

CGA/GGA Joint Technical Advisory Committee Meeting  
Agenda Packet

# CGA/GGA Joint Technical Advisory Committee Meeting

## **MEETING MINUTES**

**August 14, 2020 | 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.**

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### **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 started the meeting and went over some housekeeping and logistical items.

#### **In Attendance:**

##### **Committee Members:**

GGA: David Kehn, Emil Cavagnolo, Zac Dickens

CGA: Darrin Williams, Thad Bettner, Bill Vanderwaal, Jim Wallace, Brandon Davison (ex-officio)

**Others in Attendance:** Lisa Hunter (GGA Staff), Mary Fahey (CGA Staff), David Ceppos (Facilitator), Byron Clark (Davids Engineering, Inc.), Reza Namvar (Consultant Staff), Ken Loy (Consultant Staff), Grant Davids, Jim Brobeck, Stacie Ann Silva, Conway Couto, Bernadette Boyle, Bridgette Gibbons (CDFW), Lester Messina, Michelle Dooley (DWR), Sharla Stockton (Glenn County), Lena Black (Jacobs Engineering), Lisa Porta (Montgomery and Associates)

### **2. \* Approval of Minutes (CGA TAC, GGA TAC)**

For the CGA, Bill Vanderwaal made a motion to approve the minutes from the June 22, 2020 CGA/GGA TAC meeting. Thad Bettner seconded the motion, which passed unanimously.

#### **Roll Call Vote**

##### **Colusa Groundwater Authority**

Thad Bettner: AYE

Bill Vanderwaal: AYE

Darrin Williams: AYE

Jim Wallace: AYE

For the GGA, Zac Dickens made a motion to approve the minutes from the June 22, 2020 CGA/GGA TAC meeting. David Kehn seconded the motion, which passed unanimously.

#### **Roll Call Vote**

##### **Glenn Groundwater Authority**

David Kehn: AYE

Emil Cavagnolo: AYE

Zac Dickens: AYE

### 3. Period of Public Comment

There was no public comment.

### 4. \* Discussion and Possible Action: Selection of TAC Member from the GGA and the CGA to provide regular TAC meeting updates at Board Meetings

Lisa Hunter provided background on this item. At the July 13 meeting of the Glenn Groundwater Authority Board, the Board requested that the GGA TAC appoint a member to provide a report of TAC activities at GGA Board meetings. This would provide a consistent way for the Board to receive updates on GSP development and to have an opportunity to provide their input. Mr. Kehn added that the Consultant team is providing excellent Technical Memorandums on activities, but this TAC member would be able to provide an additional level of detail during Board discussions and answer any questions. Mr. Vanderwaal asked if this item was just for the GGA Board. Ms. Hunter said yes, it is a GGA Board request, but the CGA TAC may decide to also designate a TAC member to provide Board reports. The CGA chose not to designate a TAC member at this time.

Mr. Ceppos asked for nominations from the GGA TAC for a member to provide regular TAC meeting updates at GGA Board meetings. Mr. Kehn voluntarily nominated himself. Emil Cavagnolo seconded and the motion passed unanimously.

#### **Roll Call Vote**

David Kehn: AYE

Emil Cavagnolo: AYE

Zac Dickens: AYE

### 5. Colusa Subbasin Groundwater Sustainability Plan Development:

- a. Update on Projected Water Budgets
- b. Preliminary Refinement of GDE Delineation
- c. Well Monitoring Pilot Program Description

Byron Clark provided a summary of the discussion topics for today's presentation and began by describing the progress on the **Water Budgets**.

Regarding Projected Water Budgets, Mr. Clark said that drafts of two of four scenarios have been developed; 1) the Current Conditions (lower bookend) and, 2) Future Conditions with 2070 Climate Change (upper bookend). The two scenarios that are still in development are; 1) Future Conditions without Climate Change and, 2) Future Conditions with 2030 Climate Change. The Climate Change data is provided by DWR. These scenarios have been developed based on the most recent version of the Integrated Hydrologic Model that is being developed, which is based on DWR's C2VSim Fine Grid model. The most recent refinements to the model have been to crop evapotranspiration (ET) and irrigation demand. These refinements were made after receiving feedback from the TAC. Other refinements have been made to the groundwater system parameters, and stream parameters, in particular the Colusa Basin Drain.

Assumptions related to the *current conditions* water budget relies on recent historic land use, surface water supplies and Urban water demands mapped over a 50-year hydrologic period (1966-2015).

Assumptions related to the *future conditions* water budget also rely on recent historic land use and surface water supplies, plus 50 years of historic hydrology that has been modified based on DWR's Central Tendency climate change projections.

Mr. Clark said that the Bay Delta Water Quality Control Plan update process is not being considered in the water budgets. The TAC had previously asked how other GSPs are handling this. Mr. Clark reported that the GSPs he has reviewed do not make any assumptions about the Bay Delta process in their water budgets, although it is mentioned in the text.

Mr. Clark provided an overview and reminder of the components and structure of a water budget. He then provided a report on the draft set of average annual water budget results for the 50-year period under the current conditions water budget. The draft results show that over a 50 year period, average annual change in storage shows an outflow to storage which represents an increase in storage of about 2,000 acre-feet annually. There is substantial uncertainty in these numbers due to the relatively small magnitude relative to other water budget components, but over the long term, the draft results suggest that the basin as a whole is generally in balance.

Next Mr. Clark reviewed a graph from 1966-2015 depicting annual change in storage. Cumulative change in storage over a 50 year period is around 100,000 acre-feet per year, but there is tremendous variability over time as wet and dry periods occur. When considering Sustainable Management Criteria and Projects and Management Actions in the GSP, it's important to recognize how varying hydrology affects conditions in the basin.

Mr. Clark then showed similar charts and graphs for the future conditions water budget with the 2070 Climate Change scenario. Precipitation is somewhat similar. The primary difference is an increase in ET, which drives an increase in water demand to meet crop needs. There is a net reduction in storage of about 300,000 acre-feet over a 50 year period, or 6,000 acre-feet per year.

