stanford.edu/file/druid:dw122nb4780/A%20Guide%20to%20Water%20Quality%20Requirements%20under%20SGMA.pdf>

Mr. Brobeck (public) asked about efforts to identify contaminants related to the Westside Streams Recharge PMA. He said studies related to the Sites Reservoir Project EIR indicate water quality issues (elevated metals, etc.) in westside streams, especially during and following storm events.

Mr. Davids agreed that water quality needs to be considered in the Westside Streams PMA during ongoing analysis and work.

Mr. Bills asked what the pre-2015 historical maximum is.

Mr. Loy said this hasn't been analyzed yet. However, under regulation, if this has been exceeded in the past, the GSAs do not need to address this. They are more focused on not causing degradation of current groundwater quality.

Mr. Bills asked, regarding URs, this is a large basin and if the monitoring network needs to be expanded, will monitoring wells be located randomly, or located in areas where contaminants are more likely to occur. Mr. Bills recommended locating monitoring wells along deep seated faults where upwelling of connate water could occur, and performing water quality monitoring of westside streams and springs originating along the western edge of the Colusa Subbasin.

Mr. King expressed concern that new deep wells are bringing up poor quality water and introducing it into freshwater zones in the basin and asked how this is addressed.

Mr. Loy responded that the role of GSAs is to coordinate with County Departments of Environmental Health, which manages well permits and approvals.

Action: TAC Decision to approve MO, MTs, and UR (as shown on slides 10 & 11) for Sustainability Indicator #4 Degraded Water Quality:

GGA: Mr. Bills moved to approve the MO, MTs, and UR as shown in slides 10 & 11. Mr. Cavagnolo seconded and the motion passed per roll call vote.

David Kehn- Aye
Emil Cavagnolo- Aye
Mark Lohse- Aye
Zac Dickens- Aye
Don Bills- Aye

CGA: Mr. Bettner moved to approve the MO, MTs, and UR as shown in slides 10 &11. Ms. Carter seconded and the motion passed per roll call vote.

Denise Carter- Aye
Bill Vanderwaal- Aye
Thad Bettner- Aye
Jim Wallace- Aye
Deke Dormer- Aye
Ben King- Abstained

ii. Depletions of Interconnected Surface Water—Action

Mr. Loy presented a revised UR criteria for depletions of interconnected surface water:

25% or 3 of 10 monitoring wells, whichever is greater, fall below their MT for 24 consecutive months.

Mr. Loy said that the Technical Team had looked into the questions about the interconnectedness of Stony Creek and that review of available data does not resolve any uncertainty of the connectivity of the stream and groundwater.

He explained that if the loss from a losing stream is influenced by groundwater levels, then it is an interconnected stream. This may be the case for Stony Creek, although it goes dry in some years. It does not seem that interconnectedness can be ruled out, so the recommendation is continued monitoring of Stony Creek as an interconnected stream. Data gaps and necessary improvements to the network will be documented in the GSP.

Mr. Loy went on to address the Colusa Basin Drain and explained that it was not previously included as an interconnected stream, and when included, four adjacent wells meet the criteria for a representative monitoring well (two of these are already included for the Sacramento River), bringing the total number of representative monitoring wells for interconnected surface water to 12.

Recommendation is for revised UR statement for Interconnected Surface Water: 25% (3 of 12 RMWs) fall below MT for 24 consecutive months (same rationale for lowering of GW levels).

Mr. Vanderwaal asked if one RMW between Colusa Basin Drain and Sacramento River will be more influenced by one or the other, and asked if TAC members are comfortable with the current criteria and well locations.

Mr. Kehn said that although a UR may be triggered in one area that changes the whole basin, PMAs could be focused on that area to address it.

Ms. Carter expressed concern that 4 of 12 wells along Stony Creek are so close together that if one well hits a UR, she'd expect it to happen in others as well. She asked if one of those wells could be removed.

Mr. Bills said that the distance between wells and hydrogeology need to be considered in well selection/removal.

