December 17, 2020 TPR Meeting - Handout #1

Public Utilities

San Pasqual Valley (SPV) Groundwater Sustainability Plan (GSP)
Technical Peer Review (TPR) Meeting
Meeting Summary

The following is a summary of the TPR discussion, comments, and questions. This summary reflects the general content and spirit of each discussion point, but is not a verbatim recording.

Date: Thursday October 8, 2020 from 9:00 to 11:30 pm

Location: GoToMeeting

Purpose: Technical Peer Review Meeting

Attendees:	Technical Peer Review (TPR) • Eddy Teasdale (ET), Luhdorff & Scalmanini • Will Halligan (WH), Luhdorff & Scalmanini • Peter Quinlan (PQ), Dudek	City of San Diego (City) • Sandra Carlson (SC) • Karina Danek (KD) • Niki McGinnis • Mike Bolouri
	Advisory Committee (AC) • Frank Konyn (FK) • Matt Witman (MWit) • Rikki Schroeder (RS) • Dave Toler (DT)	County of San Diego (County) • Jim Bennett (JB) • Leanne Crow • Nancy Karas
	Public • Anita Regmi, Dept of Water Resources • Lani Lutar, Responsible Solutions, on behalf of Ranch Guejito • Hank Rupp, Rancho Guejito (RG) • Andre Monette, Best Best & Krieger, on behalf of Ranch Guejito • Alison Vargas, TetraTech • Elyse Levy, California Department of Fish & Wildlife • Jeremy Burns, Wood	Consultant Team • John Ayres (JA), Woodard & Curran • Rosalyn Prickett, Woodard & Curran • Nicole Poletto, Woodard & Curran • Micah Eggleton, Woodard & Curran • Heidi Gantwerk, HG Consulting • Nate Brown (NB), Jacobs • Paula Silva, Jacobs

Roll Call and Introductions

Rosalyn Prickett, Consultant Team, greeted participants as they signed onto GoToMeeting and reviewed basic instructions for GoToMeeting user tools. Rosalyn introduced Eddy Teasdale of Luhdorff & Scalmanini, who will be sitting in on the TPR while Matt Weidlin is out on leave. She also introduced the new facilitator for the SPV TPR and AC meetings, Heidi Gantwerk of HG Consulting, who has extensive experience with outreach and facilitation for non-profits and public agencies throughout the region.

Review

Heidi Gantwerk, Consultant Team, reviewed the meeting agenda and meeting objectives. She directed participants to Handout 1 with the last meeting summary, and Handout 2 with comments received following the last TPR meeting.

- WH: The summary of comments received did not include all of Will's comments.
    - JA: John/Sandra will follow up with Will after this meeting to make sure we have them all.
- PQ: I would like to see all of the comments submitted by other TPR members. I request to have the other TPR members cc one another in their submittals.
    - SC: We will determine the process for this and let you know.

Groundwater Model

Technical Input – Approach

Nate Brown, Consultant Team, provided an overview of the proposed conceptual approach to model layering. He anticipates 5 to 6 model layers, and will try to have interfaces that generally coincide with stratigraphic boundaries within the Basin, but will generalize them for mathematical stability outside the Basin. The model calibration period runs from water year (WY) 2005 through WY 2019, with monthly stress periods. Calibration will include groundwater-elevation (head) targets at 19 monitoring well locations and vertical-head-difference targets at three multi-completion monitoring wells. Nate provided an explanation of water budgeting for surface water, land, and groundwater systems. TPR members discussed the model approach:

- WH: What is your rationale for the layer thickness in the alluvium, Layer 2 vs Layer 3?
    - NB: In this example, we are looking to simulate groundwater conditions in all three screened intervals of the multi-completion monitoring wells and have greater spatial resolution around the alluvium/residuum and bedrock contacts.
    - WH: I am concerned about the steepness of model layers.
    - NB: The conceptual graphic in Slide 13 is vertically exaggerated, making it look much steeper than it really is.
- WH: Are you trying to calibrate to Model Layers 2, 3, and 4? Is there a way to convey the assignment of these calibration wells by model layer to have a better sense of spatial calibration details?
    - NB: Calibration wells will be assigned based on the midpoints of their well screens. Most calibration wells will likely be assigned to one or two model layers. We plan to summarize the model layers to which each well is assigned later in the development process.
    - WH: We want to be able track which portions of the basin and which layers we have better or lesser calibration.
    - NB: We will be showing spatial plots to demonstrate the degree of calibration throughout the modeling domain later in the process.
- PQ: Model layering concept looks fine.