Mr. Clark summarized his observations:

- Average annual change in storage differs between scenarios
- The primary driver for the differences is increased ET and increased pumping demand under climate change.
- Changes in storage and groundwater levels are substantial over multi-year wet and dry cycles
- These results are basin-wide. Changes in groundwater storage and groundwater levels are likely greatest in the groundwater dependent areas
- Multi-year wet and dry cycles should be considered when establishing Sustainable Management Criteria, Minimum Thresholds and the margin of operational flexibility
- Projects and Management Actions should be designed to be flexible based on the variable hydrologic conditions in the basin.

Mr. Clark concluded this discussion by stating that the next steps include additional analysis before developing draft water budget chapter of the GSP for public review, coordinating with neighboring basins and development of the two additional scenarios. A draft GSP section should be available for public review later this year.

Mr. Bettner asked how the agencies and the different GSPs are coordinating across basin boundary lines, and if some kind of scorecard could be developed comparing the different technical approaches. Mr. Clark said that there are differences in every basin, but also some broad consistencies. For example, the Colusa Subbasin and the basins in Yuba/Sutter, Butte and Tehama Counties are all using the IWFM Model code developed by DWR, although there are local models in use in Butte and Yuba. The Climate Change approach is also consistent with basins throughout the State. Mr. Clark said that a scorecard would be useful, but it is too early in the process of developing the 2022 Plans to know how some basins are approaching the technical items.

Mr. Kehn asked if Model calibration was the next step, is there a specific timeframe when the Consultants will cut off the refinements? Mr. Clark replied that they are at that point now. The core information has been input into the model and they are now making the final adjustments to better match observed data.

Mr. Kehn asked if there are data points outside of the basin that are being used in the model. Reza Namvar replied that the Model covers the entire Central Valley. The areas being calibrated for the Colusa Subbasin include a five-mile buffer outside of the basin to include wells in neighboring basins to ensure that interbasin flow data is consistent.

Next, Mr. Clark provided a background on **Groundwater Dependent Ecosystems (GDEs)** and described the work that has been done. Preliminary identification of GDEs throughout the State has been completed by DWR and the Nature Conservancy in their Natural Communities Commonly Associated with Groundwater (NCCAG) dataset. The Consultants have created initial mapping for the Colusa Subbasin based on the NCCAG dataset. Mr. Clark explained that they are trying to develop an objective approach to analyzing GDEs based on groundwater conditions, rather than going through a subjective process. Once they have completed their initial analysis, they will prepare maps for stakeholder input and further refine GDE characterization and incorporate refinements in the appropriate sections of the GSP.

At the last meeting, TAC members expressed interest in development of a scoring criteria for GDEs. The Consultants have compiled additional data on depth to groundwater, proximity of potential GDEs to surface water and proximity to irrigated cropland. They have developed a preliminary scoring criteria based on those parameters that ranges from 1-4 (1 is less likely to be a GDE and 4 is more likely). Mr. Clark presented a flow chart that can be used to rank GDE potential.

The scoring criteria includes the following parameters:

- Depth to groundwater greater than 30' is not likely to be a GDE. This is consistent with TNC's Guidance documents. Depth to groundwater was estimated using DWR's spring measurements from 2014 to 2018.

- Polygons within 150' of surface water are assumed to potentially have access to surface water. 150' is a judgement call, but this has been used in Yuba and Butte. Proximity to Surface Water was estimated by selecting canals, ditches and perennial streams based on National Hydrography dataset.
- Polygons near irrigated fields are assumed to potentially have access to surface water. Proximity to Irrigated Cropland is based on DWR land use survey data.

Preliminary scoring results revealed that approximately half of the polygons fall in the categories 1 and 2 with the other half in categories 3 and 4. There are less polygons in category 4 than the other three categories.

Mr. Clark summarized the approach to analyzing GDEs, stating that they are using a simple scoring approach that relies on public data. There is a potential for refinements, including refined datasets, adjustments to thresholds and incorporation of additional datasets.

Mr. Clark paused for questions and feedback on the approach and the path forward.

Mr. Ceppos asked Mr. Clark what he considers next steps or if this is ready to roll out to the public. Mr. Clark said that the approach is simple and a workflow has been developed. It would be straightforward to do a sensitivity test by looking at how results may differ considering different assumptions before presenting to the public for input.

Mr. Kehn commented that over time, proximity to irrigated cropland could change and asked how long term changes in cropping could be taken into consideration. Mr. Clark said one option would be to update the scoring over time as part of regular GSP updates based on updated land use mapping.

Mr. Ceppos asked Mr. Kehn if he would advocate doing the sensitivity test prior to doing the stakeholder outreach. Mr. Kehn said from a landowner perspective and if what I am doing may impact a GDE, it would be better to do the sensitivity test first before alarming any landowners.

Mr. Ceppos reminded the group that we do need to be getting moving providing more public outreach, so this is a good topic.

Mr. Clark said they will proceed to do some sensitivity testing. They are well set up to easily do that.

Mr. Clark went on to discuss progress on the **Well Monitoring Pilot Program**. He reported that the Consultant team received good feedback from the last Joint TAC meeting and subsequent discussions. Broad goals of the program include encouraging stakeholder engagement, collecting data and incorporating that data into GSP development.

The timeline starts with program development happening now and completed by the end of December at the latest. This will allow time to solicit participation, select projects and purchase and install equipment

before the next irrigation season. The program could be implemented following installation of equipment for at least 2021 and potentially additional years.

Mr. Clark presented potential eligibility requirements which include participant willingness to share data publically, use of an approved flow meter that is installed properly, and a requirement that a sounding hole must be available to monitor groundwater levels. Mr. Clark described recommended flow meters and telemetry options. He also presented an estimate of costs per site for the program.

