BEFORE THE

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA WATERFIX WATER RIGHT CHANGE PETITION HEARING	)))

JOE SERNA, JR. BUILDING

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

COASTAL MEETING ROOM

1001 I STREET

SECOND FLOOR

SACRAMENTO CALIFORNIA

PART 2 REBUTTAL

Monday, August 6, 2018

9:30 A.M.

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Reported By: Deborah Fuqua, CSR No. 12948 (a.m. session)
Candace Yount, CSR No. 2737 (p.m. session)

APPEARANCES:

CALIFORNIA WATER RESOURCES BOARD

Division of Water Rights

Board Members Present

Tam Doduc, Co-Hearing Officer:
Felicia Marcus, Chair and Co-Hearing Officer:
Dorene D'Adamo, Board Member

Staff Present

Andrew Derringer, Senior Staff Attorney
Conny Mitterhofer, Senior Water Resources Control Engr.
Hwaseong Jin
Thaddeus Hunt
Megan Raisis

For California Department of Water Resources

Tripp Mizell, Senior Attorney

Duane Morris, LLP
By: Thomas Martin Berliner, Attorney at Law
By: Jolie-Anne Ansley, Attorney at Law

U.S. Department of the Interior, Bureau Reclamation,
and Fish and Wildlife Service
Amy Aufdemberge, Assistant Regional Solicitor

State Water Contractors

Stefanie Morris, Attorney
Adam Kear, Attorney
Becky Sheehan, Attorney

(Continued)

APPEARANCES (continued)

Cities of Folsom and Roseville, San Juan Water District, and Sacramento Suburban Water District
Ryan Bezerra and Andrew J. Ramos

San Joaquin County
Thomas Keeling

City of Brentwood
David Aladjem

Sacramento Valley Group and Sacramento Municipal Utility Group
Meredith Nikkel

California Sportfishing Protection Alliance, California Water Impact Network, AquAlliance
Michael Jackson

Sacramento County Regional Sanitation District
Kelley Taber

Save the California Delta Alliance
Michael Brodsky

San Joaquin Tributaries Authority
Tim O'Laughlin

City of Antioch
Matthew Emrick

(continued)

APPEARANCES (continued):

East Bay Municipal Utility District
Fred Etheridge

Contra Costa County and Solano County
Daniel Wolk

California Water Research
Deirdre Des Jardins

Clifton Court, LLP
Suzanne Womack

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I N D E X

Friday, August 6, 2018 9:30 a.m.

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PROCEEDINGS

CO-HEARING OFFICER DODUC: All right. Good morning, everyone. On my clock, it's 9:30. So welcome back to this Water Right Change Petition Hearing for the California WaterFix project.

I am Tam Doduc. To my right is Board Chair and Co-Hearing Officer Felicia Marcus. We will be joined shortly and sitting to the Chair's right will be Board Member DeeDee D'Adamo.

To my left are Andrew Deeringer, Conny Mitterhofer, and Hwaseong Jin. We're being assisted today by Ms. Raisis and Mr. Baker.

Usual three announcements. Take a look around. In the event of an emergency, we will evacuate this room, this building. So identify the exit closest to you. We will take the stairs, not the elevators, down to the first floor and meet up in the park across the street. If you're not able to use the stairs, flag down one of the safety people, and they will direct you into a protective area.

Secondly, this meeting is being recorded and webcast. So please speak into the microphone after turning it on by pushing the pushbutton and making sure

that the green light is on. And begin by stating your name and affiliation.

Our court reporter is back with us, as always.

Bless you. Thank you.

And a transcript will be made available on our website at the conclusion of Part 2. If you wish to have it sooner, please make arrangements directly with her.

And finally and most importantly, please take a moment and put all your noise-making devices to silent, vibrate, do not disturb, off, if necessary. Please take a moment and double-check even though you think it might be so. All right.

Before we turn to Mr. Brodsky to continue his cross-examination, are there any housekeeping matters?

Ms. Womack.

MS. WOMACK: Thank you. Suzanne Womack, Clifton Court LP. First of all, I wanted to start by apologizing. I was very emotional Friday. This is a very hard situation for me to be in.

So I have gone hiking and thought about things, and I wanted to say that I do not excuse this panel for Clifton Court because I'm going to submit questions on Friday in writing. But I need to be able to ask in person for follow-up with questions regarding

especially the engineering.

And I -- you know, I don't -- engineering and operations of the control structures, the -- and the south tunnel structure that is new to the Byron Tract operations.

CO-HEARING OFFICER DODUC: Our previous oral ruling was that you may submit questions and request the return of witnesses for the specific purpose of addressing potential impacts to water rights which is something that you could not have anticipated in Part 1 and, therefore, did not able to -- was not able to address in Part 1.

The questions to be submitted for that purpose are due -- I believe I said noon? Noon on Friday.

MS. WOMACK: Friday, yes.

CO-HEARING OFFICER DODUC: And to which other parties may respond the following Tuesday by noon.

If I understand your request, you are now suggesting that you have additional questions outside of the scope of potential impacts to water rights?

MS. WOMACK: You know, I have -- I have impacts that are -- they're water rights, and the water rights are affected by the actions in what was called the Delta-Mendota intake canal.

CO-HEARING OFFICER DODUC: So let's do this,

Ms. Womack. Rather than taking the time now --

MS. WOMACK: Yes, I don't want to.

CO-HEARING OFFICER DODUC: -- to go through that, why don't you go ahead and submit all your requests with specific questions in writing by noon on Monday -- I'm sorry -- on Friday.

MS. WOMACK: Friday, yes.

CO-HEARING OFFICER DODUC: And we will review that and get back to you.

MS. WOMACK: As far as -- yeah, because I do need very specific help with that. Thank you.

And another thing I've realized is, since DWR gave all the information, engineering and all that, way after our testimony was due, I was not able -- the whole change they're talking about, my testimony doesn't address because I had a very vague -- you know, little -- well, 500-page, but little compared to the box I got. And I'd like to be able to resubmit some -- or submit some testimony. Or would that be something that would happen -- because I haven't been able to comment, really, on the details that were released after.

CO-HEARING OFFICER DODUC: It sounds like what you are requesting is the opportunity for surrebuttal.

MS. WOMACK: Yes.

CO-HEARING OFFICER DODUC: And you may put that in writing by noon Friday as well.

MS. WOMACK: I will do that. Thank you so much.

CO-HEARING OFFICER DODUC: Any other housekeeping?

Mr. Mizell, would you like to respond?

MR. MIZELL: No, simply ask for some clarification. If a request for surrebuttal is due from Ms. Womack on Friday, are responses to surrebuttal due at the following Tuesday, or do we want to wait until some other time in the future for responses to request for surrebuttal?

CO-HEARING OFFICER DODUC: Let me think upon that, Mr. Mizell.

The responses to her questions and requests for the return of witnesses for the purposes of rebuttal will be due noon on Tuesday. It might be that we will just withhold, for now, the request on surrebuttal, but I will confirm that later.

Mr. O'Laughlin, always a pleasure.

MR. O'LAUGHLIN: Well, thank you. And it's great to be here.

CO-HEARING OFFICER DODUC: It's a good thing I'm not under oath.

MR. O'LAUGHLIN: Yeah. Sorry. Yes.

Sorry I missed last week. I was not here, and I, unfortunately, did not have a chance to follow.

I was wondering where we stand -- my understanding from my associate was you were going to respond to our letter. So depending on how fast things move this week, I do have witnesses and subpoenas to take in. So do we have a time frame of when I might expect the response?

CO-HEARING OFFICER DODUC: We are still considering your request. I'm sure you do not want us to rush into a decision. We will get back to you as soon as we can. We recognize the time issues.

MR. O'LAUGHLIN: Thank you.

CO-HEARING OFFICER DODUC: Any other housekeeping matters? All right.

With that, Mr. Brodsky is the last of the cross-examiners for this particular panel. And I believe -- yes, everyone else has conducted cross-examination. Mr. Brodsky is resuming the cross-examination he started on Friday.

And, Mr. Brodsky, I believe you had a time estimate of -- was it 30 minutes?

MR. BRODSKY: 40.

CO-HEARING OFFICER DODUC: 40 minutes. I'm

being very kind to you because it is Monday and you are dressed appropriately, as always. All right.

Let's put 40 minutes on the clock for Mr. Brodsky.

And please remind me again the topic areas you will be covering. I believe now it's only with Mr. Bednarski and Mr. Choa?

MR. BRODSKY: Yes. And so I wanted to follow up very briefly on Mr. Bednarski's answer to Chair Marcus' question about soil conditions at the intake foundations. And then the other topics are the number of barge trips set out in Mr. Bednarski's rebuttal testimony, the elimination of the Clifton Court Forebay barge landing in Mr. Bednarski's rebuttal testimony, and then very briefly Mr. Bednarski's rebuttal testimony about changes at the town of Hood.

CO-HEARING OFFICER DODUC: All right. Please proceed.

MR. BRODSKY: Okay.

GWEN BUCHHOLZ, JOHN BEDNARSKI,
JASON VOLK, LAURA YOON, FRED CHOA,
BRANDON GOSHI,

called by Petitioners as Part 2 Rebuttal Panel 1 witnesses, having been previously duly sworn, were examined and testified

further as hereinafter set forth:

CROSS-EXAMINATION BY MR. BRODSKY (resumed)

MR. BRODSKY: Good morning, Mr. Bednarski.

WITNESS BEDNARSKI: Good morning.

MR. BRODSKY: So on Friday, in response to Chair Marcus's question, I believe you said that sandy soil or clay soil could pose problems for non-impact methods of supporting the foundations at the intakes.

Did I remember that correctly?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: Okay. I'd like to take a look if we could at SCDA-127.

And I believe you said that sandy soil could present a problem in that the sand can get into the drill shaft and plug it up in some way?

WITNESS BEDNARSKI: That's correct. That's my understanding of what can happen.

MR. BRODSKY: Okay. So SCDA-127 is a letter we previously submitted from Malcolm Drilling Company in which Malcolm said that they had reviewed the engineering report and were confident that non-impact methods could be used for the intake foundations. They attached to it their brochure.

If we could go down two pages.

This is the cover of their brochure here,

where they discuss their use of non-impact methods, case drilled shafts, uncased drilled shafts, CFA piles, et cetera. That's a nice picture of what looks like a fun drilling rig there.

MR. MIZELL: I'd like to lodge an objection to the length of the introduction to his question. It seems to me we're going through an advertising brochure.

Is there a question attached to this brochure that the witness --

MR. BRODSKY: Yes, there is. I'm done with the introduction.

MR. MIZELL: Okay.

MR. BRODSKY: I was just trying to say what this document was. We have looked at tens of thousands of documents in this hearing, and I thought the Hearing Officers may not remember this particular document. Sorry if I was too long.

Okay. If we could go to the next page and scroll down a little bit.

So we can see that paragraph that begins "Drilled shafts," and I'd like to read that short paragraph and then ask Mr. Bednarski a question about it.

CO-HEARING OFFICER DODUC: I'd prefer you

allow Mr. Bednarski to read it, for all of us to read it, and ask your questions.

MR. BRODSKY: All right. If folks could read that paragraph that begins "Drilled shafts are designed."

CO-HEARING OFFICER DODUC: Please indicate when you're done, Mr. Bednarski.

WITNESS BEDNARSKI: I'm done.

MR. BRODSKY: Okay.

So the third sentence there says that drilled shafts can be used in expandable clays as well as caving sands.

Do you have any reason to dispute that?

WITNESS BEDNARSKI: I'm familiar with Malcolm and the capabilities of their firm. Through our conceptual design, we've also, in addition to talking with Malcolm, we've talked with a couple other firms that provide similar services. And I have no reason, after talking with these other firms, to dispute the claim that's made in this sentence.

MR. BRODSKY: I'm glad to hear you've talked with them.

And then the last sentence, it says that their drilling techniques can be used in highly variable ground. Would you have any reason to dispute that?

WITNESS BEDNARSKI: Again, they seem like an accomplished firm from the information that we've gathered prior during the conceptual engineering report. I don't have any reason to dispute what they've written here.

MR. BRODSKY: Okay. Let me ask you, and if this is beyond your area of expertise, then feel free to say so.

Isn't it true for any soil condition you could encounter at the intake sites where you could use driven piles, you could also use drilled piles as an alternative? In other words, there's nothing you could find there that would preclude drilled piles if driven piles were possible?

WITNESS BEDNARSKI: I'm not sure that I would necessarily agree with that. To date I have relied on my team to set forth recommendations, especially in regards to the conceptual engineering report.

I believe that our information that we've provided so far provides conservative worst-case assumptions. And without further geotechnical investigations in those areas, I'm hesitant to say that we can use some other type of technique.

MR. BRODSKY: Okay. Thank you, Mr. Bednarski.

Let's move on. We've, I think, covered this

topic in depth.

WITNESS BEDNARSKI: If I could maybe, just for the Board's clarification -- there are some questions. I think this pertains to it also because it's in regards to the geology along the alignment and at the intakes.

If we could go to DWR-1304 because it relates to this specific subject.

There were questions last week, and I think this ties directly --

MR. BRODSKY: Well, I'm going to object to this.

CO-HEARING OFFICER DODUC: Hold on.

MR. BRODSKY: It's my turn.

CO-HEARING OFFICER DODUC: Hold on, Mr. Brodsky. Allow me to do my job.

MR. BRODSKY: Yes, ma'am.

CO-HEARING OFFICER DODUC: Mr. Bednarski, if you are attempting to answer questions based on last week's cross-examination, that's something that's appropriate for Mr. Mizell to do on redirect.

WITNESS BEDNARSKI: Okay. But it tied to this specific subject, geotechnical information around the intakes.

CO-HEARING OFFICER DODUC: Except that I

believe Mr. Brodsky is about to voice an objection to which I would to have sustain.

WITNESS BEDNARSKI: Okay. All right.

CO-HEARING OFFICER DODUC: Mr. Brodsky, please continue.

MR. BRODSKY: Okay. So we can move on to the number of barge trips now; new topic. Okay.

So in your testimony, DWR-1212, you indicate that there will be a maximum of 9400 one-way barge trips, which is 4700 delivery trips and 4700 return trips; is that correct?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: And those numbers are derived from the National Marine Fisheries Service Biological Opinion; is that correct?

WITNESS BEDNARSKI: That's correct. That's what I stated in my oral presentation in my testimony.

MR. BRODSKY: And isn't it true, however, that the numbers in your testimony are misreading of the Biological Opinion and the number of barge trips stated in the BiOp is actually twice what you say in your testimony?

MR. MIZELL: Objection, argumentative.

CO-HEARING OFFICER DODUC: Well, it might be argumentative. It is a point of confusion.

So Mr. Bednarski, please ignore the argumentative nature and clear up this confusion for us.

WITNESS BEDNARSKI: I'm not aware of that conflict. My interpretation of the Biological Opinion is that there are 9400 one-way trips that have been permitted, and that's what we plan to hold to.

We described in my presentation and in my testimony that the EIR/EIS looked at 11,800 trips. So that's a more conservative approach. But we have committed through the BiOp process to reduce that to 9400 one-way trips, and that's what we've committed to in my testimony.

MR. BRODSKY: Okay. So then can you see any reason operationally why a permit condition from this Board limiting barge trips to 4700 delivery plus 4700 return, would be a problem for you operationally?

WITNESS BEDNARSKI: We've identified 9400 one-way trips as our commitment that we're going to meet. I'm not sure why we need the extra specificity about delivery trips versus return trips. We said 9400 one-way trips.

MR. BRODSKY: So a permit condition limiting it to 9400 one-way trips would not be operationally a problem for you?

WITNESS BEDNARSKI: That would be consistent to what we've agreed with within the BiOp, and we're comfortable with that.

MR. BRODSKY: And if the BiOp actually sets forth twice that number and that you've misread it, would you still be comfortable with a condition limiting to 9400 one-way trips?

MR. MIZELL: Objection, asked and answered.

CO-HEARING OFFICER DODUC: Sustained.

MR. BRODSKY: Okay. I'd like to take a look at SCDA-103, Page 153, and if we could look at Table 2-33, which is a couple pages in. Okay.

So the legend above the table there indicates that this is for barge trips between the three anticipated barge origin locations and the two primary barge landings; is that correct?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: And the two primary landings -- and I realize this has been changed since then. But at this time, the two primary landings were Bouldin Island and Clifton Court Forebay?

WITNESS BEDNARSKI: That's correct, at the time this was prepared, yes.

MR. BRODSKY: And the three anticipated barge origin locations were the ports of Antioch, Stockton,

and San Francisco?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: So this table is detailing with barge trips between the three ports and the two primary landings?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: Okay. And for this chart, the total number of trips shown in the right-hand column sums to 5,532, correct?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: Okay. Now I'd like to look at the table for the secondary barge landings, which is Table 2-34.

And, Mr. Bednarski, this table shows the number of barge trips for the five secondary landings?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: And the total here sums to 3860?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: So we have 5532 on the previous table plus 3860 on this table, and that sums to 9392?

WITNESS BEDNARSKI: I believe so, yes.

MR. BRODSKY: And that's where -- where we're getting the 9400 figure is that we're rounding off the 9392 to 9400?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: Okay. All right. But the numbers in these tables only count one-way trips to the landing and don't count the return trips; isn't that correct?

WITNESS BEDNARSKI: I'm not sure exactly. There was some uncertainty as to the way that these -- this document was written. Suffice it to say, though, DWR is committing to limit our barge trips to 9400 one-way trips. So a roundtrip would include two one-way trips. That's what our commitment is in my testimony and today and last week.

MR. BRODSKY: Okay. If you look at the legend there above the column with the numbers, it says number of one-way trips to landing; is that correct?

WITNESS BEDNARSKI: I'll agree that that's what it says. And there has been confusion on this issue as the Board directed us to clear up, and we believe that we've cleared that up and are comfortable with the 9400 one-way trips.

MR. BRODSKY: Did you somewhere in this table -- and forgive me for not taking the time to find it. It says the DWR provided these numbers or participated in providing these numbers to the National Marine Fisheries Service.

Is that your understanding?

WITNESS BEDNARSKI: That is my understanding, that we presented numbers and had discussions with them and a negotiation as to the final number that we would be allowed to utilize.

MR. BRODSKY: Did you personally participate in that?

WITNESS BEDNARSKI: I did not, no.

MR. BRODSKY: Do you know who did?

WITNESS BEDNARSKI: Members of the DWR EIR/EIS team and some members from the engineering team.

MR. BRODSKY: But you don't know their names?

WITNESS BEDNARSKI: Not off the top of my head, no.

MR. BRODSKY: Okay. All right. I'd like to look at the text which explains this table we're looking at here, and that's on Page 155, the second paragraph. And if you could read from the beginning of that paragraph down to the next -- into the next-to-the last sentence.

CO-HEARING OFFICER DODUC: Ms. Morris, did you have --

MS. MORRIS: I'll wait.

WITNESS BEDNARSKI: Okay.

MR. BRODSKY: So that discusses Table 2-34 showing 3900 one-way trips, which we already agreed on,

right?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: And then it says these trips will occur during June 1 through October 31st period spread over the time of constructing the tunnel conveyance and other facilities, assuming that the 3900 one-way trips and the required return trips for a total of 7800 one-way trips are distributed through the five landings, et cetera. 7800.

So if we go back and look at Table 2-34, doesn't that indicate that those 3900 shown there are only half the actual trips? That's only the trip to the landing. There's actually a return trip.

CO-HEARING OFFICER DODUC: So, Mr. Brodsky, I'm going to jump in now because we have gone over this. Mr. Bednarski had more than twice acknowledged that these numbers are referring to one-way trips and, therefore, a return trip would mean double the number of trips. So I'm not sure what you are trying to --

MR. BRODSKY: That's not what his testimony was. His testimony was that there's a total of 9400 one-way trips without return trips. And I'm trying to establish that he made a mistake, that this document actually shows twice as many trips as what he has in his testimony.

CO-HEARING OFFICER DODUC: Ms. Morris.

MS. MORRIS: Thank you. Stefanie Morris on behalf of the State Water Contractors.

I'd like to object to this line of questioning. I think Mr. Bednarski has already stated several times the amount of the confusion in the document that, and he has committed in writing in his written testimony that the total number of trips would be 9400 one-way trips.

So I don't think that this adds anything to record showing that this document -- whatever Mr. Brodsky's trying to demonstrate, Mr. Bednarski's already committed to that number.

CO-HEARING OFFICER DODUC: Mr. Brodsky, that's my understanding, too, but that's the number that he's committed to. We all understand it to be one-way.

CO-HEARING OFFICER DODUC: 9400 is one-way.

MR. BRODSKY: Okay. I --

CO-HEARING OFFICER DODUC: I'm trying to understand your point here.

MR. BRODSKY: The point is that there are twice as many barge trips as represented in Mr. Bednarski's testimony. There are 18,800 one-way barge trips, 18,800. And I'm trying to establish that

by walking you through the document.

MR. MIZELL: So --

CO-HEARING OFFICER DODUC: Mr. Mizell, perhaps you can help.

MR. MIZELL: Yeah. I'd like to also concur with Ms. Morris' objection.

Mr. Bednarski has already indicated that his reading of the document is what's represented in his testimony. To the extent that Mr. Brodsky wants to continue to ask the same question over and over to compel Mr. Bednarski to answer it differently seems inefficient.

Mr. Brodsky certainly can put on his own witness to interpret the Biological Opinion in a different manner.

CO-HEARING OFFICER DODUC: Mr. Mizell, let me see if I can -- I think I understand, Mr. Brodsky. And I think we have the same understanding. And perhaps it's just a matter of you trying to make sure that it's on the record.

Mr. Bednarski, when you testified and as these charts show, that these are one-way trips to the landing; you are not accounting for the, quote, one-way trip back from the landing?

WITNESS BEDNARSKI: Perhaps if I may, if we

can go back up to pages -- to the bottom of -- it's the Document 152. So go up.

CO-HEARING OFFICER DODUC: So I'm thinking what Mr. Brodsky, when he is emphasizing one-way, he means to include both the one-way to the landing and the one-way return.

Is that correct?

MR. BRODSKY: Yes, ma'am. The barge -- each barge trip through the Delta is disruptive to recreation. So if we only count the trip to the landing, we're only accounting for half of the disruption. We need to count the trip back as well, and we need to know the total number of trips, which Mr. Bednarski mistakenly said was 9400 and is actually 18,800.

CO-HEARING OFFICER DODUC: This is where I'm sure Ms. Morris and Mr. Mizell will chime in that Mr. Bednarski's testimony is that it's 94 trips -- 9400 trips one way to the landing. And so far Mr. Bednarski has been silent on the return trips.

So perhaps you could clarify now, Mr. Bednarski.

WITNESS BEDNARSKI: I know this Biological Opinion document is a bit confusing, but we've -- in order to prepare our testimony and the response to the

Board on their questions, we looked at the last bullet here. And it seems pretty clear to us that -- what their intent was; 9400 one-way barge trips are projected as a conservative assumption for transport of all materials required by the PA, which is DWR.

That is all the barge trips that we're allotting for this program. So a delivery and a return is two one-way trips. That's the way we're interpreting this.

MR. BRODSKY: Okay. And the point of my line of questioning --

WITNESS BEDNARSKI: Does that clarify the question that you asked? You asked me a question, right?

CO-HEARING OFFICER DODUC: Hold on.

Okay. Mr. Brodsky.

MR. BRODSKY: Well, the point of my line of questioning is to show that that's not what the Biological Opinion says. And so I'd like to just continue to take him through it and show where he's made the mistake and, hopefully, he'll recognize that and acknowledge it.

CO-HEARING OFFICER DODUC: Well, let's try this, if I might jump in with a question that I believe we have anyway.

If you could go to SWRCB-106, which is the NMFS Biological Opinion.

This is a question we also had, Mr. Brodsky.

MR. BRODSKY: Please proceed.

That was meant to be a joke.

CO-HEARING OFFICER DODUC: Page 157, second paragraph on Page 157. All right. Starting from Line 5. You read that sentence beginning with "exposure." It now talks about 18,800 cumulative individual trips.

WITNESS BEDNARSKI: Yes, it does.

CO-HEARING OFFICER DODUC: So help me understand.

WITNESS BEDNARSKI: So at the time -- it's my understanding at the time these discussions were held with NMFS on the Biological Opinion that certain assumptions were made as to how many segments could be placed onto a barge at any one time to transport. And we used a rather liberal or shall I say less conservative approach. Maybe that's -- what we've found since the time that we've negotiated with NMFS is that we feel it's reasonable and practical to assume that we can place more segments onto these barges than the number that we had anticipated when we spoke with NMFS in the negotiation of the Biological Opinion.

So with that assumption in hand, we are now committing to reducing the number of barge trips, one-way barge trips, from the number that was originally discussed with NMFS. We believe that there are ways to load these barges that will dramatically increase the number of segments that we can place on these barges.

CO-HEARING OFFICER DODUC: So do I understand your 9400 one-way trips to be equivalent to 4700 round-way trips?

WITNESS BEDNARSKI: Yes, that is correct.

MR. BRODSKY: And that contradicts this Biological Opinion, doesn't it?

CO-HEARING OFFICER DODUC: Yes, he has answered that.

WITNESS BEDNARSKI: I believe I've answered that several times. It's a different number.

MR. BRODSKY: Isn't it true that the 18,800 cumulative individual trips reflects that reduction that you just talked about?

This was written after that reduction was agreed upon; isn't that correct?

MR. MIZELL: Objection, asked and answered.

MR. BRODSKY: I didn't ask that question.

MR. MIZELL: Misstates the witness's

testimony.

CO-HEARING OFFICER DODUC: Mr. Bednarski, timing-wise?

WITNESS BEDNARSKI: I am not aware of the discrepancy that Mr. Brodsky just mentioned.

CO-HEARING OFFICER DODUC:

WITNESS BEDNARSKI: I'm not.

MR. BRODSKY: Okay. I'd like to look at DWR-1212, Page 14, Lines 9 to 12.

So that last sentence, the 9400 are one-way barge trips, that's cumulative individual trips, correct?

WITNESS BEDNARSKI: That's the total number of one-way barge trips. I'm not sure what you're implying when you say "cumulative." That's our total that we're agreeing to utilize on this project.

MR. BRODSKY: Well, the Biological Opinion used the language "18,800 cumulative individual trips."

So I'm asking if this number here, 9400, is the same measure of cumulative individual trips?

WITNESS BEDNARSKI: That would be my -- oh, I'm sorry.

CO-HEARING OFFICER DODUC: Sorry. Ms. Morris.

MS. MORRIS: Thank you. Stefanie Morris, State Water Contractors.

Again, I just -- we've asked and answered this question, and I believe that --

CO-HEARING OFFICER DODUC: No, Ms. Morris. Ms. Morris, this actually is a different question by the way I understand it. So let's let Mr. Bednarski answer it.

WITNESS BEDNARSKI: That would be my interpretation of this number.

MR. BRODSKY: And so last question.

Then this represents a reduction by half of what was stated in the Biological Opinion that Hearing Officer Doduc read to you?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: And you're willing to commit to that?

CO-HEARING OFFICER DODUC: They have committed to it, in writing, to us.

MR. BRODSKY: Let's move on.

CO-HEARING OFFICER DODUC: Thank you, Mr. Brodsky. Actually, thank you. You helped us clarify something.

MR. BRODSKY: You're welcome.

CO-HEARING OFFICER DODUC: Which is a sign of a very effective cross-examination.

MR. BRODSKY: Thank you very much, and I'm

trying to move as fast as I can. So that did take up a little extra time. I hope you'll keep that in mind when we get to the end of my 40 minutes.

CO-HEARING OFFICER DODUC: Yes. I did steal a couple of your minutes.

MR. BRODSKY: All right. So let's go to -- now I'd like to talk about still barge trips but -- not the total number of barge trips but barge trips per day, which is maybe beating a dead horse, but we're beating a little different part of the horse.

All right. So I'd like to take a look at DWR's response to the July 9th ruling. That was where Delta Alliance had asked a question about barge trips. The Board issued a ruling on July 9th, and then I believe on July 10th DWR issued a response.

So I think that would be in the chronological section there. Yes.

MS. RAISIS: Can you repeat what you're looking for exactly?

MR. BRODSKY: It's DWR's to the Board's July 9th ruling. It's titled "California Department of Water Resources' Response to the California State Water Resources Control Board Ruling of July 9th, 2018."

I have a hard copy here. Would it help if I brought that to you?

CO-HEARING OFFICER DODUC: Do you have a date for that response?

MR. BRODSKY: I believe it was July 10th. I think you told them they needed to answer the next day.

CO-HEARING OFFICER DODUC: There it is.

MR. BRODSKY: Yes, that's it. Thank you.

And then at Page 2, Lines 3 to 11, so if I could ask Mr. Bednarski to read that paragraph, starting "Commercial barges will be used. . ."

WITNESS BEDNARSKI: Okay.

MR. BRODSKY: And so that says there are going to be four barge roundtrips per day, and that's not considered an adverse impact under NEPA or significant under CEQA; is that correct?

WITNESS BEDNARSKI: That's what it says, yes.

MR. BRODSKY: And this -- what we're talking about here is as it was in the Final EIR. So that was before the issuance of the administrative Draft Supplemental Environmental Impact Report, correct?

WITNESS BEDNARSKI: If this was taken, yes, from the Final EIR/EIS, then it was before.

MR. BRODSKY: Okay. And then I'd like to go to the ADS EIR which is, I believe, SWRCB-113 in the -- and that would be -- we're looking for Page 3 dash -- maybe that's -- I don't have the page number.

The ADS EIR also states that there are four barge trips per day; is that correct?

WITNESS BEDNARSKI: I guess I'd need to see that to confirm it. I mean, at this point, I'll take your word for it. But I -- I wasn't involved with writing all the sections of the EIR/EIS for the Supplemental, so I don't know exactly where that was shown.

MR. BRODSKY: Okay. I think to save time, I don't think we need to search for that right now. We'll see if we need to go back to it.

Okay. But those numbers are actually wrong. There are at least 16 roundtrips per day according to the Biological Opinion; isn't that correct?

WITNESS BEDNARSKI: That's incorrect. It was 16 one-way trips, is my interpretation of what's in the Biological Opinion, for a total of eight roundtrips.

MR. BRODSKY: Okay. Let's take a look at it. That would be SCDA-103, Page 155. And if we start with the second sentence. . .

CO-HEARING OFFICER DODUC: Mr. Brodsky?

MR. BRODSKY: Yes. At the very top of the page there, the sentence starting "It is assumed."

CO-HEARING OFFICER DODUC: And your question is?

MR. BRODSKY: So the question is that there is then four roundtrips to CCF plus four roundtrips for Bouldin Island for a total of eight roundtrips right there, correct?

WITNESS BEDNARSKI: That's correct. That's what's called out in that paragraph.

MR. BRODSKY: So we've got eight so far, and that's for the primary landings, Bouldin and CCF? That was a question. Is that correct?

WITNESS BEDNARSKI: Oh, it was?

MR. BRODSKY: Yes. I'm sorry. I was waiting for you, and you were waiting for me

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: Okay. So next let's -- we could have been here all day.

Now if you could read the second paragraph on Page 155 starting with "During the five to six years. . ."