Nate explained the parameter assumptions for GSP Model projections.

- PQ: Regarding the time series of wet and dry years, who generated them?
    - NB: The global climate models (GCMs) were generated by independent climate experts (technical references were provided in Handout 2).
    - PQ: Were the series of wet and dry years randomly generated? When I compared 1980-2010 to graphs shown at previous TPR meeting, these are biased to be drier.
    - NB: The series was not randomly generated. It was developed by independent climate experts based on assumed future greenhouse gas emissions and other input variables.

The recommended GCM is indeed on the drier side. Handout 2 provides the rationale for selecting the HadGEM2-ES RCP8.5 climate scenario. Given the GSP is a planning document associated with long-term water availability and supply, it makes sense to use a GCM that indicates drier future conditions to facilitate setting SMC that provide an adequate margin of operational flexibility.

- PQ: It would be more reassuring to see an even distribution of dry and wet years. The calibration period had slightly more dry years and is already conservative.
- NB: Faced with multiple GCMs, we had to select one that seemed most appropriate for a water-supply planning document. This one is on the drier side, but not an extreme-dry scenario.

Preliminary Analysis - Results

Nate explained how the Lake Hodges water levels are being incorporated into the GSP Model as a boundary condition.

- PQ: On Slide 21, you said you would set the general head boundary based on water year type. It would be important to recognize the ranges of lake levels in a given water year.
  - NB: Yes, we agree and plan to use the average historical lake stage for a given water year type in the projection simulations.

Nate explained how bias corrections were done for Basin Characterization Model (BCM) inflows. They will use the measured flowrates in Guejito and Santa Maria Creeks, where there are gages with reliable data during the calibration period. For the three ungauged creeks, they will use bias-corrected BCM runoff estimates. As Peter noted last meeting, BCM is not calibrated to local conditions. Since then, they have implemented monthly and annual bias corrections with the BCM runoff to make such estimates more consistent with local conditions.

- PQ: So the only inflow information taken from BCM is surface runoff?
  - NB: Yes. The modeling team feels the groundwater recharge estimates from the BCM are not appropriate for use with the GSP Model.
- Nate explained how consumptive use is computed in the numerical flow model. CalETA data is being used for years it is available; crop coefficients are being used in lieu of CalETA data in years where it is not. WH: On consumptive use, are you also accounting for any non-ET related uses of water as part of farming practices? Such as off-season uses of water for soil moisture management, frost protection, etc?
  - NB: The only additional water use in the model outside of consumptive use is built into the assumed irrigation efficiency input variable. We do not have any data on other on-farm water uses.
  - WH: With the various stakeholders on AC, is there local data that could be available on water application processes that aren't directly related to consumptive use? (none provided)
  - NB: No, I haven't seen any.
- PQ: Consumptive use varies from 37 to 45 inches for orchard on your graph in Slide 27– will you use an average of this historical for the projections?
  - NB: No, we plan to use crop coefficients from the end of the calibration simulation and the reference ET to compute future consumptive use. The reference ET is computed by BCM and then bias-corrected by the modeling team using the local CIMIS station. The crop coefficient and reference ET estimates will be used to compute future monthly consumptive use for the projection simulations.

Refined Analysis

Nate described the assignments of wells to parcels in Handout 5. One outstanding question is how the Guejito area (Parcels 42 and 43) will be irrigated in the future.

- PQ: Wells 3 and 5 have been destroyed; they have been replaced with wells RK 10, 12, and 13, which are used to irrigate Parcel 42.
- PQ: Parcel 43 is irrigated by wells outside of the basin.
- NB: We requested information on Parcel 43 pumping wells from the City and County, but were ultimately directed to go with what we have (which is nothing for Parcel 43, in terms of pumping well construction or locations)
- JB: County understanding is that Parcel 43 is irrigated by wells outside of the basin (wells pumping from fractured rock).

Nate further described how the modeling team assigned pumping locations over time during the calibration period.

Nate indicated having 2005 and 2018 land use layers available, but it is preferrable to have independent estimates of consumptive use at the parcel level for the modeling with the CalETa data.

AC Comments on Groundwater Model

- MWit: On Lake Hodges water levels slide, the City has decided that Lake Hodges cannot be filled as high in the future as it has been in the past, so those averages of historical ranges for the projection simulations need to account for this.
- MWit: The consumptive use charts being used take place in a vacuum. The team needs to consider rainfall; otherwise, the model will be not true to the actual amount of groundwater pumped. In wet years, permanent crops use much less water.
- MWit: There are a lot of assumptions built into the plan and groundwater modeling. How is actual data on pumping and groundwater levels being used; how will the plan be updated with that data?
    - JA: Every 5 years, the GSP will need a review and update. One of the implementation items you will see later on in PMAs portion of this agenda is a model update every 5 years. In this basin, the land use does not change much; but we can change assumptions in the model projections based on new data as they become available.
    - NB: Agree with John.

Projects and Management Actions

Technical Input – Approach

John provided an overview of the proposed approach to projects and management actions (PMAs). GSP implementation actions will include continued monitoring, public meetings, annual reports, 5-year Plan Update, numerical model update, and pursuing funding opportunities. Adaptive management is "a structured, iterative process of decision making…via monitoring…". SPV Basin does not appear to be experiencing undesirable results related to levels; may need management for groundwater quality (e.g., nitrates) – projects and management actions will be discussed more next meeting. This meeting is intended as a high-level introduction to the adaptive management process as shown on slide 41. After receipt of monitoring results that are near or exceed SMC, Core Team will investigate the issue, communicate with public, and determine a proposed project/management action. Example projects that may be considered: stormwater recharge, recycled water from Escondido or San Diego, or raw

water from Ramona. Example management actions that may be considered: demand softening, irrigation efficiency, well inventory, basin-wide metering, or pumping restrictions.

- WH: An earlier slide stated the quality, not quantity, is the main basin issue. The proposed management actions seemed to address both concerns. Is this a catch-all list that will be refined?
    - JA: First three projects listed import cleaner water into the basin, so those address both issues. It is difficult to remediate poor groundwater quality. We could add "operate pump and treat facility" to just address the quality issue.
    - JA: We worked with several local engineers to identify infrastructure projects that can address both issues, which is how we could be specific on adjacent agency pipelines. We want to be able to address both quality and quantity. That will provide a list of projects that are available to implement in different future scenarios to avoid undesirable results.
- WH: Could we potentially add "outreach and education" regarding ongoing land use practices, to explain efficiencies or changes that could be incorporated to reduce nitrate loading?
    - JA: Great addition, will add to the list.
- PQ: Ramona has spray fields near the airport where they are getting rid of recycled water. May be a longer pipeline that in Escondido, but "recycled water from Ramona" would be downhill and could be added to the plan.
    - JA: Great addition, will add to the list.
- ET: Agree that additional PMAs that specifically target groundwater quality should be added in.

John polled TPR members and they all agree with using an adaptive management approach.

John then explained that two management areas are being proposed in alignment with the City and County jurisdictions.

- WH: I'm confused about term "management areas" because it has a distinct definition in SGMA that is not consistent with the way it is conveyed on Slide 44. Seems like these proposed management areas are defined strictly based on jurisdiction. Are you planning on having an actual management area discussion per SGMA, or is this more in terms of governance?
    - JA: This is a reflection of the MOU and we want to clearly diagram which portions of the basin will be managed by which entity. Regulations say we may use different monitoring networks and thresholds in different management areas, but that it is not required.