Mr. Ceppos said that the goal today is to get some information back to the Boards and ideally get their guidance on next steps and not get out too far ahead of the Boards. He then opened the floor for comments and questions.

Jim Wallace complimented Mr. Clark on the work done on this item. He asked if the Consultant team could pull out the raw data from the telemetry systems that he is recommending. Mr. Clark said yes.

Mr. Wallace asked whether the program should be focused in one geographic area where there may be a priority or spread the effort throughout the entire basin. It should be spelled out in the criteria prior to soliciting participation. Mr. Clark questioned how to identify a priority area. He said with the telemetry options, they could be spread out across the basin without increasing costs of the program.

Mr. Ceppos reminded the group that they have a responsibility as Board and TAC members to have a robust conversation with the Board regarding decisions on items like this.

Darrin Williams said that he is very familiar with one of the suggested telemetry options, Ranch Systems, and it is a very good system with excellent support. There could be some significant infrastructure costs in getting the system set up. He suggested that it might be important to consider what type of land use to target, for example, micro-irrigation vs. flood system.

Mr. Kehn commented that the cost is high for this program. We need to develop criteria for selection. Part of getting participation from landowners will depend on how we roll out the program. He suggested development of a one-page fact sheet that is vetted by local farmers.

Mr. Ceppos asked Mr. Clark about a timeline. Mr. Clark said that decisions needed to be made by late fall. It may be prudent to include a project like this in the GSP but not go as far as implementation, just project design. He said that he assumes the grower would be responsible for the installation of the flow meter, and in one cost scenario the grower would pay for the meter and in another scenario, the program would pay for the meter.

Lisa Hunter asked if they could also utilize self-reporting based on information they already have in order to collect additional information and compare that with the telemetry.

Mr. Kehn asked if there is an expiration date on the funds. If we don't have to implement the project right away, we could use the funds to implement later.

Mr. Williams suggested that, instead of focusing on cost of meters and cost per site, we could let the landowner purchase the equipment and they would work directly with the consultants.

Mr. Wallace said he agrees with taking a simple approach. We could provide a set dollar amount to each grower to participate in the program.

Ms. Fahey said that we have to be careful with the way grant funding is utilized and she would have to speak with the grant Administrator to see if payments could be made directly to landowners under this program.

Brandon Davison, DWR, suggested that the GSAs could partner with the local RCDs and they may have additional funding and staff to assist with this program.

## **6. Interbasin Coordination**

Ms. Fahey summarized the Staff report on this item. Coordination across basin boundaries is required under SGMA and is also a critical element for successful SGMA implementation. She said that one of the CGA's Board members had asked about developing a report card or matrix that could summarize the different technical approaches being used in the Colusa Subbasin and the adjacent subbasins. She also said that a Northern Sacramento Valley Interbasin Coordination group has formed. The group is being facilitated through a DWR Facilitation Support Services contract with Butte County. That group is developing a spreadsheet that compares the different approaches in the basins in Colusa, Glenn, Butte and Tehama Counties. The spreadsheet is still in development but it may be sufficient for our needs.

Mr. Bettner described the type of document he would like to see and explained that the purpose is to catch any potential conflicts or issues early on so they can be addressed before the GSPs are submitted. It was determined that Mr. Bettner would coordinate with Mr. Clark to discuss an approach and Mr. Clark would bring it back to the Boards for a high level discussion.

Grant Davids said that this is an important topic and there are important differences, especially with the models, to take into consideration. It will take time to work through the differences. The GSPs should have a provision to work through the differences.

Ms. Hunter said that the work being done by the NSV Interbasin Coordination group has not been seen yet. It may cover our needs. The NSV group is planning to meet with the various consultant teams soon.

Mr. Dickens said that he agrees with Ms. Hunter, he is interested to see what the NSV group develops.

## **7. Schedule Next Meeting**

Discussion was held about when to schedule the next meeting. It was determined that late September or early October would work, considering harvest schedules.

## **8. Topics for Next Meeting**

Future topics include: Model calibration, GDEs, Interbasin Reportcard, well monitoring program, funding mechanisms, additional hydrogeologic investigation (proposal from consultants), projects and

management actions ranking criteria, establishing Sustainable Management Criteria and Measureable Objectives.

Mr. Kehn asked if we have to have confidence in the model in order to develop Sustainable Management Criteria and Measureable Objectives. Mr. Clark said that will be important but historical groundwater levels may be more important. Mr. Kehn said the sooner we can discuss these things, the better for the public.

Mr. Ceppos mentioned that harvest is a conflict for scheduling meetings every year and asked if anyone is opposed to holding a sequence of meetings in the future, for instance, two meeting in one week that might better accommodate schedules, rather than one long meeting. Mr. Wallace said he prefers meeting more frequently, shorter meetings, later in the afternoons and that it is important to receive the presentations in advance.

### **9. Member Reports and Comments**

Mr. Kehn reported that at the last GGA Board meeting an attorney representing some westside landowners provided public comment about the Operations fee.

Mr. Dickens asked where we stand with the schedule and stated that it would be helpful to have an understanding of where we stand and how we are going to meet the GSP deadline.

Mr. Ceppos asked if there were any comments from the public. There were none.

### **10. Adjourn**

The meeting was adjourned at approximately 3:50 p.m.

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### **ACTION ITEMS**

- DE to run sensitivity testing on the GDE analysis criteria
- Staff to lookup deadline for use of grant funds for Well Monitoring Pilot Program
- Staff to check with Mary Randall regarding direct payment of grant funds to landowners
- Mr. Bettner to coordinate with Mr. Clark to discuss an interbasin coordination report card approach and Mr. Clark to bring it back to the Boards for a high level discussion.
- Share NSV Interbasin Coordination group spreadsheet when available
- Staff and Consultants work on a schedule to help TAC and Boards understand where we stand and how we are going to meet the GSP deadline.

