From: Howard Brown - NOAA Federal <howard.brown@noaa.gov>

Sent:Thursday, April 4, 2019 11:15 AMTo:Evan Sawyer - NOAA FederalCc:Cathy Marcinkevage; Garwin Yip

Subject: Re: Shasta Analysis

Evan,

Maria's questions can often be very difficult to work with and I don't really have the solution for how to address them but I do realize that it can put you in more than a difficult spot. I am sure you know that she is not intentionally trying to make it difficult for you, but that she has lots of experience working with Reclamation on matters that most of us just have not been part of. Right now, just keep track of her questions, give them some thought, but keep working on your analysis with the information that you have and we will meet with Maria next week to trouble shoot them and we should all work together to ask questions about how we get where we can satisfy her inquiries. I know that doesn't answer your questions, but our timeline is not forgiving so we are going to have to keep working through some of this. Howard

On Thu, Apr 4, 2019 at 10:51 AM Evan Sawyer - NOAA Federal <<u>evan.sawyer@noaa.gov</u>> wrote: Hey Howard,

Short answer: Yes, I will have a a draft finished today, ready for Maria's review tomorrow.

Longer answer: Yes, but... every time I open the doc I find more things that need doing. Garwin is reviewing a draft with a number of placeholders in it for things I either have to fix or do. It's a process.

I spoke with Maria for a bit yesterday and I'm still unsure how to incorporate the discretionary contract deliveries. Maria expressed concern that since shorting those deliveries is NOT included in the COS modeling that it discounts the effect of Reclamation proposing to NOT short those deliveries in the PA. The problem I have is that it's hard to describe those deliveries in an exposure risk response way (or even measure them since they're not described in the BA but are buried in the Calsim data, maybe?)? The way I see it, making (or not making) the discretionary contract deliveries would effect Reclamation's ability to build storage (and what Tier summer ops are), this should be captured in the modeling by how often Reclamation expects to be in each Tier. The effects to species are then dependent on the operational Tier.

Maybe the bigger problem is Discretionary allocations are not described as part of the PA (or at all really). Cathy had suggested working with Derick but I don't know what to ask him? Maybe it would be useful to know or plot the May 1 Shasta storage against the quantity (or proportion of) discretionary allocations? I think that would tell us that for a given allocation what the likeliehood of achieving a particular May 1 storage is (and what summer management Tier) which ultimately gives us the exposure and risk to species? But again, that information is part of the analysis of the PA Tiers but Reclamation doesn't present it that way? I don't know can someone ask Derick if that's possible in CalSim? If he can pull out the discretionary allocation amount and the May 1 storage?

I have to get back to it, but please let me know your thoughts and suggestions. Evan

On Thu, Apr 4, 2019 at 10:03 AM Howard Brown - NOAA Federal < howard.brown@noaa.gov > wrote: Good morning Evan,

I am following up on our discussion about giving Maria some time to review the Shasta analysis this week. I talked with her about this and she is planning to block some time tomorrow to conduct her initial review. Can you get your analysis to a point where she can read it tomorrow? Maria also had a few suggestions for moving forward on Shasta that I want to loop you in on:

- 1. Maria wanted to be sure that you take a look at what Derek Hilts has been providing us and incorporating it in your analysis.
- 2. She wants Garwin to take a close look at the Shasta analysis.
- 3. She would like to schedule a follow-up with you, Garwin, Eric and Miles (also me and Cathy but but the aforementioned folks are the most critical)

Cathy, can you reach out to Eric and Miles to get something on our calendars for next week?

Thank you! Howard

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