Action: TAC Decision to approve revised UR for Sustainability Indicator #6: Depletions of Interconnected Surface Water (slides 20 and 21):

GGA: Mr. Kehn moved to approve the revised UR for Sustainability Indicator #6: Depletions of Interconnected Surface Water (Slides 20 and 21). Mr. Dickens seconded and the motion passed per roll call vote.

David Kehn- Aye
Emil Cavagnolo- Aye
Mark Lohse- Aye
Zac Dickens- Aye
Don Bills- Aye

CGA: Mr. Wallace moved to approve the revised UR for Sustainability Indicator #6: Depletions of Interconnected Surface Water (Slides 20 and 21). Mr. Bettner seconded and the motion passed per roll call vote.

Denise Carter- Aye
Bill Vanderwaal- Aye
Thad Bettner- Aye
Jim Wallace- Aye
Deke Dormer- Aye
Ben King- Aye

b. 4.b Groundwater Dependent Ecosystems (GDEs)

Mr. Davids said that SGMA requires consideration of GDEs as beneficial users of groundwater when setting SMCs, and provided a review of implemented and planned actions:

- Implemented Actions:
 - Potential GDEs identified and mapped using the best publicly available resources.
 - Ranked to identify those most likely to be actual GDEs based on depth to groundwater, and proximity to surface water sources and irrigated lands that could rule out groundwater as a required source for potential GDEs.
- Planned Actions:
 - Evaluate and document potential impacts to GDEs under the adopted SMCs.
 - Identify data gaps in the monitoring network and develop projects to fill the data gaps and support the beneficial use or ground water by GDEs.
 - Anticipated to include installation of shallow monitoring wells at priority GDE locations.

Discussion:

Mr. Davids explained that, according to land use mapping from LandIQ, there is very little overlap between GDEs and crops, in particular on rice land.

c. Projects and Management Actions (PMAs)

Mr. Davids provided an overview of PMA Submittal Deadlines

1. 6/18/2021: submittal deadline for 7/16 PMA draft chapter 6 release
2. 8/2/2021 submittal deadline for 8/31 draft GSP release

Next, Mr. Davids provided an overview of the current draft PMA list for Joint TAC review

1. There are currently 25 potential PMAs under consideration for the GSP
2. Four leading projects have been identified (two in-lieu recharge and two direct MAR projects)

Finally, Mr. Davids explained what project attributes would be included in simple and detailed PMA descriptions, respectively.

Mr. MacEwan presented an economic analysis of possible Demand Management Economic Analysis, as summarized below:

- Types of demand management
 - Allocation (Pumping Limits)
 - Allocation & Water Market (allows flexibility in moving water around)
 - Multi-benefit land repurposing/idling programs
 - Fees/financial incentive programs
- Potential demand management: strategic, temporary land idling for drought and localized short-term groundwater management with potential for future increasing frequency and severity of droughts. Program could be easily scaled and turned on/off with little or no new infrastructure.
- General program concepts: Voluntary program to temporarily idle land and make water available for areas of concern in years of need.
 - Groundwater-using lands in drought-affected areas are idled to alleviate sustainability challenges
 - Surface water-using lands anywhere would be idled, and saved water would be used in-lieu of groundwater in area of concern
- Review of Cost Example- loss of net return to farming, goes up each year.
- Overview of Program Benefits, Costs, and Funding Options- flexible over time and with severe drought conditions.
 - Assessment to all subbasin lands for subbasin-wide sustainability benefits.
 - Assessment specific to the specific program areas.
 - Hybrid approach that allocates costs in proportion to benefits received under the program.

Potential for grant funding if land idling in specific areas can support other benefits (e.g., habitat or other ecosystem services)

Discussion on PMAs:

Mr. Wallace asked about the four leading projects and said that the TAC should review the project list and agree on which projects should be leading. Mr. Davids explained that the leading projects, as preliminarily defined, are those that have the most available information and are relatively well defined.

Mr. King asked if project details can be made available and commented that the Colusa Basin Drain and Sycamore Slough areas can be good areas of recharge in spring and that enhanced infiltration/percolation in arable areas is a great project idea.

Mr. Brobeck commented that the Vina Subbasin had concerns over legal implications of recharge projects and he referred to a document written about this subject that he encouraged others to read. Link: https://www.vinagsa.org/files/3cf947ca5/04_PMA+Legal+Implications+Discussion+Paper.pdf

Discussion on Demand Management Economic Analysis:

Mr. King commented that demand management is a political and social analysis, rather than an economic analysis. He thinks a demand management program will have a negative influence on the most vulnerable people in the subbasin

Mr. Ceppos explained that these considerations would need to be addressed by CGA/GGA boards, rather than the TAC.

Mr. MacEwan clarified that this concept is local. It would be to transfer water within the subbasin, not to transfer water to other areas of the state.

Mr. Kehn commented that he appreciated Mr. King's comment and considerations of political/social implications of possible demand management.

Mr. Davids commented that the technical team feels this idea has merit among the full suite of PMAs, but if the TAC is not interested, it can be struck from the list. He further explained that just because a project is on the list it does not mean that the project will be implemented, rather that it is available for consideration if conditions warrant.

Mr. Ceppos asked if the program would be mandatory or voluntary. Mr. MacEwan clarified that the program would be voluntary and costs would be to provide incentives to convince landowners to temporarily idle lands.

Mr. Bills commented that the program seems solely focused on agricultural groundwater usage, and asked if municipal/domestic groundwater usage should also be included and provided incentives for reducing use during times of drought.

Mr. Davids responded that municipal/domestic groundwater use is so much smaller that it will not provide the same benefits as agricultural demand management.

Mr. Bettner commented that temporary land idling is already taking place to some degree within the subbasin, including in 2014-2015 due to water supply shortages, and thinks that municipal and domestic demand management could potentially be incorporated as well.

5. Well Monitoring Pilot Program Update

A brief update was provided by Mr. Davids. He reported that the technical team has conducted inspections on five of the six participating wells. Owner-GSA agreements are finalized and need to be executed. Average capital cost for the program is estimated at \$3,000-\$3,500 per site (excluding the data plan).

6. Topics and TAC Decisions for Next Meeting (July 9, 2021)

Mr. Davids suggested the possibility of scheduling a special meeting potentially earlier than July 9th (since July 9th will be so close to the July 16 draft Chapters 5 and 6 release deadline) and to hold that meeting date and time until further notice.

7. Member Reports and Comments

There were no reports or comments.

8. Adjourn

The meeting was adjourned at 4:15 p.m.

DRAFT

Agenda Item 6.b: Unallocated Grant Funding - Status, discussion and possible recommendation

\$284,600.00 in Proposition 1/ Proposition 68 awarded grant funding has not yet been contracted. The unallocated funds are included in Category C (GSP) in the grant Work Plan (see attached). The funds could also be allocated to another Category, such as Category D (Monitoring/Assessment [Well Monitoring Pilot Program]), but this would require a grant amendment.

There are several tasks where these funds could be allocated. Some suggestions are presented below.

The Joint TAC should discuss these options and consider a recommendation for the CGA and GGA Boards.

TOTAL AVAILABLE GRANT FUNDING	\$1,999,600.00
TOTAL CONTRACTED HCM/WB	\$378,000.00
TOTAL CONTRACTED GSP	\$1,337,000.00
TOTAL UNCONTRACTED	\$284,600.00
POTENTIAL TASKS	
	Estimated Costs (rough)
Well Monitoring Pilot Program	~\$16K/site (variable depending on site)
Hydrogeologic Investigation	Costs under this category will vary based on level of effort
Assess remaining data gaps and develop investigation work plan(s)	
Field mapping of key geologic and hydrologic features	
Test drilling	
Monitoring well installation	
Subsidence benchmark installation	
Stream gage installation	
Well Location database	
Annual Report (due in April 2022)	\$50K - \$75K

*This would require a grant amendment to move funds

EXHIBIT A WORK PLAN

Project Title: Colusa Subbasin GSP Development

Project Description: Prepare a GSP for the Colusa Subbasin (Basin).

Category (a): Grant Administration

Prepare reports detailing work completed during reporting period as outlined in Exhibit F of this Agreement. Progress Reports will include sufficient information for DWR Project Manager to understand and review backup documentation submitted with invoices. Quarterly invoices will accompany the Progress Reports and should be submitted to the DWR Project Manager for review to receive reimbursement of Eligible Project Costs. Collect and organize backup documentation by task and prepare a summary Excel document detailing contents of the backup documentation organized by task.

Submit a deliverable due date schedule within 30-days of the execution date of Amendment 1 of this agreement or any future amendments, where the amendment would result in a change in the deliverables and/or schedule, for DWRs Project Manager's review and approval. Edits made to the schedule must be approved by the DWR Project Manager in advance.

Prepare Draft Grant Completion Report and submit to DWR for Project Manager's comments and review no later than 90 days prior to the work completion date listed on Page 1, Paragraph 2. Prepare Final Grant Completion Report addressing the DWR Project Manager's comments and submit within 30 days prior to the work completion date listed on Page 1, Paragraph 2. The reports will be prepared and presented in accordance with the provisions of Exhibit F of this Agreement.

Deliverables:

- Quarterly Progress Reports and invoices with all required backup documentation
- Environmental Information Form
- Deliverable due date schedule
- Draft Grant Completion Report
- Final Grant Completion Report

Category (b): Stakeholder Outreach and Coordination

Provide professional facilitation services and support as necessary for GSP development and adoption meetings. Communicate, outreach, and engage with interested parties and beneficial users of groundwater within the basin. Conduct coordination meetings between basin GSAs and representatives of neighboring basins as necessary during the plan development and adoption process.

Deliverables:

- Public Outreach Plan
- Meeting summaries included as attachments in the quarterly Progress Report

Category (c): GSP Development

The Counties of Colusa and Glenn, in the Colusa Subbasin, each received Proposition 1 Sustainable Groundwater Management Planning grant funding for Counties with Stressed Basins (Stressed Basins). Some of the tasks in Category (c) will utilize data from the Stressed Basins grants. Quarterly progress reports will note when tasks use and build upon work that was previously completed during implementation of both the Colusa and Glenn Counties Stressed Basins grant projects. There will be no duplication of previous work under this Project.

Prepare a GSP that meets SGMA requirements and the DWR regulations and is based upon work and findings as described below. Submit the adopted GSP via the SGMA GSP Submittal Portal and submit the email response to DWR's Project Manager as proof of submittal.

1. Data Collection and Analysis

Compile, evaluate, and analyze data necessary for development of the GSP. Identify data gaps and develop a plan for obtaining that data.

2. Integrated Hydrologic Modeling

Evaluate the available options and develop an integrated hydrologic model for the Basin. Compile, evaluate, and compare simulated and local water budget information. Select and refine integrated hydrologic model for water budget development and other GSP model scenario analysis. Develop model scenarios, complete model runs, evaluate model results. Develop model scenarios to support evaluation of potential projects and management actions or other analysis.

3. Monitoring Protocols

Identify and compile existing monitoring protocols, evaluate monitoring protocols for consistency with GSP regulations, and document final monitoring protocols for GSP data.

4. Data and Reporting Standards

Develop data and reporting standard procedures for GSP-related data sets, inventory compiled data, refine and expand data gap action plan.

5. Data Management System

Evaluate and select Data Management System (DMS) and implement a DMS for GSP-related data sets. Build upon the initial evaluation of the DMS and consider a range of available options, including proprietary systems, open-source systems developed by DWR or others, and custom applications.

6. GSP Administrative Information

Compile and organize information necessary for completing GSP Administrative Information section.

7. Basin Setting

Develop a GSP Basin Setting section for the Basin including, but not limited to, management areas as applicable, hydrogeologic conceptual model, current and historical groundwater conditions, and water budget. Perform hydrogeologic investigations, data collection, data analysis, and related stakeholder outreach to fill data gaps in Basin Setting. This may include installation of new monitoring wells, Airborne Electromagnetic (AEM) studies, or other data-gathering methods. Map potential Groundwater Dependent Ecosystems (GDEs). Evaluate susceptibility of potential GDEs to groundwater conditions. Prepare summary of GDE conditions for GSP incorporation.

