



NOTES: Water Supply Working Group #3

Meeting Held: 08.29.18

Notes prepared by Consensus Building Institute

Next Meeting: October 3, 10:00a-1:00p @ Sonoma County Water Agency in Santa Rosa

Meeting in Brief

The Model Sub-Group presented the PVP model and a draft template for summarizing the model reports for the Ad Hoc. The Water Supply Working Group agreed the PVP model accuracy is sufficient for the Model Sub-Group to move forward with the first round of modeling scenarios. The Model Sub-Group will simultaneously continue to refine the model's accuracy.

The Working Group approved the general metrics captured in the model summary report. Participants said the report should also capture important threshold red flags (water storage and timing, cold water pool storage and timing, water flows, and PVID demand).

The Working Group refined the alternative modeling scenarios and identified four scenarios (in addition to the baseline scenario) for the initial round of model runs. If time is limited, the Working Group deferred to the Model Sub-Group to decide which scenarios to prioritize for this initial round. The Model Sub-Group will present the model results and revised summary report template at the next Working Group meeting.

Action Items

Scott	Sept 28	Create brief description/table/slide deck explaining the deviations observed in the model validation exercise.
Model Sub-Group	Sept 28	Revise the model summary report template per August 29 discussion (e.g., include thresholds).
Model Sub-Group	Sept 28	Begin running scenarios per August 29 discussion.
Craig A, Bryan, and Josh	Sept 28	Discuss high-level indicators for detecting water quality concerns.

PVP HEC-ResSim Model

View [presentation slides](#).

Model Components

The Working Group reviewed the components of the PVP HEC-ResSim Model developed by Sonoma Water. The model incorporates more current datasets and other available models (e.g., unimpaired data flows, bathymetric surveys, smoother hydrology model curves) and more accurate logic that better simulates PVP operations (e.g., gate closures).

The model currently analyzes seven junctions in the system. Sub-group members noted the East Fork of Russian River junction represents the water discharged from the powerhouse (results are the same as the E-16 powerhouse junction). The model does not cover PVID's demand, which is calculated in a separate model for the Russian River. The model can include additional junctions and datasets as that information becomes available (e.g., the Complex Fire's impact on runoff will not be known for some time).

The model uses the 2017 block water data, which PG&E staff confirmed generally reflects normal operations (one pulse with a tail-off). A Working Group member suggested looking at additional hydrographs to help smooth out the block water hydrograph curve.

Model Verification

The Model Sub-Group then presented the verification results to gauge the model's performance, which closely matched observed conditions 2006-2016. The simulated results deviated a few times from observed data; however, those discrepancies resulted from issues such as human judgment error or lag time to obtain early closure approval. The model also does not include periods where PG&E operated under drought variances. Sub-Group members suggested analyzing the deviations more closely for opportunities to better understand the PVP system and improve the model's accuracy.

Next Steps

Scott McBain from the Model Sub-Group will create a brief description/table/slide deck explaining the deviations observed in the model validation exercise.

Sonoma Water staff and consultants will continue to refine the model, but the Model Sub-Group can also move forward and simulate other scenarios per the Working Group's direction.

Feedback on Template for Reporting out Scenario Modeling Results

Refer to Slides/Pages 11-12 of the [model presentation slides](#).

The Model Sub-Group presented a draft model results summary report to quickly compare baseline conditions with model scenarios. In addition to the PVP model reports, the report will include Russian River model results to describe flows above Lake Mendocino. The summary report compiles the results from all the modeled

scenarios to compare across scenarios, whereas each scenario will have separate, more comprehensive information readily available.

Thresholds. The group indicated the report should help capture red flags or threshold concerns for the different scenarios. Thresholds should include a buffer above critical points of undesirable impacts. Participants cautioned about setting hard thresholds that may or may not apply to all scenarios. Participants offered the following general input to consider for developing the thresholds:

- Storage violation (and timing) at both lakes: Stay well above levels for compromising infrastructure.
- Cold water pool storage (and timing) at both lakes: Avoid major water quality concerns (e.g., dead pool volume).
- Flows: Eel River=RPA exceedance, Russian River East Fork=Decision 1610 with Biological Opinion temporary change variance. Use acceptable fisheries flows thresholds.
- PVID demand: 15,000 AF average; contract=19,000 AF.

Water Quality. A Working Group member requested that the report capture water quality red flags. The Model Sub-Group explained the current model does not analyze water quality. However, other opportunities may be available to further explore water quality concerns (e.g., CARDNO is developing a water temperature model). A few Working Group/Sub-Group members agreed to meet offline to further explore options.

Incorporating Fish Passage Scenarios. The Environmental Flows Sub-Group recently met to discuss the minimal flows necessary to support fish passage. The group identified the current RPA caps (spring flows especially) as a sufficient placeholder; however, it will be important to have flexibility to explore options that may adjust the minimal flows (e.g., adjust E5 and diversion rate alternatives).

Report Content. The group acknowledged the report template likely needs additional refinements to more succinctly summarize the model results for the Ad Hoc. It was suggested the report focus on capturing threshold concerns (e.g., frequency that threshold was exceeded) rather than Min/Max standard deviations; the group agreed to let the sub-group make a recommendation. Include exceedance plots in the model results (not the summary report).

Next Steps

Craig A, Bryan M, and Josh F to discuss high-level indicators for detecting water quality concerns for the different scenarios.

The model sub-group will analyze what information would be most useful in the summary report (thresholds, min/max, standard deviations, etc.) and present their recommendations at the next Water Supply meeting.

Next Round of Modeling Scenarios

View the [initial round of potential scenarios matrix](#).

Per discussion, the group added and revised the alternatives to be:

PVP Alternatives	Russian River / Lake Mendocino Alternatives
<ul style="list-style-type: none"> • Baseline / Current Operations • PVP Decommission • PVP Revised Operations (RPA E-5 and other operation changes) • Lowered Scott Dam (tied into Fish Passage Working Group flows) • Reduce East Branch Russian River Flows • Run-of-the-River Diversion, Modified Scott Dam (existing tunnel capacity) • Run-of-the-River Diversion, No Scott Dam (existing tunnel capacity) • Run-of-the-River Diversion, No Scott Dam (increased tunnel capacity) 	<ul style="list-style-type: none"> • Baseline / Current Operations • Lake Mendocino FIRO (Full) with fish flow EIR Operations • Lake Mendocino FIRO (Hybrid) • Raise Coyote Valley Dam • Raise Coyote Valley Dam with FIRO • Reduce Russian River Water Demands • Pump to PVID • Create Storage in Potter Valley

The group recommended Model Sub-Group run the scenarios listed in the table below for the initial round of model simulations. The group acknowledged the sub-group may not have sufficient time to run all of these models by the next Water Supply meeting. The group deferred to the sub-group to decide which models to prioritize for this initial round.

Scenario	Combined Alternatives for Initial Round of Model Simulations	
	PVP	Russian River / Lake Mendocino
0	Baseline / Current Operations	Baseline / Current Operations
1	PVP Decommission	Baseline / Current Operations
2	PVP Revised Operations	Lake Mendocino FIRO (Full) with fish flow EIR Operations
3	Run-of-River Diversion, No Scott Dam (existing tunnel capacity)	Lake Mendocino FIRO (Full) with fish flow EIR Operations
4	Run-of-River Diversion, No Scott Dam (existing tunnel capacity)	Pump to PVID

The group reiterated they will apply climate futures (four scenarios) later in the simulations. An expert from US Geological Survey recommended modeling out to 2050.

There was a concern that the group is not fully considering what opportunities exist and may remove options preemptively. For instance, regulatory agencies sometimes

exercise flexibility on permitted activities if the long-term benefits exceed the risks. The group acknowledged the challenge to balance staying open-minded and develop creative solutions with refining and prioritizing recommendations for the Ad Hoc.

Next Steps

The Model Sub-Group will run the baseline scenarios and a begin to run the initial round of model scenarios per the August 29 discussion.

Next Steps and Future Agenda Items

There was a request for future meetings to occur further north (e.g., Garberville or Willits) for individuals traveling from the northern region.

At its next meeting on October 3rd, the Water Supply Working Group will discuss the following topics:

- Review results from the initial round of model analyses
- Refine technical approach
- Begin to develop potential recommendations