Corning Subbasin Advisory Board

June 3, 2020, 1:30 – 3:30 pm

Meeting #2 Meeting Summary

Pursuant to Governor Newsom's Executive Orders N-29-20, this meeting was conducted by teleconference/webinar.

Webinar: https://global.gotomeeting.com/join/864238549
Telephone: +1 (872) 240-3212
Meeting Access Code: 483-034-717

1. Welcome and Introductions

At 1:30 p.m., Julie Leimbach (Ms. Leimbach), facilitator for the Corning Subbasin Advisory Board (CSAB), called the meeting to order.

Roll call

Ryan Teubert (Mr. Teubert) and Lisa Hunter (Ms. Hunter) took the roll call for the CSAB Members.

Tehama County Flood Control and Water Conservation District (TCFCWCD)

- ✔ Bob Williams
- ✔ David Lester
- ✔ Ian Turnbull (Alternate)

Corning Sub-basin GSA

- ✔ John Viegas
- ✔ Lisa Hunter
- ✔ John Amaro (Alternate)

Steve Gruenwald (TCFCWCD) and Julia Violich (Corning Sub-basin GSA) were absent.

Introductions

Ms. Leimbach welcomed meeting participants to the second CSAB meeting and asked participants to introduce themselves by entering their name and affiliation into the webinar chat box. (A list of meeting participants is included at the end of this document.)

2. Agenda and Groundrules Overview

Ms. Leimbach informed all meeting participants that meeting materials and presentation slides are available on https://www.corningsubbasingsp.org/. She reviewed the Agenda and noted that the project team removed the Sustainability Goal discussion item and will revisit this topic at a future meeting. She stated that for each agenda item, CSAB members and staff may ask clarifying questions during the presentations. She reviewed the groundrules and stated that public comment will be taken at the end of each agenda item.

Ms. Leimbach reviewed the action items from the previous meeting:

1. Consider and address Jaime Lely's westside landowners organization concerns
    - Complete: Glenn County staff have communicated with Jaime Lely.
2. Post CSAB meeting schedule on https://www.corningsubbasingsp.org/.

- Complete: The meeting schedule has been posted online and can also be downloaded as a pdf file.

Public Comment for Items Not on the Agenda

- There was no public comment at this time.

Action Item: Approval of the Meeting Summary

John Amaro (Mr. Amaro) made the motion: *The CSAB approves the CSAB April Meeting Summary.* Ms. Hunter seconded the motion. Ms. Leimbach opened discussion and hearing no discussion, called a vote.

Roll call vote:

- Tehama County Flood Control and Water Conservation District (TCFCWCD)
  - Bob Williams – Aye
  - David Lester– Aye
  - Ian Turnbull (Alternate) – Aye
- Corning Sub-basin GSA
  - John Viegas– Aye
  - Lisa Hunter– Aye
  - John Amaro (Alternate) – Aye

The Board unanimously approved the motion with a 6-0 vote.

3. Hydrogeologic Conceptual Model and Groundwater Conditions

Lisa Porta (Ms. Porta), Montgomery & Associates, provided an overview of the Hydrogeologic Conceptual Model and Groundwater Conditions.

Corning Subbasin Plan Area

Ms. Porta reviewed the Corning Subbasin Plan Area and highlighted the following points:

- The project team is coordinating with the five neighboring subbasins (Red Bluff Subbasin, Los Molinos Subbasin, Vina Subbasin, Butte Subbasin, Colusa Subbasin) to manage groundwater within the context of the Greater Sacramento Valley.
- Corning Subbasin land use is primarily private agricultural land and native vegetation.
- Inactive eucalyptus orchard shows potential land use change in the center of Corning Subbasin (DWR land use data from *2016 California Statewide Agricultural Land Use*).
- High levels of groundwater use in the agricultural parcels (2014 water use data - a dry year).
- For the purposes of the GSP, groundwater and surface water use patterns should be compared across dry and wet years.
- The project team is working with water districts to compile data that will be used for the GSP and will coordinate with the appropriate entities for tribal, state, and federally managed lands.

CSAB Discussion

Board members made the following comments:

- Water Use (slide 9): Correction of the surface water use data; the region around the Capay Landowners Association lands to the west of Orland Unit Water Users Association does not use surface water anymore.
    - Ms. Porta – Thank you for this feedback and information. The project team will double check this data from DWR.
- Water Districts (slide 10): Correction on active water districts; Capay Rancho Water District is no longer active (became inactive in the 1970s).
    - Ms. Porta – The mapped data are also from DWR. Thank you for this information. We will revise this map.

Public Comment

- Brandon Davison (Mr. Davison) introduced himself as the DWR representative for GSP development. He asked if there is a data gap for water use for Tehama County right across the Glenn County boundary line.
    - Ms. Porta – The map of water source data aligns with land use patterns, and it appears that this area is not currently actively farmed.

Hydrogeologic Conceptual Model (HCM)

Ms. Porta provided an overview of select HCM components, based on the DWR guidance (2016 Best Management Practice for Hydrogeologic Conceptual Models):

- The HCM is an important tool for building a three-dimensional understanding of the basin, computing water budgets, and creating models.
- Soil characteristics
    - Soil Types – Much of the Corning Subbasin surface soils are considered to have “slow” or “very slow” infiltration rates.
    - Potential Recharge Areas – Much of the Corning Subbasin soils have been classified as having “very poor” potential for recharge. There is better recharge potential in the northern and southeast regions.
    - Natural Discharge areas – Most of the discharge areas are classified natural communities associated with groundwater wetlands or vegetation, which will be important for the development of Sustainable Management Criteria (SMC) on surface water depletion, as they relate to groundwater dependent ecosystems.
- There is not a distinct aquitard layer identified in this Subbasin, because there is no continuous impervious layer. The resulting mix of deposits allows water to flow vertically between geologic layers.
- Designation of Principal Aquifer
    - Technical consultant team recommends identifying one principal aquifer for the Corning Subbasin GSP development (thin quaternary alluvium and interlayered Tehama/Tuscan formations).
    - The recommended principal aquifer encompasses the subsurface geologic units used for most domestic supply and production wells.

- The deeper Princeton Valley Fill layers are less viable for water use than the units above - indicated by green on the diagram - as they are brackish and salty. And it becomes more expensive to pump and treat this water for use.

CSAB Discussion

Board members made the following comments:

- Development of Geologic Cross Sections (Slide 19):
  - Ms. Porta - They were developed by DWR using well logs and interpolating information from well driller logs.
- Management of principal aquifer should take into account localized recharge issues in the Tehama and Tuscan aquifers. There are localized concerns in the Tuscan layer in the southeastern portion of the Subbasin. Monitoring well data at different depths show differences between the two geologic layers.
- Question regarding the recommended consideration of interconnection between Tehama and Tuscan aquifers. There are studies on recharge including: 1) 2013 Glenn County Groundwater Reliability and Recharge Pilot Project Summary Report and 2) 2010 Butte County Lower Tuscan Aquifer Recharge Study. (Recommendation to speak with Thad Bettner on this topic.)

  For example, in the southern part of the subbasin, a lot of domestic and agricultural wells are completed to depths of 200-ft. or less. If there are problems in the Tuscan and you're managing as one aquifer, what is going to be the effect on the aquifers that are not adversely affected?

  - Ms. Porta – For the purposes of the HCM, this group is looking at a basin-wide analysis. Though some areas of the geologic layers are more connected than others, we do not currently have enough information to make distinctions between more than one principal aquifer at a basin-wide scale.
  - Ms. Porta – We want the GSP to recognize the potential regional impacts and effects on the basin-wide aquifer, and we will come back to this in a future Sustainable Management Criteria discussion. These geological formations could be studied in the future to better refine our understanding.
- Staff asked how the HCM will address the Stony Creek fill area and separation of geologic layers?
  - Ms. Porta –The HCM documentation includes additional information and a cross-section for the Stony Creek fill area. Generally, water is not disconnected between different layers. The different colors only indicate different geologic units, not different aquifers. We can take another look when we discuss management areas.
- Staff inquired about how the Vina and Wyandotte Subbasins are looking at one principal aquifer, but Butte and Colusa are potentially looking at designating more than one principal aquifer.
  - Ms. Porta –We are reviewing the definition for principal aquifer and will request more input from DWR as needed.

Public Comment

- Mr. Davison – Comment on the principal aquifer. [In follow up email after the meeting, DWR recommended review of the HCM Best Management Practices document for better understanding of Principal Aquifer requirements.]

Historic and Current Groundwater Conditions

Ms. Porta then proceeded to review groundwater conditions for three select sustainability indicators, highlighting the following key points:

Chronic lowering of groundwater levels

- Groundwater Contours – Higher water table level before agricultural pumping season (spring 2018) than after the agricultural pumping season (fall 2018).
- Change in groundwater elevations – Water levels decline in response to recent drought and then increase for several years after the drought.
- Key Wells for Water Level Analysis – Further analysis planned for areas where water levels have changed.
- Water Level Trends
    - East - Water levels declined about 20 feet from 2006 levels and are recovering slightly since the drought.
    - West – Water level decline since 2006, similar to eastern area.
    - South – Water levels are relatively stable, in part due to recharge from surface water. In this region, wells are shallower and there is more surface water use.
- Vertical Gradients at clustered wells
    - East – Gradients are downward; pumping takes place in the deeper portions of the basin.
    - West – Less pronounced gradients; water level declines.
    - South - Less pronounced gradients; water levels have not declined or changed as much relative to other areas in the subbasin.

Land subsidence

- Generally, there is no measurable inelastic subsidence observed in the Subbasin; except in one area north of Orland where subsidence has been measured at 0.29 ft (magnitude larger than the 0.17 feet measurement error) that is not reflected in the 2015-2019 DWR satellite surveys.
- Elastic subsidence has been measured at an extensometer in the southeastern portion of the Subbasin; this will not affect long-term management in this area because small changes are temporary and seasonally driven.

Groundwater quality overview

- Water quality is generally good in the Corning Subbasin.
- Point Source Pollution: Open Cleanup Sites – It is important that projects and management actions consider the location of these open sites and do not impact them.

CSAB Discussion

The Board members had the following comments and questions:

- Vertical Gradient – East (slide 33): Are you looking at the differences between the green and blue data lines or the orange and blue data lines?
- Ms. Porta – This graph shows that one area, the orange line, is not as affected by pumping at depths as the others. Other wells are more connected. The shallow monitoring well perforates

at about 25 feet and is a bit of an anomaly at 70 feet deep. The 130-140 foot intermediate wells in the east might track closer to the middle data lines and deeper 500-900 foot wells.

Public Comment

- Jaime Lely – Glad the Board is discussing different needs and management areas. She added that areas of the subbasin that aren't shown in the geological studies and a one-size-fits-all approach may not be appropriate for the extreme western portion of the Corning Subbasin.

Selection of Modeling Platform

Ms. Porta provided an overview of integrated modeling platforms, highlighting the following key points:

- This modeling tool will not be perfect and will be refined as monitoring data from GSP implementation is available.
- The three reviewed modeling platforms all fulfill the following SGMA criteria: (1) include publicly available supporting documentation, (2) be based on field or laboratory measurements and calibrated against site-specific field data, (3) and use public-domain open-source software.
- The technical team, Montgomery & Associates, recommended the GSAs in the Corning Subbasin select the C2VSim-FG Beta2 model (or Version 1, if released in time by DWR to be used to develop the GSP), which is also being used by Colusa Subbasin.

CSAB Discussion

CSAB Board and the technical team discussion produced the following key points:

Model Comparisons

- C2VSim-FG Beta2 Modeling Characteristics –
    - Covers the entire Central Valley.
    - DWR developed and tested for a couple years and released Beta2 in 2019. Beta2 is undergoing refinements and calibration and Version 1.0 is scheduled to be released in July 2020.
    - Team anticipates that some changes to the current model will be needed; assume full recalibration will not be needed.
    - More general approach to layering and geology.
- SVSim Beta1 Modeling Characteristics –
    - Sacramento Valley specific model.
    - DWR developed and released to the public but has not tested fully. May become model of choice for the Sacramento Valley, once fully tested and vetted.
    - Assume needed more extensive review/revision and recalibration of this newer and untested model.
    - Finer spatial discretization (more nodes) and more layering but is only as good as the input data. Many input data will be the same between the two models.
- Either of these models would be appropriate for the GSP. We might not see many differences between the two models for the GSP water budget and water management sections.

- We can calculate the inflow and outflow of each of the subbasins, to compare estimates between Corning and Butte Subbasins, for example, which will be good enough for a basin-wide approach.
- Summary of Model Characteristics (slide 49): DWR models assign shapes for different elements. “38-1,102 Ac” and “3.7-1,297 Ac” indicate the minimum and maximum sizes of the cells.

Interbasin coordination - different models for different basins

- Some adjacent basins are using the same model and are others are using a different model, but what is really important is that the basins use the same modeling code, which supports use of the same numerical approach to how water and flow is calculated in the cells.
- It could be a more challenging comparison between nine layers in SVSim Beta1 and four layers in C2VSim-FG Beta2, but we can coordinate and compare water budgets and inter-basin flow.

Tehama County - Approach for the other GSPs

- Financial resources play a role in selecting a modeling platform and coordinating between basins.
- Tehama County has doubled its integrated groundwater modeling budget using Prop 68 funds, which enables the technical team to invest in SVSim Beta1 review and refinements.
- Tehama County’s initial plan for model development and interbasin coordination is to 1) extend the model boundaries 5 miles wide in every direction and 2) continue to work as closely as we can with Corning Subbasin technical team (Montgomery & Associates).
- Tehama County is adding budget to fund the Corning Subbasin technical team (Montgomery & Associates) to coordinate more with the Tehama County Subbasins technical team (Luhdorff & Scalmanini team). The teams are collaborating.

Public Comment

- There was no public comment.

Action Item: Make a recommendation to GSAs on modeling platform

Mr. Turnbull proposed the motion: *The CSAB recommends that the GSAs use the C2VSim Beta2 modeling platform. Mr. Amaro seconded the motion.*

Ms. Leimbach restated the proposed motion to include use of Version 1.0 of the model if available in time for GSP development and opened discussion. Board members discussed the following key points:

- Even if the GSAs used the same modeling platform, the models would produce different results because each group will make different changes in the platform. Coordination on assumptions for input to the models will be important. For example, each model should have the same boundary conditions and reflect changes made in each other’s models at those boundaries.
- It won’t be a problem if Corning Subbasin is using C2VSim-FG Beta2 and the rest of Tehama County is using SVSim Beta1.
  Each subbasin technical team will calculate recharge and outflow numbers for their subbasin and make assumptions based on the hydrology inputs from other basins. The teams will

need to come to some agreement on assumptions for their model inputs and check model outputs at the boundary and hopefully they will be within a reasonable range (10% or so).
- SVSim Beta1 is not ready yet. The GSAs may want to do alpha and beta testing of the model in the future.
- The C2VSim-FG beta version 1 that will be released in July. If DWR releases version 1 later than July, then we will use Beta2, which is currently available for use. M&A verified that the changes between the beta version and version 1 are not significant, but the team will double check.

Ian Turnbull accepted a proposed modification to his motion: *The CSAB recommends to the GSAs to use the C2V-FG model version 1 if it comes out within one month. If version 1 comes out after one month, then the GSAs will use the Beta2 version.* Mr. Amaro seconded the motion.

Ms. Leimbach restated the modified motion and opened discussion. Hearing no discussion, she called the CSAB members to a vote.

Roll call Vote:

- Tehama County Flood Control and Water Conservation District (TCFCWCD)
  - Bob Williams – Aye
  - David Lester– Aye
  - Ian Turnbull (Alternate) – Aye
- Corning Sub-basin GSA
  - John Viegas– Aye
  - Lisa Hunter– Aye
  - John Amaro (Alternate) – Aye

The Board members unanimously approved the motion with a 6-0 vote.

Review Status of GSP Technical Work and GSP Sections Development

Ms. Porta provided an overview of the status of the GSP technical work and GSP sections development, highlighting the following key points:

- The primary focus for the technical team is currently the integrated model review and modifications, that will be described and documented in a technical memorandum that will be attached to the GSP.
- The technical team plans to write, gather feedback, and revise one section of the GSP at a time.
- The Kearns & West facilitation team will document stakeholder comments for the GSP.

Next Steps

Agenda Items for Upcoming Meetings

Ms. Porta stated that agenda items for the next CSAB Meeting include draft water budgets and model revisions.

Action Items Review

Ms. Leimbach reviewed the following action items:

1. Remove Capay Rancho Water District from water district map, they have been inactive since the 1970s
2. Review the water use map data and modify, as needed, based on board input – Technical team
3. Review Principal Aquifer definitions and additional information and modify as appropriate – Technical team

Adjourn

Ms. Leimbach noted that the end of the agenda has a schedule of topics and objectives, which will be updated for each future meeting. Hearing no further comments from Board members, staff, or the public, she adjourned the meeting at 3:26 p.m.

Meeting Participants

CSAB Members

- Lisa Hunter, Corning Sub-basin GSA
- John Viegas, Corning Sub-basin GSA
- John Amaro (Alternate), Corning Sub-basin GSA
- David Lester, Tehama County Flood Control and Water Conservation District (Groundwater Commissioner)
- Bob Williams, Tehama County Flood Control and Water Conservation District (Board Member)
- Ian Turnbull (Alternate), Tehama County Flood Control and Water Conservation District (TAC Member)

Other Participants

- Ryan Teubert, TCFCWCD (Manager)
- Nichole Bethurem, TCFCWCD
- Todd Hamer, Tehama County Groundwater Commission
- Sharla Stockton, Glenn County
- Thad Bettner, GCID
- Jaime Lely, landowner
- Dana Pressley, landowner
- Mike P., Ollenber Farms Capay
- Bernadette Boyle, LSCE
- Eddy Teasdale, LSCE
- Nick Watterson, LSCE
- Hilary Reinhard, Provost & Pritchard
- Brandon Davison, DWR
- Matt Brady
- Steve Gruenwald, TCFCWCD (Private Citizen)
- Charles Brush

Consultants and Project Team

- Lisa Porta, Montgomery & Associates
- Peter Dennehy, Montgomery & Associates
- Julie Leimbach, Kearns & West

- Sharon Hu, Kearns & West