8. Sustainable Management Criteria

Develop GSP Sustainable Management Criteria for the Basin, including analysis and determination of Sustainability Goals, Undesirable Results, Minimum Thresholds, Measurable Objectives, as appropriate.

9. Monitoring Network

Develop monitoring network capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions, and yield representative information about groundwater conditions as necessary to evaluate GSP implementation. Evaluate and designate representative monitoring sites that represent general groundwater conditions and are adequate to act as proxy for other sustainability indicators, if

appropriate. Assess monitoring networks for adequacy, determine data gaps, and develop a plan to address inadequacies and gaps. Develop reports and forms to be used with the DMS for reporting required data to DWR in a format consistent with the GSP regulations.

10. Projects and Management Actions

Develop Projects and Management Actions to achieve Sustainability Goals for the Basin, describe the implementation feasibility, and the method by which each will be evaluated for effectiveness.

11. Funding Mechanisms Evaluation

Review and evaluate potential funding mechanisms and options to pay for projects, management actions, and other GSP implementation costs including annual reporting and 5-year GSP updates. Consider options including regulatory fees, other property-related fees, benefit assessments, and special taxes. Compare the potential mechanisms to identify which may be appropriate, acceptable, and well-suited for different GSP implementation activities. Evaluate implications of potential groundwater allocation scenarios.

Deliverables:

- Draft GSP
- Proof of Final GSP submittal to DWR

Category (d): Monitoring/Assessment

Design and implement a well monitoring pilot program to collect information from voluntary participants utilizing existing wells regarding groundwater extraction and groundwater levels at individual wells. Identify selection criteria for participating wells, considering well location, groundwater use, equipment specifications, and other factors as identified. Conduct stakeholder outreach to enlist program participants. Evaluate options for data collection including periodic field visits and telemetry. Implement data collection activities and incorporate available data into GSP development process. Identify and evaluate options for basin-wide implementation, including estimation of initial and ongoing program costs.

Deliverables:

- Technical documentation of program design, well selection criteria, stakeholder outreach, and evaluation of data collection options
- Monitoring data for incorporation into GSP
- Technical documentation of options for basin-wide implementation including associated costs.

EXHIBIT B BUDGET

Project Name: **Colusa Subbasin GSP Development**

Grantee: **Colusa Groundwater Authority**

Grant serves a need of a Disadvantaged Area?: **Yes**

Local Cost Share Required: **0%**

Budget Category	Round 2 Grant Amount	Round 2 Local Cost Share	Round 2 % Local Cost Share	Round 3 Grant Amount	Round 3 Local Cost Share	Round 3 % Local Cost Share	Total Cost
(a) Grant Administration	\$16,320	\$0		\$58,240	\$0		\$74,560
(b) Outreach and Coordination	\$180,200	\$0		\$49,560	\$0		\$229,760
(c) GSP Development	\$803,480	\$0		\$825,680	\$0		\$1,629,160
(d) Monitoring/Assessment	\$0	\$0		\$66,120	\$0		\$66,120
TOTAL COSTS	\$1,000,000	\$0	0%	\$999,600	\$0	0%	\$1,999,600

EXHIBIT C SCHEDULE

Project Name: Colusa Subbasin GSP Development

Categories	Start Date ¹	End Date ¹
(a) Grant Administration	01/01/2017	06/30/2022
(b) Outreach and Coordination	01/01/2017	04/30/2022
(c) GSP Development	01/01/2017	04/30/2022
(d) Monitoring/Assessment	12/01/2019	09/30/2021

NOTES:

¹Exhibit C Schedule only dictates the work start date and the work end date for the Budget Category listed. The Grantee should refer to the Deliverable Due Date Schedule that has been approved by the DWR Grant Manager to obtain the estimated due date for the deliverables listed in Exhibit A. The dates listed in Exhibit C Schedule are date ranges that correlates to the activities listed within that Budget Category in Exhibit A. Eligible costs for each Budget Category will only be approved if the work completed falls within the date ranges listed in Exhibit C.