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**From:** Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov>  
**Sent:** Thursday, December 20, 2018 7:29 PM  
**To:** Garwin Yip - NOAA Federal  
**Cc:** Cathy Marcinkevage; Evan Sawyer - NOAA Affiliate; Sarah Gallagher - NOAA Federal; Howard.Brown; Justin Ly - NOAA Federal; Naman, Seth; Ellrott, Brian  
**Subject:** Re: [EXTERNAL] RE: ROC on LTO - Complete Model Results to Support the December 2018 BA Qualitative Analysis  
**Attachments:** Pages from OCAP\_BA\_Aug08\_chronology example for Shasta storage.pdf; Pages from OCAP\_BA\_Aug08\_bar chart example for Keswick releases.pdf; 3-1\_ROConLTO\_CalSim\_Storages\_And\_Elevations\_v17\_WOA\_COS\_PAL\_PAU\_121018.pdf

Garwin, Howard, and Cathy -- I drafted this then realized maybe I shouldn't send. Is this innocuous enough to send via e-mail (which also helps to inform and maybe save time for other folks on the e-mail), or should I print out and carry over tomorrow? Or not respond at all? **I would really like to make suggestion #3 and share the examples from the 2008 BA, so hope we can respond in some way.** Have also attached the incoming modeling results, since not all of you were on Katrina's e-mail.

\*\*\*PROPOSED RESPONSE TO KATRINA\*\*\*\*\*

Katrina,

The modeling results appear to be organized as follows for each of seven reservoirs (Trinity, Shasta, Oroville, Folsom, San Luis, New Melones, and Millerton):

I. Reservoir

A. Storage results (items not necessarily in order of presentation)

1. Storage summarized by month and exceedance probability, with average storage by month for each water year type.
2. Results include results for each scenario: Without Action, PAL (Proposed Action Lower), PAU (Proposed Action Upper), Current Ops (COS)
3. Results also include summaries of the differences between all possible pairings of scenarios
4. Each page is organized with three tables -- the first two showing results for two scenarios, and the third showing the difference between scenarios.
5. Exceedance plot for May and September.

B. Elevation results (same content and organization as for storage)

I appreciate all the pairwise comparisons and the inclusion of the scenarios results on the same page as the comparative results, and glad to see the comparisons between the Proposed Action and Current Ops scenarios. Also glad that average storages and elevations are summarized by yeartype.

**Questions/suggestions:**

1. Do you expect to provide similar packages for reservoir releases/streamflows? That is important information for our effects analysis.
2. Do you expect to provide similar packages for modeled water temperatures (know you sent me a Stan example but just haven't had time to review yet so am asking here)? That is important information for our effects analysis.
3. Would be great if, in addition to results summaries you've already created, you could provide (for storage, elevation, flows, water temps; for each reservoir/river):

a. A series of bar charts like the attached example from the 2008 BA. While this information is in the yeartype-specific rows of your scenario tables, the current format of results allows a review of just two scenarios at a time. The attached example allows an easy "at a glance" comparison of ALL scenarios at once, over all months of year, both overall and by yeartype.

b. A graph showing the full chronology for all scenarios, as in the attached example from the 2008 BA. This sort of figure will help us understand whether/when we have "runs" of low storage/low flow years and how that looks in the different scenarios.

Thanks for the chance to comment,  
Barb

On Thu, Dec 20, 2018 at 5:43 PM Harrison, Katrina <[kharrison@usbr.gov](mailto:kharrison@usbr.gov)> wrote:

Hi folks -

Attached are some example results from our ROC modeling - do you have any comments on the format? They will all look like this (or as amended by your comments). We are spitting out the CalSim results for the new PA tomorrow.

Thank you,

Katrina

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**Barb Byrne**

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