# CGA/GGA Joint Technical Advisory Committee Meeting

## **MEETING MINUTES**

**October 16, 2020 | 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.**

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### **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 started the meeting and went over some housekeeping and logistical items.

#### **In Attendance:**

##### **Committee Members:**

GGA: Emil Cavagnolo, Mark Lohse

CGA: Darrin Williams, Thad Bettner, Bill Vanderwaal, Jim Wallace, Brandon Davison (ex-officio)

**Others in Attendance:** Lisa Hunter (GGA Staff), Mary Fahey (CGA Staff), David Ceppos (Facilitator, Consensus and Collaboration Program [CCP]), Danaka DeBow (CCP), Byron Clark (Davids Engineering, Inc.), Ken Loy (West Yost Associates), John Ayers (Woodard and Curran), Sajit Singh (CGA/City of Williams), Shelly Murphy (CGA/Colusa County Water District), Ben King (landowner), Bridget Gibbons (CDFW), Lester Messina (Colusa Glenn Subwatershed Program), Michael Bolzowski (Cal Water), George Valenzuela (Woodard and Curran), Jake Sahl (TNC), Lisa Humphreys (Glenn County Farm Bureau), Gina Nicholls (Nossaman, LLP), Kelly Peterson (Butte County Water and Resource Conservation), Lisa Porta (Montgomery and Associates), Jaime Lely

### **2. \* Approval of Minutes (CGA TAC, GGA TAC)**

For the CGA, Jim Wallace made a motion to approve the minutes from the August 14, 2020 CGA/GGA TAC meeting. Bill Vanderwaal seconded the motion, which passed unanimously.

#### **Roll Call Vote**

##### **Colusa Groundwater Authority**

Thad Bettner: AYE

Bill Vanderwaal: AYE

Darrin Williams: AYE

Jim Wallace: AYE

For the GGA, a quorum was not present so no vote was held. The item will be tabled until the next meeting.

### **3. Period of Public Comment**

Ben King commented that he thinks the Bay Delta Water Quality Control Plan update process should be considered in the water budgets for the Colusa Subbasin GSP.

#### **4. Colusa Subbasin Groundwater Sustainability Plan Development:**

- a. GSP Development Timeline
- b. Draft Sustainability Goal and Undesirable Results Statements
- c. Hydrogeologic Investigation
- d. Well Monitoring Pilot Program
- e. Groundwater Dependent Ecosystems

Byron Clark began the discussion with a summary of the topics for this agenda item and began with an overview of the **GSP timeline**. The timeline includes GSP milestones and public outreach activities. Mr. Clark said to anticipate monthly meetings of the TAC and the GSA Boards plus additional public outreach efforts going forward until GSP completion.

Referencing the Colusa Subbasin GSP timeline, Mr. Clark described the flow of work. The Basin Setting portion of the GSP provides a foundation and describes an understanding of conditions in the basin both currently and into the future. This work has been in progress for some time and he anticipates releasing draft Basin Setting sections for review by the TAC, the public and the GSA Boards in the next few months. He mentioned that some discussion on Management Areas should begin soon.

The next phase is to address the Sustainable Management Criteria (SMC). These are qualitative descriptions of goals for sustainability, what would constitute an undesirable result (UR), and how to measure URs. Discussions are currently underway about draft overarching goals for the basin and UR statements. Once those are completed, work shifts to the technical analysis where milestones are set. Mr. Clark anticipates moving into a more quantitative analysis based on existing knowledge towards the end of this year. This work will provide a basis for determining sustainable yield. The monitoring network also goes hand in hand with SMC and monitoring sites will be evaluated for use in setting Minimum Thresholds. Mr. Clark anticipates this work to take place in early to mid-next year. In the coming months, Mr. Clark anticipates going through the process of identifying projects and management actions. A screening process will be developed to evaluate projects for incorporation into the GSP. Document preparation will be ongoing and a public review draft of the final GSP is scheduled to be completed by mid-2021. This will provide time to receive public comment and complete any needed updates prior to the January 31, 2022 GSP due date.

Mr. Clark described additional tasks that are included in the Proposition 68 grant work plan. An initial review of different funding mechanisms for GSP implementation will occur over the next few months. A hydrogeologic investigation that will help fill data gaps is currently in the planning phase and will move into implementation, data collection, analysis and incorporation into the GSP by October, 2021. And finally, the Well Monitoring Pilot Program is currently in the development/planning phase and advertising/enrollment will begin early next year.

Mr. Clark opened the floor for questions/discussion. Mr. Vanderwaal commented that, according to the schedule, Management Areas (MA) are being established after Minimum Thresholds (MT) and

Measurable Objectives (MO) are established and after projects are developed. He asked what role Management Areas are being proposed to take in the Plan. Mr. Vanderwaal mentioned the process in the Yolo Subbasin where agencies within Management Areas have more control over MT and project development. Mr. Clark said the team has had these discussions and that this group should begin to have MA discussions now. He mentioned that the establishment of MT can be sensitive to conditions in the basin whether or not there are Management Areas so there is flexibility. The same is true for Projects and Management Actions.

Mr. Clark displayed the Colusa Subbasin GSP timeline with outreach activities added, and asked Mr. Ceppos to present the discussion about public outreach. Mr. Ceppos said that the GSP team has so far mostly opted to rely on TAC and Board meetings as the primary venues for public outreach. Covid has presented some challenges to the public outreach planning, but it can be beneficial to avoid “stakeholder fatigue” from having too many public outreach meetings. He mentioned that it is the nature of GSP development that the GSAs should be expecting accelerated meetings over the next year until the GSP is completed.

Mr. Ceppos referred to the GSP timeline and explained how the public outreach milestones line up with the technical work and the timing of presenting draft sections of the Plan to the public. He mentioned that outreach for the Well Monitoring Pilot Program is different from the rest of the outreach efforts and will be more focused on advertising and enrollment, more like marketing the program. There will be further refinement of the outreach plan in the coming weeks as well as updates to the Communication and Engagement Plan and design of public events.