Heidi let the TPR members know that the Core Team's intent is to upload the meeting presentations to the project website at least 72 hours in advance of meetings (on the Monday prior to Thursday meetings), but that this month QA took a bit longer than anticipated and the team was not able to upload the files as planned. Next time, the meeting presentation will be available for TPR review in advance.

AC Comments on Projects and Management Actions

No comments.

Field Program Update

John explained that aquifer testing is still on hold.

AC Comments on Field Program Update

- RS: Why is the field program on hold?

- SC: It is on hold because of the Coronavirus.
- RS: How does the virus affect testing?
- KD: The City is putting lower-priority SGMA items on hold, because of staffing and resource limitations associated with the virus.

Final Thoughts from TPR or AC

- WH: Thanks to John and Nate. As we are progressing into more substantive topics. There are more comments from Peter and I. Can there be more opportunity to discuss or revisit some of the prior topics that may be more contentious or require follow-up?
- DT: Very interesting discussion today, compliments to the consultant team.

Public Comments

Public comments provided in the "Chat" during the meeting are listed below. Public comments provided verbally by meeting participants follow:

- Andre Monette, BBK, Counsel for RG – Peter already made our concerns clear about the model, specifically about where rainfall data came from that will be used to project future groundwater levels. The model appears to be flawed and we will submit more comments in writing. This raises concerns about how model will be used – it shouldn't be used to set minimum thresholds.
- Andre Monette, BBK, Counsel for RG – Any comments connected to this process should be public record.
- Andre Monette, BBK, Counsel for RG – We fully support the proposed management areas, as they support the MOU. There is a technical basis for separate management areas for side canyons, such as Rockwood Canyon and Bandy Canyon. This group should be prepared for separate management actions in those side canyons.
- Lani Lutar, Responsible Solutions (RG) - I would like to ask that an item addressed earlier be revisited at the appropriate time. Ms. Carlson noted that it has not been decided whether TPR written comments/input would be shared with all committee members. For complete transparency, it would seem most appropriate for everyone to have access to the same information. Submitted comments are also Public Record by law. But more importantly, this is a matter of good governance to encourage transparency. *Note, this comment was submitted as a typed comment at 9:28am – please see the meeting Chat Log.*
    - Heidi Gantwerk (Facilitator) - The team is committed to transparency and are discussing the best way share TPR comments.

Next Steps

The next TPR Group meeting is scheduled for Thursday, January 14, 2021 from 9 to 11:30 am.

Comments should be sent directly to Sandra Carlson at carlson@sandiego.gov.

The TPR meeting ended at 10:46am.

GoToMeeting Chat Log from TPR Meeting

TPR - Peter Quinlan (to Everyone): 9:26 AM: I can't hear Will

W&C-Heidi Gantwerk (to Everyone): 9:28 AM: Can you not hear him at all Peter?

Lani Lutar (to Everyone): 9:28 AM: I would like to ask that an item addressed earlier be revisited at the appropriate time. Ms. Carlson noted that it has not been decided whether TPR written comments/input would be shared with all committee members. For complete transparency, it would seem most appropriate for everyone to have access to the same information. Submitted comments are also Public Record by law. But more importantly, this is a matter of good governance to encourage transparency.

Rikki (to Everyone): 10:33 AM: why is it on hold?

Rikki (to Everyone): 10:33 AM: Really? how does virus affect the testing?

Andre (to Everyone): 10:35 AM: Hi, my name is Andre Monette, I'd like to make a public comment at the appropriate time. Thank you

Lani Lutar (to Everyone): 10:40 AM: Thank you for responding to my input!

Frank Konyn - AC (to Everyone): 10:41 AM: when will this afternoon's presentation be made available?

Frank Konyn - AC (to Everyone): 10:42 AM: the power point

Images from TPR Meeting