MR. CROWFOOT: Thank you all for being here today. This is the third meeting of the Oroville Dam Citizens Advisory Commission. I'm seeing some familiar faces in the audience today, but for those who are here for the first time, this is a body created through state law, thanks to the leadership of Mr. Gallagher, Mr. Nielsen, and our legislature. And that law, essentially, has created this body of local leaders, as well as folks from the state government. And we are specifically focused on ensuring information's provided from local community; from state government, Department of Water Resources, my -- our Agency, the Natural Resources Agency; and to ensure that we can actually receive information from local leaders to really strengthen our relationship.

My name is Wade Crowfoot, and I serve as the secretary of the Natural Resources Agency. I thought what we would to start is just to have our members of the commission to once again introduce themselves to really -- we know each other now, but certainly the
MS. NEMETH: Good morning. Karla Nemeth, director of the Department of Water Resources.

MR. MILLION: Lieutenant Joe Million, Yuba County Sheriff's Department.

MR. COLLINS: Lieutenant Steve Collins with Butte County Sheriff's office.

MR. LAMBERT: Steve Lambert, Butte County Supervisor.

MR. LAMXUREUX: Eric Lamoreux, Deputy Director of Emergency Operations, Cal OES.

MR. CONANT: Matt Conant, Sutter County Board of Supervisors District 1.

MR. PITTMAN: Dave Pittman, City of Oroville Councilman.

MS. WIDENER: Genoa Widener, Butte County Supervisor's appointee.

MR. TEAGUE: Matt Teague, California State Parks' designee for Lisa Mangat.

MR. GALLAGHER: James Gallagher, State Senator Gallagher's designee for Lisa Mangat.

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MS. NEMETH: And just want to thank everyone in the community here, and then also continue to have it play an important role in our state's water supply. So we will spend a lot of time hearing from our partners at the Army Corps of Engineers. I first, though, wanted to ask Karla to give us an update on the request that the State made to the federal government on the reimbursement of costs related to the repairs that Water Resources have been making on the facility in Oroville.

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**OROVILLE DAM CITIZENS ADVISORY COMMISSION**  
Meeting on 02/21/2020

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<td>1. you know, aftermath of the Oroville Dam incident is always things. But anyway, (unintelligible) so</td>
<td>1. there's always things. But anyway, (unintelligible) so</td>
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<td>2. forecast-based operations and trying to work towards,</td>
<td>2. we have a lot of great friends and allies in this as</td>
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<td>3. you know, a more modernized way of managing water, and</td>
<td>3. well. So I'm going to keep it short. Basically</td>
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<td>4. managing for a flood.</td>
<td>4. everything he just said. But I'm also pleased that, at</td>
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<td>5. You know, in the modern era, you know, we've</td>
<td>5. the federal level, we're able to come through even</td>
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<td>6. been using a manual that, you know, was first -- you</td>
<td>6. stronger than I anticipated that we could do here.</td>
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<td>7. know, first came together and first established in the</td>
<td>7. So, you know, I kind of had the idea it might</td>
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<td>8. 1950s. And so -- and based, you know, on some of the</td>
<td>8. be a little lower ceiling, but in that it's going to be</td>
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<td>9. data that we had seen and understood at the time, now we</td>
<td>9. looking like $750 million towards the reconstruction;</td>
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<td>10. know a lot more. And we know that those -- that we are</td>
<td>10. that's pretty exciting. And so I think that gives us a</td>
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<td>11. getting actually more surges of water at different times</td>
<td>11. lot more lateral moves that we can be doing as a state,</td>
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<td>12. that are obviously concerning. So, you know, obviously,</td>
<td>12. for the projects that need to be continuing to get</td>
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<td>13. that's -- that's a big concern is getting towards the</td>
<td>13. rigged around the state to catch up with safety on</td>
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<td>14. forecast-based operations and finding ways to modernize</td>
<td>14. the -- a lot better projects. And also, we can remember</td>
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<td>15. that manual.</td>
<td>15. that there's a lot of local recreation that no dollars</td>
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<td>16. And also, you know, we continue to do the work</td>
<td>16. are going to be freed up for to help with the original</td>
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<td>17. with the ad hoc advisory committee regarding the</td>
<td>17. promise or implications going back to the '60s; it's</td>
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<td>18. comprehensive needs assessment at the dam and</td>
<td>18. very important that Oroville and Butte County areas.</td>
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<td>19. identifying infrastructure improvements that would</td>
<td>19. So if we can, you know, light up that</td>
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<td>20. increase the safety, the overall safety, and reliability</td>
<td>20. discussion and keeps going forward on what is</td>
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<td>21. of Oroville Dam. There's been some very goods</td>
<td>21. needed right here so that's more possible. Plus the --</td>
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<td>22. discussions there, and, you know, looking forward to</td>
<td>22. since we're a little more flush, we can also continue</td>
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<td>23. the, you know, the final outcome of that, we've got</td>
<td>23. talking about the upgrade to Highway 70 and Highway 99.</td>
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<td>24. some -- both the senator and I have had some very good</td>
<td>24. I know those are different parts, but, you know, tax</td>
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<td>25. discussions in that ad hoc; some of the members are part</td>
<td>25. payers look at it all as the same pocket. Anyway, these</td>
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<td>1. of this commission as well.</td>
<td>1. are all things that are important to our area here. So</td>
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<td>2. And obviously, our goal really being we want</td>
<td>2. with that I'm looking forward to the discussion today,</td>
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<td>3. to -- you know, it's not just the spillway, and</td>
<td>3. and obviously very important, I think it's very</td>
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<td>4. certainly there's been a lot of progress there, but we</td>
<td>4. important.</td>
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<td>5. want to look the at the entire complex in making sure</td>
<td>5. And we'll bring the heat in on the flood</td>
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<td>6. that we are where we need to be from a safety</td>
<td>6. control aspects. But also, when you -- you guys are</td>
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<td>7. standpoint, and a flood control standpoint. So with</td>
<td>7. probably tired of hearing me say it, but the balance</td>
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<td>8. that, I'm looking forward to the discussion this</td>
<td>8. between flood control and how we're going to keep our</td>
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<td>9. morning. Thank you again for all the partners who</td>
<td>9. lake full, you know, having newer dynamics. James was</td>
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<td>10. continue to be very much engaged in this. And I also</td>
<td>10. talking about that as far as how we can keep the lake as</td>
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<td>11. especially want to thank the director for his personal</td>
<td>11. full of possible but with the safety factor in needing</td>
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<td>12. engagement on this from the very beginning.</td>
<td>12. to do so. So, you know, more modernized and upgraded</td>
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<td>13. And Karla Nemeth, the director of the</td>
<td>13. forecasting and et cetera. But we know that, and I look</td>
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<td>14. Department of Water Resources, giving their personal</td>
<td>14. forward to discussion. So thank you for having me and</td>
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<td>15. attention. And it is my great honor to have with us</td>
<td>15. Bill to come by.</td>
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<td>16. this morning Congressman Doug LaMalfa who I've worked</td>
<td>16. MR. CROWFOOT: Thank you, Congressman. And</td>
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<td>17. with for many years. I actually worked for him at one</td>
<td>17. thank you for your leadership and partnership in terms</td>
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<td>18. time. And -- but always been very much engaged on these</td>
<td>18. of getting that federal reimbursement for the</td>
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<td>19. issues; fighting for us at the federal level. And so</td>
<td>19. improvement. I think we're very thankful to both FEMA</td>
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<td>20. maybe that'll -- I might turn it over, if you'd like to,</td>
<td>20. and to you and other leaders of the delegation for the</td>
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<td>21. Congressman, to address this a little bit. But looking</td>
<td>21. news that came through just this week that Karla just</td>
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<td>22. forward to this meeting. Thank you.</td>
<td>22. summarized. Just by way of explanation, this body of</td>
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<td>23. Mr. LaMalfa: Thank you, James. It's so good 2</td>
<td>23. local leaders and state agency leaders was put together</td>
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<td>24. to see you here. And you probably are better to be on</td>
<td>24. as a result, of course, of the emergency that we</td>
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<td>25. time than sometimes later (unintelligible.) It's always</td>
<td>25. experienced over three years ago.</td>
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**OROVILLE DAM CITIZENS ADVISORY COMMISSION**  
**Meeting on 02/21/2020**

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<td>1 And we in state government knew that we had to 1 government that the people not knowing what was going 1 so humbled, absolutely humbled to see the success of it.</td>
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<td>2 do better in terms of explaining how this facility's 2 on. And in this case, it was a very good example with 2 Mr. Secretary, thank you very much for your personal</td>
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<td>3 operated and how we're going to keep people safe in this 3 the failure of the spillway. But they have been so 3 attention. And, Karla, how are you?</td>
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<td>4 community. And then Senator Nielsen and Assemblymember 4 attentive to allowing public citizens to this venue by 4 MS. NEMETH: Good to see you.</td>
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<td>5 Gallagher, through a law change, institutionalized this 5 supporting the legislation that James and I worked on, 5 MR. NIELSEN: Karla Nemeth has been doing a</td>
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<td>6 body to make sure that there's good information flowing, 6 and then setting this up. 6 fine job for these folks. Thank you. I'm glad to be</td>
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<td>7 and we're collectively moving forward. So we're our 7 And the secretary put in his very valuable 7 here with you.</td>
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<td>8 third meeting now on that. So next in our agenda I'll 8 personal sometime into this. And I'll tell you, I'm 8 MR. CROWFOOT: Thank you so much, Senator. So</td>
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<td>9 just give a brief update on what we achieved at this 9 involved in a lot of issues; Wade is everywhere in 9 Mr. Forbis is going to start with the presentation, and 9 then we'll have an opportunity for questions and answers</td>
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<td>10 last meeting. I'll note that out charter -- again, is 10 California. We were just in committee, I think it was 10 our commission. And thank you in advance, also, for 10 our community in public comment have questions for 10 our commission. And thank you in advance, also, for</td>
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<td>11 this collective set of rules that bring our -- how 11 yesterday or the day before; I can't even remember. And 11 sticking around for public comment. So if members of 11 sticking around to be able to answer those as well. 11 so humbled, absolutely humbled to see the success of it.</td>
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<td>12 govern ourselves -- has been finalized. 12 a couple things I do what to bring to your attention 12 that does warrant our attention. Though it doesn't 12 and then setting this up.</td>
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<td>13 We have information, including meeting agendas 13 does affect us as well. 13 relate to Oroville Dam, it relates to the state water</td>
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<td>14 and meeting minutes from the last meeting on our website 14 project and about everything else that's going on; it's 14 become a problem. The degradation of our levees? Most 14 does affect us as well.</td>
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<td>15 from the California Natural Resources Agency. So that 15 homeless. Now, that's a very high priority. But it 15 assuredly. And pollution of our waterways. And James 15 become a problem. The degradation of our levees? Most 16</td>
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<td>16 home page is like a one stop shop for all information on 16 and I am working on some legislation related to that 16 assuredly. And pollution of our waterways. And James 16 most assuredly. And pollution of our waterways. And James</td>
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<td>17 this commission. I will also mention that at our last 17 right now. I know some of our local governments are 17 and I are working on some legislation related to that 17 and I am working on some legislation related to that</td>
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<td>18 meeting we discussed the $5 million grant project for 18 attending to it. But it is part and parcel of our 18 right now. I know some of our local governments are 18 attending to it. But it is part and parcel of our</td>
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<td>19 sediment removal in the Feather River. And the good 19 future and things that we're going to need to do in the 19 future and things that we're going to need to do in the 19 future and things that we're going to need to do in the</td>
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<td>20 update, I want to let everybody know that this grant 20 right now. I know some of our local governments are 20 future and things that we're going to need to do in the 20 future and things that we're going to need to do in the</td>
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<td>21 agreement has been signed with the Sutter Butte Flood 21 attending to it. But it is part and parcel of our 21 future and things that we're going to need to do in the 21 future and things that we're going to need to do in the</td>
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<td>22 Control Agency. So progress there. 22 our commission. And thank you in advance, also, for 22 our commission. And thank you in advance, also, for 22 our commission. And thank you in advance, also, for</td>
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<td>23 And we'll continue to keep the commission 23 that does warrant our attention. Though it doesn't 23 sticking around for public comment. So if members of 23 sticking around for public comment. So if members of 23 sticking around for public comment. So if members of</td>
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<td>24 updated as that work moves forward. So let's shift into 24 become a problem. The degradation of our levees? Most 24 have an opportunity for questions and answers 24 have an opportunity for questions and answers 24 have an opportunity for questions and answers</td>
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<td>25 our third item on the agenda, which is our discussion 25 assuredly. And pollution of our waterways. And James 25 our commission. And thank you in advance, also, for 25 our commission. And thank you in advance, also, for 25 our commission. And thank you in advance, also, for</td>
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<td>26 with the Army Corps of Engineers. And as -- as we 26 do affect us as well.</td>
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<td>27 talked about at the last two meetings, we're really 27 so humbled, absolutely humbled to see the success of it.</td>
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<td>28 interested in closer work together with the Army Corps 28 so humbled, absolutely humbled to see the success of it.</td>
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<td>29 of Engineers to build a really strong working 29 so humbled, absolutely humbled to see the success of it.</td>
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<td>30 relationship, and the congressman and the law office to 30 so humbled, absolutely humbled to see the success of it.</td>
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<td>31 really understand how the facility's at Oroville can be 31 so humbled, absolutely humbled to see the success of it.</td>
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<td>32 optimized to maintain public safety, to control for 32 so humbled, absolutely humbled to see the success of it.</td>
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<td>33 flood, and also to supply benefit. So we're excited to 33 so humbled, absolutely humbled to see the success of it.</td>
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<td>34 have Mr. Joe Forbis from the Army Corps Sacramento 34 so humbled, absolutely humbled to see the success of it.</td>
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<td>35 District, water management section chief, who is one of 35 so humbled, absolutely humbled to see the success of it.</td>
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<td>36 the leaders of the Army Corps in our region. 36 so humbled, absolutely humbled to see the success of it.</td>
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<td>37 And I might -- before you -- before I ask you 37 so humbled, absolutely humbled to see the success of it.</td>
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<td>38 to start on your presentation, I've just welcomed 38 so humbled, absolutely humbled to see the success of it.</td>
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<td>39 Senator Nielson. 39 so humbled, absolutely humbled to see the success of it.</td>
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<td>40 MR. NIELSEN: Hey, how are you? 40 so humbled, absolutely humbled to see the success of it.</td>
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<td>41 MR. CROWFOOT: I'm good. We'll -- we've got a 41 so humbled, absolutely humbled to see the success of it.</td>
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<td>42 space for you right there. Senator, welcome any opening 42 so humbled, absolutely humbled to see the success of it.</td>
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<td>43 thoughts you have as we jump into our third meeting of 43 so humbled, absolutely humbled to see the success of it.</td>
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<td>44 this commission. 44 so humbled, absolutely humbled to see the success of it.</td>
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<td>45 MR. NIELSEN: I will catch my breath and thank 45 so humbled, absolutely humbled to see the success of it.</td>
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<td>46 you. You know, folks, it's really moving for me to see 46 so humbled, absolutely humbled to see the success of it.</td>
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<td>47 this. And I want to commend the secretary for his 47 so humbled, absolutely humbled to see the success of it.</td>
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<td>48 attentiveness of the agency to this, and the governor as 48 so humbled, absolutely humbled to see the success of it.</td>
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<td>49 well. The situation we're dealing here is very great 49 so humbled, absolutely humbled to see the success of it.</td>
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<td>50 and serious. There's always been a problem in 50 so humbled, absolutely humbled to see the success of it.</td>
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## OROVILLE DAM CITIZENS ADVISORY COMMISSION
**Meeting on 02/21/2020**