Mr. Ceppos opened the floor to TAC member questions and comments and then to public comments. There were no TAC comments. From the public, Mr. King commented that it would be good to have Spanish materials available. Mr. Ceppos said that he has brought on staff members that are fluent in Spanish and they are fully prepared to do that. Mr. King stated that the major groundwater issues are on the west side, by Arbuckle and northern Yolo County. There are also arsenic issues in Grimes. Those would be natural areas of focus and both will need Spanish language support.

Mr. Clark introduced John Ayres from Woodard and Curran to discuss **Draft Sustainability Goal and Undesirable Results Statements**. Mr. Ayres described the relationships between SGMA terms: The Sustainability Goal (SG) is an overarching statement of what the GSAs want to achieve. Undesirable Results (UR) statements describe what the GSAs want to avoid related to the Sustainability Goal. The Basin Setting provides more details of conditions in the basin. The Basin Setting helps set up the monitoring network, which will be utilized to monitor for conditions that are considered undesirable. The UR Statements help define what the GSAs will be monitoring for. Minimum Thresholds (MT), Measurable Objectives (MO) and Interim Milestones are defined for each monitoring site and for each of the six Sustainability Indicators.

The Statute (§354.24) defines that the Sustainability Goal “...culminates in the absence of undesirable results within 20 years of the applicable statutory deadline.” The SG is a qualitative non-numeric description of what we want to achieve in the basin. Mr. Ayres presented the draft Sustainability Goal for the Colusa Subbasin:

*The sustainability goal for the Colusa Subbasin GSP is to maintain, through a cooperative and partnered approach, locally managed sustainable groundwater resources to preserve, and enhance the economic viability, social wellbeing and culture of all Beneficial Uses and Users, including domestic, agricultural, municipal, environmental, tribal, and industrial, without experiencing undesirable results by managing use within the sustainable yield.*

He explained that the UR statements will parrot parts of the SG and describe what is significant and unreasonable for each UR. Stakeholder input will be important in determining what is significant and unreasonable. Several of the UR statements read very similarly and the language is quite general so the GSAs can pick and choose which factors will be used to set up the monitoring network and where to set thresholds, depending on conditions in the different areas of the basin. Mr. Ayres described the UR statements:

Groundwater Levels and Groundwater in Storage. General language is used to provide flexibility.

Seawater Intrusion. There is no UR statement for Seawater Intrusion as seawater is not present and not likely to occur in the Colusa Subbasin because the basin is not anywhere near the Pacific Ocean, a Bay, a Delta or an Inlet. This message comes directly from DWR's BMP for Sustainable Management Criteria. Connate saline water at depth, which has been commented on at past meetings, falls under the groundwater quality Sustainability Indicator.

Groundwater Quality. GSAs were given authorities by SGMA statute that are tied to water quantity. It is not reasonable for GSAs to manage water quality issues that are not tied to water quantity. The only avenue would be to partner with an agency that has authority over water quality such as the CA State Water Resources Control Board. Things that are naturally occurring that are hard to manage without raising or lowering groundwater levels are not in the GSAs' jurisdiction.

Land Subsidence. The UR statement for Subsidence is tied to infrastructure. There is flexibility in the statement to allow for considerations about what types of infrastructure should be addressed.

Depletions of Interconnected Surface Waters – Similar to Groundwater Levels and Groundwater Storage, general language is used in the UR Statement to provide flexibility.

Mr. Ayres paused for questions/comments. There were no TAC comments. Mr. King commented that he understands the approach to seawater intrusion. Mr. Ayres stated that the team will not ignore the connate seawater but they are following DWR's guidelines.

Mr. Clark said that the agenda for the next Joint TAC meeting will include a formal decision item to review/refine and make a recommendation to the Boards to adopt the Sustainability Goal and UR Statements, recognizing that there is still an opportunity to refine these prior to GSP adoption.

Mr. Ayres went on to describe the next steps to define the monitoring network and begin to develop Minimum Thresholds (MT) and Measurable Objectives (MO) for each Sustainability Indicator. He explained that SGMA gives local agencies the flexibility to decide what is significant and unreasonable. Stakeholder input will be important when the GSAs are making these determinations. Mr. Ayres stated that monitoring sites will be set up for each Sustainability Indicator and clarified that monitoring networks are not set up to measure groundwater production/pumping volumes.

Mr. Ayres described different considerations for setting MTs for each of the Sustainability Indicators, the suggested approach, and questions that will still need to be decided by the TAC and GSA Boards. He concluded the presentation by stating that SGMA does not require GSAs to make conditions better than they were on January 1, 2015. GSAs can use a range of historical low measurements to create a buffer when developing the MTs. He stressed that the GSAs will need to further evaluate and make decisions about details of monitoring for water quality. It is unlikely that other existing programs can be used to establish MTs for water quality because they are not on a regular monitoring schedule.

Mr. Ayres paused for questions/comments. Jim Wallace asked where monitoring for groundwater extractions come in to this. Mr. Ayres said extraction is not monitored under the network. Statute says GSAs only monitor for the six Sustainability Indicators. GSAs do have to report annual aggregated extraction in the basin. This can be done in a variety of ways.

Mr. Ceppos asked Mr. Ayres if there were any questions he thought the TAC members should be asking. Mr. Ayres said that, related to groundwater levels, there are different conditions throughout the basin and certain areas that need more attention. Are there any concerns about certain areas needing special attention? Also, should the GSAs do some kind of monitoring for water quality? Some 2020 plans have chosen not to monitor for quality and he has heard that DWR is not happy with that approach. He recommends doing some kind of monitoring, even if it is minimal. Regarding subsidence, the GSAs should decide if there is any infrastructure that should or should not be considered. This kind of input is important to come from TAC, Boards and stakeholders.