CO-HEARING OFFICER DODUC: And how far would you direct him to read?

MR. BRODSKY: Just the entire paragraph.

Okay. So that, then, is an additional one roundtrip per day for each of four secondary landings, correct?

WITNESS BEDNARSKI: During that time frame

that they've identified there, yes.

MR. BRODSKY: Okay. And in addition to that, there are four roundtrips to the Bacon Island landing?

WITNESS BEDNARSKI: Potentially during that -- during that time frame that's shown there, yes, June.

MR. BRODSKY: June 1st through October 31st.

So during that period of June 1st to October 31st, we have a total of 16 roundtrips: four to Clifton Court, four to Bouldin Island, four to the four secondary landings, and four to Bacon; isn't that right?

WITNESS BEDNARSKI: I'll agree with your math on that.

MR. BRODSKY: Okay. Thank you. I think we can move on.

Okay. Now I'd like to go to the elimination of the Clifton Court Forebay landing. And if we could look at the Final Environmental Impact Report SWRCB-102, Map Book Figure M15-4, Sheet 6.

Let me while, we're looking for that, ask a follow-up question.

So if that's 16 roundtrips during June 1st to October 31st, doesn't your testimony understate that when it says there's only four roundtrips?

MR. MIZELL: Objection, asked and answered.

Once again, Mr. Bednarski's testimony commits the Department to 9400 cumulative one-way trips. And that would, of course, be a clarification of the NMFS BiOp as we have extensively explored now.

So if the NMFS BiOp contains a different calculation of daily trips, it's reflective of what's in the NMFS BiOp, not a correction of Mr. Bednarski's testimony. Mr. Bednarski has been very clear in his testimony, and if we need to go back to 1212, we can do that.

MR. BRODSKY: I never asked before about the number of round trips. I was asking about total trips. This is a new question. I haven't asked him any question about roundtrips discrepancies.

CO-HEARING OFFICER DODUC: Overruled, Mr. Mizell.

WITNESS BEDNARSKI: My understanding is that could be a peak, not a long-term average delivery. I believe the information that I presented before in my Part 2 and other times has referred to an average. Now you're referring -- my understanding is from reading that -- to sort of a peak-duration deliveries that averaged out over the entire year. It's quite a bit less than that.

MR. BRODSKY: The document says from June 1st

to October 31st there will be 16 trips per day, correct?

WITNESS BEDNARSKI: It could potentially total that many, yes.

MR. BRODSKY: So when I read you, at the top of Page 155 of the Biological Opinion, "It is assumed that there will be four trips to each of these barge landings per day and four returning trips back to the port of origin for a total of 16 trips per day combined for both sites during June 1 through October 31 period," doesn't that mean 16 trips per day from June 1st to October 31st every day of the workweek?

MR. MIZELL: Objection, asked and answered. He's explained that it's peak trips.

MR. BRODSKY: I'm asking him what the meaning of this sentence is.

CO-HEARING OFFICER DODUC: Mr. Bednarski?

WITNESS BEDNARSKI: Yes, there could be up to that many, and then at different times of the year, there's other restrictions on the deliveries that we can make to the different sites. It's been adjusted seasonally, by NMFS.

MR. BRODSKY: So it's my understanding that NMFS placed restrictions on when you could have barge trips because, at certain times of the year, the barge

trips are more disturbing to the fish species; is that correct?

WITNESS BEDNARSKI: That's my understanding.

MR. BRODSKY: And this June 1st to October 31st is known as the work window when you're allowed to have more barge trips; is that correct? Because it's not as disturbing to the fish?

WITNESS BEDNARSKI: That's my understanding.

MR. BRODSKY: And so this period, June 1st to October 31st, is also the summer and fall, is it not?

WITNESS BEDNARSKI: I will agree with your characterization.

MR. BRODSKY: And that is the peak boating season, is it not?

WITNESS BEDNARSKI: I have no way -- I don't have any personal knowledge of that.

MR. BRODSKY: Fair enough.

So isn't the concentration of barge trips the greatest between -- at 16 roundtrips per day from June 1st to October 31st?

WITNESS BEDNARSKI: That's what our permit with NMFS will allow us to do, yes.

MR. BRODSKY: Okay. Then I'd like to look back at your testimony. . .

CO-HEARING OFFICER DODUC: So, Mr. Brodsky,

how much longer will you be beating this dead horse?

MR. BRODSKY: One more question.

Let's move on. Let's move on.

CO-HEARING OFFICER DODUC: And you have --

MR. BRODSKY: Let's go the elimination of Clifton Court landing.

CO-HEARING OFFICER DODUC: And since you've now used up another 40 minutes minus my time that I took, we'll, let's say, give you ten minutes to finish your cross-examination.

MR. BRODSKY: I don't think I can cover the Clifton Court landing in that amount of time, but I'll try my best.

CO-HEARING OFFICER DODUC: Let's try.

MR. BRODSKY: So we'd want to look at FEIR Sheet M15-4, Sheet 6.

Okay. And the -- if we could blow it up just a little bit.

Near the upper right there, there's a legend that says "barge unloading facility."

Are you able to see that?

WITNESS BEDNARSKI: Yes, I am.

MR. BRODSKY: And that is -- let's see. We've lost our page there.

WITNESS BEDNARSKI: Scroll down the other way.

There you go.

MR. BRODSKY: That is the landing that we've referred to as the west canal or Clifton Court landing that's been eliminated --

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: -- or being proposed to be eliminated?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: Okay. Then if we could go to the ADS EIR Map Book M15-4, Sheet 5.

MR. MIZELL: This is still the Final EIR. We need to go to Supplemental EIR.

MS. RAISIS: Mr. Brodsky, could you please specify the exhibit number?

MR. BRODSKY: SWRCB-115, I believe. And we need the Map Book Figures. I think this is the FEIR.

MS. RAISIS: This is Exhibit 113.

MR. BRODSKY: Okay.

MS. RAISIS: Can you repeat which Map Book Figures you're looking for?

MR. BRODSKY: Map Book Figure M15-4, and we want Sheet 5. Okay. There.

And so now we see there, the legend "Byron Tract" up near the top of the gold hatched area. And that is the Byron Tract Forebay site that you referred

to in your testimony?

WITNESS BEDNARSKI: That is correct.

MR. BRODSKY: And it's your testimony that those tunnel segments that were to be delivered to that barge landing that was there at the upper right of Clifton Court Forebay will now be delivered to that Byron Tract area shown on this same page?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: And is it the same number of tunnel segments; that's all the tunnel segments that were to go to that eliminated barge landing will now go to the Byron Tract?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: So but that doesn't make any sense. Why would they eliminate the barge landing if that large number of segments is still being delivered there? What's the point of eliminating the landing?

WITNESS BEDNARSKI: To reduce potential environmental impacts, building a temporary landing there.

MR. BRODSKY: Okay. So there were a total of 2185 trips to the Clifton Court Forebay; is that correct, what we looked at before in the Biological Opinion?

WITNESS BEDNARSKI: Yeah, 2185, I believe.

MR. BRODSKY: Okay. I'd like to look at your testimony, DWR-1212, on Page 13, Lines 23 to 25, the sentence, "However, even without a temporary barge landing at this location, barge deliveries of tunnel lining segments to the proposed tunnel shafts near Byron Tract Forebay location will be utilized."

Have I read that correctly?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: So isn't that indicating that now the only tunnel segments that will be delivered to that area are the ones that go to tunnel -- two tunnel shafts near the Byron Tract Forebay?

WITNESS BEDNARSKI: I believe that's what I was trying to explain in my testimony, yes.

MR. BRODSKY: Okay. And prior to this, the Clifton Court Forebay was one of the primary barge landings where large amounts of tunnel segments would have been stockpiled and then distributed throughout the project area, wasn't it?

WITNESS BEDNARSKI: Yes, it was.

MR. BRODSKY: Okay. So let's take a look at -- back to SWRCB-113, Map Figure M15-4, Sheet 5. Wow, that was quick. Okay.

So there we can see Highway 4 and then the Old River Bridge we've talked about so much there on

Highway 4. And then continuing that way, there's a purple line going down from Highway 4 to a purple square there. Are you able to see that?

WITNESS BEDNARSKI: No, I'm not.

MR. BRODSKY: Are you able to see it now?

WITNESS BEDNARSKI: Oh, off of Victoria Island?

MR. BRODSKY: Yeah, right where it says "Victoria," just to the left of that, there's a purple line emanating at Highway 4 and then going down to a purple square.

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: And that's one of the access shafts near the Byron Tract Forebay, correct?

WITNESS BEDNARSKI: I believe that one there is what we refer to as a safe haven. So there's not going to be a shaft constructed at that location.

MR. BRODSKY: Okay. Very good.

Let's scroll up to the next Map Book page. Go down a little bit.

And this -- we see there in the legend, "Barge unloading facility on Old River"?

WITNESS BEDNARSKI: Yes, that is correct.

MR. BRODSKY: And then a black line, looks like a road, leading to another purple line and purple

square?

WITNESS BEDNARSKI: Yes.

MR. BRODSKY: And is that an access shaft?

WITNESS BEDNARSKI: Yes, it is.

MR. BRODSKY: Okay. Now, that's an access shaft the second nearest or the nearest to the Byron Tract, correct?

WITNESS BEDNARSKI: Yes. With the current conceptual design, that would be the closest actual shaft to be constructed.

MR. BRODSKY: And it has its own barge unloading facility right there on Old River, doesn't it?

WITNESS BEDNARSKI: Yes, it does.

MR. BRODSKY: So why would you send a barge all the way down Old River and under the Highway 4 Bridge and unload down there to supply this shaft when you could just unload right here?

WITNESS BEDNARSKI: Well, can we go back to that other drawing and go down one from here?

So from this location here where the tunnel's terminated to Byron Tract Forebay, we will actually be what we call "driving our tunnels." So all of the equipment and materials to supply the tunnel boring machines, including the segments, would be dropped in

through these two shafts here.

MR. BRODSKY: Which two shafts?

WITNESS BEDNARSKI: Well, there's going to be two shafts there at the terminus of the tunnels. It's not shown on this drawing, but if we pulled up another drawing, we would show the shafts. I'm not exactly sure what this sheet was used for. But at the terminus of the tunnels -- you can see them roughly just inside Byron Tract Forebay.

MR. BRODSKY: Yes.

WITNESS BEDNARSKI: Okay. There will be two shafts there, one for each tunnel driving -- TBM that's driving north from this location. So all of the electricity, all of the staff that is running the tunnel boring machines, all of the grouting materials, all of the tunnel segments will be introduced into the tunnels here following the TBM as it mines north.

So we would not be able to do that from that shaft that's located on Victoria Island. So all of the materials go in through this, this location here.

MR. BRODSKY: Okay. So then the tunnel segments that are delivered to this location are all to be fed down that shaft?

WITNESS BEDNARSKI: These two shafts, yes.

MR. BRODSKY: Okay. And they won't be

distributed elsewhere by truck along the tunnel route to other shafts?

WITNESS BEDNARSKI: That's correct. Our plan is that approximately half of the segments will be delivered by barge and half of the segments will be delivered by truck to those two shafts on this drawing.

MR. BRODSKY: Okay. So what about all the segments that were previously delivered to the Clifton Court Forebay site that were going to be distributed throughout the tunnel area? Those -- those are going to go somewhere else, right?

WITNESS BEDNARSKI: No. I believe I've disclosed in my testimony that those segments that were previously bound for the west canal at Clifton Court Forebay are now going to have a slightly shorter trip and will be dropped off immediately adjacent to the Byron Tract Forebay.

MR. BRODSKY: But that's a lot fewer segments to go down those two shafts than were previously delivered to Clifton Court, isn't it?

WITNESS BEDNARSKI: I'm not following your logic on that, how it's less.

The tunnel drives are basically the same length as they were before. We haven't made any changes to the length of the tunnel drive in this part

of the project, and it should be about the same.

MR. BRODSKY: Well, it's less because previously the tunnel segments that were delivered by barge to Clifton Court Forebay were going to be distributed throughout the length of the tunnels, delivered all over the place by truck, and that's no longer going to happen, right?

WITNESS BEDNARSKI: No, that's incorrect.

MR. BRODSKY: Okay. All right. Let's move on.

CO-HEARING OFFICER DODUC: And you're moving on now to your last topic regarding Hood?

MR. BRODSKY: Correct.

CO-HEARING OFFICER DODUC: Five minutes?

MR. BRODSKY: Yes.

CO-HEARING OFFICER DODUC: All right.

MR. BRODSKY: Okay. Let's take a look at SCDA-305. No, wrong one. I'm very sorry. SCDA-70. I'm sorry. My mistake.

Can we minimize it a little bit so we can see the whole thing? Good. All right.

So we've depicted there the geotechnical exploration zone in purple dots going through the center of the town of Hood.

And it was your testimony that that

geotechnical exploration route has now been moved so it will skirt around the edge of the Hood in order to reduce impacts on Hood; is that correct?

WITNESS BEDNARSKI: Yeah, I'll accept your characterization that the dashed purple line is our geotechnical exploration zone, and that's what was previous -- the previous alignment was through Hood.

Now, through my testimony and through the Supplemental EIR/EIS, we have moved that tunnel. So it's to the eastern limits of the town of Hood now.

MR. BRODSKY: Yeah, and that will ease the impact on some of those homeowners who would have rather had their property condemned or suffered a great deal of inconvenience, because you've moved it away from them now?

MR. MIZELL: Objection, assumes facts not in evidence.

MR. BRODSKY: Why would this -- you said it reduces impacts. Why would moving that reduce impacts on Hood?

WITNESS BEDNARSKI: I believe I used the term "potential impacts" on the Hood.

We became aware through Part 1 testimony that there were two municipal water wells in the town of Hood and that our tunnel alignment coincidentally went

right between both of those water wells. So there were a lot of questions about the recharge of those wells and how that would take place with the tunnel going through there. So we looked at that.

We also looked at the potential risk of ground settlement and its potential impact on the residences and other structures in the town of Hood. So we made the decision to reduce that risk even further to both the water wells and to any structures, to move the tunnel to the east.

So it was all based on potential risks and information that was brought to us in Part 1 of these hearings. We've made some realignments there.

MR. BRODSKY: Okay. Thank you.

And so there's a construction yard depicted there next to the town of Hood. Looks to be roughly twice the size of the town.

Would you agree with that?

WITNESS BEDNARSKI: I believe that your exhibit characterizes that as a construction yard. I don't recall how that area is called out in the Final EIR/EIS or in the Supplemental document.

MR. BRODSKY: There's a construction feature at that location, correct?

WITNESS BEDNARSKI: I'll accept your

representation of that. I don't recall off the top of my head.

MR. BRODSKY: Okay. And then up at the top of the page, if we scroll down a little bit, we see Intake 3 depicted there. And that's roughly, as shown here, twice the size of the town?

WITNESS BEDNARSKI: Is that a question?

MR. BRODSKY: Yes.

WITNESS BEDNARSKI: It's hard to estimate. I don't have any numbers based on that.

MR. BRODSKY: Would you say, looking at that, it's larger than the town?

MR. MIZELL: I'm going to object as asked and answered.

CO-HEARING OFFICER DODUC: Sustained.

MR. BRODSKY. Okay. And then scrolling down to the bottom of the page, that's Intake No. 5 right there in the proximity that it's shown to the town?

WITNESS BEDNARSKI: That's correct.

MR. BRODSKY: Okay. Mr. Bednarski, even with this moving of the tunnel route, in your heart of hearts, do you believe the town of Hood is going to survive this construction?

MR. MIZELL: Objection, relevance. Also beyond the scope of rebuttal.

CO-HEARING OFFICER DODUC: Assuming Mr. Bendarski has a heart of hearts, but strike that.

Mr. Brodsky, would you like to rephrase your question?

MR. BRODSKY: You said that you're moving the tunnel alignment and geotechnical exploration to reduce impacts on Hood.

Do you think that will reduce it enough where the town will still -- will survive this construction, given what's still there?

MR. MIZELL: I'm going to renew my objection based upon relevance, and beyond the scope of rebuttal testimony.

CO-HEARING OFFICER DODUC: The scope includes a removal to avoid any -- minimize or reduce potential impacts on Hood.

To what extent, Mr. Bednarski, are you able to project, estimate the reduced impacts on the town of Hood based on this Supplemental EIR/EIS?

WITNESS BEDNARSKI: Well, I believe that there will be some reduced impacts, that otherwise we wouldn't have moved these features. I believe that there's also -- well, potentially direct reduced impacts to the water well situation, and then also the potential risk of settlement. So from those two

aspects, these revisions where made.

CO-HEARING OFFICER DODUC: But anything else is beyond your expertise and understanding in terms of impacts to -- potential impacts to Hood?

WITNESS BEDNARSKI: Well, I wouldn't exactly say that. I mean, I would say that I'm representing the engineering effort that went into the conceptual design for the three intakes that are along the river at this location near Hood.

And we have worked closely with our EIR/EIS team to develop plans to minimize those impacts to the levels that have been presented in both of the documents, the Final EIR/EIS and the Supplemental document. And I believe that those two documents, you know, sort of set forth our conclusions as to the impacts on Hood. And I've not read anything that would indicate we're going to decimate the town of Hood as Mr. Brodsky seems to characterize.

MR. BRODSKY: I think that's a pretty direct answer. Thank you. That concludes my cross-examination.

Thank you, Mr. Bednarski.

CO-HEARING OFFICER DODUC: I think, Mr. Brodsky, that's the first time I ever heard someone ask an engineer to answer a question based on heart.

So that's a first.

MR. BRODSKY: First time for everything.

CO-HEARING OFFICER DODUC: All right. Thank you, Mr. Brodsky.

For all of those have been wondering at my generous allotment of time to Mr. Brodsky for his cross-examination, it has been a very effective cross-examination, even though you did belabor some points.

But I do appreciate that your clients which you represent have a significant interest in the Supplemental EIR/EIS. So I appreciate the time that you put into reviewing the document and preparing the cross-examination.

MR. BRODSKY: Thank you, Madam Chair; I appreciate it. And thank you very much for your evenhanded conduct of the hearing.

CO-HEARING OFFICER DODUC: Are there any questions from anyone up here before I ask -- all right.

Mr. Mizell, do you have redirect?

MR. MIZELL: I do not.

CO-HEARING OFFICER DODUC: You do not. All right.

With that, then, I thank Mr. Bednarski and

Mr. Choa for your assistance and appearance in this hearing.

Now would be a good time, I believe, to take a break while, Mr. Mizell, you set up your second panel. And we will return at 10:55.

(Recess taken)

CO-HEARING OFFICER DODUC: All right. It is 10:55. We're back in session. Welcome to you all. Welcome back to some of you.

Before I administer the oath to our newcomers, let's do some housekeeping. I want to talk about time check, but are there any other housekeeping matters?

Mr. Brodsky.

MR. BRODSKY: I was just going to ask on time if there's been any estimate for, you know, the total for DWR's panels and cross, when we think DWR will be done so the rest of us can start planning?

CO-HEARING OFFICER DODUC: That's what I'm intending to do.

Are there any other issues besides the time estimates issues?

(No response)

CO-HEARING OFFICER DODUC: All right.

Mr. Mizell, your anticipation of the time that you'll need for direct testimony?

MR. MIZELL: Yes, this panel should take about 120 minutes or two hours.

CO-HEARING OFFICER DODUC: I'm sorry?

MR. MIZELL: Two hours, please.

CO-HEARING OFFICER DODUC: Two hours?

MR. MIZELL: Yes.

CO-HEARING OFFICER DODUC: Okay. So it's 11:00 now. Say noon, and then we'll take a lunch break; so the direct will be done around 2:00 o'clock.

With that, may I get an estimate at this time of those who anticipate conducting cross? And it would be helpful if you can line up by group number.

Team effort -- that will help tremendously for all of you, as well as for us, in determining the time.

All right. Mr. Bezerra.

MR. BEZERRA: Yes. Ryan Bezerra for Cities of Folsom and Roseville, Sacramento Suburban Water District, San Juan Water District.

I expect that in potential combination with City of Sacramento, we'll have four hours of cross-examination for this panel. And I can break that up to explain to you each witness, if you'd like, but that's what we anticipate.

CO-HEARING OFFICER DODUC: Okay. If that's the case, then that will be the only cross-examination

we will potentially get to today. But let me go down the rest of the list.

MR. ALADJEM: Good morning, Madam Chair. David Aladjem, Downey Brand.

My partner Meredith Nikkel will be representing the Downey Brand clients on Group 7 and also North Delta Water Agency, Group 10, I believe it is, total of one hour.

MR. KEELING: Tom Keeling for the San Joaquin County protestants, Group 24. I estimate for Group 24, 45 minutes.

But also for Mr. Herrick, who is not here, is Group 21; his estimate is 45 minutes.

And Ms. Meserve in spot 47 --

CO-HEARING OFFICER DODUC: You're out of order.

MR. KEELING: I can come back.

CO-HEARING OFFICER DODUC: No, go ahead.

MR. KEELING: One hour is her estimate.

CO-HEARING OFFICER DODUC: How is she enjoying the Lost Coast?

MR. KEELING: She's getting some smoke from that Complex fire over there, but I think she's probably now in some green paradise with water running and -- you know.

CO-HEARING OFFICER DODUC: Thank you, Mr. Keeling.

Ms. Taber.

MS. TABER: Good morning. Kelley Taber on behalf of the Somach, Simmons & Dunn clients in Group 7, Placer County Water Agency, Glenn Colusa Irrigation District, and Biggs-West Gridley Water District. I estimate about one hour on behalf of those clients.

And I also will have cross-examination on behalf of the Sacramento Regional County Sanitation District, Group 13, and the City of Stockton, Group 22. And that could be up to two hours on behalf of those two parties.

MR. ETHERIDGE: Good morning. Fred Etheridge on behalf of the East Bay Municipal Utility District for Group No. 15. And we estimate our cross-examination will take approximately one hour. Thank you.

MR. O'LAUGHLIN: Tim O'Laughlin, Group 18, SJTA, two hours.

MR. EMRICK: Matthew Emrick, City of Antioch, Group 27, about 45 minutes.

MR. JACKSON: Michael Jackson for CSPA, CWIN, AquAlliance group. Given the size of this and the

amount of material, two and a half hours.

CO-HEARING OFFICER DODUC: And your group number?

MR. JACKSON: 31.

MR. WOLK: Daniel Wolk for Group 25, Contra Costa County and Solano County. We estimate probably about 45 minutes of cross. Thanks.

MS. DES JARDINS: Deirdre Des Jardins, Group 37, up to two and a half hours, but we'll see what other questions get asked.

CO-HEARING OFFICER DODUC: All right. Thank you all for those estimates. I think it's safe to say that we will not get to anyone besides Mr. Bezerra today.

MR. MIZELL: I'd like to let the Board know that we do have one scheduling request for this panel.

So the witnesses Dr. Earle and Mr. Bradbury, their testimony focuses on terrestrial biology and the adaptive management process. Dr. Earle is unavailable Thursday and Friday but will be able to return for any day that suits the Board's schedule thereafter to be cross-examined, and Mr. Bradbury can attend along with him.

Their testimony is somewhat discrete from the remainder of this panel. So I believe that, if we --

if we continue with cross-examination of the rest of Panel 2, they may have some questions deferred to Dr. Earle and Mr. Bradbury, but their return should be able to answer any questions, if they can defer.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: Yes, thank you very much. In light of that scheduling issue, I'd like to propose that those two witnesses simply be deferred until after this panel. Sacramento Valley Water Users asked to break this panel up partly in the light of timing considerations.

I personally am out of town on Thursday and so will have to pass off some of my cross if I don't complete it by the end of today. If we can avoid having 40 minutes of direct testimony by those two witnesses who won't be available the rest of the week for cross anyway, if we could push them off to essentially a later panel, that will be preferable.

CO-HEARING OFFICER DODUC: Ms. Des Jardins, are you speaking on a different matter or this one?

MS. DES JARDINS: This one.

CO-HEARING OFFICER DODUC: Okay.

MS. DES JARDINS: I wanted to join in that request. And also, to the extent there's these kind of scheduling issues that are known in advance, announcing

them when the panel is up, it makes it difficult for other parties to prepare for cross. Thank you.

CO-HEARING OFFICER DODUC: Mr. Mizell.

MR. MIZELL: Yes, I don't have any objection to having Dr. Earle and Mr. Bradbury on their own panel. I do think that may lead to additional questions that could have been answered should we proceed straightforward with this panel today.

But I do recognize that, you know, our notice today at three days out, as was requested by the Board, is still a shift in the way we were characterizing our Panel 2. So I'm happy to try and be flexible if Dr. Earle and Mr. Bradbury need to be brought back on their own panel.

CO-HEARING OFFICER DODUC: All right. In that case, then let's -- thank you, Mr. Bezerra, for that suggestion. Let's go ahead and proceed with that so that Dr. Earle and Mr. Bradbury will not need to be here.

And we will see you next week.

Ms. Morris -- before they leave.

MS. MORRIS: If Mr. Bezerra has four hours of cross-exam, he will finish today. And I feel like, if we break this up, we're going to have to go through the whole panel again. So are you limiting people's time

to the one hour per panel? Are we now on another panel and they get a whole other hour and we're going to run through the list of everybody one more time with these two witness?

Because if that's the case, I don't believe that's the most efficient way to proceed.

CO-HEARING OFFICER DODUC: Now I'm confused, Ms. Morris, by what you're implying.

MS. MORRIS: Well, Mr. Bezerra says he may not be able to finish his cross because he's not going to be here on Thursday. He has four hours, and we still have, you know, a lot of time left in the day.

CO-HEARING OFFICER DODUC: Ms. Morris, my understanding, Mr. Bezerra aside, is that Mr. Mizell said Dr. Earle and Mr. Bradbury will not be able to return on Thursday. So all the other parties will not be able to cross-examine them on Thursday anyway. And I would assume there will be other parties wishing to cross-examine them rather than just Mr. Bezerra. So they would have to wait until next week anyway.

MS. MORRIS: Maybe I'll be a little bit more clear. I'm asking you does this then create a situation where people have additional time so we're now creating another panel, and these two witnesses will --

CO-HEARING OFFICER DODUC: Well, then let's --

MS. MORRIS: -- go through everybody else for another hour or whatever time they request?

CO-HEARING OFFICER DODUC: Ms. Morris, thank you. Let's do this, then.

Mr. Mizell, Dr. Earle and Mr. Bradbury will become part of Panel 3.

MR. MIZELL: I think that there's nothing scheduling-wise wrong with that. The topics that Dr. Earle and Mr. Bradbury discuss are California WaterFix-related; whereas Panel 3 is existing conditions-related. There may be some confusion in the cross-examination at that point as to the topics we're discussing on that panel, but I'm willing to give it a shot.

CO-HEARING OFFICER DODUC: Mr. Mizell, this is to accommodate your witnesses not being available on Thursday and Friday, so I suggest you make that accommodation.

MR. MIZELL: Okay.

CO-HEARING OFFICER DODUC: Anything else?

(No response)

CO-HEARING OFFICER DODUC: All right. Thank you all.

With that, thank you, Dr. Earle, Mr. Bradbury.

Mr. Mizell, do any of your witnesses need to take the oath?

MR. MIZELL: Yes, Madam. Dr. Phillis needs to be sworn in.

CO-HEARING OFFICER DODUC: If you could please stand and raise your right hand.

(Witness sworn)

CO-HEARING OFFICER DODUC: Thank you.

So, Mr. Mizell, without Dr. Earle and Mr. Bradbury, what is your estimate now for direct in terms of time?

MR. MIZELL: 100 minutes.

CO-HEARING OFFICER DODUC: One hour?

MR. MIZELL: 100 minutes, so --

CO-HEARING OFFICER DODUC: 100 minutes.

MR. MIZELL: -- one hour and 40 minutes.

WITNESS CHILAMKURI: Tripp, I need to take my -- the oath, too.

MR. MIZELL: Oh, yes. Sorry.

Dr. Chilmakuri also needs to take the oath. I'm very sorry.

CO-HEARING OFFICER DODUC: Please stand and raise your right hand.

(Witness sworn)

CO-HEARING OFFICER DODUC: Thank you.

All right. So 100 minutes for direct of the remaining witnesses.

Ah-ha. Okay. So then Chair Marcus has advised me that everyone else will need to, when you come up to conduct your cross-examination, give me an adjustment in your time estimate now that Dr. Earle and Mr. Bradbury are no longer included in cross-examination.

Yes, I do concur with Ms. Des Jardins that these scheduling conflicts are noticed to all of us as soon as possible.

With that, Mr. Mizell, Ms. Aufdemberge, you may begin.

MARIN GREENWOOD, ERIK REYES,
NANCY PARKER, KRISTIN WHITE,
CHANDRA CHILMAKURI, RICK WILDER,
COREY PHILLIS, and SERGIO VALLES,

called by the Petitioners as Part 2 Rebuttal Panel 2 witnesses, having been duly sworn, were examined and testified as hereinafterset forth:

DIRECT EXAMINATION BY MR. MIZELL

MR. MIZELL: Thank you very much.

So Panel 2 consists of modeling witnesses and

biological testimony witnesses with some supporting witnesses as well. I will just forgo any summary of that large panel and get right to my questions and let them have their time with you.

Dr. Greenwood, is DWR-1001 a true and correct copy of your statement of qualifications?

WITNESS GREENWOOD: Yes, it is.

MR. MIZELL: Is DWR-1221 a true and correct copy of your testimony for Part 2 Rebuttal?

WITNESS GREENWOOD: Yes, it is.

MR. MIZELL: Dr. Wilder, is DWR-1002 a true and correct copy of your statement of qualifications?

WITNESS WILDER: Yes, it is.

MR. MIZELL: Is DWR-1229 a true and correct copy of your testimony for Part 2 Rebuttal?

WITNESS WILDER: Yes, it is.

MR. MIZELL: Mr. Reyes, is DWR-27 a true and correct copy of your statement of qualifications?

WITNESS REYES: Yes, it is.

MR. MIZELL: And is DWR 1226 -- strike that.

Dr. Chilmakuri, is DWR-1202 a true and correct copy of your statement of qualifications?

WITNESS CHILAMKURI: Yes, it is.

MR. MIZELL: And is DWR-1217 a true and correct copy of your testimony for Part 2 Rebuttal?

WITNESS CHILAMKURI: Yes, it is.

MR. MIZELL: Ms. Parker, is DWR -- or, sorry.

Is DOI-35 a true and correct copy of your statement of qualifications?

WITNESS PARKER: Yes, it is.

MR. MIZELL: And is DOI-43 a true and correct copy of your testimony for Part 2 Rebuttal?

WITNESS PARKER: Yes, it is.

MR. MIZELL: Mr. Valles, is DWR-18 a true and correct copy of your statement of qualifications?

WITNESS VALLES: Yes, it is.

MR. MIZELL: And is DWR-1127 a true and correct copy of your statement -- of your testimony for Part 2 Rebuttal?

WITNESS VALLES: Yes, it is.

MR. MIZELL: Dr. Phillis, is DWR-1208 a true and correct copy of your statement of qualifications?

WITNESS PHILLIS: Yes, it is.

MR. MIZELL: And is DWR-1225 a true and correct copy of your testimony for Part 2 Rebuttal?

WITNESS PHILLIS: Yes, it is.

MR. MIZELL: Ms. White, is DOI-41 a true and correct copy of your statement of qualifications?

WITNESS WHITE: Yes, it is.

MR. MIZELL: Is DOI-42 a true and correct copy

of your testimony for Part 2 Rebuttal?

WITNESS WHITE: Yes, it is.

MR. MIZELL: With that, I'd like to introduce Dr. Greenwood to give a verbal summary of his testimony.

WITNESS GREENWOOD: Good morning. I'm Marin Greenwood with ICF. I'll be speaking to my PowerPoint, please. It's -- I don't actually remember the exhibit number. I think it's 1300-something.

MR. MIZELL: DWR-1360, please.

WITNESS GREENWOOD: Thank you.

So I'll be summarizing my written testimony rebutting protestant witness testimony regarding fish in the Delta. My written testimony is Exhibit DWR-1221.

As of my previous testimony, by "Delta," I'm meaning the legal Delta plus adjacent areas, such as Suisun Bay and Suisun Marsh.

Before I begin, I have one small correction to my written testimony. On Page 14, Line 18, the references to Exhibit RTD-1020 should refer instead to Exhibit RTD-12.

Next slide, please.

So I've grouped my rebuttal opinions into several main topics that you see there on the screen.

First, the CWF H3+ North Delta Diversions, which I will refer to as NDD, will be designed and operated to reasonably protect fish.

Second, application of the Nobriga and Rosenfeld 2016 Operation Dynamics Model suggests that CWF H3+ will reasonably protect longfin smelt.

Third, CWF H3+ will reasonably protect fish from South Delta entrainment.

Fourth, CWF H3+ will reasonably protect food web productivity in the Bay-Delta.

Fifth, CWF H3+ will reasonably protect the Bay-Delta ecosystem.

And finally, CWR H3+ will reasonably protect juvenile and adult Mokelumne River salmonids.

So I'll discuss each of these topics in turn in the next few slides.

Next slide, please.

So, firstly, regarding reasonable protection by the NDD, several issues were raised that I'll discuss. My first subtopic is regarding NDD reverse flow and sweeping velocity. Dr. Rosenfeld and Mr. Cannon propose the NDD bypass flow criteria to address concerns regarding reverse flows in the North Delta.

In response, I note that CWF H3+ is required

by its ITP to avoid increasing the magnitude, frequency, or duration of flow reversal in the Sacramento River at Georgiana Slough, which in my opinion makes the proposed criteria of Dr. Rosenfeld and Mr. Cannon unnecessary.

Mr. Cannon observed that he had not seen any description precluding NDD diversion at zero sweeping velocity. And to rebut this, I note that the NDD bypass flow criteria of at least 5,000 cfs at all times means that sweeping velocity must be downstream.

My next subtopic related to the NDD is bypass and downstream flows. Mr. Shutes and Mr. Cannon claimed that CWF H3+ does not include unlimited pulse protection flows downstream of the NDD for the listed Chinook salmon. But they're incorrect because unlimited pulse protection flows are included in CWF H3+. Mr. Shutes claimed that CWF H3+ does not include the D1641 Rio Vista flow requirement, which is incorrect because the requirement is included in CWF H3+.

Mr. Oppenheim proposed Rio Vista flow requirements. I consider these to be unnecessary because they're not specific to CWF H3+, and other elements in CWF H3+ such as operational criteria and mitigation are reasonably protective in my opinion.

Mr. Cannon and Mr. Stroshane suggested that Delta smelt would be more likely to occur in the NDD reach as a result of NDD operations. However, our particle tracking modeling analyses included in the BA and the Fish and Wildlife Service Biological Opinion did not suggest that this would be the case.

Next topic I'll discuss related to the NDD is entrainment. Mr. Oppenheim suggested that the NMFS Biological Opinion should have analyzed a longer time period than 2012 to 2016 in assessing entrainment risk of juvenile Chinook salmon. In response, I assessed a longer time frame in Exhibits DWR-1350 and DWR-1351. From this, I conclude that the size threshold used by NMFS on 2012 to 2016 was representative of the available time series.

I'd also note that the size threshold for entrainment of less than or equal to 32 millimeters used by NMFS may be conservative given that it was based on the observation of a single juvenile Chinook salmon of 32 millimeters that may have been smaller at the time it was actually entrained.

Dr. Rosenfeld claimed that analysis of CWF H3+ assumed no mortality of the longfin smelt at the NDD, which is incorrect because this information was included in the ITP -- ITP application, for

example.

Related to this, Dr. Rosenfeld claimed that none of the potential changes in entrainment rates were considered in an overall assessment when, in fact, a variety of CWF H3+ take mechanisms, including entrainment at the NDD were considered in the analysis for the potential to jeopardize longfin smelt.

Mr. Stroshane opined that there was no detailed analysis of Delta smelt NDD risk, but this is incorrect because such analysis was included in the effects analyses, such as the BA.

Mr. Shutes suggested that larval smelt are too small to detect. But larval smelt are actually required to be monitored near the NDD. And in my opinion, that monitoring is likely to be done using small-mesh nets such as those used in the current smelt larval survey, for example.

My next subtopic is related to biological modeling for which Dr. Rosenfeld raised several issues. Dr. Rosenfeld suggested that the Delta passage model, the DPM, is flawed, which I disagree with. The DPM did not include specific consideration of near-field mortality, for example, because the extent of such effects is uncertain. I'll also note that it did not consider mitigation, for example, the Georgiana Slough

non-physical barrier and real-time operations effects.

Dr. Rosenfeld expressed concerns because of the NMFS winter-run lifecycle model showed negative effects. In response, I would note that, although the model included representation of mortality at the NDD, in my view, it is important to recognize that it did not include the effects of real-time operational adjustments in response to monitoring.

Also, as I explained in more detail in my written testimony, there is a simplified operational assumption wherein daily NDD diversions are made as soon as possible with the start of a new day, resulting in greater diversions at night. This is important because it is at night when most juvenile salmon are migrating downstream in the NMFS winter-run lifecycle model, which would tend to increase the estimated impacts suggested by the model.

Dr. Rosenfeld noted that the IOS lifecycle model's best estimate indicates less adult winter-run Chinook salmon numbers under CWF H3+, which is accurate. But in my opinion, it is important to acknowledge the wide uncertainty in the modeling results. As I explained further in my written testimony, such models were selected in consideration of what is best available, but they do still have

uncertainty.

My ultimate conclusion for the biological modeling is that, although there are differences between models, they generally pointed to there being potential effects within the Delta rather than upstream and specifically from the NDD. My opinion is that the measures included in CWF H3+ would address these potential effects to provide reasonable protection.

The next subtopic I have related to the NDD is screen design. As I discussed in my previous testimony, my opinion regarding NDD reasonable protection includes consideration of the many required pre- and post-construction studies.

Mr. Stroshane stated that the NDD would be built and then studied. In fact, the NDD would be studied before being built, and final design would be informed by these pre-construction studies. And the NDD would be studied more during a test period before final operations and then studied and monitored more after operations begin, with adaptive management as necessary.

Mr. Cannon raised several issues regarding screen design. His opinion that the NDD sites are in poor locations is in contrast to those of the fish facilities technical team, who made an evaluation based

on the aerial photography and field-based river cross-section data.

Mr. Cannon cited information suggesting that exposure of fish to the fish screens for more than 60 seconds would lead to fatigue and potential entrainment or impingement; however, in my written testimony, I provide reference to our laboratory study in which small and large juvenile Chinook salmon were tested for two hours and did not exhibit injury rates different than control fish and had very high survival, which was only 5 of over 3,200 test fish dying.

The ability to maintain uniform approach velocity along the fish screens was questioned by one of Mr. Cannon exhibits. But based on my discussions with Mr. Reyes, who is here as part of our panel today, I understand that it is not anticipated that the flow control baffles will need frequent adjustment to meet velocity criteria. I would note that conformance with NMFS fish screen criteria is an important component of the NMFS BiOp's terms and conditions.

Mr. Cannon expressed concern regarding predation at the NDD, but the exhibit he cites regarding probability of fish refugia failure does not specify the reasoning for this opinion. I previously acknowledged the uncertainty related to predation and

the importance of pre- and post-construction studies related to refugia and predator density and distribution together with consideration of predatory fish relocation through adaptive management. And I'll touch on predatory fish relocation again in a moment.

The uncertainty of potential predation in the NDD is also an issue that I discussed in response to Mr. Stroshane further in my written testimony.

Mr. Stroshane has several concerns related to fish screen design, among which is that the NDD are experimental and have not been employed elsewhere. However, Mr. Bednarski's testimony showed that the screens are generally similar to those built at GCID, Red Bluff, and Freeport.

Mr. Stroshane suggested that there could be risk to fish from temporary shutdowns of screens for cleaning, although he did not specify what sort of risk.

In response, I would note that there is flexibility in the operations in shutting down both screen base and individual screens, so in my opinion, there is not risk to fish. Mr. Reyes, who is here on our panel, is available for questions related to the engineering considerations on screen shutdown.

Mr. Stroshane also questioned why fish screens

have been ruled out in a DWR engineering study as an option for Georgiana Slough but were acceptable for the NDD. My opinion, there are several reasons why comparison of the NDD to Georgiana Slough is not appropriate, among which is the fact that Georgiana Slough is a natural channel through which flows can be large and would not be controlled, unlike the NDD. And the screens at Georgiana Slough would need to be very large to achieve velocity criteria.

Moving on to my subtopic of monitoring the NDD, as I discussed in my previous testimony, real-time operations are an important component that contribute to my opinion regarding reasonable protection and the NDD. Mr. Shutes suggested that monitoring such as rotary screw traps is unreliable. I consider it to be a good indicator, which agreed with Mr. Cannon's opinion during cross-examination by Ms. Meserve.

Dr. Rosenfeld expressed concern regarding potential inadequacy of existing monitoring. In response, I note that CWF H3+ is required to consider if new monitoring stations or techniques might be needed, which addresses Dr. Rosenfeld's concern.

Mr. Cannon suggested that through-Delta survival criteria would only be assessed with large hatchery-origin juvenile Chinook salmon, but the ITP in

fact requires assessment for all juvenile life stages.

Dr. Rosenfeld opined that there was evidence that protective triggers would be implemented. I'm unclear of the specific basis for his suggestion, and my understanding is that the NDD can be shut down quite quickly, certainly well within the 24 hours stipulated in the ITP, for example.

Next subtopic related to the NDD is mitigation. As I discussed in my previous testimony, I consider mitigation to be an important component in CWF providing reasonable protection for fish from NDD. Mr. Cannon suggested that predator removal and non-physical barriers as mitigation have not proven feasible or effective.

Regarding non-physical barriers, I disagree with Mr. Cannon's opinion that these devices have not proven feasible or effective because two DWR studies that we cite in the BA showed considerable -- by which I mean one-half to two-thirds -- reductions in juvenile salmonid entry into Georgiana Slough during a pilot deployment.

Regarding predator removal and in response to Mr. Cannon, our analyses did acknowledge the uncertainty in this measure, and it is considered as a possible adaptive management measure should the

monitoring suggest that it is needed. Although it has uncertainty, the BA describes that there are two peer-reviewed studies from the Delta showing that predator removal is feasible and can be effective.

Our last sub-topic related to the NDD is protection of unlisted fish. So various protestant witnesses expressed the concern that unlisted salmonids would not be protected by the NDD because of the focus on listed salmonids. I disagree because, as I noted in my previous written and oral testimony, there is temporal overlap between unlisted and listed salmonids, so the various operational criteria and environmental commitments would also be protective of unlisted salmonids. My opinion on this is also consistent with one of the NMFS BiOp's conclusions.

Mr. Cannon also provided a list of other unlisted fish that he had concerns about. In response, I note that some of these species were addressed in the FEIR/FEIS and found not to have significant impacts. For those species not addressed in the FEIR, my written testimony describes why I believed they would be reasonably protected for reasons including low spatial overlap with the NDD or being most likely to occur near the NDD in spring, when there are various constraints on water operation, for example.

Can I have the next slide, please?

So, next, regarding reasonable protection of longfin smelt, Dr. Rosenfeld suggested that a better analytical method would be use of the Nobriga and Rosenfeld 2016 population dynamics model rather than the X2 abundance relationship that we used quantitatively in our analyses. I did consider the Nobriga and Rosenfeld model qualitatively in the ITP application, but for this rebuttal, Dr. Corey Phillis, who is here as part of our panel today, and I applied the Nobriga and Rosenfeld model.

The slide here shows a summary results table which is taken from our memo Exhibit DWR-1352. The small differences in predicted longfin smelt abundance indices between CSF H3+ and NAA that we see here in the final column on the right-hand side of the table are consistent with the small differences from the X2 abundance analyses in the ITP application. This, to me, suggests that there would be reasonable protection.

Dr. Rosenfeld stated that the CWF ITP found that the longfin smelt population is still projected to decline further as a result of reduced Delta outflow. However, my understanding is that the analysis in the ITP is based on the X2 abundance progression method applied to the NAA with the existing climate and sea

level in relation to CWF H3+ with 2030 climate and sea level so that the CWF H3+ scenario includes sea level rise effects on X2 that are independent of CWF H3+.

As shown in the second to last column in the table on this slide, our comparison to existing conditions based on Delta outflow as opposed to X2 using the Nobriga and Rosenfeld model, which uses Delta outflow instead of X2, predicts that longfin smelt relative abundance would be similar or slightly greater under CWF H3+ than existing conditions.

And the next slide, please.

So moving on to reasonable protection from South Delta entrainment, there were three main issues suggested by protestant witnesses.

Dr. Rosenfeld was concerned regarding modeling results suggesting potential increased entrainment of longfin smelt. As I noted in my previous testimony, this result is driven by Head of Old River Gate closure assumptions. Actual Head of Old River Gate operations will include consideration of real-time adjustments of South Delta exports and Old and Middle River flows to minimize effects to listed species.

Next, Dr. Rosenfeld raised some specific modeling issues related to assumptions for particle tracking to assess longfin smelt entrainment. I rebut

these in some detail in my written testimony to come to the conclusion that I think the PTM modeling gave an appropriate assessment of larval entrainment risk.

Mr. Cannon suggested that South Delta entrainment risk could be greater because of the operations of the NDD and no changes to South Delta export rules. I rebut this in my written testimony by noting that there are to changes South Delta export rules and that analyses of potential entrainment risks do not suggestion greater effects.

And next slide, please.

Next, regarding reasonable protection of food web productivity, Dr. Rosenfeld was concerned about entrainment of plankton at the NDD. Analysis included in the BA and Fish and Wildlife Service Biological Opinion suggested that this entrainment would be minor and could be more than offset by greater contributions from the San Joaquin River which has greater plankton density.

In addition, I note in my written rebuttal testimony as an example that there would be improved South Delta hydrodynamics as a result of less South Delta summer pumping, as shown in this table that we see on this slide, which represents mean July-to-September QS flow. QS is an indicator of

entrainment risk and basically represents flow in the lower San Joaquin River area of the Central and South Delta. QS, as you see in the table, is generally positive under CWF H3+ compared to the No-Action Alternative, where it's generally negative, which potentially indicates less entrainment risk under CWF H3+ for the Delta smelt zooplankton prey Pseudodiaptomus forbesi.

Dr. Rosenfeld also suggested that CWF H3+ would reduce abundance of the zooplankton Eurytemora affinis and bay shrimp. I rebut this suggestion in Exhibit DWR-1349 by applying X2 abundance index regressions showing little difference between CWF H3+ and the No-Action Alternative.

Next slide, please.

So moving on to reasonable protection of the Bay-Delta ecosystem, I address several additional topics covered by protestant witnesses that I've not covered elsewhere today.

So, first, regarding turbidity and sediment, Dr. Rosenfeld used a draft memo to interpret that only a small proportion of the sediment entrained by the NDD could be collected. I rebut this by noting that the draft memo he used gave an incorrect testament and the actual amount that would be collected is considerably

greater and in line with the amounts anticipated to be entrained.

Dr. Rosenfeld proposed a condition to limit NDD entrainment of sediment inputs to the Delta to less than 5 percent. I consider this condition to be unnecessary because Dr. Rosenfeld did not provide a specific justification for this number and because the CWF ITP requires a sediment reintroduction plan to be developed.

Second, Dr. Rosenfeld felt that harmful algal blooms, including microcystis, likely would increase under CWF H3+. In response, I defer to Dr. Bryan's previous testimony, which is Exhibit DWR-81, which suggests that this would not be the case.

Third, Dr. Rosenfeld suggested that there would be decreases in some fish species under CWF H3+ because of less spring Delta outflow. As I show in my written testimony, applying X2 abundance relationships does not suggest this would be the case.

Unrelated to this issue, Dr. Rosenfeld and Mr. Cannon proposed Delta outflow or EC, electrical conductivity, criteria which I do not think are necessary, given that CWF H3+ adaptive management will address outflow-related issues such as Delta smelt summer rearing habitat and because there are other

processes, such as the Delta smelt resiliency strategy, re-initiation of consultation on the 2008-2009 BiOps, as well as updates to the Bay-Delta Water Quality Control Plan that will also be considering the issue of outflows.

Fourth, with respect to selenium, Mr. Stroshane suggested that selenium loading and bioaccumulation from San Joaquin River could increase under CWF H3+. Given the general similarity in Delta outflow, I disagree that there would be an increase in invasive clams that bioaccumulate selenium as Mr. Stroshane suggested.

Mr. Stroshane also proposed extensive and permanent monitoring for selenium loading and concentration. I do not consider this to be necessary because, as stated in the selenium TMDL staff report, SWRCB-45, that Mr. Stroshane cited, there is already monitoring ongoing or there will be additional monitoring likely to be required under Bay-Delta Water Quality Control Plan updates.

And related to this issue, I show in my written testimony that selenium levels in the San Joaquin River have been decreasing over time to below the water column target for protection of fish that is given in the TMDL staff report.

Last, on the ecosystem topics, with respect to Yolo Bypass inundation, Mr. Cannon suggested in his written testimony that CWF H3+ proposes increased Yolo Bypass flows. This is not correct as increases in Yolo Bypass flows are not proposed. Mr. Oppenheim proposed changes to increase Yolo Bypass inundation, which I consider unnecessary given the operational criteria and mitigation provided by CWF H3+.

And last slide, please.

My last topic is addressing reasonable protection of Mokelumne River salmonids for which I'll discuss juvenile and adult salmonids separately.

My written testimony provides you rebuttal of specific analytical issues that Ms. Workman and Mr. Setka raised, but in the interest of time, today I'll focus only on the proposed Water Right Change Petition conditions.

Regarding juvenile salmonids, Ms. Workman proposed a water right change petition condition that Old and Middle River flow criteria for April and May be those described in the project description shown in Appendix A-2 of the NMFS Biological Opinion.

I consider this condition unnecessary because the criteria are already included in CWF H3+ project description and are required by the ITP.

Ms. Workman also proposed monitoring of juvenile Mokelumne River salmonids as another condition which I don't consider necessary based on the available information suggesting CWF H3+ effects would not be greater than NAA, No-Action Alternative.

Regarding adult salmonids, Mr. Setka proposed closure of the Delta Cross Channel, the DCC, gates for 15 days per month during October and November, with coordination, to the extent feasible, with lower Mokelumne River pulse flows.

I do not consider this to be necessary to address effective CWF H3+ because, as will be discussed in more detail by Dr. Chilmakuri in his rebuttal testimony, although there were modeled increases in DCC openings under CWF H3+ that were of concern to Mr. Setka, in reality, the opening frequency of the DCC is expected to be similar under CWF H3+ and NAA, No Action Alternative.

Also, CWF H3+ does not preclude additional closures of the DCC such as were planned to be tested in 2012 for their potential to reduce straying of adult Mokelumne River Chinook salmon.

So that concludes my summary testimony, and I'll hand it over now to Dr. Wilder.

CO-HEARING OFFICER DODUC: Before Dr. Wilder

begins, I note, Mr. Mizell and everyone else, that our clock has broken down, so staff is keeping track of the timing.

Mr. Jackson.

MR. JACKSON: Yes. I made an error that I'd like to correct as soon as possible, in terms of time. I was supposed to ask for two hours for NRDC.

CO-HEARING OFFICER DODUC: I was wondering.

MR. JACKSON: Yes, and I was wandering, evidently.

CO-HEARING OFFICER DODUC: Thank you, Mr. Jackson.

Mr. Mizell.

MR. MIZELL: For timekeeping purposes, after Dr. Wilder presents, we will be moving on to the two modeling witnesses. It might be the opportune time to break for lunch after Dr. Wilder.

CO-HEARING OFFICER DODUC: All right. We'll do that.

WITNESS WILDER: Hi, good morning. I am Rick Wilder. And before I begin, I would like to make one small correction. It's on Page 9 of DWR-1229, Line 21. It currently reads, ". . .under the NAA to 6.4 percent." That should be corrected to ". . .under the NAA to 2.0 percent." That was simply a copy-paste

error. And if you look at the parenthetical next to that value, the numbers add up to 2.0 percent. It also doesn't change the meaning of the sentence; in particular, the last value in that sentence remains at point-7 percent.

So with that, I'm here to briefly discuss the -- my rebuttal testimony, my -- I have five opinions. They can be found on the top of Page 2, if we wouldn't mind opening 1229, DWR-1229.

And Line 10, specifically, I'm just going to jump right into the first opinion. I'm sorry, Page 2, Line 10. There we go.

California WaterFix is reasonably protective of American River salmon and steelhead. This directly rebuts two statements by Mr. Paul Bradovich during his testimony, first, that there would be unreasonable effects of the WaterFix on juvenile steelhead in the Lower American River.

His conclusion or his opinion is based on what appears to be visual observations of exceedance plots of temperature model outputs. My opinion, however, is that California WaterFix is reasonably protective of juvenile steelhead in the American River. And this is based on what I consider a more extensive analysis based on -- including summary statistics, looking at

trends by month and water type as well as a quantitative analysis looking at temperature threshold exceedances, the frequency and magnitude of exceeding those temperature thresholds.

My analysis also considers three important factors, modeling limitations, real-time operations, and adaptive management.

A second point raised by Mr. Bradovich is that there would be a 75-degree Fahrenheit upper incipient lethal temperature threshold for juvenile steelhead. That is one of several lethal temperature thresholds for juvenile steelhead that I found in the literature.

During our collaborative meetings with the fish agencies, we decided to focus, instead of lethal thresholds, instead, on sub-lethal thresholds. One of the main reasons is because of -- because these temperature thresholds tend to be lower and therefore are more conservative and allow a broader range of temperatures through which to evaluate thermal effects on fish.

Now, there was an additional issue raised during my cross-examination from the American River Water Agencies, and that is that I was unaware of some field data that existed for redd dewatering. The American River group, however, did have these data,

which they did provide to me. And we ran the analysis and compared it to that -- the analysis we had in the Biological Assessment. You can find that in Exhibit DWR-1337.

When you do this analysis, it's very similar to the results that we presented in the BA, and therefore, my opinions do not change.

My second opinion can be found on Page 4, Lines 6, which is that the WaterFix effects analysis fully considered -- that's Line -- there we go; thank you -- fully considered the relationship between physical models and biological parameters.

Dr. John Rosenfeld stated in his testimony that our use of the term "small" to characterize marginal effects is misleading because the magnitude of the change in a physical parameter may not always be the same as that of a biological parameter. And I agree with this, and I would actually take it one step further. Not only is the magnitude of change of a physical factor not always the same as the magnitude of a biological parameter, but also the direction of that change may be different.

And if we could turn to the top of Page 5, Line 4, I'll give you a quick example of this.

Page 5, Line 4, please. Thank you.

So you'll notice this figure is in black and white. And for the benefit of the Hearing Officer, I'd like to go to the original figure in DWR-1142, Appendix 5D. And I believe it was on the flash drive that was provided.

Thank you. So here it is showing the different segments for your benefit.

Could you scroll up just a tiny bit. Thank you.

So this shows a figure of field-based data showing spawning habitat availability as a function of flow for winter-run Chinook salmon in various segments of the Sacramento River. What it shows is that, at low flows, as you increase flow, you see that spawning habitat availability for winter-run increases up to a point between 5- and 11,000, depending on the river segment. After that, further increase in flow actually reduces spawning habitat availability. In other words, an increase in flow has a negative effect on winter-run past those 5- to 11,000.

So to ameliorate this problem noted by Dr. Rosenfeld and expanded upon by myself, we made every effort we could to link the physical modeling outputs to biological parameters, doing things like this, looking at these flow habitat availability

relationships, in addition, looking at winter -- other biologically based models such as the winter-run Chinook Salmon Lifecycle models, Reclamation's Egg Mortality model, and SALMOD. And only when no other biologically based analytical tools were available did we rely on these straight physical modeling outputs.

Now if we could turn to Page 6 of my testimony, written testimony, Line 8. Thank you.

This is my third opinion, which is that California WaterFix -- if the California WaterFix approach of presenting results in multiple ways is appropriate.

We were criticized by Dr. Rosenfeld in some of the ways that we presented our results in our -- in the BA and the FEIR/FEIS documents. However, we deliberately reported results in multiple ways for two reasons: First, to be comprehensive of all the possible ways to report results and, secondly, in consideration of the wide range of viewers and readers of these documents so that they could interpret and analyze the results in whatever way they needed.

But whether I include these criticized ways of reporting results or not does not change my opinions that California WaterFix is protective of upstream aquatic species.

If we can turn to Page 7, Line 9.

This is my fourth opinion: That the WaterFix will provide reasonable protection of upstream life stages of salmonids.

Dr. Rosenfeld had many -- claimed there would be many negative effects to upstream salmonids in the upstream waterways. And I spent the next couple pages of my written testimony rebutting each of these and concluded that, when you put this in a population context, the results would be nearly negligible. Let me give you one example of this.

If we can scroll down to Page 19 -- or Line 19. Thank you.

Dr. Rosenfeld indicated that temperature differences in the Sacramento River would lead to a 59 percent increase in mean temperature-related egg mortality in below-normal water years for winter-run Chinook salmon. So taken out of context, that 59 percent might appear to be quite a significant change, but what he doesn't tell you is that he's looking at values around 8,000 to 13,000 eggs.

There are 5.9 million eggs that are seeded. The SALMOD -- which is the model I believe he used; he doesn't indicate -- the model is seeded with 5.9 million eggs. Further, juvenile production in

below-normal years is on the order of 2 million juveniles. So when you put these values of 8,000 and 13,000 in that context of either 2 million or 5.9 million eggs, you get a difference of more like 0.1 to 0.2 percent of the overall population, which is -- in my opinion, does not constitute an unreasonable effect to winter-run Chinook salmon.

My final opinion is on Page 10, Line 26.

Additional permit terms and conditions are unnecessary. There were several proposals for specific permit conditions, terms and conditions related to upstream WaterFix operations. And they're listed on the top of Page 11. It's my opinion that these terms and conditions are unnecessary because the California WaterFix is already reasonably protective of upstream aquatic resources. Further, these permit terms are for impacts unrelated to WaterFix because they could be implemented with or without WaterFix in place.

And then finally, the issues raised in these terms and conditions are being addressed under other processes and on a different timeline than the -- this -- these proceedings.

And that concludes my testimony.

CO-HEARING OFFICER DODUC: Thank you, Dr. Wilder.

Mr. Mizell, we will take a break for lunch. When we come back, how much time remains for your direct testimony of these witnesses?

MR. MIZELL: About one hour to one hour and ten minutes.

CO-HEARING OFFICER DODUC: So that should take us to the 2:00 o'clock hour.

Mr. Bezerra, it's been my experience that you and Group 7 have always been very effective and efficient in your cross-examination. So we will proceed with the one hour and then add additional time pending showing of good cause by you.

But at this time, are you still estimating four hours of cross?

MR. BEZERRA: Yes. Yes, I am.

CO-HEARING OFFICER MARCUS: So no time --

(Reporter interruption)

CO-HEARING OFFICER MARCUS: I was just trying to do the math.

CO-HEARING OFFICER DODUC: But whatever you say has to go in the --

CO-HEARING OFFICER MARCUS: Sorry. I was just trying to do the math. So no time for Dr. Earle or Mr. Bradovich?

MR. BEZERRA: Correct. I'm just trying to

make today a little more efficient.

CO-HEARING OFFICER DODUC: All right. With that, we will take our lunch break before Mr. O'Laughlin has something to say.

MR. O'LAUGHLIN: No, I was trying to run to the door.

CO-HEARING OFFICER DODUC: Never stand between Mr. O'Laughlin and the door.

With that, we will take a lunch break and return at 12:50.

(Whereupon, the luncheon recess was taken at 11:51 a.m.)

Monday, August 6, 2018 12:50 p.m.

PROCEEDINGS

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CO-HEARING OFFICER DODUC: Good afternoon. It is 12:50. Welcome back from lunch.

Mr. Mizell, I'll go back to you to resume your direct testimony for these witnesses.

MR. MIZELL: Thank you very much.

So here after lunch, we're going to hear from Dr. Chilmakuri and then from Miss Parker.

WITNESS CHILMAKURI: Good afternoon. My name is Chandra Chilmakuri.

CO-HEARING OFFICER DODUC: Okay. Hold up. Let's help me to pronounce your last name correctly, please.

WITNESS CHILMAKURI: Chilmakuri.

CO-HEARING OFFICER DODUC: Chilamkuri (phonetic).

Close enough.

WITNESS CHILMAKURI: Close enough.

CO-HEARING OFFICER DODUC: All right. Thank you.

WITNESS CHILMAKURI: It's like an L and M together, so Chilmakuri, if that helps.

Oh, I see. The spelling is wrong on the --

CO-HEARING OFFICER DODUC: Oh.

(Laughter.)

WITNESS CHILMAKURI: You were right.

CO-HEARING OFFICER DODUC: Thank you. That's why.

WITNESS CHILMAKURI: Yes. M and L are reversed on this.

All right. Before I start summarizing my testimony, I have a few editorial fixes on -- in my testimony. I'd like to run through those.

Mr. Hunt, if you don't mind bringing up DWR-1217, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: On Page 1, Line 26, the reference for my summary of expertise should be Exhibit DWR-87.

If you scroll down to Line 26.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Instead of DWR-31, it should be DWR-87.

And please scroll down to Page 2, Table 1.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Oh, Page 3, sorry.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Could you scroll down

further?

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Oh, there it is. Sorry. I have the?

A. Number wrong.

So the Table 1 title right now, it says (reading):

"Legend: Cells filled with pattern indicate operations vary in real-time . . ."

It should say (reading):

". . . Cells not filled with pattern indicate operations vary in real-time . . . "

If you scroll down to Page 5, Line 19.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: The reference there to Table 1, "As shown in . . . fourth column of Table 1" should read "As shown in . . . fourth column of Table 2."

If you'll scroll down to Page 22, Lines 19 and 20.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: There are a couple of corrections there. One is the reference to FEIR/EIS

should be SWRCB-102 instead of 105.

And following that, where I say, "included a mitigation measure," it should say -- instead of "mitigation measure," it should say, "environmental commitment."

None of these changes change my opinions that are present in my testimony, because they're mostly ed -- because they're all editorial errors.

And if you open up my presentation, DWR-1294.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: And if you scroll to Slide 3, I just want to make one change.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: This is Table 1 from my testimony on this slide, and it should have the same change. The legend should say "cells not filled with pattern."

Thank you.

Okay. Scroll back up.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Thank you.

Good afternoon, everyone. My name is Chandra Chilmakuri. I'm a Principal Engineer with Metropolitan Water District of Southern California, and my previous employment was CH2M Hill. I was a consultant with

Department of Water Resources and Bureau of Reclamation, working on California WaterFix and Bay Delta Conservation Plan since 2007, mostly focused on the modeling.

I'm here to present my testimony on several topics directed to modeling. And my summary presentation does not include all the detailed opinions I have in my written testimony in the interest of time.

With that, could you move to the next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My first opinion is that (reading):

"DCC gate operations with California WaterFix are expected to remain consistent with current operations. Therefore, proposed permit condition in EBMUD-155 is not necessary."

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: East Bay MUD witness, Mr. Setka, stated that the WaterFix would result in longer opening of DCC gates in the fall months. And he stated that he based that opinion on the modeling results included in the Biological Assessment.

However, in my opinion, given that WaterFix is not proposing to change the DCC operations criteria or the real-time operations decision-making process that's currently used, it is my opinion that the WaterFix would not result in different gate operations than the No-Action Alternative.

As shown on this slide in Table 1, I'm presenting the current -- the various regulatory requirements and -- that control the DCC gate operations in different months.

And, as I said, the cells that are in white here represent the months where the operations of real-time conditions driven and vary year -- from year to year. So, for example, in October, the default operation per Decision 1641 is just leave the gates open.

And the 2009 NMFS Biological Opinion have -- requires that the gates be closed depending on the fish presence and -- or fish catch at different trawls along the Sacramento River, whereas, in the CalSim II model, the surrogate used to fish presence is simply the Wilkins Slough flow that's modeled.

And the -- Also, the NMFS BiOp requires that the resultant salty conditions be maintained. So CalSim II recognizes that requirement as well.

However, since CalSim II was only relying on Wilkins Slough flow changes rather than fish presence data, the modeling results show that the -- As shown in Table 2 there, there are 31 years where WaterFix would result in longer opening in October than the No-Action Alternative.

However, in real-time, if it -- if the closure decisions are going to be -- continue to be based on fish catch, then it is my opinion that the decision to when and how long the gates would be closed would not differ between WaterFix and No-Action Alternative.

Also, under current operations, the DCC gates are closed when Sacramento River flows are higher from flooding consequence or scarring consequence. Typically the flow levels are between 20 to 25,000 cfs upstream of DCC. That's when the gates are closed.

In the CalSim model, there's an assumption that the DCC would be closed when Sacramento River flows upstream of the DCC gates is greater than 25,000 cfs.

And for WaterFix mod -- CalSim II run, the -- the Sacramento River flow that was used to make this decision was actually downstream of the proposed intakes, which results in -- in longer opening of DCC gates in a few years in June and December month as

shown in Table 2 there.

However, the NFMS Biological Opinion for WaterFix states that the DCC gates should be closed -- or the decision to close the DCC gates based on high flows should be based on flow measured upstream of the index.

And given that the modeling is indicating that the frequency of time when the Sacramento River flows would be greater than 25,000 cfs, it's about the same between No-Action Alternative and CWF H3+.

It is my opinion that, with the -- by using the flow upstream of the intakes, the close -- the DCC gate operation should be similar between No-Action Alternative and CWF H3+.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Given that there -- as I said, the CWF H3+ does not change any operations criteria or real-time decision-making processes, and the fact that the NMFS Biological Opinion states that the DCC closure during high flows should be triggered based on flows upstream, it is my opinion that the DCC gate operations would remain similar between WaterFix H3+ and No-Action Alternative.

And it is my opinion that there is no need for

additional permits -- permit condition by East Bay MUD.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My second opinion is that the exports -- or the South Delta exports, SWP and CVP pumping facilities, under CWF H3+ are not expected to be greater than No-Action Alternative.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: East Bay MUD witnesses Miss Workman and Dr. Bray testified that the CW -- the WaterFix scenarios would result in increased South Delta exports relative to No-Action Alternative.

They based their opinions on the Boundary 1, Boundary 2, H3 and H4 scenarios that Petitioners presented in Part 1 of this hearing.

However, as shown on this slide, the modeling results for CWF H3+ which is Adopted Project and Proposed Project, that representation presented here shows that the South Delta exports in April and May, which are the months the East Bay MUD witnesses focused on are going to be lower than No-Action Alternative under all conditions.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My third opinion is that CWF is not expected to impact CVP North of Delta carryover storage conditions; therefore, proposed permit conditions in ARWA-502, CSPA-202 Errata, and PCFFA-87 for carryover storage are not necessary.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: ARWA witnesses Mr. Goering and Mr. Bratovich proposed modified flow management standard as a permit condition for California WaterFix.

In proposing that term -- that condition, they cited two reasons:

One was that WaterFix would increase the frequency of that -- frequency of upper end dead pool conditions in Folsom;

And second was that WaterFix would exacerbate low storage conditions in Folsom.

As shown on this slide on -- in Table 3, I'm presenting the CalSim II results -- or the number of months and number of years where the either No-Action or CWF H3+ are the dead -- dead pool conditions -- around dead pool condition, which is 90,000 acre-feet. I'm providing the numbers for 100,000 acre-feet just to indicate the low storage conditions in Folsom.

And, as you can see, the -- both CWF H3+ and No-Action Alternative have identical or -- Actually, CWF H3+ is slightly less, or one -- one month less.

It is my opinion that CWF H3+ does not increase the frequency of dead pool conditions compared to the No-Action Alternative.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: With respect to the second point that the ARWA witnesses made, CWF H3+ does not exacerbate low storage conditions at Folsom.

I'm presenting here the end-of-month storage results from CalSim II model for No-Action Alternative and CWF H3+. The red line in this graph is the CWF H3+ and blue is No-Action Alternative.

And, as you can see, for most of the months, CWF H3+ and No-Action Alternative result in similar storage conditions in Folsom.

In June through September months, there are a few cases where CWF H3+ is slightly lower than No-Action Alternative. However, the reactions are typically at relatively high storage conditions at Folsom, as you can see on the vertical scale.

Therefore, it is my opinion that CWF H3+ does not exacerbate low-flow storage conditions in Folsom,

and the proposed condition by ARWA witnesses is not necessary.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: PCFFA witness Mr. Stokely proposed a condition for carryover storage requirement for Trinity Lake.

And, again, I'm demonstrating the CWF H3+ does not impact the storage conditions in Trinity Lake, as shown in these graphs, in any of the months relative to the No-Action Alternative.

Therefore, it is my opinion that there is no need for the additional proposed condition by Mr. Stokely for Trinity carryover storage.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: This slide is presenting the simulated storage conditions in Shasta for all the months.

And, again, CWF H3+ and -- does not impact the storage conditions relative to the No-Action Alternative, as shown in these graphs; therefore, the proposed permit conditions by CSPA are not necessary.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: When using CalSim II model to understand the effects of a project such as CWF, a better indicator of whether the project is creating impacts to CVP North-of-Delta storage is to look at the combined CVP storage in the Trinity, Shasta and Folsom Lakes.

And I'm presenting the results for the combined CVP North-of-Delta storage on this slide for both No-Action Alternative and CWF H3+. As you can see, the CWF H3+ results are either identical to No-Action Alternative or slightly better in some cases.

So, it is my opinion that CWF H3+ does not create any impacts to the CVP North-of-Delta storage conditions and, therefore, there is no need for any additional permit conditions for the carryover storage in these reservoirs, and any such requirements would only exacerbate the conflict between upstream storage and the instream Delta flow needs.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My next opinion is that CWF is not expected to impact Lake Oroville carryover storage conditions and, therefore, the proposed permit condition for Oroville carryover storage in CSPA-202 Errata is not necessary.

Excuse me.

(Pause in proceedings.)

WITNESS CHILMAKURI: Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: As shown in this slide here, the modeling results indicate that CWF H3+ would not reduce the storage in the No-Action Alternative in most cases. It is the slide projection in June and July months, as you can see; however, again, the reductions are mostly at relatively high storage conditions in Oroville.

Therefore, it is my opinion that there is no need for any additional permit conditions on Oroville carryover storage as the one proposed by CSPA.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My next opinion is that the applicable salinity requirements for City of Antioch's M&I use will continue to be met with WaterFix.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Antioch's witness, Dr. Paulsen, testified that CWF would increase salinities for City of Antioch's M&I use.

She based her opinion on a comparison of CWF scenarios, which included climate change and sea-level rise predictions, to a scenario called EBC2 which do not -- did not include climate change and sea-level rise.

She also based her opinion on a comparison of CWF scenarios to historical salinity measurements which, as testified by Petitioners' witnesses and previously, it is an inappropriate use of modeling results.

As shown in this graph on this slide, I'm presenting the simulated EC conditions at Antioch location for No-Action Alternative and CWF~H3+.

Each bar represents the -- an 82-year average of the simulated salinity conditions for No-Action Alternative and CWF H3+.

And as you can see, in most months, the -- both scenarios result in similar EC conditions. There is a relatively small increase in the summer months, primarily in August and September through November. However, largely, they show similar EC conditions.

More importantly, as Miss Smith testified in her -- in the Part 2 direct, the applicable salinity requirements for City of Antioch's M&I use, which is at Rock Slough, is -- the probability of exceedance of

meeting that requirement between No-Action Alternative and CWF H3+ is similar.

Even if you look at Dr. Paulsen's own testimony, it is clear that CWF would result in similar or better conditions for -- salinity conditions for City of Antioch. I excerpted Table 1 and Table 2 from her testimony on this slide.

If you compare the number of days for H3, H4 and B2 scenarios to the No-Action Alternative, you find them to be either similar or greater than -- greater than No-Action Alternative, which indicates that there are more -- are more number of days with suitable salinity conditions for City of Antioch.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My next opinion is that CWF is not expected to impact Sac Regional Wastewater Treatment Plant operations.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Dr. Paulsen, in her testimony for Sacramento Regional Sanitation -- County Sanitation District, stated that the CWF would increase salinity condition -- salinity levels in the Delta.

In make -- In making that opinion, she based

her -- she based her opinion only on the Boundary 1 scenario and the salinity conditions that she analyzed at the City of Antioch location, which is significantly farther from Sac Regional's south wall.

And there is no -- no additional characterization of salinity conditions in the Sacramento River in her testimony.

As shown on this slide, I'm imparting three different locations on Sacramento main stem in the vicinity of the Sac Regional south fall land further downstream all the way through -- near Georgiana Slough.

And it is my opinion that WaterFix will not -- or WaterFix will result in nearly identical salinity conditions relative to No-Action Alternative upstream of the Cache Slough confluence on the Sacramento River.

Therefore, it is my opinion that the Sac -- under -- Sac Regional would not be impacted by the salinity changes predicted under WaterFix.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Dr. Paulsen also testified that the WaterFix would impact Sac Regional Wastewater Treatment Plant operations.

She based her opinion on -- by saying that the

WaterFix would result in more frequent times when Sacramento River flow would be lower than the amount needed to meet their 14-to-1 dilution requirement.

She based her opinion on an analysis that was conducted by Flow Science and I excerpted some information from that analysis on this slide. The Table 1 and Table 2 come from her testimony.

Excuse me.

(Pause in proceedings.)

WITNESS CHILMAKURI: As shown in the Table 1, the -- in the top third column there, the values represent the -- the Sac -- Dr. Paulsen's assumption in her -- in her modeling as to what Sac Regional would discharge to the river. And that represents the maximum permitted discharge in the amount of 181 mgd, average dry river flow.

In the second column there, the values that are shown are the -- the actual measured inflow into their treatment plant in the year 2015.

As you can see, consistently, their assumed effluent is at least 50 percent -- or above 50 percent greater than the influent flow in that area. Therefore, it is my opinion that Dr. Paulsen's analysis overestimates any impacts due to WaterFix.

Dr. Paulsen also included the information in

Table 2, which shows that the flows from the Treatment Plant vary throughout the day. And the factors in the Table 2 indicate that the flow fraction of the monthly flow comes out at each hour of the day.

I conducted a simple analysis to understand the -- the range of impacts that would cause, assuming the Sac Regional will be operating at their maximum permitted discharge.

So, I took information in the Table 1, third column, and multiplied by the Table 2 and estimated their hourly discharge rates for the -- for a typical year.

In the data -- In the plot on the right there, I'm showing at the bottom of the plot there two curves in green and purple.

The green curve are -- bluish green, I should say, is indicating their daily maximum discharge that would come out of the Treatment Plant, and the purple represents their daily minimum.

And remember that these numbers are associated with their maximum permitted discharge of 181 mgd which they are not operating today at that levels.

So the -- Based on this calculation, approximately, Sac Regional Treatment Plant would have -- would be discharging approximately 395 cfs as

their maximum release at any given time, and their minimum would be about 200 cfs.

And to achieve 14-to-1 dilution ratios for these discharges, the Sacramento River flows should be around 5500 cfs or 2800 cfs.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: I took the DSM-II hourly flow outputs from -- for the CWF H3+ and No-Action Alternative and basically counted up for each month how many hours the Sacramento River flow, as modeled for those two scenarios, would be less than those two thresholds, one corresponding to the maximum discharge that they would ever make under their current Permit, and then the minimum discharge.

And on the top or -- top left graph is summarizing the results for their maximum discharge.

I'm plotting the -- The blue bar indicates the average number of hours when the Sacramento River flows, as modeled for No-Action Alternative, will be less than the upper threshold.

And the red bar indicates the same for the CWF H3+ scenario.

I'm plotting the green bar there as a reference which shows the total number of hours in a

given month.

Right away, you can see that the -- the -- the amount of time the -- either No-Action or CWF H3+ is less than this 395 cfs threshold, which is their maximum possible discharge, is -- is only happening relatively less amount of time in the given month. And there's a large amount of time left in the -- in a month where the flows are high enough to meet their 14-to-1 dilution.

The same -- The same conclusion for the bottom plot which is looking at their low release, which is approximately 200 cfs.

So even if you com -- If you compare the CWF H3+ result to the No-Action Alternative, the relative changes are fairly minimum. The largest change is in the September month for both those thresholds and it only amounts to 4 percent for the upper -- the 395 cfs release and 3 percent for their 200 cfs release.

And in other months, there is also either an integral or the differences are less than those -- what I just described.

So -- And the graph on the right is just demonstrating the same results for the entire 984 months that I evaluated.

And, again, for the lower thresholds, the

results are very similar. The differences are very minimal between the two scenarios. The higher threshold and the difference are roughly about 4 percent increase -- or, actually, 4 percent or less in changes.

And remember that the -- that I'm assuming that Sac Regional would be releasing 395 cfs every other of 82 years for that upper threshold. It is not the case as indicated in their Table 2 on the previous slide.

So the discharge would lie somewhere between 200 cfs and 395 cfs and, therefore, it is my opinion that the impacts would be very minimal, if any, because of WaterFix on their operations.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: My last opinion is that the salt budget analysis presented in SDWA-291 is incomplete, imprecise, unreliable, and any opinions about the effects of CWF on South Delta salinity based on this analysis are incorrect.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: South Delta Water Agency witness Mr. Burke presented a salt budget analysis in

his testimony.

He stated that his objective was to evaluate salt chlorine in the South Delta Region. However, Mr. Burke did not include all the salt sources and salt sinks in the South Delta Region. He only considered the salt sources and sinks that are external to the South Delta Region and did not include any salt source or sinks interior to the South Delta Region; therefore, his analysis is complete.

Mr. Burke also relied on a set of EC-chloride conversion equations to try and translate the EC results from DSM-II into chloride amounts.

However, as Mr. -- Dr. Nader-Terani has testified in the past, the ones that are EC-chloride equations may not be suitable because the -- depending on the source of the salt, for the same EC level, the chloride concentration would be completely different. So using one set of EC-chloride conversions for all the locations is inappropriate.

Further, Dr. Nader-Terani also pointed out that, with WaterFix, the mix of the water in the South Delta from various sources may change, as demonstrated in this graphic from his testimony.

The source contribution from Martinez, which is the ocean water, is actually lower under WaterFix

scenarios than the No-Action Alternative; therefore, again, using the same set of equations between the No-Action Alternative and WaterFix scenarios may not be also appropriate. Therefore, any salt estimates that -- salt chlorine estimates that Mr. Burke made are erroneous, in my opinion.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Mr. Burke computed the net salt chlorine for South Delta Region for both No-Action Alternative and CWF H3+ -- sorry -- actually BA H3+.

And he computed the differences between those net residuals as about 30,000 metric tons. And he concluded that the C -- the WaterFix scenario's adding 30,000 metric tons of salt in the South Delta Region.

I disagree with his interpretation of the result given that his own analysis is indicating that the WaterFix scenario was bringing in roughly 169,000 metric tons of less salt into the South Delta.

Further, Mr. Burke also concluded that the CWF is accumulating more salt by about roughly 30,000 metric tons a year. Again, I disagree with his interpretation of what that number means.

And if Mr. Burke was correct, then there

should be a -- a steady increase on salinity conditions in the South Delta under WaterFix relative to No-Action Alternative.

However, the modeling results from DSM-II does not indicate that -- does not show that there's any steady increase in the salinity conditions in the South Delta.

As shown in this slide here, I'm plotting five different locations in the South Delta Region. And when you compare them, the ECs under WaterFix scenario to the No-Action Alternative, they are fairly similar and they don't indicate any steady increase under WaterFix.

Therefore, any opinions drawn based on the analysis conducted by Mr. Burke are erroneous, in my opinion.

Next slide, please.

Mr. Hunt, next slide, please.

(Exhibit displayed on screen.)

WITNESS CHILMAKURI: Thank you.

To conclude, the permit conditions presented in East Bay MUD 155, and ARWA-502, CSPA-202 Errata, PCFFA-87 are not necessary.

Any applicable salinity requirements for City of Antioch's M&I use will continue to be met under

WaterFix, as per the No-Action Alternative.

CWF is not expected to impact Sac Regional Treatment Plant operations, and the salt budget analysis presented by Mr. Burke in SDWA-291 is incorrect.

That's all I have. Thank you.

MR. MIZELL: Next up, we'll hear from Miss Parker.

I believe the clock started when Dr. Chilmakuri was discussing his errata. I believe Miss Parker's testimony, summary of her written testimony, will take somewhere in between 35 and 40 minutes.

WITNESS PARKER: Good afternoon.

I'd like to start with a few typos of my own.

And we don't need to bring up my testimony. They're fairly -- fairly short. I could just read them into the record, if that's okay.

So on Page 16 in my written testimony in the description of Figure 5a, the reference should be to Figure 5a not to 7a.

On Page 18 in my description of Table 5b, the reference should be to Table 5a and not to 4a.

I managed to miss Figures 11 and 12. There's no reference to Figures 11 and 12. I just misnumbered

and skipped those numbers. So I just want people to be aware of that.

With that in mind, I also had some units errors in Figures 13a and b and 12. They're labeled as being in cfs when they're in thousands of acre-feet. It should be reasonably obvious from the slide that it's of storage, not of flow.

So with that covered, if you could bring up, Mr. Hunt, DOI-44.

(Exhibit displayed on screen.)

WITNESS PARKER: And go to Slide 2, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So the main overview of -- my message today starts with the fact that the several terms and conditions which have been proposed by multiple Protestants in Part 2 are not necessary because the WaterFix does not negatively affect the Project's abilities to meet regulatory or contractual obligations. And I'm going to continue to try to clarify this.

The proposed conditions, whose impacts on the full CVP have not necessarily been fully or at all analyzed, are either simply hydrologically infeasible or they cause operational impacts.

The CVP manages its multiple facilities

collectively, and the limits on the operation of any one severely hampers CVP flexibility in operating to meet all of its obligations.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So my first topic is going to be on the National Marine Fisheries Service 2017 Draft Proposed Amendment to the Shasta RPA.

This Draft Amendment includes, among other things, specific storage conditions for Spring Fill and for September carryover storage, and it also includes limits on spring releases. The criteria are all water year type base and I've listed them in this table here.

I'm going to discuss this in three sections on three different slides.

First, I'll go through a hyperactive feasibility perspective for the Spring Fill. Then I'll look at an operations criteria perspective for the carryover criteria in September, and follow that with an operations criteria perspective on the April release limits.

So Slide 4, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So, first, let's start with the Spring Fill targets.

To analyze their hydrologic feasibility, I started with the assumption that we met September carryover. So assume that that's in the bag and we just need to focus on meeting the Spring Fill.

So my question was: If we met that, if we met September, and if Reclamation released only some minimum possible release from October all the way through the end of April, is there enough inflow to fill Shasta to the target storage that NMFS has pronounced for that following spring.

So, as an example, if we have a wet year carryover requirement in September of 3.2 million acre-feet, and if the following year happens to be dry and the Spring Fill target is 3.9 million acre-feet, then we need to get Shasta from 3.2 to 3.9. That's a 700,000 acre-foot gain in storage. Is that hydrologically feasible?

And so, okay, that's one possible point. There's a bunch of different combinations for what water year-types follow each other. And each combination results in a specific need for storage gain and that's what's represented by the orange dots that are all connected by the black line. So that's a threshold line for where we meet that fill criteria.

So what I did was, I used data from water

years -- this is historical data -- from water years 1922 to 19 -- sorry -- to 2017. And I calculated the historical October through April inflow volumes for Shasta.

I subtracted from those inflow volumes the volume of water represented by an assumed 3,250 cfs minimum release. That's taken out of Decision 90-5 and is a reason -- is -- is criteria that's often used in CalSim as a -- as a rock minimum release from Shasta.

So, those volumes, the inflow minus the minimum release, are what's represented by all of the blue dots on the -- on the graph.

All of the instances of blue dots that fall below the threshold line are instances where NMFS spring flow criteria is simply hydrologically not possible.

I also performed the same analysis, so all of that -- so that plot is based on data -- it's based on historical data, just a historical trace of data.

So I performed the same analysis using additional inflow scenarios all affected by various levels of climate change which have been used for a variety of CalSim scenarios over the years.

All of them had very similar levels of infeasibility, or instances of infeasibility. And

they're concentrated, not unsurprisingly, on dry and critical springs.

The criteria cannot be met in over one-third of combined dry and critical years. And for critical years alone, the criteria is infeasible between 50 and 75 percent of the time for the various inflow scenarios that I looked at.

But I'm actually painting way too rosy a picture here because a minimum release of 3250 between October and April often needs to be exceeded in order to meet a variety of Delta criteria.

So it's -- it's not an operational reality for Shasta to only release that. That would only increase the number of problems that we would have in dry years, and it would add wetter years to the profile of years where Shasta is physically or operationally incapable of meeting the Spring Fill criteria.

Slide 5, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So now let's focus on the September targets.

So I asked a similar question as in the previous slide, and this time it was: If we met the spring peak -- so let's pretend that that's taken care of -- what is our capability for meeting the September

carryover?

The problem with this perspective is, it's really hard to use historical data because Shasta has been operated over time to a wide variety of regulatory and demand targets.

So, instead of using historical data, I looked instead at the results of the model that everybody in this room should be familiar with. I just took results out of the Petitioners' No-Action Alternative.

And what this was meant to do was portray 82 years of operations to a consistent set of criteria; okay? So we're just looking for consistency here.

So I looked at: Out of those 82 years, in how many did we meet the spring criteria but miss the end-of-September criteria?

Now, remember, we weren't trying to do this. I'm just looking a -- one particular casted operation of the CVP/SWP system.

So out of those 82 years of operations, 27 of those years missed where we met spring but we missed the end of September. So let's look at why that was.

So, I've posted all of the information about those 27 years on the table in this slide. I listed what year it was, what water year-type it was, what the spring target was, and how much we were possibly even

over it, and also by how much we missed the end-of-September carryover, and what month we fell below that end-of-September carryover. Sometimes we did it as early as July; sometimes we waited until September to actually get -- to get past that threshold.

The other columns contain information about what Shasta was operating to in addition to deliveries and exports that helped to drive releases from Shasta that would have contributed to not retaining that water in storage.

Now, what you can see in -- So, the -- the coding here -- and I realize this is pretty detailed -- the coding here is, "X2" means that that was a Delta outflow requirement based on an X2 position. "NDO" means that that was net Delta outflow. "WQ" means that it was water quality in addition possibly to net Delta outflow.

There was a water -- There was a reason to release even more water for meeting a water quality standard.

And "WS" is Wilkins Slough. "FC" is flood control.

So WQ and NDO and X2 -- well, at least X2 in June is a 1641 requirement. Net Delta outflow and

water quality are 1641 requirements.

The X2 requirements that you see in virtually every single instance in the September column, those are the Biological Opinions -- the Fish and Wildlife Service Biological Opinions for Fall X2.

So you can see that there's a broad range of Delta criteria which are controlling Shasta operations in -- in all months above and beyond -- or beyond the delivery and exports that Shasta is releasing for. So what's especially interesting here is that all but one of these years are wet or above normal.

And so let's think about what NMFS is trying to get at here. And it's all the same water year-type in the spring and in September.

So, in a wet or above-normal year, the Spring Fill target is 4.2 million acre-feet and the end-of-September carryover is 3.2. So you have a million acre-feet to work with.

And if you can't accomplish -- If the CVP is not able to accomplish all of its responsibilities with 1 million acre-feet, then -- then this is operationally incompatible with the responsibilities of the CVP.

27 years represents two-thirds of all of the wet and above-normal years in the -- the period of record -- in the dataset that we used in CalSim.

So out of 30 -- we have 39 -- 26 wet years, 13 above-normal years, so that makes 39 total years. And in 27 of them, we cannot meet or we could not meet those end-of-September carryover targets without extraordinarily deep cuts to CVP deliveries.

And in dryer years -- These are the -- Remember, these are the years when we met the Spring Criteria. In other years where we didn't meet it, in wet or normal years where we didn't meet it, and especially in dry years, which we saw in the previous slide, we often struggle to meet just hydrologically the instance and the degree of -- of operational challenge that Shasta would be under would be even greater.

All of this would simply profoundly limit the operational flexibility of the CVP in serving all of its multiple purposes.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So on the April and May limits -- So, NMFS has pronounced limits on April and May releases -- and these are primarily problematic in April, not so much in May -- the April release limits one would presume are intended to conserve coldwater pool.

And this is a perspective that Reclamation shares with the National Marine Fisheries Service and we already operate with this perspective in mind.

Historical data -- So I just plotted historical data and just look at the bottom plot on this slide. So I just plotted what the historical releases have been since about 1994. That's the data that was easy for me to pull up in CNET.

What we see is that there are several clear instances where the flow is well above that target. Those are releases for flood control, simple, and we're not going to not meet a flood control standard. So the standards are incompatible in the very wettest years with flood control.

In many other instances where you do see the historical releases being fairly slightly over those flow limits, it's very likely because, in April, we are meeting criteria for X2, or for water quality.

And there is operational flexibility associated with the -- the management -- the cooperative management between Shasta, Trinity and Folsom for meeting Delta criteria that, if limited by specific hard thresholds on releases, just makes it far more difficult for the CVP to exercise that level of flexibility.

So next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So, wrapping up this section on the NMFS Draft Proposed Amendment.

It is my belief that the Protestants call to include this Draft RPA Amendment as a condition on WaterFix Permit approval is about as misguided as the Proposed Amendment itself is.

And, first, I'll reiterate that Petitioner analysis does not show an impact to Shasta storage, so no condition ought to be necessary.

Second, the Proposed Amendment is inoperable in some cases and outright infeasible in others.

Reclamation has been through an extensive series of consultations with NMFS on this very matter. NMFS is not holding Reclamation to this Operational Criteria.

And Reclamation is continuing to work with the service through its reinitiation of consultation process to seek permanent management solutions which can actually be put into place. This criteria does not belong in the WaterFix Petition process.

Next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So, my next main topic is

kind of a lead-in to the American River Water Agency's proposal for the modified flow management standard.

But because that position that ARWA has taken is based, in part, on the section that the WaterFix causes differences to Folsom storage, before I get into those specifics on the ModNMFS, what I want to address is just some basics on what causes differences between the No-Action and the CWF H3+ scenarios in CalSim.

So what was the model set up to do? The big difference between those two model runs is that, in the WaterFix scenario, we have a North Delta diversion. All of the criteria attendant on that diversion include Bypass Flow Criteria, diversion limits, you know, capacity, all of that.

And, in addition, there are associated other criteria, such as extended OMR limits, Head of Old River Gate settings, and Spring Delta Outflow Criteria.

So those elements, both the physical implementation of the North Delta itself and all of the criteria associated with it, those elements are what changed in CalSim. So we have new logic, new tables, new guiding criteria that was written and implemented.

And what happened out of all of that is that exports and Delta outflows are higher in some months, lower in others, in response to that cast facility in

CalSim. Those are an expected and intended outcome of the implemented facility.

But all of the rest of the model logic stayed exactly the same, including everything about reservoir operations. So the CVP has three facilities, small, medium and large, and CalSim balances those using a system of layers; okay?

Each storage facility has its own local as well as system-wide responsibilities, but there was no modification of any individual reservoir criteria on how to address those.

So the balance of what happened with the export in Delta outflow that was intended to change as a function of the WaterFix implementation, the balance of that was -- is just captured collectively in the rest of the system upstream in the North-of-Delta storage. CVP storage should be looked at collectively, therefore, and how it responds to the WaterFix.

Adjustment of individual facility balancing in the model would have been a refinement and, at least at the time, it was not considered necessary for this level of analysis for what was reasonable and what was necessary for a Water Rights Petition hearing to demonstrate the Project's ability to continue to meet regulations and -- and objectives.

So I included six examples in my testimony of instances where an understandably suspicious consumer of model results might have concluded that there was an effect on Folsom operations. One of those is 1981.

Can we go to the next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So I'll just walk you through one of those six examples.

In this particular year, it was a dry year, and on the American River, it happened to be a dryer year on the American than even elsewhere in the system.

Folsom, indeed, in this scenario releases more water in June and July in the CWF H3+ scenario than it released in the No-Action Alternative.

And viewed in the context of other CVP storage, I get it. It certainly seems like it would have been smarter to take this release out of Shasta, because Shasta already had more storage than in the No-Action. So its CWF H3+ results were higher than in the No-Action Alternative. And it makes perfect sense. We should have taken that water out of Shasta.

But the reason that we didn't was that Shasta was already releasing to its power plant capacity. And that happens to be a tried and true, old criteria in the CalSim model that for, for most intents and

purposes, has served us well.

In retrospect, maybe some refinement of those -- of those rules for both scenarios might have been appropriate but that, in and of itself, is why in this particular instance the release was not taken from Shasta.

So when we look, at most the -- the vast number of instances where people have objected to specific storage differences occurring in this model, in the vast majority of these cases, we can tie the answer for why that happened back to one of these very specific criteria.

It is not -- I mean, so, Ms. White can perhaps later opine on this, but it's not something that we are saying would be a hard-and-fast rule for Central Valley operations.

I mean, if they saw that there was some peril of Folsom falling to a storage condition that might have been too low, they certainly would have taken the extra water out of Shasta and violated, you know, the sacred power plant capacity. That's far more important to CalSim than it is to people sitting in Central Valley operations.

I want to point out one more thing: The total impact to overall North-of-Delta storage is very minor

and very short-lived.

In the context of the full CVP North-of-Delta storage, the largest difference that we get is 41,000 acre-feet. And in the context of total CVP North-of-Delta storage, that is a very minor . . . a difference.

Slide 10, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So with that in mind, I want to jump into the American River Water Agency's Modified Flow Management Standard issues that have been proposed to protect Folsom from the WaterFix.

Again, I want to reinforce the message that total CVP North-of-Delta storage is not affected by the WaterFix, so there is not an impact to protect against.

ARWA's own analysis, curiously, did not include any representation of the WaterFix, and so they have not demonstrated the protection that they claim are required.

But what their modeling does show is that the ModFMS has redirected impacts on other CVP operations.

I performed additional new modeling for this proceeding, showing that the ModFMS is not adaptable to hydrology other than those tailored by ARWA specifically for their analysis.

Go to Slide 11, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So, Slide 11 shows timed series results for Folsom, Shasta and Folsom storage in monitor years '90 through '95. And these are from the CalSim studies provided by ARWA for Part 2.

And right now, I can proba -- I can see in the back of my head that people are saying, "Wait. You said not to compare results month to month. Why are you doing that here?"

And I'll tell you why: Just like the Petitioners put in the WaterFix, we expected a specific difference in export. We expected a specific difference in Delta outflow.

In the same context, the American River Water Agency folks are implementing a specific operation at Folsom, and they expect to see a specific change in that operation. So that's what I'm showing here.

The blue line -- So, the blue lines are Trinity -- sorry -- are Folsom, they're the lower ones. And what we can see is that the dotted line, that's the ModFMS, that has higher storage. And, remember, their -- their operation was intended specifically to -- or mostly to protect Folsom during dryer conditions.

So this is a dryer period. And what we do see is that Folsom storage conditions do improve with the ModFMS scenario. Conversely, what we also see is that the Shasta condition had a notable decrease in storage condition.

So what I -- What I want to do now is combine Shasta and Trinity, because the effect of that Folsom operation on the rest of the system is probably seen by some collective response system-wide. And what I want to show is the combined Shasta and Trinity response to that.

So, if we could go to the next slide.

(Exhibit displayed on screen.)

WITNESS PARKER: This is Slide 12.

Okay. So, here, what the black line is demonstrating is the difference in Folsom.

What the red -- What the red line is demonstrating is essentially a mirror-image effect on combined Shasta and Trinity storage.

And what I'd like you to do is think about it this way: If we're holding more storage in Folsom in order to preserve a storage condition there, especially in dryer years, the CVP has responsibilities for meeting a wide range of criteria and obligations. That water has to come from somewhere, and that somewhere is

going to be Trinity and Shasta. Those are our other -- Those are our other storage reserves.

Slide 13, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So what I'm doing now is, I zoomed out from just the '90 to '95 segment to look at the entire period of record.

Again, the black line is differences in Folsom, and the red line is total differences in Shasta and Trinity.

And we can see that not just in the '90s but also in multiple other years, there is a pronounced mirror-image effect between Folsom and the storage differences in -- in Trinity and Shasta.

To take it one step further, what I did was, I implemented the hydrology that was used in Petitioner models.

So, ARWA chose to use historical hydrology and no sea-level rise in their analysis.

If we substitute -- In their studies, if we substitute Q5 hydrology and 15 centimeters of sea-level rise as was used in Petitioner modeling, we get to the plots in Slide 14.

This has a far more pronounced mirror-image effect.

What ARWA had done in their work was to look for -- And this is how they've characterized their results. They said they were looking for a sweet spot in the relationship between improved Folsom conditions and an avoidance of any impacts on protection of Shasta -- or of Sacramento fisheries resources.

But what we see is that, for another inflow scenario that is not exactly the one that they chose, the proposal affects Shasta storage the most in dryer conditions and, in my opinion, it undermines its viability by ensuring the very protection that it sought.

So in the next slide, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So let's return to ARWA's claim that the ModFMS is necessary to protect Folsom from the WaterFix.

In order to address this, I added the WaterFix to ARWA's models and we ran them. So think about it this way: I have a three -- They have a No-Action Alternative and a ModFMS Alternative.

What I've done is to inject the WaterFix into both of those so we now have a three-step process. We have their No-Action, their No-Action plus the WaterFix, and then adding the ModFMS on top of that.

So that is the light blue, dark blue and red dotted lines.

I have also included results from Petitioners' modeling just as a -- as a comparison. Please note that Petitioner modeling now use -- are lower because we used Q5 and sea-level rise information, not historical hydrology and no sea-level rise.

And I realize this is hard to see. You can zoom out on this plot.

(Exhibit displayed on screen.)

WITNESS PARKER: And notice that the impact of the WaterFix on total CVP North-of-Delta storage is approximately -- So the difference between the light blue and the dark blue lines also does show an overall rise in CVP North-of-Delta storage conditions.

But, most importantly from this plot, what we see is that the red dotted line doesn't really have any measurable effect on CVP North-of-Delta storage.

There are increases to Folsom, as we've seen in multiple presentations, but there are offsetting reductions to Shasta and Trinity. And that's the point.

So in slide 16, please.

(Exhibit displayed on screen.)

WITNESS PARKER: So I boiled down some of the

results from the previous table -- from the previous plot into a table and I put a little too much information on this table. The key rows that we should focus on are Shasta, Trinity and Folsom.

These are average annual results for the flow values, but for storage, what these are, are average values of all monthly storage conditions.

What we see in the yellow head section -- And this is from the studies using historical hydrology or ARWA's hydrology.

What we see is that implementing the WaterFix has a combined method of storage impacts of 22,000 acre-feet in Shasta, minus seven in Folsom, and plus nine in Trinity for an overall storage impact of an increase in 24,000 acre-feet, monthly storage condition.

Adding the ModFMS to that column leads us to the second column. And, you know, definitely, we see an increase in 21,000 acre-feet in Folsom, but we also have attendant decreases in Shasta and Trinity.

When we repeated that whole exercise using Q5 hydrology and 15 centimeters of sea-level rise, just to do the math real quickly for you:

The overall increase in CVP North-of-Delta storage is 49,000 acre-feet with the WaterFix. When we

add the ModFMS to that, again, we see an improvement of 21,000 acre-feet in Folsom but with almost triple the impact for Shasta and Trinity when you use a different set of -- of inflows.

So I'm going to stop there with -- with the ARWA. I'm going to skip Slide 17 because I think I'm about to run out of time.

I just want to get to my last points on Trinity.

So my last topic is going to address claims that were made by Tom Stokely for PCFFA that Trinity operations were not appropriately represented in Petitioner modeling, and that the California WaterFix causes storage impacts to Trinity.

The plots on this slide -- Which, again, I apologize. The units are labeled as being in cfs but they really are thousand acre-feet.

So, I've got three plots on this line. Two of them show maximum annual storage and minimum annual storage for every year. So not necessarily end of May or end of April. Just wherever we ended up max, wherever we ended up minimum.

And what you can see in all of the instances on those two plots, there is -- there are no conditions where Trinity storage is lower with the WaterFix.

I want to speak specifically to the end-of-September storage exceedance and the two points that were singled out by Mr. Stokely as indicating an effect on Trinity where the very lowest points on this plot at the very highest exceedance levels.

Those two storage results in the CWF H3+ scenario happened to occur in 1931 and 1933. Those are in the middle of the -- the most severe drought on record, which, as a -- it's a seven-year sequence of extremely dry years.

Petitioners have explained many times in this proceeding that CalSim results -- or CalSim operations in those types of stressed water years or stressed water supply conditions are not to be taken as a literal interpretation of intended Project operations.

We did not see storage levels at dead pool in any of our reservoirs in 2014 or 2015. Certainly, conditions in those years were stressed but not to this level.

The way that CalSim is set up, when you see results like that, our Project allocations are already at zero. The model is operating to fully meet all regulatory criteria and senior water rights. And it's just not smart enough to make a choice because we haven't given it information on how to do that.

So when we see results like there, this is not an intended specific, deliberate, intentional outcome of a WaterFix implementation. It's just two -- I mean, the two No-Action Alternative conditions are not all that great, either, and that also is not supposed to represent a specific intended operation of the CVP.

Slide 19, please.

(Exhibit displayed on screen.)

WITNESS PARKER: Finally, addressing concerns that the WaterFix will cause additional imports of water in the Sacramento Basin, this slide shows that this is not the case.

Imports are, on average, 531,000 acre-feet in the No-Action Alternative and 525,000 acre-feet per year in the CWF H3+ scenario.

Differences in Trinity River flows are due only to a few in -- a few differences in spill. The import is the result of a couple of balancing relationships between Shasta and Trinity.

We've already discussed that those -- those differences in Shasta and Trinity storage, without having refined what those balance -- what that balance is, the goals -- the rules are exactly the same between the WaterFix and the No-Action Alternative, and any minute difference in import is not an intentional

outcome of the WaterFix scenario.

Slide 20, please.

(Exhibit displayed on screen.)

WITNESS PARKER: In my 16 seconds left:

In summary, I really hope that some of these new views of Petitioner model results might have helped to clarify that the WaterFix does not adversely affect Project storage or its ability to meet obligations.

Reclamation relies heavily on being able to operate its North-of-Delta storage facilities in a fully integrated manner to address all of the challenges of this large and complex system.

The very hard storage requirements and flow criteria that have been proposed by multiple Protestants would absolutely reduce this flexibility. It would create redirected impacts and unintended consequences and, in some cases, these criteria are outright infeasible. Most importantly, they are fundamentally unconnected to the WaterFix Project.

Thank you very much for your time.

CO-HEARING OFFICER DODUC: Thank you, Miss Parker.

Mr. Mizell, does this conclude your direct?

MR. MIZELL: This concludes our direct.

CO-HEARING OFFICER DODUC: Anything else,

Miss Aufdemberge?

MS. AUFDEMBERGE: I believe Kristin White has a supporting statement.

CO-HEARING OFFICER DODUC: All right.

WITNESS WHITE: Hi. My name is Kristin White. I'm the Deputy Operations Manager for the Central Valley Operations Office with the Bureau of Reclamation.

I testified in this hearing previously, and a very brief testimony, written testimony, filed for this phase.

I reviewed and provided input to Miss Parker's testimony. And her understanding of the redirected impacts on CVP facilities from storage and release limitations is consistent with my understanding of how the CVP facility would respond in real-time operations.

Thank you.

CO-HEARING OFFICER DODUC: Thank you.

All right. If there's nothing else, why don't we take a short break and then Mr. Bezerra will get set up for his cross-examination.

Before you do -- Before you do, let me do this:

There was a motion made with respect to cross-examination -- or the scope of cross-examination

for the Second Revised DWR-1143. Let me go ahead and address that now.

As you will recall, we asked for this exhibit in an attempt to have information in one single document that would allow us to see what operating conditions Petitioners are proposing and where each of those came from.

We had also hoped to ascertain whether there are any modeling assumptions or other modeling considerations that are not being proposed as operation conditions, and whether any such discrepancies have a bearing on Petitioners' analysis of Project impacts.

So a motion was made on Friday by the State Water Contractors and DWR. They requested that we limit the scope of cross-examination regarding the Second Revised DWR-1143 to questions regarding requirements or modeling assumptions reflected in the document.

We are denying this request.

We find that limiting cross in this manner is likely to undermine the purpose of the document, which is to clarify what are and are not being proposed as operating conditions, and why and whether Petitioners' modeling accurately reflects the potential impacts of Project operations.

However, cross-examination regarding the Second Revised DWR-1143 must be about that exhibit. Cross-examination is not an excuse to ask questions on topics that are only tangentially related to the information in the Second Revised DWR-1143.

We, therefore, advise cross-examining parties to bear in mind our original purpose in requiring this exhibit and not let their questioning stray from those areas.

With that, we will take our short afternoon break and we will return at . . .

Candace, will 10 minutes be enough for that?

THE REPORTER: (Nodding head.)

CO-HEARING OFFICER DODUC: Okay. 2:15.

(Recess taken at 2:05 p.m.)

(Proceedings resumed at 2:15 p.m.:)

CO-HEARING OFFICER DODUC: All right. It is 2:15. We're back in session.

And before we turn to Mr. Bezerra, Mr. Berliner.

MR. BERLINER: Yes. Thank you very much.

Really, a point of clarification. I understand that Mr. Bezerra and Miss Taber are both conducting cross-examination on their clients in Group 7.

And my understanding is Mr. Bezerra is going to be crossing for approximately four hours and Miss Taber for one hour.

I just want to get clarification: This is not two bites at the apple of cross-examination on behalf of the same group. They will, in fact, be covering different material, not the same material.

CO-HEARING OFFICER DODUC: My understanding was that Miss Taber was representing Placer County and who else, Miss Taber?

MS. TABER: Glenn-Colusa Irrigation District and Biggs-West Gridley Water District.

MR. BERLINER: Yes, that -- that was my understanding as well.

So my concern is not that they're representing different clients, but that -- and to the extent they've coordinated their cross, that's great.

My concern is that they're not -- that Mr. Bezerra's not going to cross on Topic A and then Miss Taber's going to cross on Topic A, whatever that might be.

CO-HEARING OFFICER DODUC: I believe we will cross that bridge if and when we come to it.

What we have found during previous cross-examination is that counsel will, hopefully,

continue to streamline their cross-examination questions if those questions have already been asked by a previous cross-examiner. I don't see the need to make any changes at this point.

MR. BERLINER: No, I'm not asking for a change. I just wanted to -- to raise that issue.

So, that's fine. If we're not going to have asked and answered type issues, that's perfectly fine. That's really all we're after.

CO-HEARING OFFICER DODUC: Okay.

MR. BERLINER: Great. Thank you very much.

CO-HEARING OFFICER DODUC: I would suggest for all parties who are planning on conducting cross-examination, standard rules apply: That you do not repeat previous cross-examiner's questioning unless there is a specific aspect, a specific, you know, perspective that is unique to your particular client you represent.

We don't want to be retreading the same grounder over and over unless there is a particular reason why it needs to be repeated.

I'm sure, should that happen, objections will be voiced, and arguments will be articulated by both parties.

Anything else? Any other housekeeping

matters?

I think at this point it's suffice to say, given past cross-examination that's been done with Mr. Bezerra, he tends to be efficient and effective, so it's likely that we will spend the rest of the afternoon with him, but we will see as he progresses.

MR. BEZERRA: Thank you.

Good afternoon. Again, my name's Ryan Bezerra. I represent the Cities of Folsom and Roseville, Sacramento Suburban Water District, and San Joaquin Water District.

My first subject of cross-examination is for Ms. White. I anticipate this being about 10, 15 minutes. It has to do with flexibility of CVP operations.

If we could please pull up Ms. White's written testimony, Exhibit DOI-42, please.

(Exhibit displayed on screen.)

MR. BEZERRA: And if we could please go to the last sentence in the third paragraph. It starts, "Hydrologic conditions vary."

CROSS-EXAMINATION BY

MR. BEZERRA: Miss. White, do you see that sentence?

WITNESS WHITE: Yes.

MR. BEZERRA: When you talk about flexibility in that sentence, that includes flexibility in managing releases from various CVP reservoirs; correct?

WITNESS WHITE: That would be one of the -- the ways that it could be flexible, yes.

MR. BEZERRA: Okay. Could we please pull up Exhibit BKS-300?

(Exhibit displayed on screen.)

MR. BEZERRA: And, for the record, this is a copy of Chapter 2 of the 2008 Biological Assessment for OCAP.

Ms. White, are you familiar with this document?

WITNESS WHITE: Generally. It's been a few years.

MR. BEZERRA: And in general, OCAP is a description of the Coordinated Operations of the Central Valley Project and State Water Project; right?

WITNESS WHITE: I would not characterize it that way. It's Operations Criteria and Plan, I think. I haven't used that acronym in a while.

MR. BEZERRA: Thank you very much.

Could we please go to Page 5 of this document, which is Page 2-5.

(Exhibit displayed on screen.)

MR. BEZERRA: And, Ms. White, do you see the highlighted text beginning "For example"?

WITNESS WHITE: Could I see which section this is in?

MR. BEZERRA: Certainly.

(Exhibit displayed on screen.)

WITNESS WHITE: Thank you.

MR. BEZERRA: You see the highlighted text where it starts with, "For example, conditions in the Delta," and then continues on through, "the response will likely be to increase Folsom releases first."

Do you see that?

WITNESS WHITE: So you're referring to the second highlighted sentence; is that . . .

MR. BEZERRA: Correct.

WITNESS WHITE: I see that, yes.

MR. BEZERRA: Do these two sentences accurately describe real-time operations that may occur with the Central Valley Project?

MR. MIZELL: Objection: Vague and ambiguous as to whether Mr. Bezerra's seeking description of the operational conditions of the Central Valley Project with or without the California WaterFix.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: Without.

MR. MIZELL: I'd raise an objection as to relevance.

MR. BEZERRA: The relevance is that, in her written testimony, Ms. White describes that flexibility as a key to operating CVP and SWP in an efficient manner. It seems to apply to all possible circumstances.

MR. MIZELL: Miss White was responding to testimony about the California WaterFix that was produced in the cases in chief.

Her rebuttal testimony appropriately is limited to response on that criticism that she saw in Part 2 cases in chief.

It does not open up cross-examination to any and all operations of the CVP. That wasn't the intent.

CO-HEARING OFFICER DODUC: So where are you going with this, Mr. Bezerra?

MR. BEZERRA: Miss Parker has presented substantial modeling results with the baseline operation, which includes ARWA's modeling, which does not include WaterFix. We are attempting to ascertain what conditions are assumed in the baseline.

Ms. White's testimony is entirely in support of Miss Parker's so we're attempting to determine what operational flexibility Ms. Parker's talking about.

CO-HEARING OFFICER DODUC: Overruled.

MR. BEZERRA: So, Miss White, is it your understanding that at times Reclamation will prefer releases from Folsom to address Delta water quality concerns because Folsom's closer to the Delta?

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: Objection to vague and ambiguous as to "at that time."

So what time is Mr. Bezerra referring to? I think that that is pertinent to the question being answered correctly.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: The OCAP Biological -- Excuse me -- Biological Assessment specifically states (reading):

". . . Weather conditions combined with tidal action can quickly affect Delta salinity conditions."

Those are the conditions I'm seeking to determine.

CO-HEARING OFFICER DODUC: All right. Miss White.

MR. BEZERRA: I can reask the question if you like.

WITNESS WHITE: Sure. That would be good.

MR. BEZERRA: Ms. White, is it your understanding that the highlighted language accurately reflects real-time operations that may occur in operating the Central Valley Project flexibly?

WITNESS WHITE: I'm sorry. I was prepared to answer the previous question. That one was different.

Okay. Just the sentence that you read?

I'm sorry. Can you repeat the question again and state exactly what you were trying to reference?

MR. BEZERRA: Sure.

At times, changes in Delta salinity conditions may require releases from storage from the CVP; correct?

WITNESS WHITE: That's correct.

MR. BEZERRA: And does this highlighted language accurately state that a reasonable course is to likely increase Folsom releases in those conditions?

WITNESS WHITE: I don't know that that's what this text says.

This text is referring to rapidly changing conditions that were -- that were unexpected. And one course of action that we have is to release -- to increase releases from Folsom.

However, our first action is typically to reduce exports because that gets to the Delta salinity

problem immediately, whereas Folsom has a one-day travel time.

So if we can't get the export cuts, then we might look at Folsom in order to make up for the gap between when the other reservoirs' releases can make it down into the Delta.

MR. BEZERRA: And in those circumstances in real-time operations, you would prefer releases from Folsom to releases from the other projector reservoirs; correct?

WITNESS WHITE: I don't think that's exactly what I said.

We would prefer to make export cuts because that's when -- that's how we can affect the Delta the quickest. And then we would devise a release strategy.

And if export cuts couldn't make it, then Folsom is the next shortest travel time. So considering the shortened travel time of Folsom may be part of the release strategy.

MR. BEZERRA: So if export reductions cannot address completely the Delta water quality issue in real-time, Reclamation would prefer releasing water from Folsom to releasing water from other Project --

MS. AUFDEMBERGE: Objection: Asked --

MR. BEZERRA: -- reservoirs; correct?

MS. AUFDEMBERGE: Asked and answered.

CO-HEARING OFFICER DODUC: Let's get her answer so that we're all clear.

Miss White.

WITNESS WHITE: The reason why I'm hesitant to just answer, I'd like it "yes" or "no," is because it depends. That's one of the strategies that we could use.

It's going to depend on what the situation is, how long the salinity event lasts, what the -- what the conditions of all the other components, the non-CVP components that are happening within the system.

But, in general, Folsom's short residence time is certainly a factor that we would -- that we would use in determining the strategy for handling an unexpected short-term -- or unexpected sudden change in Delta conditions.

MR. BEZERRA: Okay. Thank you.

That sort of flexible operation of the Project, including Folsom, is not captured in CalSim modeling; correct?

WITNESS WHITE: I don't know that I would say that it's not captured.

If we're thinking about releasing from Folsom while we're waiting for the residence time of Shasta to

get done, to say that that would have to be captured in CalSim would say that you would have to be able to see that in a monthly average.

So, I think our monthly averages can capture quite a bit of flexibility within the system. So it's not exclusively code in the CalSim files, but I wouldn't say that it's not captured in CalSim.

MR. BEZERRA: CalSim operates on a monthly time step; correct?

WITNESS WHITE: That's correct.

MR. BEZERRA: So CalSim does not replicate day-to-day flexible operational decisions by Reclamation about releases from any given reservoir for the Delta; correct?

WITNESS WHITE: CalSim only has a monthly representation, so it does not have a daily operations component to it.

But the monthly operations are intended to capture the variety of daily operations.

MR. BEZERRA: Okay. Thank you.

Could we please go to Exhibit BKS-301, please.

And, for the record, this is marked exhibits of the NFMS 2009 OCAP Biological Opinion. The full document is Staff Exhibit SWRCB-84.

Miss White, are you familiar with this

Biological Opinion?

WITNESS WHITE: Yes.

MR. BEZERRA: And, in general, it provides some of the rules that govern coordinated operations of the CVP and SWP; correct?

WITNESS WHITE: That is correct.

MR. BEZERRA: Okay. Could we please pull up Pages 595 through 597, which begin on the second .pdf page in this exhibit.

(Exhibit displayed on screen.)

MR. BEZERRA: Ms. White, are you familiar with this RPA?

WITNESS WHITE: Yes.

MR. BEZERRA: And just for the record, "RPA" means reasonable and prudent alternative; correct?

WITNESS WHITE: Yes, that's my understanding.

MR. BEZERRA: Okay. And, in general, the purpose of this RPA is to maintain certain levels of Shasta Lake storage in dry conditions; correct?

And feel free to scroll down, if you like.

(Exhibit displayed on screen.)

WITNESS WHITE: I'm sorry. Can you go back up? I think that's . . .

(Exhibit displayed on screen.)

WITNESS WHITE: Can you back up to -- all the

way up to the title.

(Exhibit displayed on screen.)

WITNESS WHITE: All right. Yes.

MR. BEZERRA: Okay.

Could we please scroll down to Page 596 and the highlighted text?

(Exhibit displayed on screen.)

MR. BEZERRA: To the best of your knowledge, this RPA means that, in dry conditions, NMFS is effectively requiring Reclamation to prefer releases from Folsom Reservoir over releases from Shasta; correct?

WITNESS WHITE: (Examining document.)

This -- This sentence reflects the strategy that I -- I just mentioned.

First, we would cut exports, and then we would create a strategy in this sense as to -- to prefer -- to look at releases from Oroville or Folsom due to the status -- due to their shortened travel time to the Delta.

MR. BEZERRA: And the CVP and SWP might use operational flexibility to prefer releases from Folsom over releases from Oroville; correct?

WITNESS WHITE: That's -- There's a lot we would have to consider between the two, not just actual

conditions, abilities in the reservoirs, but also the travel time and how effective it might be.

MR. BEZERRA: And Folsom is much closer to the Delta than Oroville; correct?

WITNESS WHITE: Our general travel time rules are one day for Folsom and three days for Oroville, so two days closer. So it would depend on the event as to whether or not that was be relevant.

MR. BEZERRA: Okay. To the best of your knowledge, is this RPA reflected in CalSim assumptions in any way?

WITNESS WHITE: I'm going to rely on CalSim modelers for details.

Are you asking: Is it -- Is it reflected in CalSim -- Sorry. Can you be more specific?

MR. BEZERRA: Sure.

WITNESS WHITE: Which -- Which component of this?

MR. BEZERRA: As I understand this RPA, in certain dry conditions, NMFS is directing Reclamation and DWR to prefer releases from Folsom and/or Oroville over releases from Shasta; correct?

WITNESS WHITE: After export reductions.

MR. BEZERRA: After export reductions.

WITNESS WHITE: Yes.

MR. BEZERRA: And in some cases, you may prefer releases from Folsom over releases from Oroville due to shorter travel time; correct?

WITNESS WHITE: Right. But that's in daily operations, which we just covered in the previous section. It's not -- it's not -- We don't have daily operations in CalSim. We have monthly averages that are meant to reflect the resultant daily operations.

MR. BEZERRA: Okay. You're reading my mind.

CalSim does not include any logic that reflects this RPA; correct?

MR. MIZELL: Object as asked and answered.

She asked -- She deferred that question to one of the modelers to better address what is in the modeling.

CO-HEARING OFFICER DODUC: So can anyone else answer?

WITNESS GREENWOOD: No.

MR. BEZERRA: The answer's no?

CO-HEARING OFFICER DODUC: No, you can't answer or no?

WITNESS GREENWOOD: Oh, I'm sorry. Answering his question that CalSim does not include this RPA.

MR. BEZERRA: Okay. Thank you very much.

That's the end of my questions for Ms. White.

CO-HEARING OFFICER DODUC: Thank you, Mr. Bezerra.

And then your next -- By the way, this is sufficient to break it up. So thank you.

Your next line of question?

MR. BEZERRA: Will be for Miss Parker.

CO-HEARING OFFICER DODUC: Okay.

MR. BEZERRA: This may be two hours.

CO-HEARING OFFICER DODUC: And the topics?

MR. BEZERRA: The topics are: California WaterFix's effect on Folsom storage generally, including modeling assumptions;

The modeled water -- The modeled effect of California WaterFix on Folsom storage in specific years;

The assumptions in Ms. Parker's modified flow management standard sensitivity analyses;

The results of those sensitivity analyses;

And the relationship between water temperatures and those analyses.

CO-HEARING OFFICER DODUC: Okay. I'm gathering that you do not have -- At least you don't anticipate getting to questions for Dr. Greenwood and Dr. Wilder today?

MR. BEZERRA: Yeah. I can provide some more

clarity on where we're going in relation to relative witnesses.

I -- Personally, myself, I'm only -- I have additional questions for Miss Parker, Mr. Reyes and Dr. Wilder, and my colleague has questions for Dr. Chilmakuri. I don't personally have questions for the rest of the panel; other members in Group 7 may.

And the cross-examinations of Miss Parker and Dr. Wilder are much more extensive than Dr. Chilmakuri and Mr. Reyes.

CO-HEARING OFFICER DODUC: Okay.

MR. BEZERRA: Okay. So if we could please pull up Miss Parker's testimony, Exhibit DOI-43, and specifically Page 5.

(Exhibit displayed on screen.)

MR. BEZERRA: And the first bullet towards the top of the page.

(Exhibit displayed on screen.)

MR. BEZERRA: And I know I've got the --

(Exhibit displayed on screen.)

MR. BEZERRA: There we go.

Miss Parker, do you see in that first bullet the statement (reading):

". . . Petitioner modeling used the same facilities (sic) operations logic and

balancing goals facilities in CWF H3+ as in NAA."

Do you see that?

WITNESS PARKER: I see that.

I'd like to point out that that second word "facilities" shouldn't be there. That was a typo.

MR. BEZERRA: Okay. Thank you very much.

Now, preliminarily, when you say CWF H3+ and NAA, you're referring to the With-Project and No-Action Alternative modeling from earlier in Part 2 of this hearing; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: Okay. And in this statement, what do you mean by "facilities (sic) operations logic"?

WITNESS PARKER: In this context, I was talking about storage facilities operations.

MR. BEZERRA: So reservoirs.

WITNESS PARKER: Yes, specifically North-of-Delta reservoirs.

MR. BEZERRA: Okay. And what do you mean by "balancing goals"?

WITNESS PARKER: So, there's a file called balance.russell in the common MOD folder in CalSim.

Every storage facility in CalSim is set up as

a series of layers. Trinity has five, Shasta and Folsom each have six.

And there are specific -- So the -- the sizes of each layer work kind of like this:

So there's a dead pool layer at the bottom, and there's a flood control layer at the top where you should never put water, and, then, in between there are sort of a gradation of -- of layers, each one of which has a particular weight.

And where -- And -- And the size of each layer can -- or the limits, I should say, on the sizes of each layer can vary from one to possibly even the entire conservation pool by month. Those are all coded in -- in the model.

And what the balancing goals do is to create a situation where . . .

The model doesn't want to have Trinity up at Layer 5 while Folsom is down at dead pool. And, conversely, you don't want to have Trinity and Shasta being completely lopsided.

So the idea is to raise and lower them in response to regulatory criteria and demands in a way that they balance with each other.

MR. BEZERRA: Okay.

WITNESS PARKER: Again, as given with the

sizes of the layers and how those are constructed, those balancing goals have slightly less sway than some of the other criteria that govern what happens with the reservoirs.

For example, if Shasta needs to release water to meet a flow requirement at Wilkins Slough, there's nobody else that can meet that except Shasta and Folsom can't meet that. So the model will adhere to that even if it violates a balancing goal.

MR. BEZERRA: Okay. And this'll be useful for later, I think.

But you said Folsom has multiple layers and the lowest layer is dead pool; is that correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: And how much water is in Folsom when CalSim has it at its dead pool layer?

WITNESS PARKER: 90,000 acre-feet.

MR. BEZERRA: 90,000. Thank you.

So, there is other logic in the model to balance reservoir storage, such as the San Luis Rule Curve; correct?

WITNESS PARKER: I wouldn't call that balancing reservoir logic.

MR. BEZERRA: All right. So . . . We talked about this over a year ago.

In the Biological Assessment modeling, Petitioners actually did change the San Luis Rule Curve between the NAA and the With-Project; correct?

MR. MIZELL: I'm going as to object to the line of questioning about the BA modeling. That is not part of the Department -- the Petitioners' Part 2 case in chief. The modeling we presented for Part 2 case in chief is the CWF H3+ and No-Action Alternative.

We're now stepping back in time to what we discussed in Part 1 with this -- It's not particularly relevant to this line of cross.

If we can stay on modeling that was reasonably within the scope of Part 2 cross, that would . . .

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: That's incorrect.

Dr. Wilder in his testimony specifically refers to the Biological Assessment/Biological Opinion analysis, which is all based on the modeling in those documents. So Dr. Wilder's testimony opens up the modeling assumptions.

In addition, Ms. -- Ms. Parker has extensive testimony about how things were not changed in the modeling, and I'm entitled to explore what was changed or not changed.

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: I would just join the objection as outside the scope. This was -- This was a topic of cross-examination that hasn't changed. So if we allow anything of the modeling assumptions in, we're basically opening up Part 1 and what we've already done in Part 2 and that is not the most efficient use of time.

CO-HEARING OFFICER DODUC: Mr. Aladjem, do you wish to add --

Again, I'm looking for a tighter linkage to what --

MR. BEZERRA: You know what? I --

CO-HEARING OFFICER DODUC: -- specifically is being -- is being testified to by these witnesses in their rebuttal testimony.

MR. BEZERRA: I can just jump over this and cut right to the chase.

CO-HEARING OFFICER DODUC: That would be good.

MR. BEZERRA: Miss Parker, in between the No-Action Alternative and the CWF H3+, Petitioners did, in fact, change the San Luis Rule Curve between those two modeling runs; correct?

WITNESS PARKER: Yes.

MR. BEZERRA: And you changed it so that the With-Project scenario is more protective of upstream

storage than the No-Action Alternative; correct?

WITNESS PARKER: So . . . I think you're lumping San Luis Rule Curve in with balancing of North-of-Delta storage.

In my opinion, the San Luis Rule Curve has more to do with allocation logic than with balancing North-of-Delta storage among the three North-of-Delta CVP facilities.

MR. BEZERRA: And --

WITNESS PARKER: The San Luis is not covered in the balance.russell file.

MR. BEZERRA: In your testimony, you made the point that you did not change any facilities operation logic or balancing goals in between the No-Action Alternative and the With-Project; correct?

MR. MIZELL: I'm going to object.

She's actually already clarified that statement at the request of Mr. Bezerra and indicated that that was upstream storage facilities logic, and has just now testified twice that the balancing goals do not include the San Luis Rule Curve.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: Yes. She just testified to that now.

Her written testimony is not nearly as clear

on that and I'm exploring what exactly was changed in the modeling since she makes quote a point about how much of the logic was not changed in the modeling.

CO-HEARING OFFICER DODUC: Now I'm confused, Miss Parker.

My understanding of your response was not that this was a change but a distinction between the rule curve and the balancing operations in the model.

WITNESS PARKER: My rebuttal testimony -- My intent in my rebuttal testimony did not include any reference to San Luis or to San Luis Rule Curve.

What I was discussing in my rebuttal testimony was specifically CVP North-of-Delta storage and the implications -- So my -- My whole point was that the proposals to include terms and conditions on North-of-Delta storage facilities were improper because there was no impact of the WaterFix on North-of-Delta storage facilities.

CO-HEARING OFFICER DODUC: And how do you get --

WITNESS PARKER: There was no mention of San Luis in that whole thing.

CO-HEARING OFFICER DODUC: So how did we get on to San Luis?

MR. BEZERRA: Because, I believe they -- First

of all, based on Part 1, we understand that the San Luis Rule Curve can affect upstream storage because it drives how much water is exported.

And Miss Parker just stated that her testimony is that, between NAA and With-Project, there's no effect on upstream storage.

If they changed the San Luis Rule Curve to be more protective of upstream storage with the Project, then that skews her modeling results in favor of the Project, and a finding of no impact, as a result of a model assumption change.

CO-HEARING OFFICER DODUC: But this is outside of the scope of her rebuttal testimony.

MR. BEZERRA: It's not, because her fundamental testimony is that there is no change in upstream storage as a result of the implementation of WaterFix.

CO-HEARING OFFICER DODUC: Anyone else want to chime in, that would be helpful?

MS. DES JARDINS: Dierdre Des Jardins.

I just wanted to note that, to the extent that the modeling is now the CWF H3+ scenario, not allowing questions based on it being covered in cross-examination on the H3 and H4 scenarios covered in Part 1 leaves open the issue that they never asked the

question about this particular version of the modeling.

And I think, for that reason, I mean, Protestants make every effort to ensure that there was one single set of modeling used for this entire proceeding, and there has not been.

And, two, our questioning on the new modeling, it's very strongly related to how -- to how much -- how much storage is available North of Delta and how it's moved.

I think that there should be some leeway to ask questions that are very clearly related to the line of testimony, even if some of it was covered in Part 1, because it was on different modeling.

CO-HEARING OFFICER DODUC: Mr. Aladjem, please say something helpful.

MR. ALADJEM: Madam Chair, David Aladjem, Downey Brand clients.

Miss Parker testified a few moments ago in her direct testimony that there were no changes in the modeling.

Mr. Bezerra's trying to get at the assumptions behind that. It is a very useful line of questioning.

CO-HEARING OFFICER DODUC: Okay. Ms. Morris.

MS. MORRIS: I would just like to clarify, because Mr. Bezerra seems to be implying or linking

this to change -- there's no changes in upstream reservoirs.

But, in fact, the testimony on Page 6 that he seems to be zeroing in that, Miss Parker says that Petitioner did not change or newly implement any other logic.

So it's not -- She's not saying that there are change -- no change to upstream reservoirs. She's saying the logic, the modeling logic, hasn't changed. So I don't believe that he's correctly linking this.

CO-HEARING OFFICER DODUC: Mr. Aladjem, final words.

MR. ALADJEM: Madam Chair, unless I misheard, Miss Parker said did cha -- there were changes in the logic, and that's what Mr. Bezerra's trying to evaluate.

CO-HEARING OFFICER DODUC: Okay. I'm certainly confused, that I will allow Mr. Bezerra to continue --

MR. BEZERRA: Okay.

CO-HEARING OFFICER DODUC: -- in the open that what you're doing is exploring the basis for Miss Parker's conclusion in rebuttal and perhaps clarify things as you do so.

MR. BEZERRA: Precisely.

Miss Parker, your overall opinion is that between the No-Action Alternative and CWF H3+, there are no meaningful changes in North-of-Delta reservoir storage; correct?

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: Objection: Misstates the witness' testimony.

CO-HEARING OFFICER DODUC: Let's try again, then, Mr. Bezerra.

(Pause in proceedings.)

MR. BEZERRA: Miss Parker, you believe that changes to Folsom Reservoir storage depicted in the modeling are not a result of deliberate actions to export water from Folsom; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: And exports of water from Folsom in the modeling would be affected by how you set the San Luis Rule Curve; correct?

MR. MIZELL: If I may object:

It is beyond the scope of Miss Parker's testimony to go south of the Delta. She's clarified this already in the line of questioning.

If he's asking about operations logic in North-of-Delta storage facilities, that's clearly within Miss Parker's testimony.

Going south expands this well beyond the scope of what she's testified to in cross -- for rebuttal.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: She has South-of-Delta export numbers in her table 5.A and 5.B. This is explicitly within the scope of her testimony.

CO-HEARING OFFICER DODUC: Miss Aufdemberge.

MS. AUFDEMBERGE: I was just going to -- This is -- As Ms. Parker said, this is -- The rule curve is more connected to the allocation limit and that's not what Miss Parker's testimony is about.

CO-HEARING OFFICER DODUC: And I believe that's what Mr. Bezerra is trying to ascertain, whether or not the rule curve and changes to that rule curve would impact North of -- northern reservoirs.

Is that correct, Mr. Bezerra?

MR. BEZERRA: Yes. And whether some -- some or all of that is a result of changes in the San Luis Rule Curve in the two modeling scenarios.

MR. MIZELL: If we can go to Tables 5.A and 5.B.

Miss Parker actually clarified these two tables when she presented, I believe -- if I'm not completely mistaken -- and she focused you only on Shasta and Trinity numbers within those, and maybe

Folsom as well.

Maybe Miss Parker herself can indicate what she was discussing in those tables. But it was not to go to South-of-Delta storage. Despite the fact that the tables may include a number, her testimony focused only on North-of-Delta storage.

CO-HEARING OFFICER DODUC: Miss Parker?

WITNESS PARKER: So, there's a lot going on here.

Maybe I --

CO-HEARING OFFICER DODUC: Thank you. I thought so.

WITNESS PARKER: I'll -- I'll try to take a step back and clarify.

Mr. Bezerra, please let me know if I get beyond the scope of your question.

MR. BEZERRA: Let me ask what I think is a simple question.

Ms. Parker, between the No-Action Alternative and the CWF H3+ scenario, did Petitioners change the San Luis Rule Curve to be more protective of North-of-Delta storage?

MR. MIZELL: Objection: There's been no connection the South-of-Delta San Luis Rule Curve has anything to do with her testimony.

MS. AUFDEMBERGE: I would object. She's asked and answered. She's stated it was about the allocation, not about protections of storage.

MR. BEZERRA: I -- I can point you to yet more explicit statements in her testimony where South-of-Delta is explicitly referenced, if you like.

CO-HEARING OFFICER DODUC: Miss Parker, could you please --

WITNESS PARKER: I'm happy to answer.

CO-HEARING OFFICER DODUC: Please answer.

WITNESS PARKER: Could you just repeat that one question just to make sure I'm --

MR. BEZERRA: Sure.

WITNESS PARKER: -- answering correctly.

Between the No-Action --

MR. BEZERRA: Between the No-Action Alternative scenario and the CWF H3+ scenario, did Petitioners change the San Luis Rule Curve to be more protective of North-of-Delta storage?

WITNESS PARKER: In my opinion, no.

And if you'll allow me two more sentences, I can --

CO-HEARING OFFICER DODUC: Please.

WITNESS PARKER: -- try and clarify.

It wasn't done to protect North-of-Delta

storage. What it was done to do is -- So the No-Action Alternative depicts -- and, again, this goes back to Part 1 testimony -- depicts a certain operational philosophy of the CVP; i.e., we would not hurl water from the north to the south for no good reason. We wouldn't pull water out of Shasta, damaging our ability to fill water -- to fill Shasta and create cold water just by taking water out of Shasta and putting it in San Luis; okay?

So that's what the San Luis Rule Curve does, is, it helps to guide the timing and the amount of water that moves from north to south.

I did not perform the modeling for the CWF H3+ but I understand why the rule curve was changed, and it was to try to capture the same operational philosophy.

And I know that Shasta increases a little bit Folsom decreases a little bit, but overall North-of-Delta storage -- I think overall North-of-Delta storage still increases a tiny little bit. And I would characterize that as, you know, a kind of noise between the two models.

But the intent was to depict an operational philosophy of the CVP that did not pull more water out of the North-of-Delta under any condition.

So it's part of an allocation -- It is, in my

mind, part of an allocation strategy or part of the allocation logic. It is not part -- So my testimony fundamentally, the point of it, is not about rule curve, San Luis Rule Curve. It was about balancing the impact of WaterFix among our North-of-Delta CVP storage facilities.

So --

MR. BEZERRA: Let me ask you a yes or no question.

WITNESS PARKER: Okay.

MR. BEZERRA: Between the No-Action Alternative and CWF H3+, Petitioners changed the San Luis Rule Curve; correct?

WITNESS PARKER: Yes.

MR. BEZERRA: Thank you.

Okay. I'd like to go to -- back to Page 5 of your testimony and the first bullet on that page --

WITNESS PARKER: I'm sorry. What page?

MR. BEZERRA: Five.

(Exhibit displayed on screen.)

MR. BEZERRA: -- in which you state (reading):

". . . Monthly changes in storage at one reservoir are not representative of deliberate CWF effects . . ."

Do you see that?

WITNESS PARKER: So it's in the first bullet on Page 5?

Yes, I see that. Yes.

MR. BEZERRA: And by "deliberate effects" there, do you mean specific changes to the model logic to export water; correct?

MR. MIZELL: Objection: Misstates the testimony and misstates her previous answer to a very, very similar question that --

CO-HEARING OFFICER DODUC: Then she can correct it.

WITNESS PARKER: What I meant was, there is no logic in CalSim that says, "Hey, we have the California WaterFix. Let's take 100,000 acre-feet of water out of Folsom and put it into the WaterFix."

We don't have anything like that in CWF H3+, and that's what I meant.

MR. BEZERRA: Okay. Thank you.

Now, moving down to Page 7 of your testimony, and the second paragraph.

(Exhibit displayed on screen.)

MR. BEZERRA: You make a statement (reading):

". . . The lower storage conditions seen in Folsom Reservoir in CWF H3+ relative to NAA are not the direct result of

specific withdrawals that are exported by the WaterFix."

What -- Do you mean the same thing by "direct result" and "specific withdrawals"? There's no changes to the modeling logic to force exports out of Folsom?

WITNESS PARKER: The statement that I just made gets to that.

MR. BEZERRA: Okay. Thank you.

Okay. Now, turning to Page 14 and your Figure 4.

(Exhibit displayed on screen.)

MR. BEZERRA: These next two pages contain modeling results from six specific years in the CWF H3+ modeling; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: Can we flip down to Page 15 and specifically the results for the year 2001.

(Exhibit displayed on screen.)

MR. BEZERRA: Do you see that?

WITNESS PARKER: I do see that.

MR. BEZERRA: Okay. In those results in June of 2001, there's an additional release of 129,000 acre-feet from Folsom in the California WaterFix scenario relative to the No-Action Alternative; correct?

WITNESS PARKER: Actually, it's probably 133, because it goes from being plus two to minus 129.

MR. BEZERRA: Okay. I appreciate the clarification. Thank you.

And then -- So, at the end of September in that year, Folsom is 94,000 acre-feet lower with California WaterFix than with the No-Action Alternative; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: And that is -- Moving over the graph on the left side for 2001, that's a reduction from -- in September of that year, from roughly 400,000 acre-feet to 300,000 acre-feet; correct?

WITNESS PARKER: So what line are you reading?

MR. BEZERRA: Folsom storage --

WITNESS PARKER: Yes.

MR. BEZERRA: -- for 2001, September of 2001.

It's a reduction from 400,000 to 300,000 acre-feet; correct?

WITNESS PARKER: So it looks like the September storage is slightly below 300,000. I don't see where you're getting the 400,000 from.

MR. BEZERRA: The blue line for 2001 --

WITNESS PARKER: Oh, I see. Okay.

So you're talking about the difference

between . . .

MR. BEZERRA: Yes. The difference between the No-Action Alternative and the CWF H3+.

WITNESS PARKER: Yes. The difference is 94,000 acre-feet.

MR. BEZERRA: And it's a drawdown from approximately 400,000 acre-feet to 300,000 acre-feet; correct?

WITNESS PARKER: I wouldn't use the word "drawdown."

MR. BEZERRA: There's a difference in the storage of between . . . 400,000 and 300,000 acre-feet; correct?

WITNESS PARKER: That is true.

MR. BEZERRA: 2001 was a dry year; is that correct?

WITNESS PARKER: I don't know if it was dry or critically dry.

Does anybody else know?

MR. BEZERRA: Okay.

WITNESS PARKER: I'm sorry. Off the top of my head, I don't know.

MR. BEZERRA: No, that's fine.

WITNESS PARKER: Does it say?

MR. BEZERRA: In a repeat of these hydrologic

conditions, there would be no way to know how wet the following winter would be; correct?

WITNESS PARKER: It would be hard in any September to know how -- how wet the following year's going to be.

MR. BEZERRA: Okay. Thank you.

I'd like to pull up Exhibit BKS-304, and specifically the third page that displays model results for 2001.

(Exhibit displayed on screen.)

MR. BEZERRA: Ms. Parker, the graph on the left of that page is identical to your graph for Folsom storage for 2001 in your Figure 4; correct?

WITNESS PARKER: Yes.

MR. BEZERRA: And in the table, the unhighlighted numbers for June of 1932 and July of 1932 are the same as in your Figure 4; correct?

WITNESS PARKER: 1932?

MR. BEZERRA: I'm sorry. I have the wrong year.

For June of 2001 in this figure -- sorry -- the numbers -- the unhighlighted numbers are exactly the same as the numbers for June of 2001 in your Figure 4; correct?

WITNESS PARKER: I'm sorry. Would you please

repeat that one more time.

MR. BEZERRA: Sure.

MS. MORRIS: Can I --

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: I have an objection:

Where is the rest of this document coming from? Some pieces look like it's coming from Miss Parker's, but then there's a highlighted "Jones exports."

CO-HEARING OFFICER DODUC: He hasn't gotten to it yet.

MR. BEZERRA: Correct.

So --

CO-HEARING OFFICER DODUC: Let's let him -- Hold on, Miss Morris. Hold on.

I'm assuming you're just laying the foundation for now.

MR. BEZERRA: Yes.

CO-HEARING OFFICER DODUC: You will explain the rest of this before you ask her specific questions about it.

MR. BEZERRA: Yes.

CO-HEARING OFFICER DODUC: Okay.

MR. BEZERRA: June of 2001, the unhighlighted results are the same as the unhighlighted -- or is the

same for those parameters in your Figure 4 for June of 2001; correct?

WITNESS PARKER: Looks pretty close.

MR. BEZERRA: Okay. I'd now like to ask staff to pull up the DSS comparison file from the NAA results in Exhibit DWR-500, and H3+ results from Exhibit DWR-1077.

CO-HEARING OFFICER DODUC: And why are we doing this, Mr. Bezerra?

MR. BEZERRA: Because we're going to extract the Jones exports numbers from them.

Petitioners have frequently made the point to us that they haven't disclosed a complete set of their modeling results.

We are about to dive into that complete set by using the DSS software.

MR. MIZELL: We're going to file an objection that Jones exports are beyond the scope of Miss Parker's rebuttal testimony.

MS. MORRIS: I would join the objection.

It has to do with north of Delta. And this temperature in Folsom has nothing to do with exports whatsoever. So it's outside the scope.

CO-HEARING OFFICER DODUC: So explain to me, Mr. Bezerra.

MR. BEZERRA: In the middle of Page 7 of Miss Parker's testimony, she states (reading):

"Second, as discussed in the previous section, the lower storage conditions seen in Folsom Reservoir in CWF H3+ relative to NAA are not the direct result of specific resolves -- specific withdrawals that are exported by the WaterFix."

Jones exports are exports to which water may be delivered by the WaterFix, and we need to examine the modeling results to see whether they are or not.

MR. MIZELL: Miss Parker's testimony goes to the allocation logic, and the upstream reservoir operations balancing she discussed now at length with Mr. Bezerra.

The fact that Jones exports may or may not go up has nothing to do with the fact that Nancy Parker has discussed the upstream logic.

Mr. Bezerra's drawing a false analysis between the two, false comparison between the two, does not open Miss Parker up to this -- to cross-examination based upon Jones exports.

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: I'd just also add that, as has

been indicated in earlier parts of this proceeding, that the Project's operating in a coordinated fashion.

So looking at the exports of one doesn't necessarily indicate anything, and it would be an incomplete hypothetical.

CO-HEARING OFFICER DODUC: Miss Des Jardins.

MS. DES JARDINS: I would like to object to the extensive testimony by the DWR and SW -- State Water Contractor attorneys about the modeling. I believe it is not appropriate and it gets in the way of the purpose of cross-examination, which is to examine the testimony and the assertions in that testimony.

CO-HEARING OFFICER DODUC: Miss Des Jardins, I wish I could sustain your objection, but it is their job to voice objections and to argue those objections.

Anyone else?

MS. AUFDEMBERGE: So --

CO-HEARING OFFICER DODUC: Oh, Miss Aufdemberge.

MS. AUFDEMBERGE: I would like to join in this objection; and beyond the scope.

CO-HEARING OFFICER DODUC: You guys have given me enough of a headache that I'm going to call for a break now to consider this matter.

We will reconvene at 3:15.

(Recess taken at 3:04 p.m.)

(Proceedings resumed at 3:17 p.m.:)

CO-HEARING OFFICER DODUC: All right. We're back.

All right. Thank you all for bearing with us.

Mr. Bezerra, we decided that the onus is on you. The onus is on you to tell us where you're going with this line of questioning, this document that you just put up.

Explain why it is the natural outgrowth of Miss Parker's testimony.

Explain why this is not something you could have explored earlier. Why now? Why in rebuttal?

And why is it, again, a natural outgrowth of Miss Parker's rebuttal testimony?

MR. BEZERRA: Certainly.

If I could pull up her testimony, Exhibit DOI-43, and the first page.

(Exhibit displayed on screen.)

MR. BEZERRA: The second bullet.

(Exhibit displayed on screen.)

MR. BEZERRA: Here, she expresses her opinion -- her testimony that, her (reading):

"Rebuttal to claims that the WaterFix causes reductions in Folsom

storage conditions. Such claims are misleading and mischaracterize the impacts of the California WaterFix."

She then provides four years' worth of modeling data in Exhibit 4, in which she states support that opinion. I am exploring exactly what the effect of WaterFix is within those modeling results.

I can also point out specific opinions that she summarized in the power plant that she presented this morning -- excuse me -- earlier today.

If we could go to her exhibit --

CO-HEARING OFFICER DODUC: Mr. Bezerra, hold on before we move beyond that.

You are exploring the impact of WaterFix using the data that she provided.

MR. BEZERRA: They are all modeling results from the NAA and CH -- CWF H3+ modeling results.

CO-HEARING OFFICER DODUC: Yes.

But the data that she provided is in support of her argument that -- and her argument is -- her rebuttal testimony is focused on North-of-Delta storage, and you're now exploring -- trying to explore issues pertaining to South-of-Delta operations.

MR. BEZERRA: Her -- The scope of her testimony is not limited to North-of-Delta storage.

She has that first -- that second bullet on the first page in which she states, "WaterFix" -- She is attempting to rebut claims that WaterFix, which, of course, is an export project, causes reductions in Folsom storage.

She then states on Page 7 of her testimony . . .

CO-HEARING OFFICER DODUC: Let's go to Page 7, please.

(Exhibit displayed on screen.)

MR. BEZERRA: In the middle of the second paragraph (reading):

". . . The lower storage conditions seen in Folsom . . . in CWF H3+ relative to NAA are not the direct result of specific withdrawals that are exported by the WaterFix."

Again, it's an export condition.

In her PowerPoint that she presented earlier today -- If we can go to that, exhibits DOI-44.

(Exhibit displayed on screen.)

LEFT1: The last page. Her first summary opinion is that (reading):

"Analysis does not show that WaterFix impacts storage."

If we could go to Page 10, specifically to the American River Modified Flow Management Standard.

(Exhibit displayed on screen.)

MR. BEZERRA: Her second bullet states (reading):

"WaterFix analysis does not show an impact to Folsom storage."

Again, no limitations to North-of-Delta balancing conditions.

Her entire testimony is an attempt to rebut cross-examination that indicated that, with WaterFix, Folsom storage is drawn down significantly in several years.

So, I'm attempting to explore with her what the modeling is she's relying on to make these statements.

CO-HEARING OFFICER DODUC: Response, Mr. Mizell.

Thank you, Mr. Bezerra. That was helpful.

MR. BEZERRA: Thank you.

MR. MIZELL: Yes. Every statement that Mr. Bezerra just made was reading off the page, statements about Folsom storage. At no point has he pointed to anything discussing South-of-Delta export operations.

What he has tried to do is say that because we've meant -- we've touched on one component of the system, Folsom storage, that somehow now opens up the entirety of the operational scheme to cross-examination.

That's not true.

Miss Parker has been quite clear in her oral summary this morning and in her written testimony. She is rebutting statements by some of Mr. Bezerra's client's witnesses about Folsom storage. It has nothing to do with exports.

CO-HEARING OFFICER DODUC: Mr. Mizell, the question -- But isn't it true, perhaps is the question for Miss Parker, that her testimony is also that the operational -- the operation of the CVP is integrated, that the system is operated as a whole and that one aspect affects another?

And so it sounds to me like now you're trying to make a separation between North and South Delta operations.

MR. MIZELL: I am trying to make a separation between North and South Delta operations.

As you pointed out, her testimony did go to the point that every action causes a reaction in the system.

But if you go to the testimony that she supports that point with, it is about North-of-Delta storage conditions.

She put on storage graphs for Trinity, Folsom, and Shasta, and indicated through a serious of comparison graphs exactly how each of those North-of-Delta storage reservoirs interact with one another.

At no point did she go South of Delta to describe how export conditions drive anything North of Delta.

CO-HEARING OFFICER DODUC: Mr. Bezerra, do you have anything before I ask Miss Parker my question?

MR. BEZERRA: Yes, I would.

If we could go to Page 5 of her testimony.

(Exhibit displayed on screen.)

MR. BEZERRA: Essentially the entire second paragraph beginning with "Mr. Bezerra . . ."

CO-HEARING OFFICER DODUC: Do you remember mentioning Mr. Bezerra, Miss Parker?

MR. BEZERRA: It is -- It is an argument that my previous cross-examination -- Once again, she's responding to previous cross-examination questions here.

My entire previous cross-examination of --

resulted in misinformation.

And you can go up to the top paragraph. It resulted in misinformation in the record about the impacts of CWF on Folsom storage conditions.

Her entire opinion is about the impacts of CWF, which is a storage -- which is an export project.

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: Thank you.

I think we just need to continue reading the testimony where she goes on to essentially say it's about reservoir balancing. And that's her response to Mr. Bezerra's statement.

He can't point to his own statement and say that, therefore, it's within the scope. She clearly goes on to say it's reservoir balancing, not exports.

CO-HEARING OFFICER DODUC: Miss Parker, all right, let's get back to you.

In your analysis, in interpreting the modeling data to reach the conclusions that you presented in your rebuttal testimony, did you rely on the fact that the system operates holistically as a whole in interpreting the data and in developing your conclusion?

WITNESS PARKER: So, we need to be careful about what we're calling the system. CalSim is a

really big system. And, yes, what Mr. Bezerra says, it includes exports. It's part of what the State Water Project and CVP do.

A large section of my testimony was trying to clarify that I -- I really do understand that people can look at the results of CWF H3+ and say --

CO-HEARING OFFICER DODUC: On a holistic systemwide result.

WITNESS PARKER: Well, people can look at Folsom results from CWF -- If that's all they care about, they would say, "Holy cow, we've got a big effect here on Folsom. It draws Folsom storage down."

What I was really trying to get at in my rebuttal testimony is that that's not the way we're supposed to look of these results; that the implementation of the WaterFix in CWF H3+, like, that's the Project. It's the new North Delta diversion.

And that, yes, it involves changing patterns of exports and changing quantities of exports, and affects on Delta outflow. We're taking surplus Delta outflow in some cases and exporting it now.

But the changing patterns of operation of the North Delta diversion can change the storage conditions North of Delta.

So, for lack of a more technical term, water

sloshes around North of Delta.

And my point was that we didn't design any -- And I say "we" loosely. It wasn't me personally.

But we did not design logic that specifically targeted getting that water out of Folsom instead of Shasta. That wasn't the point.

And if we look holistically at CVP North-of-Delta storage conditions, they were not harming. That's what I mean when I say that the intent of the WaterFix modeling was not to drag Folsom storage down to dead pool.

The six examples that I tiered off of Mr. Bezerra's work to try to explain, the whole point of that was to try to explain that, in virtually every single one of those conditions, yeah, we pulled some water out of Folsom in those specific six scenar -- six years.

But look at where Trinity and Shasta were. They were hundreds of thousands of acre-feet higher. And in an operational model, if we were trying to do that, that would never have happened.

But, you know, in seeking to avoid any accusation that we were tinkering with the model, or forcing it to do something just to make it look good, we did not change any North-of-Delta reservoir

balancing logic, no import logic, no balancing levels. Nothing changed.

And that's my point.

So I would like to ask if my other modeling colleagues, you know, have anything to add to that.

Did I -- Does that sound --

MR. BEZERRA: Can we stop at that point because, at this point, we're getting into surprise testimony with Ms. Parker explaining the intent of her testimony.

WITNESS PARKER: I think that's exactly shy we had --

CO-HEARING OFFICER DODUC: Hold on. Hold on.

MR. BEZERRA: Hold on a second.

It is a fundamental aspect of cross-examining an expert that you can explore the bases and assumptions of that expert's analysis.

To say that the expert gets to define the scope of analysis and anything outside the expert's defined analysis is not subject to cross is pretty fundamentally inconsistent with the basis for cross-examination of an expert.

They have a bunch of model results here that Miss Parker's opinion is, these don't show drawdown from Folsom as a result of CWF H3+.

I am attempting to explore -- And I will offer -- And I will make an offer of proof that four of the six modeling results show that, in the year -- the month when there is a substantial Folsom drawdown, there is an almost equivalent increase in Jones exports in the CWF H3+ modeling.

And if --

CO-HEARING OFFICER DODUC: You're arguing --

MR. BEZERRA: -- we had done that research, it is there.

CO-HEARING OFFICER DODUC: And you're arguing that it would be part of the holistic consideration of operation --

MR. BEZERRA: Correct.

CO-HEARING OFFICER DODUC: -- the CVP, SWP and the proposed WaterFix Project.

MR. BEZERRA: Correct.

And I believe that contradicts Miss Parker's opinion that CWF H -- CWF does not impact Folsom storage.

There is direct correlation with increased exports in the months when Folsom storage is drawn down in four of these six results that Miss Parker has deigned to include in her testimony.

CO-HEARING OFFICER DODUC: All right. I'm

ready to rule.

The objection is overruled.

Mr. Bezerra, I accept your offer of proof, so demonstrate it, please.

MR. BEZERRA: Okay. Thank you very much.

Let's cut through this quickly. So if we could please pull up the DSS results.

(Exhibit displayed on screen.)

MR. BEZERRA: And, for the record, the node in CalSim we'll be looking at is Node D418, which I have a schematic of CalSim, if you like. It is the node that explains Jones exports.

And what we need to get to is the DSS -- If you were a comparison of the NAA results versus the CWF H3+ results.

And those are the screenshots that I circulated this morning.

(Pause in proceedings.)

CO-HEARING OFFICER DODUC: And your purpose in walking us through this is?

MR. BEZERRA: What we'll do quickly is go through the four months wherein Miss -- It's actually five.

In five months where Miss Parker reflects a Folsom storage drawdown. We will go through and see

the changes in Jones exports, that they increase with the Project.

CO-HEARING OFFICER DODUC: Miss Morris.

MS. MORRIS: I just have to, again, object to the relevance here because if the question's -- I don't know why we look at these things.

If the question is, why did they change, then that should be the question, because looking at the modeling results isn't going to help.

And, frankly, I'm going to object when he asks as question as incomplete hypothetical, because he's assuming incorrectly that just because you make release from Folsom and that exports go up in Jones, he's assuming that there isn't some other purpose for that release and not a multiuse.

So, perhaps we should get to that question and let Miss Parker answer that.

CO-HEARING OFFICER DODUC: Actually, we have a more urgent crisis to address.

Candace, what -- what is the problem? Your computer just crashed?

THE REPORTER: It did. I had to reboot.

CO-HEARING OFFICER DODUC: We need to stop until we make sure that things are operational on that end.

(The proceedings went off the record at 3:20 p.m.)

(Proceedings resumed at 3:37 p.m.:)

THE REPORTER: I'm back up.

THE COURT REPORTER: I'm back up.

MR. BEZERRA: Okay. I think we're still having a little bit of issue bringing results up, so I'm going to cut to the chase on one of these.

CO-HEARING OFFICER DODUC: Hold on. Hold on.

Let's make sure we're now back in session. The court reporter's computer is up.

All right.

MR. BEZERRA: So --

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: -- could we please go to Exhibit DOI-43.

(Exhibit displayed on screen.)

MR. BEZERRA: And Page 14.

(Exhibit displayed on screen.)

MR. BEZERRA: And those top results.

Miss Parker, these - That top row of results is from water year 1923; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And in --

WITNESS PARKER: Oh. I'm sorry.

MR. BEZERRA: I'm sorry. It includes Water

Year 1924.

WITNESS PARKER: 19 24.

MR. BEZERRA: Okay. And in August of 1923, Folsom storage is 128,000 acre-feet lower in the CWF H3+ than in the No-Action; correct?

WITNESS PARKER: Can I give you more than a one-word answer?

MR. BEZERRA: I -- You know, in light of the time we have . . .

It is 128,00 acre-feet lower; correct?

WITNESS PARKER: Total system storage is higher by 204,000 acre-feet --

MR. BEZERRA: Miss Parker --

WITNESS PARKER: -- and that is the point of my testimony.

MR. BEZERRA: Miss Parker, the Folsom storage result is 128,000 acre-feet lower in August of 1923 between the No-Action Alternative and the CWF H3+; correct?

WITNESS PARKER: I can read as well as you can. That is correct.

MR. BEZERRA: Thank you.

WITNESS PARKER: The total CVP North of Delta storage --

CO-HEARING OFFICER DODUC: That's enough.

MR. BEZERRA: Thank you.
WITNESS PARKER: -- is higher than the --
MR. BEZERRA: Could we please go to the box on the right in that row where the first line states (reading):
"The modified storage condition in Folsom begins in August of 1923, when a release is made to support SOD deliver at a low point in San Luis storage."
Do you see that?
WITNESS PARKER: I do see that.
MR. BEZERRA: And what do you mean by "SOD"?
WITNESS PARKER: South of Delta.
MR. BEZERRA: So, this statement means that, in 1923, there was a release from Folsom to support South-of-Delta deliveries; correct?
WITNESS PARKER: There was a release from North-of-Delta storage to support deliveries South of Delta.
MR. BEZERRA: Okay.
WITNESS PARKER: My whole point --
MR. BEZERRA: Wait. Stop.
We have taken a lot of time and I'd like to try to cut through this.
MR. MIZELL: I'm going to object to cutting

off the witness.

CO-HEARING OFFICER DODUC: Hold on. Hold on.

We've gone through this before and, at this point, Mr. Bezerra, if you don't let her continue, I believe the Chair will jump in and ask her to continue.

MR. BEZERRA: Okay. Thank you very much.

CO-HEARING OFFICER DODUC: So, Miss Parker, proceed.

WITNESS PARKER: I think I could maybe clarify my point better if I said:

If that release had been taken from Shasta instead of from Folsom, would you be asking me a question?

(Pause in proceedings.)

MR. BEZERRA: I don't understand that.

WITNESS PARKER: There wouldn't be a problem.

CO-HEARING OFFICER DODUC: Okay. Enough.

WITNESS PARKER: Because if it was taken from Shasta --

CO-HEARING OFFICER DODUC: Enough. Enough.

WITNESS PARKER: -- instead of from Folsom, there wouldn't be a question here.

And that's my point, that the specific decision to take a release from Shasta versus to take a release from Folsom is not something that was refined

in the modeling between the No-Action and the -- and the WaterFix scenario.

And that's what's causing the problems here.

CO-HEARING OFFICER DODUC: The model cannot make that decision.

WITNESS PARKER: Not -- Not well, apparently.

And if we look at the total CVP North-of-Delta condition, that's what we're hanging our hats on here.

CO-HEARING OFFICER DODUC: But it's an increase in North-of-Delta storage.

WITNESS PARKER: Yes. It's an increase condition over the No-Action Alternative condition. That's our point.

MR. BEZERRA: To the best of your knowledge, Petitioners have proposed no terms and conditions to control their discretion in releasing water to be exported through the California WaterFix.

MR. MIZELL: I'm going to object: Asked and answered many times over the course of the two and a half years.

CO-HEARING OFFICER DODUC: And, Mr. Mizell, I believe that is actually the crux of the problem, which is why we have been spending so much time in this hearing.

So, Mr. Bezerra, the question has been asked.

Miss Parker, answer it.

WITNESS PARKER: I would defer that question as pertains the operational flexibility and intent to Ms. White.

WITNESS WHITE: Can I scroll over to the --

MR. BEZERRA: Wait. I have not asked Ms. White a question.

I -- I have -- We have spent an enormous amount of time on objections to model results.

I am attempting to get through a large volume of cross-examination. We've been told multiple times over the two years of this hearing that we don't need to present modeling results on our --

CO-HEARING OFFICER DODUC: Okay. You're about to argue this.

MR. BEZERRA: I am, because -- And it's an important point.

Because we've gone over multiple times attempting to present model results to Petitioners' witnesses and them deny knowledge of them.

DWR still has a pending objection to moving their own modeling results into the record.

MR. MIZELL: I'd --

MR. BEZERRA: I've attempted to short-circuit this by pointing out the DSS viewer from their modeling

results, which, as you can see, is an extremely difficult task.

So I -- I'm trying to get through the modeling results that Miss Parker has testified to.

CO-HEARING OFFICER DODUC: Yes, but you just asked a question about terms and condition to which Miss Parker has deferred to Miss White.

MR. BEZERRA: Okay.

CO-HEARING OFFICER DODUC: That's where we were.

Do you wish to withdraw that question?

MR. BEZERRA: No. If Miss White knows whether the Petitioners have proposed terms and conditions, I would be interested to know.

CO-HEARING OFFICER DODUC: I would be shocked if the answer is yes.

But Miss White.

WITNESS WHITE: I'd like to shed a little bit of light on this, because the full question was about choosing between . . .

Well, it was about operational flexibility, which I interpreted as choosing between Folsom or Shasta in response to Miss Parker's previous statement.

And I wanted to make a statement on that.

If we look at the graph that's far to the

left, that . . . that the -- the results here show . . .

I have the wrong . . .

(Pause in proceedings.)

WITNESS WHITE: I'm sorry. Can you scroll in? It's hard for me to focus on one.

(Exhibit displayed on screen.)

WITNESS WHITE: There we go. Thank you.

The results show that this decision to theoretically pull back in July from Folsom -- I'm sorry -- it's from August.

To pull Folsom down when Shasta was sitting at . . . over two and a half million acre-feet, that seems like a pretty sharp drop in Folsom. It doesn't seem -- It seems like we would have either pulled from Shasta or split that. It doesn't seem like a realistic operation.

So the answer to permanent conditions is no.

But I think that situations like this -- and this is reflected in the other examples, too -- show situations where I don't think they're reflective of how Operators would have made the specific decision in that month between Folsom and Shasta.

MR. BEZERRA: One followup question, Ms. White.

If the Petition were approved, Reclamation and DWR Operators would retain discretion to decide from which reservoir to release water; correct?

WITNESS WHITE: As long as we're complying with all applicable laws, regulations, contracts, yes.

MR. BEZERRA: Thank you.

I'd like to ask one of the hearing staff at this point if we've been able to pull up the DSS viewer.

(Exhibit displayed on screen.)

MR. BEZERRA: There we go. I think we've got it.

So I want to scroll through here very quickly.

And we need to scroll the screen over to the left a little bit so we can see the numbers in that rightmost column.

(Exhibit displayed on screen.)

MR. BEZERRA: There we go.

Okay. So we dealt with 1923.

I'd like to look at 1932 and, specifically, July of 1932.

If we could scroll down.

(Exhibit displayed on screen.)

MR. BEZERRA: Miss Parker, do you see these results in July 1932 for Jones exports?

WITNESS PARKER: Yes.

MR. BEZERRA: And in the NAA, Jones exports are 600 cfs; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And in the CWF H3+, Jones exports are 3,333 cfs; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: Could we please, then, scroll down to 1981. Oh. Yes.

(Exhibit displayed on screen.)

MR. BEZERRA: And, specifically, June of 1981.

(Exhibit displayed on screen.)

MR. BEZERRA: Miss Parker, do you see these results where, in the NAA in June of 1981, Jones exports are 1,608 cfs?

WITNESS PARKER: Yes.

MR. BEZERRA: And do you see in the CWF H3+ results, Jones exports are 4,600 cfs?

WITNESS PARKER: Yes.

MR. BEZERRA: Thank you.

Could we please scroll down to 2001.

(Exhibit displayed on screen.)

MR. BEZERRA: And go down to June of 2001.

(Exhibit displayed on screen.)

MR. BEZERRA: Do you see in these results that

in the NAA, Jones exports are 1,650 cfs?

WITNESS PARKER: Yes.

MR. BEZERRA: And do you see in these results that, in that month with CWF H3+, Jones exports are 4,062 cfs?

WITNESS PARKER: Yes.

MR. BEZERRA: Okay. Could we please go back to Exhibit BKS-304.

(Exhibit displayed on screen.)

MR. BEZERRA: And scroll up to 1932.

(Exhibit displayed on screen.)

MR. BEZERRA: And, Miss Parker, do you see in these results the Jones export numbers there?

WITNESS PARKER: I do.

MR. BEZERRA: And those are in thousands of acre-feet rather than cfs.

I'd like to confirm that those thousands of acre-feet conform to the cfs increases we just saw in that month.

Are you -- Is it possible for you to do that math? I know it's a little tough to convert.

CO-HEARING OFFICER DODUC: We will --

MR. BEZERRA: You know what? That's fine. We can back up.

CO-HEARING OFFICER DODUC: Exactly.

MR. BEZERRA: Okay. So, Miss Parker, in this month, we just walked through that Jones exports increased substantially in June of 1932; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And in that month, Folsom storage declined; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: Okay. And if we could, please, go to, in this, 1981.

(Exhibit displayed on screen.)

MR. BEZERRA: Do you see in June of -- In June of 1981, we just walked through that Jones exports increased substantially in that month with CWF H3+; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And Folsom storage declined 190,000 acre-feet, roughly, in that month; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: Okay. If we could go to 19 -- 2001, please.

(Exhibit displayed on screen.)

MR. BEZERRA: And we just walked through that Jones exports increased substantially in June of 2001 with CWF H3+; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And there's an approximately 133,000 acre-foot reduction in Folsom storage in that month; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: Okay. Thank you very much.

Moving on.

WITNESS PARKER: I'd like to -- Can I add something to that?

Are we just reading data into the record or can I explain what those --

CO-HEARING OFFICER DODUC: You may do that upon redirect should your counsel chooses to have redirect, or requests redirect.

MR. BEZERRA: Thank you.

I'd like to move on to your sensitivity analyses for the Modified Flow Management Standard, which I'm -- I'm going to call it MFMS, for short. Just -- Do you understand that?

WITNESS PARKER: I do.

MR. BEZERRA: Thank you.

Could we please go to Page 7 of D -- of DOI-43, please.

(Exhibit displayed on screen.)

MR. BEZERRA: And, specifically, the bullet items there in the middle of the page.

Do you see those?
WITNESS PARKER: I do.
MR. BEZERRA: Okay. And in each of those, you're identifying a modeling sensitivity analysis you conducted concerning the effects of the MFMS; correct?
WITNESS PARKER: Correct.
MR. BEZERRA: Okay. And in each of those analyses, you used the Water Forum's CalSim modeling that was submitted in Part 2 case in chief as the baseline; correct?
WITNESS PARKER: In some cases. So I'd say, a baseline, that would be their 2006 FMS. That's the baseline.
MR. BEZERRA: Okay. And then I'm going to walk through the different analyses you conducted.
So -- So, first, you im -- you imported operations of California WaterFix into the modeling and then applied the MFMS; is that correct?
WITNESS PARKER: What I did was implement the WaterFix logic in both of the scenarios.
MR. BEZERRA: Okay. And then you did an additional analysis where you imported Petitioners' Q5 climate change hydrology into the analysis; correct?
WITNESS PARKER: And sea-level rise.
MR. BEZERRA: And sea-level -- 15 centimeters

of sea-level rise.

WITNESS PARKER: I'm sorry to be picky, but I wouldn't use the word "import." I would use the word "implement."

MR. BEZERRA: Okay. That's fine.

And then you did an additional installs where you included both CWF and sea-level rise and climate change; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: Okay. And you have not provided any documentation for the other assumptions embedded in the whole -- in all that modeling; correct?

WITNESS PARKER: None of the assumptions changed.

MR. BEZERRA: None of them changed from the Water Forum assumptions?

WITNESS PARKER: I used Water Forum modeling.

MR. BEZERRA: Okay. That's -- And I appreciate the clarification.

Okay. I want to talk to you about how you implemented climate change in the modeling.

So could we please pull up Exhibit BKS-302.

(Exhibit displayed on screen.)

MR. BEZERRA: And this is a -- There's a lot of data on this.

Could we please zoom in on the top part of the CalSim II joint schematic.

(Exhibit displayed on screen.)

MR. BEZERRA: Miss Parker, are you familiar with this schematic?

WITNESS PARKER: I am.

MR. BEZERRA: Could you please scroll down into roughly the middle of the page on the right side and locate the American River Basin.

(Exhibit displayed on screen.)

MR. BEZERRA: Okay. Could we blow that up a little bit?

(Exhibit displayed on screen.)

MR. BEZERRA: Thank you.

Okay. So, Miss Parker, do you see the -- Do you see the Triangle 8 there in about the middle?

WITNESS PARKER: Yes.

MR. BEZERRA: And that -- that triangle represents Folsom Reservoir in CalSim; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And, then, above that, there's a black circle with the Number 300; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: That -- The arrow from that circle to the Triangle 8 reflects inflows to Folsom

from the Middle and North Forks of the American River; correct?

WITNESS PARKER: Yes, after diversions by PCWA.

MR. BEZERRA: Okay. So, when you implemented climate change in your sensitivity analyses, did you -- you replaced The Water Forum's inflow hydrology at 300 there with Q5 hydrology for that location.

Is that accurate?

WITNESS PARKER: Yes.

MR. BEZERRA: Okay. And that -- That's how you implemented climate change for flows from the Middle and the North Forks of the American River; correct?

WITNESS PARKER: Well, I didn't just do it at I300.

MR. BEZERRA: No, I understand.

WITNESS PARKER: It's a complete dataset for the entire model.

MR. BEZERRA: No. I'm going to work through exactly what happened.

WITNESS PARKER: Okay.

MR. BEZERRA: So if we could then go down a little bit in the graph. We're going to the South Fork American system.

(Exhibit displayed on screen.)
MR. BEZERRA: That 313 in the circle, the arrow into Number 8, is that where you implemented climate change hydrology from the South Fork of the American system?
WITNESS PARKER: No.
MR. BEZERRA: No.
Okay. Where did you implement climate change hydrology on the South Fork of the American system?
WITNESS PARKER: At I8.
MR. BEZERRA: At I8.
I see. So that's -- just flows directly into Folsom Reservoir.
WITNESS PARKER: Yes.
MR. BEZERRA: Okay. Thank you.
And then a little bit to the left there, there's 9 for Lake Natoma.
Did you change the inflows into Lake Natoma in implementing climate change hydrology?
WITNESS PARKER: The climate change input datasets for CalSim do not include changes to I9.
MR. BEZERRA: Okay. So --
WITNESS PARKER: They include changes to basically the marine inflows.
MR. BEZERRA: So for purposes of implementing

climate change hydrology in your sensitivity analyses for the MFMS, for the American system, those were changes to flows into I8 for the South Fork; correct?

WITNESS PARKER: Yes.

MR. BEZERRA: And then from 300 to 8 for the Middle and North Forks of the American system; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: Okay. Now, do you see on Exhibit BKS-302 to the right of Folsom Lake, there's a wide variety of facilities there; correct?

WITNESS PARKER: To the right of -- Sorry. Could you say that one more time?

MR. BEZERRA: Sure.

So the Triangle 8 is Folsom Lake --

WITNESS PARKER: Yes.

MR. BEZERRA: -- in the model.

WITNESS PARKER: Yes.

MR. BEZERRA: To the right of that, there's lots of circles and arrows; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And those depict facilities that are upstream of Folsom Reservoir; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: Okay. And, to the best of your knowledge, does this depict accurately the facilities

that are upstream of Folsom in reality?

WITNESS PARKER: I don't know. I'm not an expert on the Upper American River.

MR. BEZERRA: Okay.

WITNESS PARKER: That -- That is not part of the CalSim model that we've been using.

MR. BEZERRA: Okay. Those -- Those facilities upstream of Folsom are just not part of CalSim. Is that what I understand?

WITNESS PARKER: That's right.

MR. BEZERRA: Okay. Now, are -- are you aware that Placer County Water Agency owns and operates the Middle Fork Project upstream of Folsom Reservoir?

WITNESS PARKER: Yes.

MR. BEZERRA: And releases from that Project can affect inflows into Folsom; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And on the South Fork of the system, are you aware that Sacramento Municipal Utility District operates facilities upstream of Folsom?

WITNESS PARKER: Generally?

MR. BEZERRA: Generally.

Okay. To the best of your knowledge, are PCWA's facilities regulated by a license issued by the Federal Energy Regulatory Commission?

WITNESS PARKER: I'm not aware of those details.

MR. BEZERRA: Okay. Do you know whether SMUD, Sacramento Municipal Utility District, has a license from the Federal Energy Regulatory Commission to operate its facilities.

WITNESS PARKER: I would hope they do.

I think you'll find is: Are inflows to Folsom affected by upstream operations? And yes, they are.

Is that where you're going with this.

MR. BEZERRA: Well, I want to make -- I want to understand some points about what you did.

So, are you -- To the best of your knowledge, does SMUD operate its facilities under a water quality certification issued by the State Water Resources Control Board?

WITNESS PARKER: I -- I don't know.

MR. BEZERRA: Okay. Do you know whether Placer County Water Agency has any Water Supply Contractors who take delivery from Folsom Reservoir?

(Pause in proceedings.)

WITNESS PARKER: There are deliveries from Folsom Reservoir to a variety of -- of Water Contractors, both CVP and non-CVP.

MR. BEZERRA: Okay. When -- When you

implemented the climate change hydrology in your sensitivity studies from the Middle and North Forks of the American River, did you determine whether that hydrology would be consistent with Placer County Water Agency's FERC license?

WITNESS PARKER: The scenarios for climate change inputs limit inflows to the -- the range of CalSim limited inflow areas are not the result of specific operational models of upstream facilities, if that's what you're asking.

MR. BEZERRA: Okay. So, just to make sure:

You did not determine whether your climate change inflow hydrology from the Middle and North Forks of the American are consistent with Placer County Water Agency's FERC license; correct?

WITNESS PARKER: It's a sensitivity study. There wasn't the point.

MR. BEZERRA: Just --

CO-HEARING OFFICER DODUC: The answer is?

MR. BEZERRA: Is the answer "no," you did not --

WITNESS PARKER: The answer is no, I didn't do that.

MR. BEZERRA: Okay. Thank you.

When you imported the climate change hydrology

for inflows to Folsom from the South Fork of the American system, did you determine whether those inflows were consistent with SMUD's FERC license?

WITNESS PARKER: No.

MR. BEZERRA: Did you determine whether those inflows from the South Fork are consistent with the Water Quality Certification that applies to SMUD issued by the State Water Resources Control Board?

MR. BERLINER: Objection: Relevance.

WITNESS PARKER: So, I --

CO-HEARING OFFICER DODUC: Overruled.

I think he's trying to -- He's on a roll here with all of his things that Miss Parker did not consider.

WITNESS PARKER: So, I can cut to the chase maybe if -- Do you want to just keep asking me questions that I say no to?

MR. BEZERRA: Well, I do want to make sure I understand that one.

So you did not determine whether the inflow from the South Fork you imported with climate change complied with the Water Quality Certification issued to SMUD by this Board.

WITNESS PARKER: So, I think what you might be getting at is that the inflows that were used by the

American River Water Agency for The Water Forum in their analysis reflecting current hydrology -- or historical hydrology, I should say, those inflows were specifically tailored by The Water Forum to reflect the operations that you just brought along with other stuff.

I did modify the -- Or I adjusted -- And what that essentially does is flip the ratio of I30, of I300 and I8.

And I did go through an exercise where I modified -- I used the same ratio and applied it to I300 and I8.

But I ultimately didn't use that data because it was not consistent with the Q5 hydrology input dataset that everybody has used. Ultimately, that didn't make any difference in the outcome of my scenarios, so I thought that it would be distracting from the analysis that I did.

So hopefully that provides some clarification.

MR. BEZERRA: I -- I have to say I didn't quite understand the answer.

I just want to --

WITNESS PARKER: I can try to explain it again.

CO-HEARING OFFICER DODUC: No, let's not.

MR. BEZERRA: No, thank you.

You did no determination whether the climate change influenced inflows to Folsom on which you relied in your sensitivity analyses complied with any of the regulatory requirements for the upstream projects in the American Basin; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And could any variations between the climate change hydrology that you implemented and those regulatory requirements affect your sensitivity analyses of the MFMS.

WITNESS PARKER: I don't think so.

MR. BEZERRA: You don't think so.

You don't think that applying -- that complying with the regulatory requirements would affect that.

MR. MIZELL: Objection: Asked and answered.

CO-HEARING OFFICER DODUC: Sustained.

MR. BEZERRA: Okay. Thank you.

Okay. I'd like to go to the results of your sensitivity analyses.

So if we could please go to Figure 8 on Page 19 of DOI-43.

(Exhibit displayed on screen.)

MR. BEZERRA: These four graphs depict

comparative reservoir storage levels from your various sensitivity analyses of the MFMS; correct?

WITNESS PARKER: They depict results of the sensitivity analysis conducted with historical hydrology.

MR. BEZERRA: Okay.

WITNESS PARKER: Specifically ARWA's historical hydrology.

MR. BEZERRA: And, for clarity, the sale from the Folsom graph here is from zero to 1 million acre-feet; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: And the scale for the Shasta graph is zero to 5 million acre-feet; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: And the scale for the Trinity graph is zero to 2.5 million acre-feet; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: These scales reflect the fact that Folsom storage total capacity is about a million acre-feet; is that correct?

WITNESS PARKER: 967.

MR. BEZERRA: Thank you.

And these scales also reflect that combined Shasta and Trinity storage is about 7.5 million

acre-feet; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And that's about seven and a half times the size of Folsom capacity; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And these graphs depict all months of CalSim's 82-year period of record on what exceeds curve; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: So any combination of month and year can be depicted on the same point of different curves; correct?

(Pause in proceedings.)

MR. BEZERRA: Let me be a little clearer on that.

So, hypothetically, you could have, say, March of 1933 and December of 1992 at the same point on two different graphs; correct?

(Pause in proceedings.)

WITNESS PARKER: Each point on one of those curves represents the data for a certain date.

MR. BEZERRA: Right.

And, so, at the 75 percent exceedance level on any given curve, you could have a different month and year combination at the same point on different curves;

right?

WITNESS PARKER: Sure.

MR. BEZERRA: Okay. So -- So, these graphs don't depict the results from any given month; correct?

WITNESS PARKER: They do not depict monthly differences in the results. It's on a time series basis. This is an exceedance curve.

MR. BEZERRA: And they don't depict the results for any given water year-type; correct?

WITNESS PARKER: They depict the results from all months, all 984 months, in the CalSim period of record.

MR. BEZERRA: Okay. Thank you.

And if we could scroll down to Figure 9 on Page 20.

(Exhibit displayed on screen.)

MR. BEZERRA: These curves are the same kind of curve; correct? They don't depict water year-types or months; correct?

WITNESS PARKER: They depict all months of CalSim results.

MR. BEZERRA: Okay. And could we scroll down to Figure 10 on Page 21.

(Exhibit displayed on screen.)

MR. BEZERRA: And, again, this is the same

sort of modeling result; correct? It's all months of the period of record.

WITNESS PARKER: Correct.

MR. BEZERRA: All right. I'd like to go to Page 16 and Figure 5a and b, please.

(Exhibit displayed on screen.)

MR. BEZERRA: Okay. Let me pull those up myself.

So these two figures depict results between October of 1988 and sometime after July of 1995; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And what's -- What's the end date on these in 1995?

WITNESS PARKER: I'm thinking September of 1995.

MR. BEZERRA: Okay.

WITNESS PARKER: Water Years '89 to '95.

MR. BEZERRA: And in your opinion, these results provide the longest and clearest example on effect of storage from implementing the MFMS; correct?

WITNESS PARKER: Yes.

MR. BEZERRA: And they are from your sensitivity analysis where you just used The Water Forum's modeling before you incorporated anything else;

correct?

WITNESS PARKER: These particular results are directly from The Water Forum's own model, not my sensitivity analyses.

MR. BEZERRA: Understood. Thank you.

So if we could go down to 5b.

(Exhibit displayed on screen.)

MR. BEZERRA: Okay. There we go.

So in October of 1989, the model affected MFMS is to increase Folsom storage by about 125,000 acre-feet and decrease combined Shasta and Shasta storage by about 150,000 feet; correct?

WITNESS PARKER: For what -- I'm sorry. What month?

MR. BEZERRA: October of 1989.

WITNESS PARKER: I wouldn't say that that particular month resulted in that exact operation. That's a cumulative operation from several months before, starting in, it looks like, April.

MR. BEZERRA: Okay. I understand.

But in that particular month, this graph indicates that, based on your analysis, Folsom's about 125,000 acre-feet higher with the MFMS and Shasta and Trinity combined are about 150,000 acre-feet lower; correct?

WITNESS PARKER: Yes, that's true.

MR. BEZERRA: Okay. Could we please go up to Figure 5a.

(Exhibit displayed on screen.)

MR. BEZERRA: Okay. Now, for that same month, October of 1989, in that figure in October -- in October 1989, Shasta storage is about 2.5 million acre-feet with the MFMS; correct?

WITNESS PARKER: Right. Correct.

MR. BEZERRA: And in that month, Shasta -- excuse me -- Trinity storage is about a million acre-feet with the MFMS; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: So, in that month, combined Shasta-Trinity storage would be about 3.5 million acre-feet with MFMS; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And the reduction in that combined storage is roughly 150,000 acre-feet with the MFMS?

WITNESS PARKER: Correct.

MR. BEZERRA: So that's about 4 percent of combined Shasta-Trinity storage. Is that about right?

WITNESS PARKER: Correct.

MR. BEZERRA: That effect? Okay.

Okay. And 1989 is a dry year in CalSim's hydrology; correct?

WITNESS PARKER: 19 what?

MR. BEZERRA: '89.

WITNESS PARKER: '89. I'm sorry. I do not know the specific water year type.

MR. BEZERRA: Okay. Do you know 1990 is a critical year.

Do you know whether that's the case or not?

WITNESS PARKER: I don't think '90 is critical. '92 is, '94 is.

MR. BEZERRA: 1989 and 1990 were both within the 1987 to 1992 drought; correct?

WITNESS PARKER: It's a dry period.

MR. BEZERRA: It's a dry period.

Okay. So, according to your results here, in a scenario where combined Shasta-Trinity storage is about 3.5 million acre-feet, the MFMS affects that combined storage by about 4 percent; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And, to your mind, this is an unacceptable redirected impact on Shasta and Trinity storage from the MFMS; correct?

WITNESS PARKER: I didn't say that, in that month, it was an unacceptable redirected impact. I

said it was a redirected impact, and that over the course of dry years, that those redirected impacts were seen more predominantly in dry years than in other years.

MR. BEZERRA: And in this year, in that month, it's about 4 percent reduction when Shasta-Trinity storage is about 3.5 million acre-feet; correct?

WITNESS PARKER: I think I've said that about four times now.

MR. BEZERRA: Okay. Thank you.

Now, looking at 5b -- Scrolling down to 5b for July of 1992 through October -- excuse me -- November of 1992.

I'm sorry. It's getting late. Can you stay on 5a?

(Exhibit displayed on screen.)

MR. BEZERRA: Thank you.

So July of 1992 to about November of 1992, do you see that?

WITNESS PARKER: July of '92 to November of '92. I do see that.

MR. BEZERRA: And for 1992, just for point of information, if you want more detailed model results to work from, they are available in ARWA-601 so we could go to those if you like, but I was planning to work

with these.

So, from July of 1992 to roughly December of 1992, Folsom in the base case seems to be low and flat; is that right?

WITNESS PARKER: The results in 1992 -- 1992 was a critically dry year. And on the American River, '92 was particularly problematic. Its hydrology was one of the lowest on record in that -- in that basin.

Yes, there's a low -- There's a longer low flat period for Folsom storage. There are also extremely low storage conditions in both Trinity and Shasta at the same time.

MR. BEZERRA: Okay. But just focusing on Folsom.

Does that low and flat period in the fall of 1992, that indicates that in the baseline modeling here, Folsom was at dead pool for several consecutive months; correct?

WITNESS PARKER: That indicates that the model was trying to meet regulatory criteria and senior water rights in an extremely dry year.

MR. BEZERRA: Okay. But this model result indicates that, in your baseline --

WITNESS PARKER: It's not my baseline. It's ARWA's baseline.

MR. BEZERRA: Well, it's the baseline of your sensitivity analysis; correct?

MR. MIZELL: Asked and answered.

MR. BEZERRA: So, in -- in this scenario, according to this analysis, the MFMS keeps Folsom a little higher in that period in 1992; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: And it indicates that Shasta and Trinity are a little lower, about 150,000 acre-feet combined, in that period; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And, in your opinion, does that increase in Folsom and decrease in Shasta and Trinity reflect an unacceptable redirected impact of the MFMS?

MS. AUFDEMBERGE: Objection: Miss Parker is testifying as a Modeler on mass balance equation. She's not making judgment calls or operational decisions through this testimony.

CO-HEARING OFFICER DODUC: And I think that was to her answer the last time you asked such a question.

Has that answer changed?

WITNESS PARKER: It has not.

MR. BEZERRA: Okay. In your opinion as a Modeler, models are supposed to reflect realistic

operations of the Project; correct?

WITNESS PARKER: Well, it depends. We've taken great pains in this proceeding to articulate that, in years like 1992, the model does not, in fact, reflect the exact intended operations of the Projects.

MR. BEZERRA: Okay. So, in 1992, is it your opinion that, in fact, Reclamation would not operate Folsom Reservoir to be at its dead pool for six consecutive months?

WITNESS PARKER: That's not a modeling question. That's an operations question.

Could you ask that question to Ms. White?

MR. BEZERRA: Well, I want to understand your sensitivity analysis because you've drawn a particular conclusion here that MFMS redirects impacts.

So, in your opinion, does this baseline for your sensitivity analysis in 1992 reflect a realistic operation of the Central Valley Project at Folsom.

MR. MIZELL: Objection.

CO-HEARING OFFICER DODUC: As a Modeler.

MR. BEZERRA: As a Modeler.

MR. MIZELL: Objection: Asked and answered.

CO-HEARING OFFICER DODUC: Overruled.

WITNESS PARKER: The models represent the Project's ability to meet regulatory criteria and

senior water rights in critically dry water years.

MR. BEZERRA: So the differences in the very -- The differences in Shasta and Trinity storage for that period in 1992 in your Figure 5a, do those potentially overstate the redirected effect of the MFMS on Shasta and Trinity, given that these are not conditions where you believe the model is operating realistically?

WITNESS PARKER: No, I don't think it does understate or overstate it.

It -- It -- The point -- So this is where the -- So, I put that time series plot together expecting that we would get concern that I was representing time series results.

But my point here was that the modification of the Folsom operation was the whole point of the ModFMS. Like, that's what the operation was intended to do, and especially intended to do that in dry years and in critically dry years, to protect Folsom from low storage conditions. And it does that very effectively.

But what I'm trying to show is that that can only be done at the expense of redirected impacts to other CVP facilities, particularly in dry years.

If it's a wet year, yes, Folsom storage may go up a little bit but maybe there's other water in the

system.

But especially when the model is operating only to meet regulatory criteria, if the water can't come from Folsom, it has to come from Shasta or Trinity. And that is exactly what I was trying to depict by this sequence of time series results.

MR. BEZERRA: Okay. Thank you.

Could we please move on to Page 17 and Figure 6.

(Exhibit displayed on screen.)

MR. BEZERRA: And this Figure 6 reflects, again, results from -- It's the original Water Forum modeling; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: Okay. This figure depicts just changes in storage in the various reservoirs; correct?

WITNESS PARKER: The black line is changes in Folsom; the red line is changes in combined Shasta and Trinity.

MR. BEZERRA: And you have not presented any modeling results showing the total amount of water in Folsom, Shasta or Trinity that supports this figure; correct?

WITNESS PARKER: I think that data can be seen in exceedance format in the other figures.

MR. BEZERRA: No, I understand the exceedance point.

But this is a particular -- This is -- This is the historical progression of hydrology in this figure; correct?

WITNESS PARKER: These are model results from --

MR. BEZERRA: It's in chronological order as opposed to an exceedance curve; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: And --

WITNESS PARKER: So the idea of this was to be, we presented '89 --

CO-HEARING OFFICER DODUC: Hold on.

WITNESS PARKER: -- to '95 --

CO-HEARING OFFICER DODUC: Hold on.

What is your question, Mr. Bezerra?

MR. BEZERRA: Nowhere in your testimony have you depicted in similar historical manner the total volume of water in storage . . . in a similar manner; correct?

WITNESS PARKER: I'm sorry. I don't understand your question.

MR. BEZERRA: This graph is a graph of changes in storage?

WITNESS PARKER: Yes.

MR. BEZERRA: So you have not presented any graph that depicts total Folsom storage that is coordinated with this graph; correct?

WITNESS PARKER: I have not. That data is available in The Water Forum's modeling results files.

MR. BEZERRA: Thank you.

And, similarly, for combined Shasta and Trinity storage, you have not presented any information about the total volume of water in storage over this period where you're depicting change; correct?

WITNESS PARKER: In my testimony, those numbers are not available, that's correct.

MR. BEZERRA: Okay. Move --

WITNESS PARKER: But they're available in The Water Forum files.

MR. BEZERRA: Moving down to Page 7 -- Figure 7 on this page.

(Exhibit displayed on screen.)

MR. BEZERRA: Now, this graph depicts the changes in storage with the climate change and sea-level rise that you've implemented; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: Okay. And, again, in that modeling, you implemented CW -- excuse me -- Q5 inflows

from the Middle Fork, the North Fork and the South Fork of the American, as we previously discussed; correct?

WITNESS PARKER: And Shasta and Trinity and Oroville and all of the reservoirs in the San Joaquin, and multiple other locations throughout the Sacramento Basin.

MR. BEZERRA: Thank you very much.

So, this -- The results in this figure do not reflect an incorporation of California WaterFix into the analysis; correct?

WITNESS PARKER: No.

MR. BEZERRA: And, again, this just depicts changes in storage; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: Okay. In conducting your sensitivity analysis resulting in these results, did you adjust any of the model's logic for exporting water south of the Delta?

WITNESS PARKER: No.

MR. BEZERRA: So, you allowed the model to continue to export water south of the Delta in this with-climate-change and with-sea-level-rise scenario?

WITNESS PARKER: Actually, yeah, that's a good point. I did use the WSDI curves from the No-Action Alternative that are commensurate with a Q5 hydrology.

MR. BEZERRA: Okay. And, again, the WSIDI curve determines the allocations for a given year?

WITNESS PARKER: The final allocation that helps to drive South-of-Delta allocation as well.

MR. BEZERRA: Okay. Thank you.

And --

WITNESS PARKER: But I believe that would have been the only thing that changed.

MR. BEZERRA: Okay. Let me scroll backwards.

So you did change the WSIDI curve from the Water Forum's model in preparing these results?

WITNESS PHILLIPS: Well, you can't use an historical hydrology water supply allocation curve with Q5 hydrology and zero rise.

MR. BEZERRA: So you incorporated the WSIDI curve from Petitioners' modeling to reflect the climate change.

WITNESS PARKER: Yes.

MR. BEZERRA: Thank you.

And, again, you have not provided any information in your testimony about the total volume of water in storage in these reservoirs in these years where you're depicting change; correct?

WITNESS PARKER: That is correct.

MR. BEZERRA: Okay. Now, do you know how

often in these scenarios Folsom Reservoir would be at its dead pool in your baseline analysis?

WITNESS PARKER: No. I don't have an exact number of months, if that's what you're asking.

MR. BEZERRA: Okay. So you -- you don't know how often implementing the modified MFMS would keep Folsom above its dead pool in this analysis.

WITNESS PARKER: I probably misspoke. I could -- I could give you a pretty good idea here.

MR. BEZERRA: Okay. Thank you.

WITNESS PARKER: So, looking at Figure 9 which we can all go to, we have exceedance plots for Folsom, Trinity and Shasta storage.

And looking at the -- Oh, I'm sorry. So it's Page 20 of my testimony.

(Exhibit displayed on screen.)

WITNESS PARKER: And so if you could zoom in maybe a little bit on each individual storage facility.

So look at Folsom, first of all.

(Exhibit displayed on screen.)

WITNESS PARKER: So that looks like possibly . . .

And we're talking about the Q5 scenario; is that correct?

MR. BEZERRA: Yes.

WITNESS PARKER: So that looks like, in the -- And it's hard to see because of the baseline.

Yeah, I don't know, it's maybe 95 percent exceedance.

MR. BEZERRA: So in . . . In your sensitivity analysis of the MFMS with climate change and sea-level rise in the baseline, Folsom would reach its dead pool in about 5 percent of months on this exceedance curve; is that correct?

WITNESS PARKER: It's hard to say. In three, four months? I don't know exactly how many numbers of months.

MR. BEZERRA: Okay. And on this curve, the dashed orange line represents implementation of the Modified FMS with Q5 hydrology and California WaterFix; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: And on that exceedance curve, Folsom reaches dead pool, what, approximately once out of all of the months of the period of record?

WITNESS PARKER: Maybe once or twice.

MR. BEZERRA: Okay. So, the difference between the black line and the orange dashed line are the difference that the modified FMS makes relative to a scenario with WaterFix and climate change; correct?

WITNESS PARKER: I mean, academically, you're correct. But --

CO-HEARING OFFICER DODUC: All right. Let's leave it at that.

MR. BEZERRA: Okay. Thank you.

Could we please go back to Page 17 and Figure 7.

(Exhibit displayed on screen.)

MR. BEZERRA: Okay. Now, you previously have discussed -- You previously have discussed stressed water supply conditions; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: And, in general, those are conditions where, in your opinion, CalSim modeling may not accurately depict what the Projects would do; correct?

(Pause in proceedings.)

WITNESS PARKER: It's more -- It's better to say that CalSim depicts storage operations that, in the model, are meeting regulations and senior water rights.

And it's -- And Reclamation in its experience does not draw reservoirs to dead pool, so it's not making the same decisions that CalSim makes. And, therefore, dead pool results in CalSim are not to be taken as deliberative, intentional depictions of

Project operations.

MR. BEZERRA: Okay. I appreciate that. That's -- That's useful.

So, on this Figure 7, which years here would you consider to be stressed water supply operations where the modeling might not depict what the operations would be?

WITNESS PARKER: Mmm, the '90s and the '30s.

MR. BEZERRA: Okay. So that downward spike --

WITNESS PARKER: '94.

MR. BEZERRA: I'm sorry. I'm talking over you.

So that downward spike in about 1934 in combined Shasta-Trinity, that would be a stressed water supply condition where the modeling might not reflect operations?

WITNESS PARKER: So, I feel like you're trying to get at the fact that these differences are not real because the model doesn't operate -- doesn't depict modeled operations correctly under stressed water conditions.

My testimony points directly to the idea that the change in -- The change in Folsom operations was the whole point of the ModFMS exercise. And then there is, necessarily, especially in dry years, including

highly stressed conditions, where the reaction of other CVP facilities to meet regulatory criteria is definitely a real outcome of an -- an -- So it's a real outcome of this scenario.

The -- The nuance -- and I'm really sorry this is a nuance that's so hard for people to understand -- is that, in the WaterFix scenario, where we have the WaterFix -- or for any scenario, even in the No-Action, we're operating model, meeting, you know, criteria and contracts and everything. We get to really dry periods and we draw reservoirs down to dead pool to meet Delta criterias, essentially.

And that is what's not a realistic depiction of Project operations or of -- of the operational philosophy of the CVP.

But a specific operation that is implemented, especially in dry years, that draws a reservoir down even further, or operates one at the expense of others, and if that's the whole intent of that operation, then I think that is real.

MR. BEZERRA: And I'm going to move to strike that answer because Ms. Parker is now -- is now characterizing the intent of The Water Forum and the American River agencies in -- well, in the Modified Flow Management Standard.

There's a great deal of testimony we presented about what the intent was. And so -- Of course, Miss Parker can testify about the model results but her characterization of the intent is inappropriate and I would move to strike that answer.

CO-HEARING OFFICER DODUC: Any response?

MR. MIZELL: Certainly.

Miss Parker's an expert in modeling. She has all the credentials to support that, and she can express her opinion of what she witnessed in manipulation of the Code.

CO-HEARING OFFICER DODUC: Overruled. It goes to weight.

MR. BEZERRA: Thank you.

Could we please move on to -- or go back to Page 8 of Exhibit DOI-43.

(Exhibit displayed on screen.)

MR. BEZERRA: And just above the italicized heading lower on the page, there's a paragraph concerning ARWA testimony about the sweet spot.

And in there, you state that (reading):

". . . The proposal affects Shasta storage the most in dryer years, thus undermining its viability for ensuring the very protection it sought."

By this statement, do you mean that, in your opinion, implementing the FMS could impact Sacramento River fisheries?

WITNESS PARKER: So, I'm a CalSim Modeler. And what I meant was that it impacts Shasta storage, thus degrading the -- in the -- the size of coldwater pool.

And my understanding as a general Modeler is that that affects Sacramento River fisheries. That is what I meant by that testimony.

MR. BEZERRA: You have presented any modeling to reflect the effect of MFMS on Sacramento River temperatures; correct?

WITNESS PARKER: Correct.

MR. BEZERRA: You have presented no modeling to reflect the effect of the MFMS on Shasta Lake's coldwater pool; correct?

WITNESS PARKER: I probably should have said "Sacramento River flows" or "Shasta storage."

MR. BEZERRA: Okay. But you have presented no modeling as to how the MFMS affects the size of Shasta Lake's coldwater pool; correct?

WITNESS PARKER: I have not, that's correct.

MR. BEZERRA: And Reclamation has a model to model the effects of proposals on the size of Shasta's

coldwater pool; correct?

WITNESS PARKER: That's correct.

MR. BEZERRA: Okay. Are you aware that The Water Forum presented water temperature modeling to reflect the effect of the MFMS on Shasta coldwater pool?

WITNESS PARKER: They did that based on their historical hydrology studies.

One of the main points of my testimony was that for any hydrology other -- at least for the Q5 hydrology, the sea-level rise -- that that effect is far stronger than with the historical hydrology that The Water Forum used.

MR. BEZERRA: And you have presented no temperature modeling to support that opinion; correct?

WITNESS PARKER: I have not.

MR. BEZERRA: Okay. Thank you.

I just have a little bit more for Miss Parker.

CO-HEARING OFFICER DODUC: All right. Hold on a second.

Do you -- Are you done with the DSS file?

MR. BEZERRA: I am done with the DSS file.

CO-HEARING OFFICER DODUC: Thank you very much.

MR. BEZERRA: I really want to, again, thank

the staff. They worked very hard to make that possible.

CO-HEARING OFFICER DODUC: And how much additional questioning do you have of Miss Parker?

Does Miss Parker need a break?

MR. BEZERRA: I -- I think it's just a few minutes.

CO-HEARING OFFICER DODUC: Okay. We do have a hard stop at 5:00.

MR. BEZERRA: I understand, and I'm trying to blast through this and potentially --

CO-HEARING OFFICER DODUC: Mr. Berliner.

MR. BERLINER: If it is just a few minutes, if we can take a three- to five-minute break, I think that would be helpful.

CO-HEARING OFFICER DODUC: Let's do that.

We'll take a break until 4:35.

(Recess taken at 4:31 p.m.)

(Proceedings resumed at 4:35 p.m.:)

CO-HEARING OFFICER DODUC: All right. It is 4:35. We are back in session.

Mr. Bezerra.

MR. BEZERRA: Thank you.

So --

(Exhibit displayed on screen.)

MR. BEZERRA: Excellent.

So, to go back to Exhibit DOI-43, could we go to Page 6, the first bullet towards the end of the page.

(Exhibit displayed on screen.)

MR. BEZERRA: And, again, Miss Parker, this accurately states your opinion that the effect of California WaterFix should be in turn not by comparing individual reservoirs but instead looking at frequency of storage over the whole period of record on a system-wide basis; correct?

WITNESS PARKER: Yes, that's what this bullet says.

And when I talk about the Proposed Project here, I'm talking about the WaterFix Project.

MR. BEZERRA: Okay. And in developing this opinion, did you consider that Steelhead in the Lower American River are listed as a threatened species under the Federal Endangered Species Act?

WITNESS PARKER: I did not personally consider that fact in writing this bullet.

MR. BEZERRA: In preparing this opinion, did you consider that Folsom Reservoir is the only source of cold water to support those Steelhead during the summer?

WITNESS PARKER: No.

MR. BEZERRA: Okay. To the best of your knowledge, is Folsom Reservoir -- Excuse me.

To the best of your knowledge, are reductions in Folsom Reservoir storage in the summer associated with warmer water temperatures in the Lower American River during those months?

WITNESS PARKER: I -- I did not -- My testimony does not include any discussion of that issue.

MR. BEZERRA: To the best of your knowledge, is Reclamation a party to any contracts with senior water right holders that involve diversions directly from Folsom Reservoir?

MR. MIZELL: I'm going to object as beyond the scope of the rebuttal testimony.

CO-HEARING OFFICER DODUC: Then she's able to answer she does not know.

WITNESS PARKER: It's beyond the scope of my testimony.

MR. BEZERRA: Okay. I'd like to pull up Exhibit BKS-303, which is a January 23rd, 1981, Federal Register entry with my highlighting.

(Exhibit displayed on screen.)

MR. BEZERRA: Miss Parker, do you see that in

this Federal Register entry, the American River between Nimbus Dam and the Sacramento River was designated under the Federal Wild and Scenic Rivers Act?

MR. BERLINER: Objection: Calls for a legal conclusion.

CO-HEARING OFFICER DODUC: Mr. Bezerra, are you asking her to just confirm what's on this page?

MR. BEZERRA: Yes. If she doesn't understand that that's what this does, that's fine.

CO-HEARING OFFICER DODUC: Overruled.

MR. MIZELL: Objection: Beyond the scope of the witness' testimony.

CO-HEARING OFFICER DODUC: Are you going to make the linkage, Mr. Bezerra?

MR. BEZERRA: The linkage is that I want to understand the basis for her opinion that overall storage throughout the entire system over the period of record is the relevant metric for assessing storage conditions.

If the Lower American River is a wild and scenic river affected by changes in Folsom storage is relevant to the basis of her opinion.

MR. MIZELL: Her testimony makes no conclusion about the relative merit of overall storage vis-`-vis other metrics that the system might be measured upon.

She's making a comparison of overall storage, yes, but she does not do that in the -- in the context of any other metrics.

CO-HEARING OFFICER DODUC: It's a very broad statement that she made in her testimony, Mr. Bezerra.

MR. BEZERRA: You know what? In light of time, I can move on.

Miss Parker, that's my last question for you.

Mr. Reyes, if we could take a look at your -- take a look at DWR-1143, second revision.

Just to be clear, what I'm trying to do here --

CO-HEARING OFFICER DODUC: Please.

MR. BEZERRA: -- is to understand the difference between --

(Exhibit displayed on screen.)

MR. BEZERRA: -- operating criteria and modeling assumptions and which one is which. That modeling assumptions are not actually operating criteria.

CO-HEARING OFFICER DODUC: Thank you. That was the intent of requesting that document.

MR. BEZERRA: Okay. If we could please go to Page 2 and specifically the second paragraph under heading Section II.

(Exhibit displayed on screen.)
MR. BEZERRA: Okay. And there's the sentence, "The exact definition of the CWF H3 Spring Outflow Criteria is provided" in a specific section of the ITP Application.
Does that mean that the CWF H3+ only relies on DWR's application for an Incidental Take Permit?
WITNESS CHILAMKURI: I'm going to answer. I'll try and answer that.
Can you just . . . I didn't quite understand what you mean by does it rely on just that.
Can you explain that a little bit more?
MR. BEZERRA: Sure. There are -- The model has some sort of spring outflow assumptions in it; correct?
WITNESS CHILAMKURI: Which model?
MR. BEZERRA: CWF H3+.
WITNESS CHILAMKURI: Yes.
MR. BEZERRA: Okay. Are the model assumptions for spring outflow in that modeling based on the Department's application for an Incidental Take Permit?
WITNESS CHILAMKURI: The -- The Spring Outflow Criteria in the CWF H3+ was -- There are two parts to it as it's described in this attachment, if you look.
If you don't mind, going down to Page 4 -- Oh,

sorry -- Page 6.

(Exhibit displayed on screen.)

WITNESS CHILAMKURI: So, as described there, there is a narrow objective to the Spring Outflow Criteria and the actual criteria itself.

The narrow objective is that, in March, April and May months, the -- the Spring Outflow Criteria is supposed to maintain the incidental outflow increase that was occurring after -- after the 2008-2009 Biological Opinions came on. And the intent is that the WaterFix would maintain that same level of outflow.

Just to give a gauge of the -- the RPAs in those three months roughly increased the outflow over D-1641 by 330,000 acre-feet, and this criteria is trying to help maintain that outflow volume with WaterFix.

So, the criteria itself is described below there for March. There was a lookup table which basically the outflow target based on the A2 index and exports are used to cut to meet that outflow. And for April and May, we continue to rely on the NMFS RPA, which is a San Joaquin i.e. ratio.

MR. BEZERRA: And let me -- let me try to cut through this.

So on this page --

(Timer rings.)

MR. BEZERRA: -- if we could scroll over to the right, there's that second bullet under Part 2 on the left-hand column that states (reading):

". . . The Spring Outflow Criteria included in the BiOps."

The Spring Outflow Criteria included in the U.S. Fish & Wildlife BiOps and the NMFS file is from CWF's Draft Incidental Take Permit; correct?

WITNESS CHILAMKURI: Correct.

MR. BEZERRA: And the Final Incidental Take Permit is different than that; correct?

WITNESS CHILAMKURI: Correct.

MR. BEZERRA: Okay. And then moving over to the right, that bullet, that states that the Final ITP would supersede the criteria in the BiOps; correct?

WITNESS CHILAMKURI: Correct.

MR. BEZERRA: To the best of your knowledge, has the U.S. Fish and Wildlife Service agreed that the terms of the Incidental Take Permit would supersede their Biological Opinion?

MR. MIZELL: Objection: Goes beyond the scope of the witness' testimony. At no point does he try an offer an opinion in the shoes of the Fish and Wildlife Service.

CO-HEARING OFFICER DODUC: Mr. Bezerra.

MR. BEZERRA: There is no testimony here. There's this table, and we're examining -- we're determining what's in this table. And I need to understand the relationship between the various Spring Outflow Criteria.

CO-HEARING OFFICER DODUC: Do you have -- Do you know the answer?

WITNESS CHILAMKURI: I know that there are -- At some point, there are discussions to clarify the BiOps but I am not sure if this particular criteria was discussed.

MR. BEZERRA: Okay. So in the CWF H3+ modeling, which one of these sets of criteria provides the modeling assumptions that was used to model the effect of California WaterFix?

WITNESS CHILAMKURI: As I said, the objective is the same. It doesn't -- The criteria may be different but the objective is exactly the same in all of the documents. It is to maintain the existing outflows.

MR. BEZERRA: I understand the objective is the same.

But which one of these documents provides the modeling criteria used to model the effect of

California WaterFix with CWF H3+?

MR. MIZELL: Objection: Asked and answered.

CO-HEARING OFFICER DODUC: I did not hear an answer.

WITNESS CHILAMKURI: Okay. So the . . .

The criteria that was used to model CWF H3+ is in the ITP Application, it's in the U.S. Fish and Wildlife Service BiOp, it's in the NMFS BiOp.

MR. BEZERRA: And so the regulatory document you didn't include in that list is the Final Incidental Take Permit; correct?

WITNESS CHILAMKURI: Correct.

MR. BEZERRA: So the CWF H3+ modeling does not use the terms of the Final Incidental Take Permit as assumptions; correct?

WITNESS CHILAMKURI: I disagree with that, just because the narrative objective of that Spring Outflow Criteria is to maintain existing outflows.

And the ITP Application and the BiOps relied on an approach that, as it's stated in Part 1 in this column -- in this table.

The CWF updated that approach but the objective stayed exactly the same, which is to meet the existing outflows.

And they also go on to clarify in their

clarifying letter that the mechanism to meet those Spring Outflow Criteria is to cut exports, and -- which is exactly what's done in the Part 1 -- I mean, in the CWF H3+ modeling.

So, in my opinion, actually, CWF H3+ modeling is representative of the Final operating criteria.

MR. BEZERRA: On this bullet, the one on the right-hand side that begins "Spring Outflow Criteria," it states (reading):

"The Final ITP and associated clarification letter would supersede the BiOps."

Have either of the Federal fish agencies agreed that the clarification letter will supersede their Biological Opinions?

CO-HEARING OFFICER DODUC: That was asked earlier.

WITNESS CHILAMKURI: Yes. I already answered that.

MR. BEZERRA: Okay. So, moving on with this exhibit.

I believe there's a variety of modeling assumptions that are not described in this exhibit. I just want to confirm that.

So, Mr. Reyes, Dr. Chilmakuri, whichever one

is most knowledgeable.

The San Luis Rule Curve is a modeling assumption; correct?

WITNESS CHILAMKURI: The San Luis Rule Curve is a -- is a depictional operational -- operator's discretion on how to manage the storage, and it's not a -- it's not a criteria or anything.

MR. BEZERRA: So the San Luis Rule Curve used in the CWF H3+ modeling is not stated in this exhibit because it's not a regulatory requirement or an operational rule; correct?

WITNESS CHILAMKURI: It is a representation of operation philosophy, as Miss Parker testified.

And the . . . The San Luis Rule Curve that was used for WaterFix scenarios -- or the changes that were made to it compared to the No-Action Alternative is a reasonable representation of the available export capacity in the system under the No-Action Alternative versus the WaterFix.

And it's just -- The rule curve is not intending to offer additional protection to upstream storage or anything, so there is no need for that to be listed in this table.

MR. BEZERRA: So, notwithstanding whatever the San Luis Rule Curve is in the modeling, the Project's

Operators would retain discretion in moving water from North of Delta to South of Delta; correct?

WITNESS CHILAMKURI: After meeting all the other regulatory requirements of the system, yes.

MR. BEZERRA: Thank you.

And the export estimate is a modeling assumption; correct?

WITNESS CHILAMKURI: Export estimate is a -- Yes, it is a modeling assumption.

MR. BEZERRA: And, in general terms, export estimate affects Project delivery allocations by reflecting constraints on moving water through the Delta; correct?

(Pause in proceedings.)

MR. BEZERRA: Can you explain what the export estimate is in general terms.

WITNESS CHILAMKURI: Export estimate is -- Correct me if I'm wrong here, but it's used to depict the available export capacity in general terms, incidentally allocations, South-of-Delta allocations specifically.

MR. BEZERRA: And one purpose of the California WaterFix is to increase flexibility for Delta export operations; correct?

WITNESS CHILAMKURI: I wouldn't characterize

it as flexibility for the Delta export operations. It's to improve the flexibility to maintain system operations.

MR. BEZERRA: So you would not characterize California WaterFix as a Project that's intended to increase the flexibility for Delta exports?

WITNESS CHILAMKURI: I'm saying that's not the only thing I would say. It's overall system flexibility.

MR. BEZERRA: Okay. And the export estimate in the modeling is a reflection of operational discretion and not a regulatory requirement; correct?

(Pause in proceedings.)

WITNESS CHILAMKURI: Could you repeat that question?

MR. BEZERRA: Sure.

The export estimate is not one of the modeling assumptions that is a regulatory requirement; correct?

WITNESS CHILAMKURI: That's correct.

MR. BEZERRA: Okay. It reflects operations in light of other operation -- regulatory requirements; correct?

WITNESS CHILAMKURI: It -- Yes, it does reflect the -- whatever the -- the available capacity in general. It's not trying to be specific for each

year, taking into account every single regulatory restriction there is on exports.

MR. BEZERRA: And --

WITNESS CHILAMKURI: But it's reflecting the general -- in general what is the available export capacity -- what would be the available export capacity in the No-Action or CWF H3+.

MR. BEZERRA: And between the No-Action Alternative and the CWF H3+ modeling, the Petitioners didn't change anything about the export estimate; correct?

WITNESS CHILAMKURI: That's correct.

But that's a reasonable representation one more time, because even though there is the WaterFix operational diversion capacity, the WaterFix scenarios also accompany salinity increase and the other export restrictions, such as the bypass flow requirements and the OMR restrictions.

So even -- even though there is an actual diversion facility, that doesn't mean there's additional export capacity. That's the reason why the export estimates were not changed between the No-Action to WaterFix.

MR. BEZERRA: And so the export estimate is not -- Even though it's an assumption in the modeling,

it's not any sort of regulatory requirement that will bind operations in the future; correct?

(Pause in proceedings.)

WITNESS CHILAMKURI: Export estimates are definitely just an assumption. That's not something you can even put in the regulatory requirements.

MR. BEZERRA: So, notwithstanding whatever export estimate is assumed in the modeling, the Project Operators would have discretion in how to set CVP and State Water Project allocations in the future with California WaterFix in place; correct?

WITNESS CHILAMKURI: Yes, after meeting all the regulatory requirements.

MR. BEZERRA: And that's all I have for today.

I know we have a couple of additional witnesses that my subset of Group 7 will want to talk to tomorrow, primarily some additional cross for Dr. Chilmakuri and for Dr. Wilder.

CO-HEARING OFFICER DODUC: And when you say your subset of Group 7, who specifically?

MR. BEZERRA: My clients are City of Folsom, City of Roseville, Sacramento Suburban Water District, San Juan Water District.

So, my colleague Mr. Ramos will be conducting some cross-examination of Dr. Chilmakuri. And I

believe Mr. Miliband from City of Sacramento, also part of the American River Group, will be conducting cross-examination of Dr. Wilder.

CO-HEARING OFFICER DODUC: And that will happen on Thursday.

MR. BEZERRA: Thursday, yes.

CO-HEARING OFFICER DODUC: Right.

Are there any other housekeeping matter we need to address?

MR. MIZELL: So I'll just give the parties a heads-up today, but I don't think it needs to be addressed until Thursday, maybe after lunch.

One of the witnesses, Mr. Reyes, does have an appointment that he would very much like to keep late in the afternoon.

It would depend upon who happens to be cross-examining and the scope of that cross as to whether or not that schedule request would be necessary.

CO-HEARING OFFICER DODUC: All right. Before we adjourn for today, I just wanted to actually acknowledge Mr. Bezerra.

It was a challenge, I think, and will continue to be a challenge for all cross-examiners, but Mr. Bezerra did a good job, and I expect others to

follow suit in terms of making their case.

When we have such complicated testimony, it is challenging to keep it within the proper scope of rebuttal and especially cross-examination of rebuttal.

I expected Mr. Bezerra, and I expect all the parties conducting cross-examination, to be able to concisely articulate the line of questioning, the purpose of questioning, the intent of the questioning to the rebuttal testimony being offered, either as direct rebuttal testimony or a logical consequence outgrowth of that testimony.

We are not going to allow revisitation of all aspects of modeling and assumption and everything that we covered in Part 1 as well as in Part 2 case in chief.

There is a reason why cross-examination of rebuttal is focused on rebuttal testimony. You must be able to make the link between your line of questioning and the rebuttal testimony.

In this particular instance, this will be even more challenging because we have a lot of modeling data. We have a new table.

And, again, cross-examiners must be able to concisely and clearly articulate the linkage between their question and the rebuttal testimony and exhibits

being offered. We are not revisiting every aspects during this hearing.

Mr. Bezerra, thank you for setting a good example.

MR. BEZERRA: You're welcome to the extent I actually did so.

CO-HEARING OFFICER DODUC: You were first at bat, so . . .

Other housekeeping matters?

MS. DES JARDINS: I just had a request with respect to the announcement by Mr. Mizell that Mr. Reyes might not be available late in the afternoon.

If that could be Noticed to the hearing parties because I notice a lot of them aren't here.

CO-HEARING OFFICER DODUC: It is --

MS. DES JARDINS: Again.

CO-HEARING OFFICER DODUC: It is hereby Noticed. It is parties' responsibilities, as we've said many times, to monitor the hearing, keep track of what's happening, and to ensure that they are up to date on all happenings.

Things happen, as you have already guessed, on a fairly real-time basis and we cannot keep up with making changes and announcements in writing to everybody all the time.

MS. DES JARDINS: I -- I just request again that the Department of Water Resources, if they have witnesses that aren't going to be available for cross-examination on the panel, notify the parties as soon as possible, not wait until the afternoon or the day before.

CO-HEARING OFFICER DODUC: Which I believe Mr. Mizell has done.

All right. Thank you all. We'll see you Thursday at 9:30 in this room.

(Proceedings adjourned at 4:58 p.m.)

State of California)
)
County of Sacramento)

I, Candace L. Yount, Certified Shorthand Reporter for the State of California, County of Sacramento, do hereby certify:

That I was present at the time of the above proceedings;

That I took down in machine shorthand notes all proceedings had and testimony given;

That I thereafter transcribed said shorthand notes with the aid of a computer;

That the above and foregoing is a full, true, and correct transcription of said shorthand notes, and a full, true and correct transcript Pages 94 -274 of all proceedings had and testimony taken;

That I am not a party to the action or related to a party or counsel;

That I have no financial or other interest in the outcome of the action.

Dated: August 13, 2018

_____
Candace L. Yount, CSR No. 2737

STATE OF CALIFORNIA)
) ss.
COUNTY OF MARIN)

I, DEBORAH FUQUA, a Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing proceedings (Pages 1 through 93) were reported by me, a disinterested person, and thereafter transcribed under my direction into typewriting and which typewriting is a true and correct transcription of said proceedings.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing proceeding and caption named, nor in any way interested in the outcome of the cause named in said caption.

Dated the 13th day of August, 2018.

DEBORAH FUQUA

CSR NO. 12948