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1. well very quickly.
2. And so just give you a quick little background
3. of why I'm here today is that -- what my team does is
4. we're involved in the oversight of flood control
5. operations within our district boundaries. So I'm going
6. to go a little bit into, like, what Sacramento District
7. looks like, how we fit in the bigger picture, what our
8. roles and authorities are, and, like, why we do what we do,
9. what our purpose is here. Then I'll shift into
10. something that were mentioned already this morning about
11. the water control manuals, what they are, how you go
12. about updating them. And then diving into an example of
13. a recent one we've updated for Folsom Dam, which I think
14. is a really good template or example to look at for here
15. at Oroville.

   There's a lot of similarities and some lessons
16. learned that we can gain from the experience that we had
17. in updating Folsom's water control manual. And then
18. lastly, I have a few slides just talking about the
19. forecasting form for operations program. I believe it's
20. been talked about here before, so I think some of you
21. are familiar, but I'll just give you a recent update on
22. the progress there. And I welcome questions from the
23. commission, of course, so if you need to interrupt while
24. I'm talking and ask me something to clarify something,
25. please do so.

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1. I want to make sure that the information I'm
2. sharing comes across as clearly as possible, and no
3. one's left wondering what the heck Joe is talking about.
4. MR. CROWFOOT: Good. So if you have questions
5. or want some clarification, just raise a hand or, per
6. his invitation, just butt in.
7. MR. FORBIS: Yes. Yes, thank you. So to
8. start off, let me get this oriented correctly. The
9. Corps of Engineer is divided up into different
10. divisions, like, kind of regions, and we are located in
11. the South Pacific Division. So I have a map here that I
12. wanted to show, like, what makes up our division. The
13. one that's in the pink-red color, that is the Sacramento
14. District. So you can see we're located in Sacramento,
15. but it extends pretty far out to the east to cover more
16. than just part of California.
18. And in terms of land mass, we're one of the
19. bigger ones in our agency. And to show you exactly how
20. that comes about for the -- like, which reservoirs we
21. have authority of within terms of their operations.
22. There -- within the Sacramento District, there are 45
23. reservoirs that have a valve (unintelligible) flood
24. control purpose; 14 of them are owned and operated by
25. the Corps of Engineers. The remaining 31 are owned and

### Page 16

1. operated by other entities, like DWR with Oroville. We
2. call those, those are termed as Section 7 dams.
3. I'll -- in this slide upcoming I'll show you
4. why that is. But you can see that two-thirds of the
5. reservoirs that we are involved in the flood operations
6. for aren't owned or operated directly by the Corps of
7. Engineers, it's done by others, per the rules that the
8. Corps of Engineers, at one time or another, have
9. established. And so just to give you a sense of the
10. range of size of the reservoirs that we track here, the
11. largest one within our footprint, within our district,
12. is Shasta, a little more than four-and-a-half million
13. acre-feet [sic.] Oroville, actually, is the second
14. largest one and one that's local, a little more than
15. three-and-a-half million acre-feet. They can range in
16. size all the way down to just a little over 3,000
17. acre-feet.
18. One of the reservoirs in Utah that's owned and
19. operated by the City of Utah there, one of their
20. municipalities, it's only 1,000 thousand acre-feet,
21. which you can see has probably different impacts than
22. what would be done here to reservoirs like Shasta or
23. Oroville. So there's a wide variety or a lot of
24. regional differences, differences between the watersheds
25. and what's needed, and what's provided by those

### Page 17

1. reservoirs. So it's not a one-size-fits-all kind of
2. thing that we deal with within our district. I also
3. wanted to touch on that it's -- the job that we perform
4. with the Corps of Engineers in Sacramento in terms of
5. water management isn't done in a vacuum, and it's not
6. done just ourselves.
7. We rely on the partnerships that we have with
8. multiple different group or entities in order to do so
9. effectively. It can be with irrigation districts, flood
10. control districts, federal water masters have a
11. significant role in -- for some of the projects that we
12. manage. And, of course, other government agencies like
13. DWR or the bureau proclamation. We have to work
14. together in order to to do the best job possible in
15. balancing not just the flood operations, but also the
16. other purposes that those reservoirs and dams fulfill.
17. There's more -- a lot of these reservoirs, actually most
18. of them, are more than just flood control projects; they
19. have other purposes, as you're aware of.
20. The state water project that supplies water
21. for irrigation, water supply, hydro power, recreation;
22. it's a balance that has to be set. In different times
23. of year, different purposes take precedent, but we need
24. to be -- keep all of those purposes in mind whenever
25. you're trying to make the best decisions on what to

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1. release and when from those projects. So I mentioned that's ties to, or that's because of the 1944 Flood Control Act, where, in Section 7, it specifies -- at the time I think they called them secretary -- referred to as Secretary of War. But it's essentially the -- it's been delegated down to the chief of engineer of the Army Corps of Engineers, the responsibility to prescribe the flood control operations and regulations for projects that, one, have an authorized flood control purpose, and two, either wholly or in part, where the construction was funded using federal funds. So those two things have to be true in order for the Corps of Engineers, through this authority, to have any sort of role in prescribing how that project will be operated for flood control purposes.

So there could be other projects that have the flood control purpose, but if it wasn't funded through federal funds, then we won't be required to prescribe direct relations in that scenario. So to tie it to Oroville specifically, there's a contract and agreement that was -- that was established in the early '60s that said, for 22 percent of the construction cost of Oroville -- up to $85 million -- for that cost up to 750,000 acre-feet of space will be provided at Oroville for flood control purposes. So it -- it -- it's -- I mean the contract's several pages, and it goes into more detail about how that's executed, but essentially, those funds contributed to the construction, in a sense, bought that amount of space to be used for flood control operations. So before I go too far into the weeds and the details of reservoir operations -- and especially into the Folsom example -- I wanted to make sure that we were all on the same page on, like, what I'm talking about, and how the water behind the dam translates into these different storage zones or pools. So here I have a graph where it just shows a very simplified dam on the left. And the space behind the dam is broken up into these different zones; the bottom one, water conservation, water supply pool. I think you all are fairly familiar with what that water can used for, and what it's used for, especially at Oroville. Above that is a flood control pool, or a flood control zone. That, it's just that zone that the Corps of Engineers regulates, either at our own dams by prescribing the release schedules ourselves, or at a

1. (unintelligible) like Oroville, establishing set of rules that are to be followed and then coordinated between your two agencies and the execution of those rules. So depending on the project, the location, a lot of factors; the size of that flood control space may vary throughout the year for different reasons. But it's just that space that the Corps of Engineers has the -- that implements their authority. Above that space, we designate that the surcharge pool where that -- that's the space between, typically, the top of what you would consider a 100 percent full, or gross pool, all the way to the top of the dam. And in that space, when operation decisions are being made, dam safety is the paramount of motivation for the decision making, because they're getting close to the top. Most dams are not designed to flow over the top. Some are. Some thin, concrete arch dams are, but for the most part, dams are not designed that way. So actually, the responsibility of operations in that surcharge zone is the dam owner and operator because they're the ones -- they're they party responsible for the dam safety of the projects it doesn't mean that the Corps hasn't established guidance or rules to follow to manage that effectively, but the ultimate decision is still left with the dam owner and operator. So how that translates -- oh, yes, Senator?

---

MR. NIELSEN: -- placing in 1964 or whenever that was effective; is that viable reservation?

---

MR. FORBIS: Yes.

---

MR. FORBIS: I just call it the term -- my

---

old term -- the "flood control reserve" that --

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MR. FORBIS: Yes.

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(Simultaneous cross-talk.)

---

MR. NIELSEN: -- placing in 1964 or whenever

---

that was effective; is that viable reservation?

---

Meaning, no other diversion can come from that amount of water. I think we said what? 750,000 acre-feet, that's got to remain there stationary for flood control at all times to reserve space?

---

MR. FORBIS: Not at all times. Specific to Oroville, the amount that is required varies throughout the year, and I can show you visually in a couple slides here. It varies based on, not just time of year -- because we all know that different times of year there's a greater risk of more rain, more water -- but it also varies based on essentially a parameter that is used to -- as a proxy for identifying how wet the watershed is. So the wetter the watershed is, the more that future rain will turn directly into runoff and their inflow into the reservoir.

So depending on how dry the ground is, or wet

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MR. CONANT: Okay. That's what I thought.

MR. FORBIS: No, sir. No. Just at Oroville.

MR. PITTMAN: Just at Oroville?

MR. FORBIS: Right. Just at Oroville.

MR. PITTMAN: Thank you.

MR. CONANT: Here's one other quick question.

MR. CONANT: I just want to make sure I understand it. The 750,000 acres only -- is only pertaining during flood events period, and can never exceed that number; no matter what the pool of water is in the runoff in the (unintelligible); correct?

MR. FORBIS: Yes, yes. Absolutely.

MR. PITTMAN: Quick question I have here.

When you're talking about this specific reservoir --

MR. FORBIS: Yes.

MR. PITTMAN: -- does the Army Corps have any other control of flood ops upstream, the reservoirs before that?

MR. FORBIS: No, sir. No. Just at Oroville.

MR. PITTMAN: Just at Oroville?

MR. FORBIS: Right. Just at Oroville.

MR. PITTMAN: Thank you.

MR. CONANT: Here's one other quick question.

MR. CONANT: I think it was 160 in my mind, but I could be --

MR. FORBIS: Good question. So we are still -- we are still using the number of the 100 -- I think it's the 150 is what that's is what the maximum --

150,000 CFS coming from the dam.