Mr. Vanderwaal commented that Management Areas could be beneficial to help establish MTs given the various conditions throughout the basin and surface water areas versus groundwater pumping areas. He asked if any of the work that The Nature Conservancy has done regarding interconnected surface water has been considered. He feels that work should be acknowledged and addressed in the GSP.

Mr. King asked about the SAFER program funding, USGS tracker for water quality monitoring and mentioned there is a new focus in San Joaquin Valley on the CV-SALTS program. Mr. Ayres said the GAMMA program does not monitor regularly enough for our efforts.

Darrin Williams commented that there are many unknowns right now so it is difficult to comment on these things. We don't know what is going to happen when/if groundwater levels drop to the same levels as 2015. Will we see more subsidence? The initial GSP will be a first run as the GSAs continue to collect data. It will be important to monitor water quality to develop a baseline. Regarding subsidence on the west side, the Tehama Colusa Canal is the most critical infrastructure. Some foundations did crack in 2014/15 but no major issues. When does it become an undesirable result?

Mr. Ceppos said that this is an iterative process and we will be working on this over time.

Mr. King commented that, regarding subsidence, the Tehama Colusa Canal is obviously important, but also the Interstate 5 underpass in Arbuckle has experienced flooding, and flooding has occurred in Maxwell. The Arbuckle cemetery is near the worst measured subsidence, although there is no impact at this point. Regarding water quality, he is concerned about pressure from groundwater substitution transfers. He mentioned carbon dating to analyze the connate seawater issues by the Sutter Buttes.

Mr. Clark introduced Ken Loy from West Yost Associates who presented information about the **Hydrogeologic Investigation** task in the Proposition 68 grant.

Mr. Loy reminded the group about the constraints of the grant agreement. There is \$314,000 dedicated to fill data gaps in the Basin Setting portion of the GSP and to support assessment of interbasin conditions. All of the work must be completed by October, 2021 which is not a lot of time considering all aspects of planning and implementation.

There are four types of investigations to consider:

1. Airborne Electromagnetic surveys (AEM). The project team has concluded that it may be more cost effective to coordinate this effort with DWR on their planned AEM survey rather than conducting a standalone survey. The GSAs could develop calibration sites. The objective would be to assess depth to bedrock, depth to water and subsurface faults influencing groundwater conditions. There are monetary and time constraints on this effort and timing of receiving the data would be dependent on DWR.
2. Installation of dedicated monitoring wells. Wells would be utilized to fill data gaps and support Sustainable Management Criteria development. There are monetary constraints and ongoing maintenance and monitoring required with this option.
3. Installation of stream gages. Stream gages could be paired with dedicated monitoring wells to provide data for model refinements and water budget development, as well as certain aspects of Groundwater Dependent Ecosystem (GDE) analysis. Stream gages would require ongoing monitoring and maintenance.
4. Installation of new benchmarks to measure land subsidence. The nexus with the hydrogeologic investigation is that new benchmarks would be placed in areas that are susceptible to subsidence due to the hydrogeology. Usable data would not be available until a second survey was completed which would be after initial GSP completion.

Mr. Loy asked if there were any questions/comments. Mary Fahey noted the GSAs could consider the Technical Support Services program through DWR for additional multi-completion monitoring wells and possibly for real-time GPS subsidence in the future. Mr. King commented about USGS wells that could potentially be incorporated to help monitor the water quality issues around the Sutter Buttes.

Next, Mr. Clark provided a quick update on the **Well Monitoring Pilot Program**. The program is designed to encourage participation from landowners and gather data. It is a relatively small effort that could be expanded on if successful. The team plans to implement this program during the 2021 growing season. They are in the process of preparing a draft informational flyer and a more detailed project description to go to the Joint TAC for review and recommendation for approval by the GSA Boards.

Mr. Clark provided a background on the characterization of **Groundwater Dependent Ecosystems (GDEs)** in the basin. He explained that this is a required component in the Basin Setting chapter of the GSP. GDEs must be considered in UR and MT development. The objective for the Colusa Subbasin is to develop a rational objective approach, and the approach is similar to adjacent basins as well as guidance developed by TNC. When evaluating potential GDEs, considerations include depth to groundwater and

proximity to surface water bodies and irrigated agriculture. Preliminary results show the vast majority (90% of potential GDEs) have groundwater within 30 feet of ground surface and approximately 75% are within 100 feet of surface water sources.

The scoring criteria includes the following parameters:

- Depth to groundwater greater than 30 feet is not likely to be a GDE. This is consistent with TNC's Guidance documents. Depth to groundwater was estimated using DWR's spring measurements from 2014 to 2018.
- Polygons within 150 feet of surface water are assumed to potentially have access to surface water. 150 feet is a judgement call, but this has been used in Yuba and Butte. Proximity to Surface Water was estimated by selecting canals, ditches and perennial streams based on National Hydrography dataset.
- Polygons near irrigated fields are assumed to potentially have access to surface water. Proximity to irrigated cropland is based on DWR land use survey data.

Preliminary scoring results revealed that approximately half of the polygons fall in the categories 1 (less likely) and 2 with the other half in categories 3 and 4 (more likely). There are less polygons in category 4 than the other three categories. Another thing to consider is what species are included in the GDE delineations. Some could be invasive such as Arundo. A next step could be to reach out to landowners with potential GDEs on their land.

#### **5. Schedule Next Meeting**

Ms. Fahey said that Staff will send an email to all TAC members to find a standing monthly meeting time for Joint TAC meetings.

#### **6. Topics for Next Meeting**

No discussion.

#### **7. Member Reports and Comments**

There was no further discussion.

#### **8. Adjourn**

The meeting was adjourned at 3:25 p.m.

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#### **ACTION ITEMS**

- Staff will follow up with TAC members and Consultant team to schedule a standing monthly meeting day and time.
- Agenda for the next Joint TAC meeting to include a formal decision item to review/refine and make a recommendation to the Boards to adopt the Sustainability Goal and UR Statements,

# Staff Report

**To:** CGA-GGA Joint TAC

**Agenda Item:** 4.a. Draft Sustainability Goal and Undesirable Results Statements

**Date:** November 13, 2020

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## Background

Sustainable Management Criteria included in the GSP require a qualitative description of the Sustainability Goal and descriptions of conditions that would be considered Significant and Unreasonable for each applicable Sustainability Indicator and therefore could lead to an Undesirable Result that could trigger State intervention. A draft Sustainability Goal and Undesirable Results statements were presented and discussed at the October 16 TAC meeting.

While developing the draft goal and statements, stakeholder feedback from public workshops held in fall 2019, the Memorandum of Agreement (MOA) between the Colusa and Glenn groundwater authorities, and statements and goals put together in 2020 GSPs for other subbasins were considered. This has resulted in a draft goal and statements that use some existing language but are tailored for the Colusa Subbasin specifically.

The Sustainability Goal and Undesirable Results statements provide a foundation to support development of other, quantitative Sustainable Management Criteria including Minimum Thresholds, Measurable Objectives, and Interim Milestones for each applicable Sustainability Indicator.

The purpose of this discussion is to further discuss the draft goal and statements with the TAC and receive additional feedback. Subject to refinements based on further discussion, the TAC will consider making a recommendation to the GSA Boards of Directors to approve the goal and statements for inclusion in the draft GSP. Further refinements can be made if necessary during the planning process.

## Proposed Recommendation

The following recommendations are proposed for consideration:

1. The Joint TAC recommends that the Colusa and Glenn Groundwater Authorities' Boards adopt the draft Sustainability Goal and Undesirable Results statements.

OR

2. The Joint TAC recommends that the Colusa and Glenn Groundwater Authorities' Boards adopt the draft Sustainability Goal and Undesirable Results statements, as revised.

Attachment  
Draft Presentation Slides

# Staff Report

**To:** CGA-GGA Joint TAC

**Agenda Item:** 4.b. Approach to Develop Minimum Thresholds (MTs) and Measurable Objectives (MOs)

**Date:** November 13, 2020

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## Background

Quantitative Sustainable Management Criteria including Minimum Thresholds (MTs), Measurable Objectives (MOs), and Interim Milestones (IMs) must be established for each applicable Sustainability Indicator. These criteria are established at individual representative sites within the GSP Monitoring Network.

This discussion will expand upon initial discussion at the October 16 Joint TAC meeting of MTs and MOs to provide additional detail on the proposed approach and supporting information that will be considered. Based on the proposed approach, a range of options to establish MTs and MOs for future consideration will be developed for review and discussion at future meetings, including considerations of potential costs associated with alternative MTs and MOs.

The five sustainability indicators (SIs) expected to be applicable to the Colusa Subbasin are:

1. Groundwater Levels
2. Groundwater Storage
3. Groundwater Quality
4. Land Subsidence
5. Surface Water Depletions

For groundwater levels, groundwater storage, and surface water depletions, the proposed approach to evaluate MTs and MOs will be discussed. For groundwater quality and land subsidence, the proposed approach to monitoring will be discussed.

## Attachment

Draft Presentation Slides

# Staff Report

**To:** CGA-GGA Joint TAC

**Agenda Item:** 4.c. Well Monitoring Pilot Program Development

**Date:** November 13, 2020

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## Background

As part of the Proposition 68 SGM Round 3 grant proposal developed in fall 2019 and recently awarded to the CGA, a task was included based on TAC recommendations to include a well monitoring pilot program. The proposed program includes the following activities:

- Collect information from voluntary participants 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.

Based on discussions with the TAC at the June, August, and October meetings, a brief informational flyer and application form have been developed in draft form. The purpose of this discussion is to review these materials and receive additional TAC input to support finalization of program development. It is anticipated that solicitation for program participation will begin in January 2021.

## Attachment

1. Draft Informational Flyer
2. Draft Participant Application

# Colusa Subbasin Well Monitoring Pilot Program Participant Information Form

## Background

The Colusa and Glenn Groundwater Sustainability Agencies (GSAs) are implementing an incentive-based pilot program to work with interested growers and landowners to continuously monitor groundwater use and water levels at participating wells. This voluntary, non-regulatory program is intended to support the GSAs in gathering information regarding groundwater use in the subbasin while providing participants with near-real time access to information on well production and groundwater levels at their wells to support irrigation management. This program is being funded through a Proposition 68 Sustainable Groundwater Management grant from the California Department of Water Resources (DWR).

## Program Description

### Activities

Interested parties are invited to submit a brief application describing contact information, location, cropping, and other information related to the proposed groundwater well. Following the receipt of applications, participants will be selected considering location within the subbasin (it is desired to enroll participants in both Glenn and Colusa counties), water source (fields relying primarily on groundwater preferred), and presence of an existing flow meter installed per manufacturer specifications (preferred). Participants agree that the well location and information collected may be made publicly available (anonymously). Participants also agree that GSA representatives may make site visits to inspect wells, verify installation, and collect manual measurements as needed.

### Incentives

The program will cover the purchase cost of a flowmeter or upgrades to an existing flow meter (up to \$2,500), if needed, purchase and installation of a pressure transducer (to monitor groundwater levels), datalogger, solar panel, cellular modem, and a 3-year subscription for web and mobile access to data gathered. Program participation may be extended beyond 3 years, as mutually agreed.