MR. LAMALFA: I think it was 160 in my mind, but I could be --

MR. FORBIS: I'd have to -- I actually have the diagram on the next slide, so we can actually check. So it's either 150 or 160. I think it's 150, and I think we went up to 160 in the past one time, I think, around '97. I believe. But we're still using that dam (unintelligible) capacity. And the Feather, up to where it meets the confluence of the Yuba in which you have objective flows of 300,000 CFS at that location. And then, I think, when the Bear River comes in, it's about 320,000 CFS. But in addition to what you mentioned, I
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<td>1 I know there's also been setback and the work that's been done.</td>
<td>1 I think this is a fantastic conversation for the public to also understand with us that, in a relationship, flows that are coming in from different watersheds. It's a very dynamic system, it's a big system, and it's going to take everybody to get us on a path into the future where we're protecting the public no matter what watershed you're living in. Thank you.</td>
<td>1 And so part of the FIRO effort, which I'll talk about in a little bit, and also updating the flood control manual. It's the verification that these downstream objective flows are still viable. Because these were established, as Senator Gallagher mentioned, back in the '60s and '70s. So it's likely -- it's likely different in some form or another. I don't know to what degree, but it's likely a little bit different.</td>
<td>1 MR. FORBIS: Yes. Great point.</td>
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<td>MR. CROWN: If you don't mind, is there anybody else on the panel that would have a concern to that number? Especially from Big South, Yuba, Sutter.</td>
<td>2 MR. FORBIS: Yes. So you may have seen a version of this diagram before. What I did -- this is the water control diagram. So this dictates what</td>
<td>3 MR. CROWFOOT: I'd have to check and -- like, I have, at all of our projects, a list of ongoing project concerns and considerations that, maybe the rules say this, but here's something you need to know, like, this landowner's property gets flooded at this level. Now, maybe that's not the driving force for your decision making, but it's important to know that. If it's safe to keep something at a lower level, as in your operational decisions, that you can do so without causing these more peripheral nuisances of the problems along the downstream areas. Yes?</td>
<td>4 MR. FORBIS: I'd have to check and see if the -- the decision making around going up to 160, to see if that was following the rules of that emergency spillway release diagram or not.</td>
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<td>4 And what helps is our coordination with DWR and the realtime operations is that, we have, at all of our projects, a list of ongoing project concerns and considerations that, maybe the rules say this, but here's something you need to know, like, this landowner's property gets flooded at this level. Now, maybe that's not the driving force for your decision making, but it's important to know that. If it's safe to keep something at a lower level, as in your operational decisions, that you can do so without causing these more peripheral nuisances of the problems along the downstream areas. Yes?</td>
<td>5 Because under the slide I have up right now, is under -- like, for normal flood operations, this is what we call the flood control diagram, the water control diagram; it doesn't prescribe anything more than 150 in this case. And so if the other diagram, which is this one -- I won't go into what all this means.</td>
<td>5 I'd have to check and see if the -- the decision making around going up to 160, to see if that was following the rules of that emergency spillway release diagram or not.</td>
<td>5 This is pretty complicated and a little bit convoluted, especially in a venue like this. But it would be this diagram that, if you're following by the letter, that would dictate at least more than 150. So if in '97, if it didn't come into play there, and it was done based on other factors, then that leads me to believe that we've never made decisions based off of the rules on this graphic. But that would require more investigation on my part.</td>
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<td>6 MR. CROWFOOT: Could you go back a slide and just let us know what we're looking at?</td>
<td>6 MR. FORBIS: Yes. Great point.</td>
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<td>7 MR. GALLAGHER: I was just going to say, yeah, historically 150 has been that number. And that's kind of -- that's what, I think, a lot of people consider capacity at what the levees can handle downstream. Now, when you're at 150, there's going to be a lot flood planning going on, levee districts are going to be sandbagged heavy. I mean, it gets really hairy. I think it was in '85 we went to 150 and we had a break. And then, in '97, we had to actually go to 160, it was the first time it went over that number, which is, you know -- typically you're supposed to stay at 150, but they went over. I was going to ask you, how often have we ever been in the actual emergency surcharge situation, historically? Have we operated in that?</td>
<td>7 And so if the other diagram, which is this one -- I won't go into what all this means.</td>
<td>7 MR. CROWFOOT: Could you go back a slide and just let us know what we're looking at?</td>
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| 1 control space requirement could vary. So depending on, 2 like I said, what -- what -- depending on how wet the 3 watershed is, and the time of year, the amount of flood 4 control space being required would occur somewhere 5 within that blue polygon. 6 Just to orient you, along the X-axis are the 7 dates, so, like, months of the year; and then along the 8 Y-axis is storage. So that's what we're looking at 9 here. So if you're -- if it's really dry, like I was 10 saying before, if we have seven years of drought, it 11 would likely be the storage allow -- or the flood 12 control space required -- which is kind of the 13 inverse -- the flood control space required would be 14 hugging the top line of that polygon that goes down and 15 then horizontally back up. If there's been a lot of 16 rain in the watershed saturated, then the flood control 17 space required could be all the way down to the bottom 18 of the outside border of that polygon, and then 19 everything in between. 20 MR. GALLAGHER: I'd like to go back to the flood 21 capacity which you were talking about. Even at 350, we 22 lose two parts every time we reach that capacity; 23 bedrock and riverbed. 24 MR. FORBIS: Okay. 25 MR. GALLAGHER: So I just want you to be aware 1 that there -- during the spillway incident, we had over 2 $10 million in damage to the one part. I don't know 3 what the flow was there; I know it was more than one 4 150. 5 MR. GALLAGHER: At least from the reservoir, I 6 think it only got a 100,000 CFS. But I don't know how 7 that compounded downstream and where that impacted, the 8 part that you're talking about. 9 MR. GALLAGHER: It wiped out two city parks. 10 MR. FORBIS: Okay. In Oroville? 11 MR. GALLAGHER: Yes. 12 MR. FORBIS: That is an example of something 13 that we would want to make sure that we know and have 14 listed in our Oroville, like, concerns and 15 considerations; that if -- you might not be able to 16 avoid going up to something that high because of the 17 conditions that are present at the time. But if there 18 is any chance that you don't have to, and you can't 19 avoid some of this type of damage, then we might have 20 that flexibility to not -- to avoid those sorts of 21 situations. 22 MR. CROWFOOT: Can you remind us from the Army 23 Corps' perspective that the reservoir conditions three 24 years ago, when the emergency occurred? In other words, 25 how -- you know, what was the reservoir level, what -- 1 how did it relate to the flood pool, et cetera. 2 MR. FORBIS: Sure. With those, actually -- I 3 don't have the actual numbers with me this morning, but 4 the pool was -- the storage at Oroville was just -- I 5 would consider just barely into the flood control space. 6 So it was encroached in the flood control space. The 7 flood -- so the rules in the water control manual were 8 dictating releases, and it was at the time of increasing 9 the flood control release to what was appropriate. Up 10 to, I believe, 60,000 at the time, is was the release 11 schedule was for. It was in that process of during the 12 increase when the initial damage in the gated spillway, 13 the concrete chute, was observed. So it wasn't in a -- 14 from a flood control perspective, there wasn't any 15 concern at that time if there's still a lot of space 16 being provided in the reservoir. And releasing 60,000, 17 I mean, it doesn't necessarily happen every year, but 18 it's should be -- that's well within the channel 19 capacity down the stream. 20 MR. CROWFOOT: That's helpful. 21 MR. FORBIS: Yes? 22 MS. WIDENER: I have a quick question. 23 MR. FORBIS: Yes. 24 MS. WIDENER: Does the owner have the ability 25 to increase the flood control pool beyond what the Army 1 can -- Corps Engineers has dictated for that month or 2 time, and what (unintelligible)? 3 MR. FORBIS: Yes. That's a great question. 4 So the rules in the water control manual govern a 5 specific space in the reservoir. And so if the dam 6 owner or operator wishes to provide more space, or make 7 any releases that are -- while the reservoir is below 8 the flood control space, they absolutely have all the 9 ability and power to do so. 10 MS. WIDENER: Okay. 11 MR. FORBIS: Yes. 12 MS. WIDENER: And so even -- so you -- the 13 Army Corps of Engineers just dictates the maximum flood 14 pool; correct? And then -- so, like, there's that 15 750,000 -- 16 MR. FORBIS: Yes, yes. 17 MS. WIDENER: If we're in that still, but 18 we're still under the Army Corps of Engineers' line, 19 they can still release if they choose to? 20 MR. FORBIS: Yes, yes. 21 MS. WIDENER: Okay. 22 MR. FORBIS: Because we don't govern the water 23 in the reservoir below the flood control space. So 24 whether releases are made for environmental reasons, 25 hydropower, additional flood control, like, any of
1 those -- any of those reasons and more, the dam
2 owner/operator, they do not need our permission to
3 govern releases throughout the entire pool, the entire
4 reservoir.
5         MS. WIDENER: Okay.
6         MR. FORBIS: So yes, they -- in fact, also
7 in 2017, there's another reservoir down in the San
8 Joaquin Valley that, based off of what was forecasted to
9 come in, they worked with us and let us know that they
10 thought it was appropriate to release more than what
11 they were required to at the time because they were
12 seeing that the amount of space made available per their
13 water communal may not be enough to capture what was
14 coming in. And that sort of preemptive decision making
15 is -- especially when justified and warranted by
16 forecast information and other things -- can be very
17 appropriate.
18         MS. WIDENER: Thank you.
19         MR. CROWFOOT: So just to provide context for
20 this year, you know, unfortunately, from the water
21 supply perspective, we're obviously having this dry-lake
22 winter.
23         MR. FORBIS: Yes.
24         MR. CROWFOOT: So how would you -- I mean, if
25 the hydrology kept up the way it is, we're going, you
26 know, dry the rest of the winter, what would that look
27 like in a year like this? What would the Army Corps --
28 would you end up even -- would your rules control
29 because we don't even nearly hit that flood pool?
30         MR. FORBIS: Since the rules only control when
31 the reservoir is in the flood control space, like, the
32 folks at DWR that we work the most with, they'll let us
33 know and keep us in the loop of, like, you know, "This
34 is what we're doing," but they're not, obviously,
35 required to do that. And there wouldn't be any rules of
36 ours that would dictate the decisions that they would
37 need to make, because they would be nowhere close to the
38 flood control space.
39         MR. CROWFOOT: Got it.
40         MR. FORBIS: So I showed this one. I just
41 want to let you know there is another graphical
42 representation of operations for the events that are
43 more rare and more significantly large than what we
44 consider being normal, that the water control diagram
45 would dictate. So it -- there are rules and guidance
46 that apply for the bottom of the flood control pool, all
47 the way up to the top of the dam. And this type of
48 diagram would only really exist at projects where there
49 is a gated spillway. Some dams have ungated spillways
50 that are just, like, a concrete sill that water flows
51 over when some gets too high.
52         MS. WIDENER: Okay.
53         MR. FORBIS: So yes, they -- in fact, also
54 places like that that have gated spillways, they would
55 have a diagram that looks kind of like this. So before
56 I jump into water control manuals, I wanted to at least
57 give you a brief list of the other things that the water
58 management group for the Sacramento District does. We
59 talked about overseeing flood operations. When water
60 control manuals get updated, that includes establishing
61 new rules for flood control operations; that would be
62 something that we would do. We also train dam
63 operators.
64         Typical, that's for Corps dams, but we also
65 meet with some of our Section 7 partners that, like,
66 refresher trainings on how the water control manual gets
67 used and implemented. As you can imagine, if there's
68 several years of drought and staff turnover, they're
69 making people that have never had to make flood release
70 effort, or never even had a need to open up a water
71 control manual. So we do that with some of out partners
72 to make sure that we're all prepared before flood season
73 of what to do if the weather warrants flood control
74 releases to be made. And then last thing I wanted to
75 point out on this list was preparing deviation packages.
76 That's Corps term for when temporary modifications to
77 the normal flood control operations are being requested
78 or are necessary.
79         It's not just coming out in an emergency, but
80 it could because we're in the middle of the drought and
81 a reservoir owner reason would like to store more water
82 than what the water control manual would normally allow.
83 There's a process that you can go through. For example,
84 for this water year alone, you are allowed to store up
85 to this much extra water in your flood control space,
86 and releases would now be dictated this way. It's a way
87 to accommodate temporary changing conditions. And it's
88 just an official Corps process, and it actually fairly
89 mimics the water control manual update process where
90 you're looking at flood risk, dam safety risk, environmental impact, things like that.
91         And if things are properly accounted for and
92 mitigated, then deviation requests are typically
93 approved, and it's done so at the South Pacific Division
94 office. So the regional office that the Sacramento
95 District falls under.
96         MR. CROWFOOT: Question. Karla reminded me
97 that our FERC license from the Federal Energy Regulatory
98 Commission also, you know, dictates some of out
99 owners.
100 Since you can't really control that with
101 opening or closing gates, this type of diagram doesn't
102 exist for those projects. But Oroville, Shasta, Folsom,
103 places like that that have gated spillways, they would
104 have a diagram that looks kind of like this. So before
105 I jump into water control manuals, I wanted to at least
106 give you a brief list of the other things that the water
107 management group for the Sacramento District does. We
108 talked about overseeing flood operations. When water
109 control manuals get updated, that includes establishing
110 new rules for flood control operations; that would be
111 something that we would do. We also train dam
112 operators.
113         Typically, that's for Corps dams, but we also
114 meet with some of our Section 7 partners that, like,
115 refresher trainings on how the water control manual gets
116 used and implemented. As you can imagine, if there's
117 several years of drought and staff turnover, they're
118 making people that have never had to make flood release
119 effort, or never even had a need to open up a water
120 control manual. So we do that with some of out partners
121 to make sure that we're all prepared before flood season
122 of what to do if the weather warrants flood control
123 releases to be made. And then last thing I wanted to
124 point out on this list was preparing deviation packages.
125 That's Corps term for when temporary modifications to
126 the normal flood control operations are being requested
127 or are necessary.
128         It's not just coming out in an emergency, but
129 it could because we're in the middle of the drought and
130 a reservoir owner reason would like to store more water
131 than what the water control manual would normally allow.
132 There's a process that you can go through. For example,
133 for this water year alone, you are allowed to store up
134 to this much extra water in your flood control space,
135 and releases would now be dictated this way. It's a way
136 to accommodate temporary changing conditions. And it's
137 just an official Corps process, and it actually fairly
138 mimics the water control manual update process where
139 you're looking at flood risk, dam safety risk, environmental impact, things like that.
140         And if things are properly accounted for and
141 mitigated, then deviation requests are typically
142 approved, and it's done so at the South Pacific Division
143 office. So the regional office that the Sacramento
144 District falls under.
145         MR. CROWFOOT: Question. Karla reminded me
146 that our FERC license from the Federal Energy Regulatory
147 Commission also, you know, dictates some of out
148 owners.
149 Since you can't really control that with
150 opening or closing gates, this type of diagram doesn't
151 exist for those projects. But Oroville, Shasta, Folsom,
1 operations. What is the Army Corps' role in, like, the relicensing process that FERC has authority over?

2 MR. FORBIS: Usually, it's -- it's usually fairly minimal, and that's typically because, at least in our experience, FERC includes language where it will specifically say that refer to the regulations, like, to that (unintelligible) by the Corps of Engineers. And so unless there's something that's going on that would inadvertently conflict with that, then, for the most part, we're notifying that it's going on, but in terms of operation, we're not. And since we don't have a dam safety authority over projects like Oroville, we don't typically have a very involved role in the FERC process. But er definitely like to know what's going on in case there is some sort of impact to the way we normally do business, and that we would need to be aware of.

3 MR. CROWFOOT: Got it.

4 MR. FORBIS: So water control manual. So we've been talking about that a lot already this morning. The water control manual is book that contains more than just the operating procedures and the rules; it contains a lot of background information and context about the project, historical facts and performance and other data, description of physical components. It's the handbook that DWR can have at their disposal for

5 Orville, and it is a document that is a Corps of Engineers document.

6 So it's something that, when it needs to be updated, there could be discussions on which party does what work. But in the end, it's a Corps of Engineers document that needs to be reviewed and approved by the division commander at the division office. So you can view it as, like, the flood operations bible that there is for each project. So it's -- I wanted to hit a caveat for the next few slides that this -- I tried to put together a general, simplified chart of what the water control manual update process could look like. It could vary from project to project, based off of the needs of updating the water control manual, what's being looked for. But in general, it's at multi-year process that looks at a bunch of different things, and has quite a few components, and several levels of review.

7 And I wanted to point out some of our highlights, some of those things. So we were just aware of when the Oroville water control manual gets updated, what are the different areas that are being focused on through that work. So the first step is establishing a plan; right? A project management plan. And so that identifies schedules, who's in the project, and what are they doing. To lay it out, the path forward, for how do we get to an approved water control manual. So you establish that, obviously, very early on. And another thing that you establish very early on is the public and state holder outreach; it's something that, as you can see, it's the longest duration item on this chart, and it's because through --

8 down through stakeholders, operating partners, you want to get them involved in the very beginning. In fact, it's in our own Corps regulations to do so, to make sure that they are sufficiently involved and informed and can provide input throughout the water control manual update process. At one point, like, halfway through this, it might shift from the initial development of the water control manual, it might shift to their role the public would serve in the NEPA process, the environmental impacts.

9 But involving the partners and stakeholders is something that starts from the beginning, ands lasts, essentially, through the very end, until it gets to the point where it's final review and approval. So and that's extremely critical for things like this. As the director mentioned, making sure that concerns are captured in developing the new operations. Like, that's critical. It's extremely important. Another cornerstone of the work of updating the water control manual, especially if the update includes reoperating a facility, is establishing and assembling the appropriate hydrologic data to make sure that you're using everything that you know that's at your disposal, so that way, when you're comparing the alternatives and evaluating them, you're doing so that in -- that in a way where it represents the reality as best as we can. And even if there weren't the incidents in 2017 at Oroville, and even if there wasn't the comprehensive needs assessment that was going on for the (unintelligible) structural changes with Oroville, the fact that the manual was last approved in 1970 indicates there's decades of hydrologic data that could -- that very well would update our understanding of, well, what's a 200-year event look like? How -- what do those flows look like? The hydrology, there's so much data there that has -- that we've collected and observed since it was last updated. That in and of itself affords another look rules to see, like, are the rules that are in place still appropriate, and if they are, are they optimized? So making sure that you've got hydrology that's updated and -- is extremely important. And this hydrology can include not just observed data, but also synthetic data, forecast information. I'll have a few examples in the
1. next few sides. But anything to do with water data, you want to make sure you have all of it before you get started in developing the alternatives.

2. MR. PITTMAN: Quick question.
3. MR. FORBIS: Yes?
4. MR. PITTMAN: Does the Corps do its own data analysis or reception in the Feather River range, or does it rely on DWR's state inflection?
5. MR. FORBIS: At least at the dam and upstream, I do not believe that the Corps has any gauges of their own. But along the Feather and Yuba, there might be some. I'd have to check. But for most of our Section 7 partners we rely on the data collection or the data collection infrastructure from those partners.

6. MR. PITTMAN: Thank you.
7. MR. FORBIS: So one of the next steps up is also characterizing the existing conditions, to make sure you fully understand what it is doing now. So that way, whenever you're preparing potential future changes of the operation, you know the increases, and hopefully no decreases, in performance are. So understanding existing conditions is very important. Then you go into identifying well, what are the different ways that we can change the operation at the project? So identifying multiple alternatives, and concluding and determining which one is -- would performs the best, is the next logical step there.

8. In part of that, that -- it's so significant I pulled it out as its own component -- is the environmental effects analysis. So you're preparing alternatives for rotating the water control manual, typically evaluating flood control of performance, flood risk management performance. But you also need to look at and see what those changes could do to the environment upstream and downstream throughout the whole system. So that is a significant chunk of the schedule for updating it, that there's the established and deeper process for what type of document you create, what sort of review goes into it, what sort of outreach goes into it. And it needs to be done efficiently, but it usually isn't done extremely quickly because you need to make sure that you covered all your bases. You have to create all the documentation that goes with it; the end result being, of course, the water control manual. But you've got to do the deeper diving, whether it's environmental assessment, environmental impact studies, something along those lines.

9. And then there's different want review reports that are part of it as well. There's several stages of review that go into updating a water control manual; one indicating that the five-ish years might be what it takes to update a water control manual, with FIRO going on at the same time, we would fully expect for a timeline of five years to be shorter, because you're looking at same type of things that can be used for the update process, and it should -- we should see some time savings there.

10. Another thing that I wanted to highlight that I wasn't sure if everyone knew about, but in fiscal year 2020, through the federal budget process, the Corps of Engineers has actually received $4 million to update a water control manuals that meet a few criteria. I have a screenshot here of the language. If we look at the criteria of what project or projects it's been applied to, when you go through each one, it really can only apply to Oroville and New Bullards Bar. Which we would want to update both of those at the same time anyway, because they operate to the same downstream control points, and it wouldn't be as effective to upgrade one and not the other.

11. And that's also why the two of them -- those projects -- are included in the FIRO effort as well, because you want to look at the system-wide multi-watershed view in terms of when you try to optimize those operations. So for context we don't, at
MR. FORBIS: Absolutely.

MR. NIELSEN: So please keep our office abreast of that.

MR. FORBIS: Right.

MR. NIELSEN: So please keep our office abreast of that.

MR. FORBIS: Absolutely.

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1. the Corps of Engineers, especially the Sacramento District, we don't really ever receive money to update water control manuals. Like, it's something that we ask for year after year, but it's something that's never been -- well, I won't say never, but it rarely gets given.

2. So to not only to get funding, but to get funding to this degree, to do something in Northern California is something that we're really excited about.

3. Now, it's going to be a unique challenge to where we're balancing the RND FIRO effort at the same time updating the water control manual. Usually, you'd want one to happen before the other. So it will require some careful planning and establishing a schedule and delineation of roles and duties. But if it's done right, then we should be able to see time savings there.

4. MR. NIELSEN: Is the 4 million adequate? Is it getting there timely and where it needs to be?

5. MR. FORBIS: 4 million would -- based of what changes we expect to see structurally at both projects, and with FIRO going on, the $4 million is likely not enough to cover the entire total. But that's heavily dependent upon how much our partners like Yuba Water Agency and DWR take on some of the trichinal work themselves and figuring out how best to optimize the funding that we received. Because this was intended to be just for this fiscal year initially. Now, what we're pushing for at the district level is to spread that out beyond this fiscal year because we can use that money more intelligently if we have more time to do it.

6. MR. NIELSEN: You have the latitude to extend the funding to extend the time? Does it have to be used in the time?

7. MR. FORBIS: The direction I've been given is that as long as we have a plan established for when we want to use it, there is the (unintelligible) that we can use it beyond the end of this fiscal year.

8. Carry-over funding is a concept that we're looking to carry over money from fiscal year to fiscal year. And that is typically allowed as long as you're showing that you're doing so responsibly.

9. MR. NIELSEN: Yeah, and I wouldn't want you to get caught in a use—it—or—lose—it situation.

10. MR. FORBIS: Right.

11. MR. NIELSEN: So please keep our office abreast of that.

12. MR. FORBIS: Absolutely.
Quick things to be aware of, Folsom Dam is not quite a million acre-feet when it's completely full. It's required to have up to 600,000 acre-feet of flood control space there. So a majority of its entire volume may be required for flood control purposes. And it has different ways to release water, the newest one being the auxiliary spillway, which we call the JFP, which stands for Joint Federal Project. It introduced an additional release capacity at a lower elevation so you can release more water sooner from the reservoir, which is helpful for being able to respond to changing forecasts. So that's an important feature for making forecast-based operations at this location work.

So I'm going to show that when Folsom Dam was authorized in 1944, it was designed to provide what was thought to be a 500-year level of protection. And then a few years later, along the American River, there was a record flood. 1956, which was the year that it was built, there's another record flood. Yes, yes. In a matter of hours it filled up. And then, in 1964, another record flood, so just eight years later. So the updated understanding of the level of protection Folsom provides was reduced down to 120-year flood that it could capture.

Then, when 1986 came around, new analysis came was performed, and it was determined actually, it's just 60-year protection that it can provide. And so that's nothing changing to, like, the degradation of its capabilities, it's just upping the understanding of the hydrology of the watershed. We're realizing, oh, it's not doing what we thought it was supposed to do. And then, of course, in '97, another record flood. So here's a graphic of when -- or here's a chart I put together of the year when it was constructed and what the larger events were though to be up till that point, and then the larger events that occurred afterwards. So six large events in terms of peak annual inflow, a natural runoff.

The six largest events in its history occurred after it was built. So what was thought to be known when it was designed as the largest things we would see were not seen yet. So it obviously proved to an issue.
Forecasting that is being used at Folsom and has been shown
to be really productive and beneficial is this ensemble
project where you're using historical
climatological data, current forecast skill to produce
durations, between, like, one and five days.
You're looking at the inflow that's expected
to come in over the next day, over the next two days, up
to the next five days. And depending on which of those
inflows results in the more conservative operation,
that's what dictates how much space you need. It
required the Weather Service to improve their modeling
capabilities and their functionality in order for them
to produce forecasts of this nature, up to four times a
day -- of this type of forecast, which they weren't able
to do before we started it.
So it required not just technical analysis
savviness to figure out that this is good, but you
also -- but different partners had to do something that
they hadn't had to do before in order to make this work.
So it was a heavy lift for all involved. So I won't
spend a lot of time on this, because it's getting a
little bit in the weeds, but essentially, the type of
forecast that is being used at Folsom and has been shown
to be really productive and beneficial is this ensemble
forecast project where you're using historical
climatological data, current forecast skill to produce
probabilities of certain volumes occurring. So what's
the likelihood of -- what's the 25 percent chance of
inflows above this occurring, coming into the reservoir?
And so you can adjust your conservatism or
aggressiveness based off of what probabilities you think
are appropriate for the operation there. I’m trying to
synthesize it without making your eyes gloss over.
MR. CROWFOOT: Joe, just a little bit of a
time check. I want to make sure we get to the end of
your presentation as it relates to this watershed. So
just a note.
MR. FORBIS: Yes. I think I've got a couple
of minutes. I'll at least end on this part with one
MR. FORBIS: Oh, sure.

MR. NIELSEN: I don't want to take too much of your time on the thing here. But I think looking at the dynamics of snowpack melts are -- just in my, you know -- I've seen it in the past (unintelligible) -- it looks like a couple of years ago -- I forget which water years it is now -- but there was a great, great concern on snowpack melt being a factor in raising the lake really quickly. And, you know, some years when there's a lot going on, I'm watching the C-Deck owners more often than I'm looking at Twitter.

MR. FORBIS: Sure.

MR. NIELSEN: When the snow is going over, I was in New York City getting it every, you know, few minutes. So I think there was a lot of fear snowpack -- and, again, I forget which water year it was -- and it never really turned into a lot; you know, the peaks, inflows. I would say that the worst days, or the biggest days, 30,000 CFS inflows, and that's pretty manageable.

MR. FORBIS: Yes.

MR. NIELSEN: So for water discharge to be happening at a time when you're getting into that March period era where you're not going to have a lot more opportunity to fill the lake, then that's where I would want to see what, you know, we can talk about later on as to how we can better predict snowpack. I mean, this year we don't have anything to worry about.

MR. FORBIS: Right.

MR. NIELSEN: But in a big snowpack year, looking back on old data on that, you know, I mean, the scariest CFS inflows was 150,000.

MR. FORBIS: Exactly. And I think for projects like Folsom and Oroville where they have the outlet capacity, and the downstream channel capacity to where -- that the timeline that snowmelt occurs is so much more, like it did for the rain flood events, that even the high inflow from a snowpack is something that, in general, for these types of projects, are more easily managed than what you're saying, like the 175, 200,000 CFS inflows that occur within the day-and-a-half kind of a thing. That's something that, for projects as large as Oroville, would be more of a concern of how you best manage that.

MR. NIELSEN: Thanks.

MR. CONANT: Quick question. So we've seen a lot of data about the individual dam operation, but has the Army Corps done any work on how one dam affects the other dams which affects another dam until you got the water (unintelligible), you got Oroville out here, you...
OROVILLE DAM CITIZENS ADVISORY COMMISSION
Meeting on 02/21/2020

1 With Folsom it was entities like the Bureau of
2 Reclamation, SACAs, DWR, there are several partners that
3 had different concerns at different times, and if you
4 weren't meeting at a regular basis, your ability to
5 address those concerns was significantly impacted. So
6 the fact that that was done was really helpful. We also
7 worked with the Weather Service to develop comprehensive
8 hydrologic data sets, including forecast information
9 that was used to verify the forecast-based operation
10 would be appropriate.

11 Another thing that we noticed is ensuring that
12 the language in the water controlling on the graph, and
13 the modeling stayed consistent throughout. There are --
14 at different stages one got ahead of the other, and
15 didn't realize that, "Oh, this model isn't
16 (unintelligible) this new sentence that we added into
17 the operation," or, "Oh, model's doing this, but we
18 didn't add that to the diagram, we should add that."*
19 Those little hiccups just slowed us down at different
20 times. So making sure that you're consistently keeping
21 those consistent throughout the whole process is
22 important.

23 And then lastly, making sure that you identify
24 and appropriately narrow scope for the NEPA process.
25 What we did for Folsom, we weren't sure what we had to be

1 needed to focus on to get on the same page, DWR, Yuba
2 Water, and the Corps were kind of already all on the
3 same page and have been that way for a while in terms of
4 flood operation. So it's having that already in place
5 should really benefit us as we move forward in
6 implementing these lessons learned. Some of them might
7 not even apply to the same degree as they did for
8 Folsom.

9 MR. GALLAGHER: Okay. So you're thinking that
10 maybe five years is a realistic timeframe for having a
11 new manual?
12 MR. FORBIS: That was a number that I
13 estimated assuming no FIRO stuff started from scratch
14 for just a reservoir X --
15 MR. GALLAGHER: So you're thinking it could be
16 even faster?
17 MR. FORBIS: Yes. We don't have any schedules
18 set yes that identify, like, a water control manual
19 update would be completed by this date. But with FIRO
20 in place, it should expedite --
21 MR. GALLAGHER: I mean, Folsom took, like, ten
22 years or more; right?
24 MR. GALLAGHER: I mean, five or less, I mean,
25 that's, certainly something I think we want to hear.

1 looked at so we kind of looked at everything. And then,
2 when we got further down in the process, we realized,
3 "Oh, we didn't need to look at this part over here; it
4 doesn't play a role." But by that time we had spent
5 time and funding looking at that. So making sure that
6 you don't jump the gun and start doing the environmental
7 impacts too early on to where you end up creating more
8 work for yourself.

9 That was one of the things that we learned
10 that. And for projects like Oroville water manual
11 update, we would be able to more smartly discern which
12 areas to focus on, and when we should focus on them. So
13 I think with that, I think I just have --
14 MR. LAWLEA: (Unintelligible).
15 MR. FORBIS: Oh, I'm sorry. Go ahead.
16 MR. GALLAGHER: Just some quick questions
17 here. One, you identified those things you learned. Do
18 you feel like we are addressing those as we embark on
19 the Oroville water control manual?
20 MR. FORBIS: I do. I think what also helps is
21 that the establishment of the forecast coordinator
22 operations program has really facilitated the working
23 relationships that our agencies have. That we worked so
24 well already that any of the hiccups that we ran into
25 for Folsom where there maybe were some time that we
MR. GALLAGHER: It’s the public’s set of additional auxiliary spillway.

MR. FORBIS: Yes.

MR. GALLAGHER: In that project.

MR. FORBIS: Right.

MR. GALLAGHER: And so the manual took that into account.

MR. FORBIS: Yes. Exactly.

MR. GALLAGHER: So in the five-year timeframe, you said, you know, the 4 million gives it what you need right now. Also assuming that DWR and the other partners can provide technical, you know -- contributes some technical information, maybe just to the department. Like, do we feel like we have -- with the 4 million that’s set aside for this fiscal year, and assuming that we keep getting, you know, continual support there, do you think we can keep the timeline that you guys have the bandwidth to keep that going? Does that make sense?

MS. NEMETH: So I think we’ve identified probably an additional 4 million would be required to do this at the pace we would like to do it. And so those are conversations we’re having internally with the secretary within the administration about how best to support that. I think certainly we were very supportive of the Corps language. And, you know, thank you to Congressman LaMalfa and Senator Feinstein was very helpful in securing that appropriation. And I think you can look to us to be doing that again to make sure that we’ve got the dollars needed to get this done in a timely manner.

MR. GALLAGHER: Do we need more money, like, from the State to help do this? Or are we looking maybe for additional money from the federal government?

Obviously, they are putting 4 million in this fiscal year.

MS. NEMETH: Right.

MR. GALLAGHER: Is that something we should maybe be talking about in our budget committee hearings, Senator Nielson and I?

MR. CROWFOOT: Well, I’ll say we want to move this process forward as fast as appropriate. In other words, as fast as possible. But also, doing this takeover outreach that we need to --

MR. GALLAGHER: Right.

MR. CONANT: And I know you do, too. So we should have that conversation. Maybe start it as an offline conversation around what are the resources we need to keep this project contract and move it as expeditiously as possible? What are the resources from the federal government versus the State? But this a the priority of ours, which is, you know, doing this work. You know, safety, flood control, and water supply; let's figure out how to optimize all three.

MR. GALLAGHER: Yeah, I mean, I think that everybody's on the same page and want to see this done right, but try and do it, you know, as expeditiously as possible; right? And then so certainly we all want to work together to make -- and you've got lessons learned, you know, from doing is this at Folsom, so I think we can bring that all together, that's all very promising.

MR. CROWFOOT: And if I might suggest, maybe we have a check-in, you know, on a quarterly basis where we have the leadership, Army Corps, DWR, our agency. So for you all, you can hold us accountable for continuing to move forward, make sure that there's enough stakeholder operations, et cetera. I like that because it's enforcing penchant for us to keep our eye on the ball.

MR. GALLAGHER: Yeah. Absolutely. And then one quick thing on FIRO, I didn't see on there that, as we're moving forward, we also should include the flood control agencies, Trilla (phonetic) and Sutter Butte.

Flood Control agencies. I don't know if they've been officially incorporated into that group, but they would be similar to, you know, (unintelligible) on the Folsom project.

MR. FORBIS: Good point. So one point of clarification there. Though Folsom uses forecast-based operations, it wasn't part of this FIRO program.

Folsom’s approach was to use what we have to the best that we can. And FIRO is how can we improve what we have, and then later on down the line use the better stuff, for lack of a better word. So the FIRO group is more focused on research and development of the forecasting capabilities and the forecasting product.

What can be done to make that better? And then once that becomes better, how can that be use operationally? And so with the Folsom update (unintelligible) was absolutely and rightfully included in those task force meetings. But if we had done a similar thing for, like, a FIRO approach where you’re doing a lot of R&D sort of analysis, the parties might have been slightly different between the two efforts.

MR. GALLAGHER: I just meant more so just for the water control update.

MR. FORBIS: Yes. Absolutely. They would be reimbursed for that. Absolutely.

MR. CROWFOOT: So when we would be -- and I
ask this of out people, too -- when would we be able to
look at that sort of (unintelligible) chart that
schedules out the different pieces of the water control
manual update and FIRO, and then understand when it's
going to take place? Is that your last bullet about
developing the final work plan?

MR. FORBIS: Actually, no. That work plan is
specific just to the FIRO effort, not the water control
manual update. And I think you're highlighting one of
challenges that we're going to face is that we have two
separate efforts looking at the same things but, like,
still different. But a lot of the same people are
working on both. So this -- specifically talking about
when the work plan outline, the technical work that's
going to be done, as part of the FIRO R&D project.

In terms of creating an Oroville-specific
water control manual update schedule, we have our first,
I guess, interagency meeting with DWR and the Corps
scheduled for next month to talk about the tasks that
we've identified that we can do, and who should do what
to really use the federal -- the $4 million federally
provided as smartly as possible. And that would likely
include Yuba Water taking on some of the tasks of what
would go into an update, and DWR taking on some of the
tasks going through the update.

So we have a meeting scheduled, coming up for
next month for that. I don't have a good guess of when
the update is scheduled, but it would come following
that at some point.

MR. NIELSEN: Real quick. If it's looking
like it's a three or four, five years process, but you
find elements that you would say, "Hey, this could be
really helpful in the operation," are you precluded from
using new bits to add to the manual, or do you have to
use the old manual and then get all the new and improved
in order to make any running changes?

MR. FORBIS: That's a great question. No, we
would use the -- our deviation process to implement
temporary changes that would benefit the various
purposes. And that's, in fact, what we did for Folsom
is, while we're still waiting for manual to be
officially approved, we did deviations to the water
control manual for Folsom that were essentially the
draft water control manual that we were currently
updating.

So we were using the operations in the
yet-to-be-approved manual before it was approved because
we were looking at it just as this several month or
one-year window. "Yes, it's appropriate for this year," or
"Yes, it's appropriate for these next four months,

until it was approved." So no, we're not precluded from
using the knowledge that we gain and the potential
benefits that would come from that before.

MR. CROWFOOT: Well, that's very helpful.

Maybe move to the last slide and turn on the lights.

Mr. Forbis gave a really good presentation. We want to
open it up to any commission members, and then I think I
want to take public comment a bit out of order, so we do
public comment now.

MR. FORBIS: Sure.

MR. CONANT: And we can sort of tally up any
questions that members of the public can offer you to be
able to answer too.

MR. FORBIS: Absolutely.

MR. CONANT: But before we do that, commission
members, any questions of Mr. Forbis?

MS. WIDENER: DWR's yearly flood operation
plan, is that made by DWR, and it's just based off of
the manual from Army Corps of Engineers?

MR. FORBIS: Yes. I'm not even sure of the
exact tile, but the one that includes the enhanced flood
pool in it, yes that was developed by DWR. And once
developed, they coordinated with us and allowed us time
to review and provide any comments or feedback. But as
we talked about before, as we got to -- since that was
is, the Feather River system, upstream from Lake Oroville, has a lot of dams and a lot of facilities that are exceeding 100 years old.

**MR. FORBIS:** Okay.

**MR. PITTMAN:** So my thought pattern is, as the Corps has been in partnership with this project, my wonder is, as those projects have to be redone, rebuilt, whatever, is there a possibility the Corps might be interested in partnerships for flood control upstream?

**MR. FORBIS:** I think there's a possibility. I know I've attended one meeting where the -- not specifically the Feather River, but that one meeting where the discussion of future federal interests in infrastructure changes at dams in various watersheds came up. So I know that's a question that can be asked, and it's usually -- I'm not as familiar with the process of what comes from there, but I know those conversations occur and have specific entities or people are interested in pursuing that. I could find appropriate point of contact at our office to flush out those details, because, unfortunately, I'm not the right guy.

**MR. PITTMAN:** Well, I appreciate your answer because I see Folsom as an example of getting the lower exit of the pool. It may be an example to use as many other reservoirs, maybe (unintelligible) we have that wonder is, as those projects have to be redone, rebuilt, whatever, is there a possibility the Corps might be interested in partnerships for flood control upstream?

**MS. DENNIS:** Thank you very much. As part of the discussion. That makes a lot of sense for all the other reservoirs. I mean, Feather draining is huge, as we all know, and so is the Sacramento River drainage. But if you can get it in all the other pools, it might help the reservation. So I appreciate your conversation.

**MR. FORBIS:** Absolutely. Yeah, sure.

**MR. CROWFOOT:** Thank you, Mr. Forbis.

**MR. FORBIS:** Thank you. Thanks for the invitation.

**MR. CROWFOOT:** Have a seat.

**MR. FORBIS:** Okay.

**MR. CROWFOOT:** And just one request as you do, which is this body is, you know, formalized moving forward and we meet on a quarterly basis. So would be great if you or a colleague from time to time could come and update us on this process. Obviously, we have director of Department of Water Resources, but really appreciate your engagement. There was a lot of interest in having you come, and hopefully we can just stay looped as a commission to your process.

**MR. FORBIS:** Absolutely. I'm happy to share. This sort of work with FIRO and (unintelligible) operation, that's brand new for the Corps of Engineers as an agency. So it's on the forefront of what our agency's typically comfortable with. And so we're pushing the bounds a little bit out here in California. It's exciting work for us. And especially knowing that it's resulting in better performance from these projects, so they can do a better job than what they've typically done. So I'm happy to come back and share any progress we've made.

**MR. CROWFOOT:** Thanks so much.

**MR. FORBIS:** Thank you.

**MR. CONANT:** Those who want to make comment, you can fill out a speaker card, or you can also just come up. But I will take the one card I have received already, which is Helen Dennis. And would ask you to come forward, if you would, Helen. And what we do, as you know, Helen, is try to ask each of the public commenters to keep their comments focused so we can hear from everybody. And then if you have specific questions that we can answer or Army Corps can answer, please feel free to identify those. Welcome.

**MR. DENNIS:** Thank you very much. As part of the community, I'm more interested in what's happening for the citizens, for us as a public. I don't want to know everything about water, I just want to be kept safe from it. I don't want Lake Oroville to only be for boaters and fishermen. I want it to be for regular family members who want to go, say, swim, or who want to go camping, who want to see the wildlife. And I don't see that happening. I see only boating, boating, and boating going on at the lake.

**MS. DENNIS:** Thank you very much. As part of the community, I'm more interested in what's happening for the citizens, for us as a public. I don't want to know everything about water, I just want to be kept safe from it. I don't want Lake Oroville to only be for boaters and fishermen. I want it to be for regular family members who want to go, say, swim, or who want to go camping, who want to see the wildlife. And I don't see that happening. I see only boating, boating, and boating going on at the lake.

**MS. DENNIS:** Specifically, I've been up to Loafer Creek, the dam, the spillway, over to the other side where the boating is; I don't see a lot of activity going on for the common citizen who doesn't have the money to own the boat, or maybe isn't interested in having a boat or going out on the lake, but just wanting to enjoy the lake from the shore. I'm seeing taking down more and more trees, more wildlife is being chased away of all the equipment and explosions and everything that are going on. When I come to these meetings, I want to here about Oroville.

**MS. DENNIS:** I do understand that Folsom is important to what is happening in Oroville, but I really want to hear about what's going on right now in Oroville in and at the dam, and at the surrounding waterways. And that's my comment. Also, another thing I read was that on one of these sheets (unintelligible) about Oroville is that the Department of Water Resources, DWR, owns and operates the Oroville Dam facility. I believe they get licensed -- which, last time I heard, they were still trying to get the license. And I was opposed to it.
because of the way they had been if the past. But that
thing I'm commenting on: Why are they making statements
if they own it?

MR. CROWFOOT: Thank you so much, Hellen. Just
on the topic of recreation, this commission and its
members can identify any topics we want to make sure to
address in future commission meetings. So if there's an
interest in diving into recreation, both challenges and
opportunities, we can certainly do that. Just a
quick -- let's turn Helen's last point into a question,
which is: Does DWR own the dam? And maybe a couple
sentences on relicensing.

MS. NEMETH: Sure. DWR and state water
project is the owner of the dam. And that means that we
acquired the land and financed the construction, so we
are, in fact, the owner-operator. And we have a water
right to the water that we store in Oroville Dam. And
that is essentially, as you know, it provides water to
the Californians in the bay Area, all the way down
through southern california throughout the central
valley. So we are, in fact, the dam owner and operator.
The state water project has 25 other dams throughout
California in which it is the owner and operator. So
it's a very familiar role for the state water project.

On the relicensing, we do, as many of you in this room
know, that the relicensing was completed in, I think, it
was 2006.

We received the final environmental permit, it
was a biological opinion from the National Marine
Fisheries service in 2016. And we await final approval
from the Federal Energy Regulatory Commission to
actually activate that license. Until that time, we
deal on an annual basis with a temporary license.

There's a lot of recreational benefits that are part of
our new license, particularly ones that are in what's
called the FERC boundary of the facility. To the extent
that there are other recreational projects that the
department has committed to that's outside of that
boundary, we have accelerated those -- particularly
since the Oroville spillway failure -- as the way to do
everything that we can to more immediately enhance
recreational opportunities, understanding that some were
lost during that incident.

That continues to be a work-in-progress. We
are very focused on getting the license so that we can
start to do all the projects that we've committed to
doing, now 14 years ago. So it's a huge priority for
the department to do that.

MR. CROWFOOT: Thanks so much, Karla. Other
members of the public that care to share perspective?

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MR. JERRY: Everybody is at the throttle and the control, but is somebody controlling them?

MR. CROWFOOT: Joe, maybe you could talk a little bit about the flood operation center and the partnership between DWR and the Army Corps.

MR. FORBIS: Yeah, absolutely. That's the first thing that came to mind. Thank you, sir, for your question and comment. So there currently exists with DWR, the joint operations center, which is a facility in Sacramento that has the Weather Service, the Bureau of Reclamation, and DWR located in one facility. And within that is the flood operation center where the release -- the proposed releases from all these reservoirs are shared and submitted and incorporated into the Weather Service's stream flow forecasts.

So you can see the impacts of future releases at various downstream gauges and control points. During this time of year, we have a video conference call or meeting at least one a week during the flood season where we get together, look at the upcoming weather, share our plans for releases, and coordinate and ensure that all the information is known by all parties so that way, the forecast provided by the Weather Service are up-to-date and show realistic results of what would happen when these release changes, if any are scheduled, are making. Since that's a DWR, like, facilitated in-house function, I don't know the entire history with it, but I know we've been a party to that for a very long time.

And there's been the subgroup with the -- another term for you -- the Forecasted Coordinated Operations Group that has been in place for over ten years, specifically for the Yuba and Feather watersheds with the Corps of Engineers. And that has quarterly meetings where we meet and discuss the goings on of the different projects, and also have a shared, like, modeling tool that can show if releases are coming from these different locations, what does that mean at these downstream points?

MR. JERRY: But is there a general in charge of all this operation? You got the Navy, you got the Air Force and all this; and your corps being a federal plan to keep them from flooding out. And you've got all these different outfits that are making progress. Some you are. You know, keep it simplistic. I don't care about all this other stuff. I want it simplistic. Is this going to somebody that is a decision maker that has algorithms and a computer coming up with all these variabilities to make a decision?

MR. FORBIS: The Corps of Engineers has the authority for the flood control operations within our district.

MR. JERRY: Not your district. In the --

MR. CROWFOOT: Let me ask Karla just -- and I don't mean to cut you off -- just to directly answer the question. I'll tell you that, from my perspective, I am confident that we have a flood operation center that integrates gaits all of this realtime data with each of these agencies, and then ultimately, on our system, the buck stops with our director of DWR and her team. One of the suggestions at our first meeting was to actually offer a tour of the flood operation center to this commission, and I'd like to ask our organizers to put that to the top of list.

And maybe before we get out of the winter season, offer that to this group, because I think it's really informative to see. It does feel a little bit like mission control at NASA, so I want to reassure that they are. But, Karla, and the question of, sort of, who is the decision maker as it relates to the State owned and operated facilities and flood control?

MS. NEMETH: So every entity that owns its facilities makes decisions about how to operate them. But all the controls for flood control are approved by the Corps. So we're making a decision on the lever, but it's all approved by the Corps.

MR. JERRY: Yeah, but do you have control over PTE (phonetic) that's coming into your lake from Lake Almanor? Suddenly they say, "We got a horrendous amount of water coming up here," and you're sitting here, based upon, you know, Ponderosa and the works with a certain amount coming in, and suddenly they say, "We have a problem here."

MS. NEMETH: We are absolutely incorporating all these inputs into our decision making.

MR. JERRY: Then you have Shasta up there with their releases. Okay. Now, I want to get to the other thing that I'm up here for; that's the Pulermo tunnel. I mentioned that Dave Sarkisian and I had a meeting a while ago. I have grave concerns about the Pulermo tunnel. Take into consideration that this is a 2,430-foot tunnel going through Oroville Dam, releasing its contents just above the access road going into the underground power plant. And should that break up there, it's going to flood right into the underground power plant. Once you lose that, you don't have that almost 17,000 CFS stability to release water, because the power plant will be flooded. And then the only other way you can release water is the spillway because of the river valve outlet would be unusable at all.
filling a whole reservoir up with nobody to control it. And all this jeopardy is only to provide controls are. And so they have a situation where they could open a valve on an existing pin stock up there now and recover their 40 CFS.

Or, for that matter, DWR can go down on the river and put a pump and pick it up 200 feet and put 40 CFS in that canal to continue their operations. I mentioned to Mr. Sarkisian there that a legal requirement — and I brought this up in that meeting with you. I have a copy of that, of which he has a copy of it. Going back to the 1960s to read about the conditions that water resources had to put those facilities in and guaranteed them the water. So they give you several options to be able to maintain that 40 CFS.

Having that tunnel through the dam, in my feeble estimation, is jeopardizing that whole side of the dam up there should it go out. You're looking at 150 PSI. You're looking at 300 foot of head over the top of the inlet. You're looking at a situation if you had to shut that facility down, you have to set the (Unintelligible) down 300 feet, you could then recover your 40 CFS. And so we're able to walk in and it looks good for the next 20, 30 years maybe. But how long is that facility going to be up there? 100, 200 years? Somewhere in the meantime, you're going to have to go in there and do something to that; the valves that rust or the whole dam itself. Creating pressure on that 6-foot diameter tunnel, sometime, sooner or later, you're going to have to go in there and do a considerable amount of maintenance.

And I don't know how you would be able to send a diver down there 300 feet to pull that gate up. If you had a broach, if you had a whirlpool, like I mentioned before, that would suck the (Unintelligible) down through it.

MR. CROWFOOT: Can I -- this is helpful, and I -- and I'm encouraged that actually you got an opportunity to connect directly with Department of Water Resources. Can we just ask somebody at Department of Water Resources, just for the purposes of our commission, just come up in about two minutes, at least just give us -- so we're all understand what the Pulermo tunnel is from DWR's prospective, and an update on addressing this gentleman's concerns. Yeah, great.

MR. JERRY: Do you want know me to stand here, or do you want me to sit down?

MR. CROWFOOT: Please have a seat. Thank you.

MR. JERRY: Thank you.

MR. CRADDOCK: Good morning, commission. Ted Craddock, acting deputy director of the state water project. And, Jerry, good to see you today, and really glad that we were able to have our chief dam and safety engineer David Sarkisian connect with Jerry. So to your question, Secretary, I'll just give a very brief description of the facility. And then if we want to talk in more detail, maybe this is something the commission would be interested in a future presentation on. It's a -- the facility is a small tunnel that's located below the dam, and it was bored through the bedrock underneath the dam. It's a facility that includes a concrete-lined tunnel for about halfway, and then a tunnel plus, so a concrete plug in the tunnel,
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<td>have it. So thank you very much. Any other members of</td>
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<td>the public that wish to comment? Okay. For our last</td>
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<td>item, I’d ask our colleague from Department of Water</td>
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<td>Resources, Erin Mellon, come and give us an update on</td>
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<td>and surrounding communities is that, over the last three</td>
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<td>seriously and have made progress on that,</td>
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<td>work-in-progress. And Erin will update us on that.</td>
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<td>MS. MELLON: Thanks. Thank you all. Thank</td>
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<td>you, commissioners. I talked about this a little bit at</td>
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<td>our last meeting. So like I just mentioned, we just</td>
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<td>posted a digital article that kind of memorializes some</td>
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<td>of the outreach that we want to do. It talks about when</td>
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<td>we want to do that outreach based on some annual</td>
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<td>milestones, and the (Unintelligible) that we do that</td>
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<td>outreach. And there are paper copies in the back for</td>
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<td>everyone. Like Secretary pointed out, we really want to</td>
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<td>proactively share information about the operations of</td>
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<td>DWR as a whole, and, obviously, Oroville specifically.</td>
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<td>We want to do is in a variety of ways to make sure that</td>
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<td>everybody has access to that. So we use e-mails, we use</td>
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<td>our website, we use print advertisements in local</td>
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<td>papers, certainly social media.</td>
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<td>Congressman LaMalfa talked about checking C-desks and</td>
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<td>we also are pulling our charts off that website which</td>
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<td>shows current lake levels and releases from the</td>
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<td>in large part determined by how much water in storage we</td>
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<td>have in Lake Oroville.</td>
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<td>make required releases from the facility, and that's for</td>
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<td>environmental reasons or water quality or water supply</td>
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<td>needs. Certainly any time that we ever intend to</td>
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<td>utilize the main spillway, a lot of communication will</td>
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<td>be had. And we’ll start communicating well ahead when</td>
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<td>we anticipate potentially use with the understanding</td>
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<td>that, depending on weather patterns, things may change.</td>
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<td>We may adjust our operations and may not need to end up</td>
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<td>using the main spillway. Unfortunately, this year, it</td>
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<td>looks like it's going to stay pretty dry.</td>
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Mr. Crowfoot: Thanks so much, Erin. The community feedback and input has been really helpful to improve our communications. And so let me ask, first of all, are there commission members that have any suggestions, observations, questions in term of these -- recent ways that we are communicating? I might just ask Ted -- oh, sorry.

Ms. Mellon: Me too.

Mr. Crowfoot: Yeah, and I say, too, video that can shared as well.

Ms. Widener: I just want to add that 80 percent of our learning today -- or more -- is generated by visual. So the more pictures, the better. I just have the say that. That's a big deal and it really helps.

Ms. Mellon: Me too.

Mr. Crowfoot: All right. We have the slide up. Maybe to conclude the meeting -- and maybe it's Tad or John I see back there -- if you want to just give us the sort of status report on the reservoir this season and what we can expect for the remainder. Not that we're asking you to report on the reservoir this season and what we can expect for the remainder. Not that we're asking you to report on the reservoir this season and what we can expect for the remainder. Not that we're asking you to report on the reservoir this season and what we can expect for the remainder.

Ms. Widener: I have just an observation for the public. There's, like, a contact us at the end of -- through one of those community update e-mails. And you can click on it, and you can get a hold of Liza really, really quickly. I had a little bit of an issue with some dates that were not showing on the website; she fixed it really quickly and got back to me, and it was very much appreciated.

Ms. Mellon: Thanks. Yeah, if you don't know her already, Liza Whitmore is our public information officer here in Oroville. She lives up in Chico. That was a new addition -- what have we been? A year now and a couple months now? In or around?

Ms. Mellon: So that was direct feedback from all the way we're all open, ears are wide open. I really appreciate that kind of feedback to make sure that we're communicating to you all in a way that's actually helpful.

Mr. Crowfoot: Thanks so much, Erin. The community feedback and input has been really helpful to improve our communications. And so let me ask, first of all, are there commission members that have any suggestions, observations, questions in term of these recent ways that we are communicating? I might just ask Ted -- oh, sorry.

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Mr. Crowfoot: And, John, the flip side of that, of course, you're talking about water supply. At least there's a silver lining as it relates to flood control. So plenty of space in the reservoir.

Mr. John: Yes, plenty of space in the reservoir. I think as was in Joe's presentation, we're not even close to having -- being open to that required vacant flood control space for this year. So that is the flip side. There is no concerns at this point whatsoever for any type of flooding.

Mr. Crowfoot: Got it. Questions of John?

Mr. John: John is, like, the chief operator of the entire state water system. He's got some fancy title I forget.

Mr. Nielsen: Thank you. What could we figure on having an updates, or even a final number, on ag district allocations here locally, or farther down the miracle March.
MR. JOHN: We hope so. So we update these forecasts every month. And what happens is, during that snow survey process that takes place where all the snow's measured comprehensively up and down the Sierra Nevada, that gets turned into a runoff forecast of how much runoff we expect from that -- from the snow that's up there, plus a forecast of anticipated precipitation. That then flows into an operations forecast in terms of what we can actually deliver to our contractors. The unfortunate thing is, the 15 percent was actually based on conditions as of February 1st. And as I mentioned, we're being shut out of here in February. So we don't see any movement upward on that allocation anytime soon unfortunately.

MR. NIELSEN: You're very conservative early in the year. So if you believe that we're going to have the minimal amount of additional inflow, you know, everything -- taking into account the dryness we've had and maybe average from here on out, do you see that that 15 percent can be improved upon for those a little father south?

MR. JOHN: Yeah, so there's certain optimism of --

MR. NIELSEN: Yeah, there's certain expectation of a certain amount of precipitation occurring each month. Even in a dry year, we would typically see a few inches of precip each month; we're not seeing that in February. I mean it's not completely unusual that we see a week's stretch of no precip, because much of our precip comes in through these atmospheric rivers. So that, you know -- that has the potential of turning around if we get hit by one of those, say in March, which is still a month that we're open to that type of phenomenon.

MR. NIELSEN: Right now? Okay. What are we -- I wrote down a few C-Deck numbers from -- Oroville Lake reached it peak four days ago; 805.53 is already trending down unless something big happens on our runoff. A year ago today, interestingly, it was 774. So it's 30 feet higher than a year ago. But we had a lot happening before we reached the peak on June 26th of 896. And then the lake dropped all the way down to 775, it's low point, on November 29, which is about the same as the one-year-ago date. So it's only come up 30 feet since November 29 to where we are right now.

So as, you know, the concern the gentlemen had, I don't see any way we're going to be getting into a flood control situation. We can have an easy March. So I just thought those numbers were interesting on Oroville a year ago. Compared to now, we have almost zero snowpacks, so we're going to have to play it pretty tight. Releases he talked about for delta saline and fish issues, how many CFS do you think that would peak at, looking at how we haven't had supplements from --

MR. JOHN: Right. So we made about 500 CFS increase. We're hopeful that's all we're going to have to make for at least the foreseeable future. I will say I'm giving up hope yet that we have reached our peak in storage. I think there's -- more likely than not, we're going to start increasing storage once again once -- I mean, odds are we will get some sort of precipitation in March that -- and we do have some -- even though it's small, we do have some snowpack. We will still get some of that inflow later in the spring. So not giving up hope yet that we've peeked out on storage.

MR. NIELSEN: No, no. But I mean, last year I liked to watch the inflows, too, and we had a lot of days between -- the low was 10,000, the high was about 35,000 CFS during that March period. I hope we see some 35s and kick this up a bit. I'm a little concerned.

MR. JOHN: Absolutely. This is the time period where we actually would be cheering on an atmospheric river to provide some benefits to the water supply.

MR. NIELSEN: Thank you. I'd like to, at the appropriate time -- I'll wheel back -- but on FERC relicensing and that situation when that's appropriate.

MR. CROWFOOT: Me too.

MR. NIELSEN: Right now? Okay. What are we looking at as far as, you know, as the FERC or the needs assessments, are those things that are in the way of a FERC relicense? What are the other things in order to
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<tr>
<td>1 get those as soon as we can.</td>
<td>1 accelerate absent a FERC license.</td>
<td>1 get to those as soon as we can.</td>
<td>1 get to those as soon as we can.</td>
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<td>2 MR. NIELSEN: Do I hear in there that you</td>
<td>2 MR. CROWFOOT: But, Karla, it also sounds like</td>
<td>2 MR. CROWFOOT: But, Karla, it also sounds like</td>
<td>2 MR. CROWFOOT: But, Karla, it also sounds like</td>
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<td>3 have -- FERC has some boundaries on that, but are you</td>
<td>3 it would be helpful to get the list of projects that</td>
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<td>4 able make firm commitments independent of what FERC</td>
<td>4 we’ve committed to within the FERC license, too.</td>
<td>4 we’ve committed to within the FERC license, too.</td>
<td>4 we’ve committed to within the FERC license, too.</td>
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<td>5 might that we can take to the bank locally as far as</td>
<td>5 MS. NEMETH: Absolutely.</td>
<td>5 MS. NEMETH: Absolutely.</td>
<td>5 MS. NEMETH: Absolutely.</td>
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<td>6 those recreation and facilities upgrades? Kind of like</td>
<td>6 MR. NIELSEN: But do we have -- and I might be</td>
<td>6 MR. NIELSEN: But do we have -- and I might be</td>
<td>6 MR. NIELSEN: But do we have -- and I might be</td>
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<td>7 what the lady was asking about, one of our public</td>
<td>7 ignorant because I’m not here all the time, but do we</td>
<td>7 ignorant because I’m not here all the time, but do we</td>
<td>7 ignorant because I’m not here all the time, but do we</td>
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<td>8 members. On facilities that are accessible to her too,</td>
<td>8 have that plan? Is that something that we can put our</td>
<td>8 have that plan? Is that something that we can put our</td>
<td>8 have that plan? Is that something that we can put our</td>
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<td>9 too.</td>
<td>9 finger on, and then I can help reassure our locals at</td>
<td>9 finger on, and then I can help reassure our locals at</td>
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<td>10 MS. NEMETH: Absolutely.</td>
<td>10 the City and the County. &quot;Hey, we’re looking good, and</td>
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<td>11 MR. NIELSEN: But do we have -- and I might be</td>
<td>11 I’m going to go ahead and do my part to help encourage</td>
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<td>12 ignorant because I’m not here all the time, but do we</td>
<td>12 FERC to move forward once we have those assurances&quot;?</td>
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<td>13 have that plan? Is that something that we can put our</td>
<td>13 MS. NEMETH: Yeah, so we’ve done a handful of</td>
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<td>14 finger on, and then I can help reassure our locals at</td>
<td>14 projects -- and we can give you an update on those</td>
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<td>15 the City and the County. &quot;Hey, we’re looking good, and</td>
<td>15 projects -- that we're helping on the -- both on the</td>
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<td>16 I’m going to go ahead and do my part to help encourage</td>
<td>16 fish front, in the Feather, but also some of the work</td>
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<td>18 MS. NEMETH: Yeah, so we’ve done a handful of</td>
<td>18 and other places. So I’d be happy to provide you with a</td>
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<td>19 projects -- and we can give you an update on those</td>
<td>19 lost of work that's ongoing. But I think we have</td>
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<td>20 projects -- that we're helping on the -- both on the</td>
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**OROVILLE DAM CITIZENS ADVISORY COMMISSION**

**Meeting on 02/21/2020**

**Pages 102..105**

1. get that resolved? And also, there's obviously a local
2. concerns of the County and the City on some things being
3. met. I think everybody in favor of getting this done
4. and having the -- a long term hydropower. Everybody
5. wants that. But just, you know, the concerns
6. immediately after the spillway failure and some of the
7. more local issues.
8. What are you looking at with that whole matrix
9. as far as -- what you need to get out of the way as far
10. as needs assessment. Is that a job that needs to be
11. done first? And the FIMO and that update there, are
12. those things that need to be done, or is that
13. independent of what you need to do for a relicensing?
14. MS. NEMETH: I think technically it's
15. independent. But I think the dynamic is, you know,
16. post-spillway failure, a real interest in the County and
17. the City and, you know, especially some of our friends
18. recreational community really wanting to understand what
19. out long-term plan was to enhance the facility. We are
20. close. And a lot of folks around some of the
21. commissioners others have been participating in the
22. comprehensive needs assessment. And, Ted, you can tell
23. us the timing on that. But I believe we're close to
24. reaching completion on the forecast and foreign
25. reservoir operations, which is really exciting stuff, we

1. expect to have a work plan completed by the end of this
2. year, which, of course, is all of this new information
3. that the Corps is committed to considering as it moves
4. towards a separate process, which is updating the -- the
5. control manuals.
6. So all those things are converging. I think,
7. ultimately, it's at the discretion of the FERC
8. Commission in Washington, D.C. to make the
9. determination. And, you know, I think -- I mean, my own
10. observation if FERC was -- you know, as we were moving
11. through this realtime emergency and sorting things out
12. through the aftermath, and we were rebuilding our
13. relationship with FERC, and the engagement of many
14. independent technical bodies that could help provide
15. more confidence that we were looking at everything, we
16. were accounting for everything. I think the fact that
17. we have now three separate, independent entities that
18. are reviewing the work, I think, helps us, you know,
19. make the case to FERC that we're crossing T's and
20. dotting I's, and that we're committed to delivering on
21. this path of improvements.
22. Here at Oroville ought to help us make the
23. case. But these very specific things that we can and
24. cannot do given the FERC boundary, particularly as it
25. relates to the recreational amenities. We just want to

1. accelerate absent a FERC license.
2. MR. CROWFOOT: But, Karla, it also sounds like
3. it would be helpful to get the list of projects that
4. we’ve committed to within the FERC license, too.
5. MS. NEMETH: Sure.
6. MR. CROWFOOT: I think that’s important for
7. you to know what we're stepping up. And do you recall
8. off the top of your head the amount of investment as it
9. relates to the amount of funding?
10. MS. NEMETH: John, can you remind me? Or Ted.
11. MR. CROWFOOT: Half a billion dollars?
12. MS. NEMETH: One million.
13. MR. CONANT: Say again. Maybe on the
14. microphone.
15. MS. NEMETH: Yes.
16. MR. CONANT: Sorry to put you on the spot.
17. MR. YARBOROUGH: Sorry. An entire
18. billion with the license.
19. MR. CROWFOOT: Got it.
20. MR. NIELSEN: Say that again, please.
21. MR. YARBOROUGH: Would be one billion in
22. total.
23. MR. NIELSEN: One billion with a "B"?
24. MR. YARBOROUGH: With a "B" over the
25. 50-year license.
where boom, you get a 40 or 50 year operating
direction. It's like, once you finally get to that 24 point
think everybody really wants to be going in this right 23 same
area?
within the FERC boundary where the Oroville facility is.
MR. NIELSEN: (Unintelligible) over 50. Okay.
MR. CROWFOOT: And it seems like a good
follow-up would be -- at the Congressman's office, would
be just some overview that detail in terms of what are 12
the projects. I mean, we're excited about this, for 13 what
it's worth. And I think that we recognized that we 14 need to
work with the community on finalizing the FERC 15 license,
but, you know, we're sort of excited to get it 16 this stuff in
the ground.
MR. NIELSEN: I hope, again, that
( unintelligible) remaining positive relationship there. 19
I know -- there's been a really good (Unintelligible) 20 with
the local chamber being the promoter for DWR. And 21
(Unintelligible) up there, so those are all good inputs. 22 I
think everybody really wants to be going in this right 23 same
direction. It's like, once you finally get to that 24 point
where boom, you get a 40 or 50 year operating
license, it seems there's nothing really to talk about.

much after that. And we all want that license to
happen.
MR. CROWFOOT: Right.
MR. NIELSEN: Great, green hydro generation.
MS. NEMETH: That's what's so good about this
commission.
MR. NIELSEN: Thank you.
MR. CROWFOOT: Helen, quick point.
MS. DENNIS: All right. My quick point is,
when I made my comment, it was not solely for disabled
people. It's for everybody.
MR. CROWFOOT: Totally.
MS. DENNIS: When I was younger and my
children were home, I used to take them out to the Loaf,
for instance, or the ( unintelligible) and take them out
to go swimming and have a picnic and a barbecue or
whatever. I've taken Girl Scouts out. I've taken, you
know, lots of kids out there to enjoy the lake, and from
the shore, not necessarily in a boat.
MR. CROWFOOT: Yeah, I think the point we take
from your comment is that we need all types recreational
access.
MS. DENNIS: That's right. And for everybody.
MR. CROWFOOT: Absolutely.
MS. WIDENER: And if I can add to that. I

a child of yours and Senator Gallagher's. And then also
Congressman LaMalfa, who we are honored to have here
today. Gentlemen?
MR. NIELSEN: Well, to me, as I said,
it's humbling to be a part of this for so long. My
whole life's actually been river and water issues all
over California. But to see the success of this, and
the commitment of the administration, it's really
encouraging. And I would hope so to the citizens.
There were not too many private citizens here today. I
would hope that they would realize at least that this is
their opportunity to come.
And this is a rare thing that -- this is a
rare thing in government, to have your government come
to you. And you're getting the highest level
officials. They are busy people, and they are devoting
a lot of time and attention to the citizens here. So
that's a rare opportunity. So it's incumbent on the
citizens to involve themselves and pay attention to
what's going on here. Because in that you have a very
direct voice. You don't have to send a letter and wait
a month to get a response, "Thank you for your letter."
But you're getting to talk to the real shot callers. So
that's really helpful. I do want to just revisit and
mention, again, the issue of siltation. I don't think

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1 we've got any problems.
2 I'm not hearing complaints. But it's
3 something that we must always be aware of. And it can
4 becomes problematic when we create islands and -- much
5 goes on. So let's just not forget that, as far as our
6 conveyance, silt is an issue. I used to have fun
7 thinking about the people who would say we needed to
8 control the flow of the river. Well, I said, "No,
9 you're never going to do. We're peons, that river's
10 going to go where it wants to go." So we tried to work
11 along with (Unintelligible) we can, but it's more the
12 boss than we are. But they are things that humans most
13 assuredly can do.
14 I want to make just an observation that I
15 consider an encouraging one. Many of us deal with the
16 federal government; Congressman LaMalfa literally every
17 day. But my perception -- and I've gone to Washington
18 many times on many issues. And under -- irrespective of
19 the administration, usually, when you go to D.C., you
20 meet with high-level officials, and they welcome you to
21 the office and smile and listen to you and patronize
22 you. And the conclusion is, we'll take it up with the
23 regions. Fine. Now, that's maybe a little harsh, but
24 not much. My point being, it's important to go, but
25 sometimes don't harbor high expectations. I never have.

1 However, in the last couple of years, I've
2 seen a big difference when I've gone back with the help
3 of Congressman LaMaltha arranging things for Gallagher
4 and to visit. You sit down with these directors or
5 secretaries, whoever you're meeting with, and it's a
6 very direct conversation. They're all hands on desk
7 listening to you. And there are even commitments made
8 in the meeting. "Yeah, we're going to do that and
9 here's how. We're going set it in place and work on
10 it." Now, that meant that were well prepared for the
11 meeting, because they don't just make decisions on the
12 fly like that without examining the issues.
13 But my point is, it's an encouraging thing to
14 see the federal government being a bit more responsive
15 to us. And lastly, the issue of homelessness, I want to
16 revisit that. Last year we took a little cruise up to
17 Feather and the Yuba and down the Sacramento. And I was
18 really shocked the degree of campers. I know there was
19 quite a few, but how much really surprised me. About
20 five months ago, I got up one morning and -- usually
21 when I'm on the river, I always open the curtains and
22 look out at the river -- looked like a garbage truck had
23 rolled into the river, all this enormous pile of trash.
24 Within 30 minutes one-half of the Sacramento River --
25 it's pretty wide at that point -- was brown and filled

1 having severe public safety, human persons safety on our
2 streets and out cities. My own staff have been harassed
3 walking to their homes in downtown Sacramento. And one
4 of them just made the decision this week to move, she's
5 been so harassed and fearful.
6 And as I mentioned as far as our waterways,
7 there are issues here. We really need to focus on it.
8 And I think that we are on the threshold of being able
9 to do that. And the governor has done something
10 addition, although there's no meat on the bone yet, and
11 that's the key to how successful this will be.
12 Addressing not just providing shelter for the homeless,
13 but also other needs to allow those homeless individuals
14 to become self-sufficient and self-supportive and not
15 homeless. And we've got a long way to go with that yet,
16 but at least encouraging it's talked about.
17 And that's encouraging to me because that's a
18 core problem, and that's getting to the core of the
19 issue if we do it. And so there are some good things
20 ahead if we persist. I don't want to belabor it too
21 much, folks, but it's even polling is such a big issue
22 in the nation. But I assure you it's an issue
23 everywhere, even in out small community. Mr. Secretary,
24 I tank you very much for your attentiveness. And
25 Director Nemeth for being here with us. And we enjoy.
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<td>1</td>
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<td>again, it's been a very positive relationship since</td>
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<td>We enjoy your attention, and we appreciate it.</td>
<td>We've had this happen the last three years. And the</td>
<td>we've had this happen the last three years. And the</td>
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<td>MR. CROWFOOT: Yeah, thanks so much. I would</td>
<td>communication had been pretty incredible, and I think</td>
<td>communication had been pretty incredible, and I think</td>
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<td>just respond that we heard, I think at the last</td>
<td>Jim and James would commend that, as well as our state</td>
<td>Jim and James would commend that, as well as our state</td>
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<td>two meetings, members of the community that are concerned</td>
<td>reps. So with that, thank you all, everyone. And on</td>
<td>reps. So with that, thank you all, everyone. And on</td>
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<td>about camping on the waterways below the dam. And, you</td>
<td>the things we need to follow up with the Corps,</td>
<td>the things we need to follow up with the Corps,</td>
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<td>know, we should think about how we may want to talk</td>
<td>please -- you know, the dollars, et cetera will want to</td>
<td>please -- you know, the dollars, et cetera will want to</td>
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<td>about that here at the commission. I mean, obviously,</td>
<td>be apprized of how we're doing on that, and make sure</td>
<td>be apprized of how we're doing on that, and make sure</td>
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<td>it's not related specifically to the dam, but its of</td>
<td>you have the flexibility to keep going. Thank you.</td>
<td>you have the flexibility to keep going. Thank you.</td>
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<td>importance. And we state agencies need to do something</td>
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<td>about it, along with our local partners. So let's</td>
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<td>explore that. Congressman?</td>
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<td>MR. NIELSEN: I had plenty of mic time, but I</td>
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<td>just wanted to say thank you to the group. Thank you</td>
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<td>Director and Secretary. And I want to pass up the</td>
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<td>chain, too, the thanks to the Trump administration for</td>
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<td>their responsiveness to Northern California's needs the</td>
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<td>last three years when we had the spillway, the car fire</td>
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<td>in Redding, and we had the campfire in Paradise. And as</td>
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<td>Jim was, you know, talking about, the responsiveness has</td>
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<td>been really good on a (Unintelligible). And that goes</td>
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<td>hand-in-hand with our state-level folks.</td>
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<td>We don't always agree when everything down</td>
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<td>there's is -- as you noticed sometimes. But we've all</td>
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<td>agreed on how the immediacy of things that need to</td>
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<td>happen in response to these disasters has been. And</td>
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<td>it's been really good. So, you know, I look at two</td>
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<td>of those are fires and one of is this. And Governor</td>
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<td>Brown and I were getting on a plane to Washington, it's</td>
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<td>been almost three years ago, and he threw out a figure</td>
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<td>of what the State was going to need on the dam, and by</td>
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<td>golly, we reached it. You know? So and that's good.</td>
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<td>It doesn't hurt to have our big-guy colleague in and</td>
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<td>Bakersfield, Mr. McCarthy, with the presidency or two.</td>
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<td>I always, you know, remember that.</td>
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<td>And then thank you, Secretary, too, for your</td>
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<td>attention on this, but also on some of the steps that</td>
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<td>are being taken for forest management and fire</td>
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<td>prevention on the heels of Paradise. And the car fire</td>
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<td>because of the inventory of trees and forestry that so</td>
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<td>desperately needs to be done in this state. And so look</td>
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<td>forward to working with you on that even more so. And</td>
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<td>for our local officials here, too. I want to continue</td>
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<td>to be a resource as we talk together about how the FEMA</td>
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<td>relicensing's going to come into play so that all these</td>
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<td>needs are met.</td>
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<td>And I don't think anybody's that far apart.</td>
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<td>It's more about how the information's going to be, and</td>
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<td>how the commitment is, you know, I guess, lack of a</td>
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<td>better word, trustable versus what -- you know, you were</td>
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<td>talking about the 50 years ago like that. And I think,</td>
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<td>certainly the commission in terms of how the manual</td>
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<td>update is proceeding along with the forecast and</td>
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<td>important reservoir operations. I'd also like us to be</td>
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<td>able to advance an invite to the commissioners to join</td>
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<td>us at the flood operation center.</td>
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<td>If you could spend, you know, a few hours</td>
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<td>getting down to Sacramento, it's worth your time to</td>
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<td>actually see how the flood operation coordination</td>
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<td>happens. And we should hopefully do that by the end of</td>
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<td>the winter, if we can. Any final questions or thoughts?</td>
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<td>Yes, sir?</td>
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<td>MR. BARNES: Just in regards to Senators</td>
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<td>Nielson's comments on the homelessness issues on river.</td>
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<td>I'm involved in about 95 percent of our department's</td>
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<td>interaction with homeless, and any activities that we</td>
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<td>do. And I'd really embrace the opportunity to be a part</td>
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<td>of those conversations if it presents itself.</td>
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<td>MR. CROWFOOT: That's great. I mean, I for</td>
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<td>one am very open to agendizing this on a future</td>
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<td>commission meeting. Again, not totally central to the</td>
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<td>dam, but important to the community and the relationship</td>
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<td>with state agencies.</td>
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<td>Thank you all. Have a great day.</td>
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<td>(Whereupon, the matter concluded at 12:18 p.m.)</td>
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REPORTER'S CERTIFICATE
---oOo---
I, Olivia M. Rendon, a Certified Shorthand Reporter in and for the State of California, hereby certify that the witness in the foregoing deposition was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in the within-entitled cause; that said deposition was taken at the time and place therein stated; that the testimony of the said witness was reported by me, a disinterested person, and was thereafter transcribed under my direction into typewriting; that the foregoing is a full, complete, and true record of said testimony; and that the witness was given an opportunity to read it and, if necessary, correct said deposition and to subscribe the same.
I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing deposition and caption named, nor in any way interested in the outcome of the cause named in said caption.
Executed this 7th day of March, 2020.

__________________________
Olivia M. Rendon, CSR 14306