Participants will be responsible for:

- Installation of flow meter per manufacturer specifications
- Installation of access tube for pressure transducer in well casing
- Monthly cellular modem costs (approximately \$15 per month)
- Manual reporting of pumping data, in the event of device failure during the 3-year program duration

### Equipment Providers

- Flow Meters
  - McCrometer (<https://www.mccrometer.com/Agricultural-Turf>)
  - SeaMetrics (<https://www.seametrics.com/applications/agriculture/>)
  - Others as approved

[NOTE: GRAPHICS/FORMATTING TO BE DEVELOPED]

- Datalogger, Solar Power, and Telemetry
  - Ranch Systems ([www.ranchsystems.com](http://www.ranchsystems.com))
  - Others as approved

### Timeline

- January 2021: Applications Accepted
- February – March 2021: Participants Selected, Wells Inspected, and Equipment Installed
- April 2021 – October 2023: Wells Monitored (3 growing seasons)

### Questions?

For more information, please contact:

Colusa Groundwater Authority  
Mary Fahey  
CGA Program Manager  
530-458-0719  
[mfahey@countyofcolusa.com](mailto:mfahey@countyofcolusa.com)

Glenn Groundwater Authority  
Lisa Hunter  
GGA Program Manager  
530-934-6540  
[lhunter@countyofglenn.net](mailto:lhunter@countyofglenn.net)

### Funding

Funding for this project has been provided in full or in part from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 and the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Proposition 68), and through an agreement with the State Department of Water Resources.



# Colusa Subbasin Well Monitoring Pilot Program Application

Thank you for your interest in the Colusa Subbasin Well Monitoring Pilot Program. Please provide the following information. Note that landowner must be up to date with their GSA operations fee.

Owner/Company: \_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

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

Contact Phone: \_\_\_\_\_

Contact Email: \_\_\_\_\_

Location Description, including parcel number (please also provide a map showing well location and field(s) served):

\_\_\_\_\_

\_\_\_\_\_

Acreage Served by the Well: \_\_\_\_\_

Crop(s) Grown: \_\_\_\_\_

Irrigation Method (drip, microspray, sprinkler, etc.):

Is the well currently equipped with a flow meter (circle one)? Yes / No.

If so, is it installed per manufacturer specifications (circle one)? Yes / No.

(Please provide photographs of meter, upstream conditions, and downstream conditions.)

Is surface water available for the area served by the well (circle one)? Yes / No

If surface water is available, what is the percent of crop irrigation needs met by groundwater? \_\_\_\_\_

Do you agree to allow information collected to be shared anonymously by the GSAs (circle one)?

Yes / No

# Staff Report

**To:** CGA-GGA Joint TAC

**Agenda Item:** 4.d. Projects and Management Actions Solicitation

**Date:** November 13, 2020

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## Background

Achieving and/or maintaining sustainable conditions in the Colusa Subbasin may require implementation of projects and management actions (PMAs) to avoid Undesirable Results in the long term. PMAs could include a combination of supply augmentation (e.g. Sites Reservoir and winter recharge projects) and demand reduction (e.g. invasive species eradication and groundwater allocation). The proposed approach to identifying, evaluating, and including PMAs in the Colusa Subbasin GSP is:

- Initial PMA Assessment – Initial compilation of ideas regarding potential PMAs based on stakeholder outreach, existing data and studies, and review of similar information from other basins.
- Screening Analysis of PMAs – Reconnaissance-level evaluation of the technical and economic considerations of identified PMAs; development and application of a screening process to identify PMAs for further consideration.
- Evaluation of Alternative Combinations of PMAs – Establish potential combinations of PMAs; evaluate potential benefits based on modeling; assess cost and schedule implications.
- Identification of Proposed Mix of PMAs for Inclusion in the GSP – Select final mix of PMAs for inclusion in 2022 GSP. Describe PMAs and implementation plan in sufficient detail to satisfy GSP regulations.

A draft template to solicit input from stakeholders on potential PMAs that could be implemented in the Colusa Subbasin was developed and reviewed with the TAC in June. Based on feedback received this template has been updated. The objective of this discussion is to receive additional input on potential PMAs, the draft template, and the process to solicit input on potential PMAs from stakeholders within the basin.

It is important to note that collection of potential PMAs will continue throughout GSP development and included as an appendix to the Plan. A cutoff date for initial project evaluation will be determined in order to properly evaluate and narrow down the projects included in the final GSP. All other projects can be evaluated at a later date if desired. Documentation of the evaluation and selection process will be included in the GSP.

## Attachment

Updated Draft PMA Solicitation Form

November 13, 2020

1

# Colusa Subbasin GSP Projects and Management Actions (PMAs) Submittal Form

## Overview

The purpose of this form is to gather ideas for potential projects and management actions (PMAs) that could be evaluated and ultimately included in the Colusa Subbasin GSP. Once ideas are gathered, an initial screening and evaluation process will be conducted, followed by ranking of potential PMAs for more detailed evaluation and inclusion in the initial GSP.

Potential PMAs may fall under several categories, including but not limited to the following:

- Recharge projects
- Supply augmentation projects
- Water conservation projects
- Projects to reduce non-beneficial consumptive use
- Groundwater pumping allocations
- Monitoring programs (groundwater pumping, water levels, stream flows, etc.)

Please provide supporting documentation and/or links to that documentation for each question, if available. **NOTE: It is recognized that much of the requested information may not be available at this time. Please provide as much information as you can.**

## Project Name and Contact

Project or Management Action Name:

Contact Person:

Organization/Affiliation (Project Proponent):

Contact Phone:

Contact Email:

## Project or Management Action Description and Status

Project or Management Action Description:

Project or Management Action Location (please provide a map if available):

Which Sustainability Indicator(s) does this Project or Management Action address:

1. Groundwater levels
2. Groundwater Storage
3. Groundwater Quality

4. Land Subsidence
5. Surface Water Interaction

Brief Project Description (1-2 short paragraphs):

Project or Management Action Status (Conceptual, In Design, Ready for Implementation):

Has a feasibility assessment been conducted? If so, please list the agency and provide the documentation (or provide web link to download).

Estimated Project or Management Action Start and End Dates:

Estimated Cost:

Potential Funding Sources:

Management Action or Project Yield (e.g. water contributed to the groundwater system, acre-feet per year):

Please describe any required Permitting and Regulatory Process and status of permitting and CEQA/NEPA compliance:

Does this Management Action or Project serve a disadvantaged community? If so, which one(s)?

Additional Information Sources:

Other Information: