1 STATE OF CALIFORNIA 2 OROVILLE DAM CITIZENS ADVISORY COMMISSION MEETING 3 FRIDAY FEBRUARY 21, 2020 4 PROCEEDINGS 5 ---000---6 MR. CROWFOOT: Thank you all for being here 7 today. This is the third meeting of the Oroville Dam Citizens Advisory Commission. I'm seeing some familiar 8 9 faces in the audience today, but for those who are here 10 for the first time, this is a body created through state 11 law, thanks to the leadership of Mr. Gallagher, Mr. 12 Nielsen, and our legislature. And that law, 13 essentially, has created this body of local leaders, as 14 well as folks from the state government. And we are 15 specifically focused on ensuring information's provided 16 from local community; from state government, Department 17 of Water Resources, my -- our Agency, the Natural 18 Resources Agency; and to ensure that we can actually receive information from local leaders to really 19 20 strengthen our relationship. 21 My name is Wade Crowfoot, and I serve as the 22 secretary of the Natural Resources Agency. I thought 23 what we would to start is just to have our members of 24 the commission to once again introduce themselves to 25 really -- we know each other now, but certainly the

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1	Page 2 folks here today. So why don't I start on my right with	1	Page 4 to flood control.
2	Karla Nemeth.	2	And then looking forward, how we can work
3	MS. NEMETH: Good morning. Karla Nemeth,	3	together to both optimize Oroville to protect the
4	director of the Department of Water Resources.	4	community here, and then also continue to have it play
5	MR. MILLION: Lieutenant Joe Million, Yuba	5	an important role in our state's water supply. So we
6	County Sheriff's Department.	6	will spend a lot of time hearing from our partners at
7	MR. COLLINS: Lieutenant Steve Collins with	7	the Army Corps of Engineers. I first, though, wanted to
8	Butte County Sheriff's office.	8	ask Karla to give us an update on the request that the
9	MR. LAMBERT: Steve Lambert, Butte County	9	State made to the federal government on the
10	Supervisor.	10	reimbursement of costs related to the repairs that Water
11	MR. LAMOUREUX: Eric Lamoreux, Deputy Director	11	Resources have been making on the facility in Oroville.
12	of Emergency Operations, Cal OES.	12	MS. NEMETH: Thank you, Secretary. Many of
13	MR. CONANT: Mat Conant, Sutter County Board	13	you may be aware that Department of Water Resources
14	of Supervisors District 1.	14	after the failure of the gated spillway and emergency
15	MR. PITTMAN: Dave Pittman, City of Oroville	15	spillway and subsequent evacuations, the Department of
16	Councilman.	16	applied to FEMA for reimbursement for recovery effort
17	MS. WIDENER: Genoa Widener, Butte County	17	associated with that project. We did receive word from
18	_	18	FEMA just this week that the entire gated spillway is an
	Supervisor's appointee.		5 5 1 1
19	MR. TEAGUE: Matt Teague, California State	19	eligible expense, which is important. Our total budget
20	Parks' designee for Lisa Mangat.	20	for the recovery effort is 1.1 billion.
21	MR. GALLAGHER: James Gallagher, State	21	We are now eligible for 75 percent of the
22	Assemblyman.	22	gated spillway expenses. We have a little bit more to
23	MR. CROWFOOT: Nice going. And I think we'll	23	do associated with power lines and other aspects of the
24	soon be joined by Congressman LaMalfa. Very excited	24	recovery effort. This is important for the greater
25	that he'll be joining for his first meeting. To start	25	community. The reimbursement by the federal government
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1	you know, aftermath of the Oroville Dam incident is	1	there's always things. But anyway, (unintelligible) so	
2	forecast-based operations and trying to work towards,	2	we have a lot of great friends and allies in this as	
3	you know, a more modernized way of managing water, and	3	well. So I'm going to keep it short. Basically	
4	managing for a flood.	4	everything he just said. But I'm also pleased that, at	
5	You know, in the modern era, you know, we've	5	the federal level, we're able to come through even	
6	been using a manual that, you know, was first you	6	stronger than I anticipated that we could do here.	
7	know, first came together and first established in the	7	So, you know, I kind of had the idea it might	
8	1950s. And so and based, you know, on some of the	8	be a little lower ceiling, but in that it's going to be	
9	data that we had seen and understood at the time, now we	9	looking like \$750 million towards the reconstruction;	
10	know a lot more. And we know that those that we are	10	that's pretty exciting. And so I think that gives us a	
11	getting actually more surges of water at different times	11	lot more lateral moves that we can be doing as a state,	
12	that are obviously concerning. So, you know, obviously,	12	for the projects that need to be continuing to get	
13	that's that's a big concern is getting towards the	13	rigged around the state to catch up with safety on	
14	forecast-based operations and finding ways to modernize	14	the a lot better projects. And also, we can remember	
15	that manual.	15	that there's a lot of local recreation that no dollars	
16	And also, you know, we continue to do the work	16	are going to be freed up for to help with the original	
17	with the ad hoc advisory committee regarding the	17	promise or implications going back to the '60s; it's	
18	comprehensive needs assessment at the dam and	18	very important that Oroville and Butte County areas.	
19	identifying infrastructure improvements that would	19	So if we can, you know, light up that	
20	increase the safety, the overall safety, and reliability	20	discussion and keep things going forward on what is	
21	of Oroville Dam. There's been some very goods	21	needed right here so that's more possible. Plus the	
22	discussions there, and, you know, looking forward to	22	since we're a little more flush, we can also continue	
23	the, you know, the final outcome of that, we've got	23	talking about the upgrade to Highway 70 and Highway 99.	
24	some both the senator and I have had some very good	24	I know those are different parts, but, you know, tax	
25	discussions in that ad hoc; some of the members are part	25	payers look at it all as the same pocket. Anyway, these	
	Page 7		Page 9	
1	of this commission as well.	1	are all things that are important to our area here. So	
2	And obviously, our goal really being we want	2	with that I'm looking forward to the discussion today,	
3	to you know, it's not just the spillway, and	3	and obviously very important, I think it's very	
4	certainly there's been a lot of progress there, but we	4	important.	
5	want to look the at the entire complex in making sure	5	And we'll bring the heat in on the flood	
6	that we are where we need to be from a safety	6	control aspects. But also, when you you guys are	
7	standpoint, and a flood control standpoint. So with	7	probably tired of hearing me say it, but the balance	
8	that, I'm looking forward to the discussion this	8	between flood control and how we're going to keep our	
9	morning. Thank you again for all the partners who	9	lake full, you know, having newer dynamics. James was	
10	continue to be very much engaged in this. And I also	10	talking about that as far as how we can keep the lake as	
11	especially want to thank the director for his personal engagement on this from the very beginning.	11	full of possible but with the safety factor in needing to do so. So, you know, more modernized and upgraded	
12 13	And Karla Nemeth, the director of the	12 13		
14	Department of Water Resources, giving their personal	14	forecasting and et cetera. But we know that, and I look forward to discussion. So thank you for having me and	
14	attention. And it is my great honor to have with us	14	Bill to come by.	
16		16	•	
17	this morning Congressman Doug LaMalfa who I've worked	17	MR. CROWFOOT: Thank you, Congressman. And thank you for your leadership and partnership in terms	
18	with for many years. I actually worked for him at one time. And but always been very much engaged on these	18	of getting that federal reimbursement for the	
		19		
19 20	issues; fighting for us at the federal level. And so maybe that'll I might turn it over, if you'd like to,	20	improvement. I think we're very thankful to both FEMA and to you and other leaders of the delegation for the	
20	Congressman, to address this a little bit. But looking	20	news that came through just this week that Karla just	
		21		
22	forward to this meeting. Thank you.	22	summarized. Just by way of explanation, this body of local leaders and state agency leaders was put together	
4	MR. LAMALFA: Thank you, James. It's so good 2 to see you here. And you probably are better to be on	23	as a result, of course, of the emergency that we	
25	time than sometimes later (unintelligible.) It's always	24	experienced over three years ago.	
20	CTUE CIENT DOUECTINED TALET (UITHICETTIGIDIE.) IL S AIWAYS	22	concrete over ander years ayo.	

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1	Page 10	1	Page 12
1	And we in state government knew that we had to	1	government that the people not knowing what was going
2	do better in terms of explaining how this facility's	2	on. And in this case, it was a very good example with
3	operated and how we're going to keep people safe in this	3	the failure of the spillway. But they have been so
4	community. And then Senator Nielsen and Assemblymember	4	attentive to allowing public citizens to this venue by
5	Gallagher, through a law change, institutionalized this	5	supporting the legislation that James and I worked on,
6	body to make sure that there's good information flowing,	6	and then setting this up.
7	and we're collectively moving forward. So we're our	7	And the secretary put in his very valuable
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
9	just give a brief update on what we achieved at this	9	involved in a lot of issues; Wade is everywhere in
10	last meeting. I'll note that out charter again, is	10	California. We were just in committee, I think it was
11	this collective set of rules that bring our how	11	yesterday or the day before; I can't even remember. And
12	govern ourselves has been finalized.	12	a couple things I do what to bring to your attention
13	We have information, including meeting agendas	13	that does warrant our attention. Though it doesn't
14	and meeting minutes from the last meeting on our website	14	relate to Oroville Dam, it relates to the state water
15	from the California Natural Resources Agency. So that	15	project and about everything else that's going on; it's
16	home page is like a one stop shop for all information on	16	homeless. Now, that's a very high priority. But it
17	this commission. I will also mention that at our last	17	does affect us as well.
18	meeting we discussed the \$5 million grant project for	18	The encampments along out waterways have
19	sediment removal in the Feather River. And the good	19	become a problem. The degradation of our levees? Most
20	update, I want to let everybody know that this grant	20	assuredly. And pollution of our waterways. And James
21	agreement has been signed with the Sutter Butte Flood	21	and I are working on some legislation related to that
22	Control Agency. So progress there.	22	right now. I know some of our local governments are
23	And we'll continue to keep the commission	23	attending to it. But it is part and parcel of our
24	updated as that work moves forward. So let's shift into	24	future and things that we're going to need to do in the
25	our third item on the agenda, which is our discussion	25	future to maintain all of this. Again, I've just been
	Page 11		Page 13
1	with the Army Corps of Engineers. And as as we	1	so humbled, absolutely humbled to see the success of it.
2	talked about at the last two meetings, we're really	2	Mr. Secretary, thank you very much for your personal
3	interested in closer work together with the Army Corps	3	attention. And, Karla, how are you?
4	of Engineers to build a really strong working	4	MS. NEMETH: Good to see you.
5	relationship, and the congressman and the law office to	5	MR. NIELSEN: Karla Nemeth has been doing a
6	really understand how the facility's at Oroville can be	6	fine job for these folks. Thank you. I'm glad to be
7	optimized to maintain public safety, to control for	7	here with you.
8	flood, and also to supply benefit. So we're excited to	8	MR. CROWFOOT: Thank you so much, Senator. So
9	have Mr. Joe Forbis from the Army Corps Sacramento	9	Mr. Forbis is going to start with the presentation, and
10	District, water management section chief, who is one of	10	then we'll have an opportunity for questions and answers
11	the leaders of the Army Corps in our region.	11	our commission. And thank you in advance, also, for
12	And I might before you before I ask you	12	sticking around for public comment. So if members of
13	to start on your presentation, I've just welcomed	13	the community in public comment have questions for
14	Senator Nielson.	14	Mr. Forbis of the Army Corps, he's generously offered to
15	MR. NIELSEN: Hey, how are you?	15	stick around to be able to answer those as well.
16	MR. CROWFOOT: I'm good. We'll we've got a	16	MR. FORBIS: Yes. Thank you, Mr. Secretary.
17	space for you right there. Senator, welcome any opening	17	Thank you, Commission, for the invitation to come here
18	thoughts you have as we jump into our third meeting of this commission.	18	and speak about what we do at the Army Corps of
19		19	Engineers as it pertains to flood control operations in
20	MR. NIELSEN: I will catch my breath and thank	20	Northern California. As I was introduced, my name is
21	you. You know, folks, it's really moving for me to see this. And I want to commend the secretary for his	21	Joe Forbis. I've been with the Corps of Engineers coming on nine years now. I've been the chief of the
22	attentiveness of the agency to this, and the governor as	22	water management section for nearly four years. I was
			in that position for roughly four months before
24		1 14	
24 25	well. The situation we're dealing here is very great and serious. There's always been a problem in	24 25	February 2017 occurred, so I got to know you guys very

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1	well very quickly.	1	operated by other entities, like DWR with Oroville. We
2	And so just give you a quick little background	2	call those, those are termed as Section 7 dams.
3	of why I'm here today is that what my team does is	3	I'll in this slide upcoming I'll show you
4	we're involved in the oversight of flood control	4	why that is. But you can see that two-thirds of the
5	operations within our district boundaries. So I'm going	5	reservoirs that we are involved in the flood operations
б	to go a little bit into, like, what Sacramento District	6	for aren't owned or operated directly by the Corps of
7	looks like, how we fit in the bigger picture, what our	7	Engineers, it's done by others, per the rules that the
8	roles and authorities are, and, like, why we do what we	8	Corps of Engineers, at one time or another, have
9	do, what our purpose is here. Then I'll shift into	9	established. And so just to give you a sense of the
10	something that were mentioned already this morning about	10	range of size of the reservoirs that we track here, the
11	the water control manuals, what they are, how you go	11	largest one within our footprint, within our district,
12	about updating them. And then diving into an example of	12	is Shasta, a little more than four-and-a-half million
13	a recent one we've updated for Folsom Dam, which I think	13	acre-feet [sic.] Oroville, actually, is the second
14	is a really good template or example to look at for here	14	largest and one that's local, a little more than
15	at Oroville.	15	three-and-a-half million acre-feet. They can range in
16	There's a lot of similarities and some lessons	16	size all the way down to just a little over 3,000
17	learned that we can gain from the experience that we had	17	acre-feet.
18	in updating Folsom's water control manual. And then	18	One of the reservoirs in Utah that's owned and
19	lastly, I have a few slides just talking about the	19	operated by the City of Utah there, one of their
20	forecasting form for operations program. I believe it's	20	municipalities, it's only 3,000 thousand acre-feet,
21	been talked about here before, so I think some of you	21	which you can see has probably different impacts than
22	are familiar, but I'll just give you a recent update on	22	what would be done here to reservoirs like Shasta or
23	the progress there. And I welcome questions from the	23	Oroville. So there's a wide variety or a lot of
24	commission, of course, so if you need to interrupt while	24	regional differences, differences between the watersheds
25	I'm talking and ask me something to clarify something,	25	and what's needed, and what's provided by those
	Page 15		Page 17
1	please do so.	1	reservoirs. So it's not a one-size-fits-all kind of
2	I want to make sure that the information I'm	2	thing that we deal with within our district. I also
3	sharing comes across as clearly as possible, and no	3	wanted to touch on that it's the job that we perform
4	one's left wondering what the heck Joe is talking about.	4	with the Corps of Engineers in Sacramento in terms of
5	MR. CROWFOOT: Good. So if you have questions	5	water management isn't done in a vacuum, and it's not
6	or want some clarification, just raise a hand or, per	6	done just ourselves.
7	his invitation, just butt in.	7	We rely on the partnerships that we have with
8	MR. FORBIS: Yes. Yes, thank you. So to	8	multiple different group or entities in order to do so
9	start off, let me get this oriented correctly. The	9	effectively. It can be with irrigation districts, flood
10	Corps of Engineer is divided up into different	10	control districts, federal water masters have a
11	divisions, like, kind of regions, and we are located in	11	significant role in for some of the projects that we
12	the South Pacific Division. So I have a map here that I	12	manage. And, of course, other government agencies like
13	wanted to show, like, what makes up our division. The	13	DWR or the bureau proclamation. We have to work
14	one that's in the pink-red color, that is the Sacramento	14	together in order to to do the best job possible in
15	District. So you can see we're located in Sacramento,	15	balancing not just the flood operations, but also the
16	but it extends pretty far out to the east to cover more	16	other purposes that those reservoirs and dams fulfill.
17	than just part of California.	17	There's more a lot of these reservoirs, actually most
18	And in terms of land mass, we're one of the	18	of them, are more than just flood control projects; they
19	bigger ones in our agency. And to show you exactly how	19	have other purposes, as you're aware of.
20	that comes about for the like, which reservoirs we	20	The state water project that supplies water
	have authority of within terms of their operations.	21	for irrigation, water supply, hydro power, recreation;
21	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
22	There within the Sacramento District, there are 45	22	it's a balance that has to be set. In different times
		22 23	of year, different purposes take precedent, but we need
22	There within the Sacramento District, there are 45 reservoirs that have a valve (unintelligible) flood control purpose; 14 of them are owned and operated by		of year, different purposes take precedent, but we need to be keep all of those purposes in mind whenever
22 23	There within the Sacramento District, there are 45 reservoirs that have a valve (unintelligible) flood	23	of year, different purposes take precedent, but we need

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1	Page 18 release and when from those projects. So I mentioned	1	Page 2 (unintelligible) like Oroville, establishing set of
2	before that the dams or the reservoirs that aren't owned	2	rules that are to be followed and then coordinated
3	or operated by the Corps of Engineers, but we have a	3	between your two agencies and the execution of those
4	role and authority in their operations board called the	4	rules. So depending on the project, the location, a lot
5	Section 7 dams or Section 7 projects.	5	of factors; the size of that flood control space may
6	That's ties to, or that's because of the 1944	6	vary throughout the year for different reasons. But
7	Flood Control Act, where, in Section 7, it specifies	7	it's just that space that the Corps of Engineers has
8	at the time I think they called them secretary	8	the that implements their authority. Above that
9	referred to as Secretary of War. But it's essentially	9	space, we designate that the surcharge pool where
9 10	the it's been delegated down to the chief of engineer	10	that that's the space between, typically, the top of
		10	
11	of the Army Corps of Engineers, the responsibility to		what you would consider a 100 percent full, or gross
12	prescribe the flood control operations and regulations	12	pool, all the way to the top of the dam. And in that
13	for projects that, one, have an authorized flood control	13	space, when operation decisions are being made, dam
14	purpose, and two, either wholly or in part, where the	14	safety is the paramount of motivation for the decision
15	construction was funded using federal funds. So those	15	making, because they're getting close to the top.
16	two things have to be true in order for the Corps of	16	Most dams are not designed to flow over the
17	Engineers, through this authority, to have any sort of	17	top. Some are. Some thin, concrete arch dams are, but
18	role in prescribing how that project will be operated	18	for the most part, dams are not designed that way. So
19	for flood control purposes.	19	actually, the responsibility of operations in that
20	So there could be other projects that have the	20	surcharge zone is the dam owner and operator because
21	flood control purpose, but if it wasn't funded through	21	they're the ones they're they party responsible for
22	federal funds, then we won't be required to prescribe	22	the dam safety of the projects it doesn't mean that the
23	direct relations in that scenario. So to tie it to	23	Corps hasn't established guidance or rules to follow to
24	Oroville specifically, there's a contract and agreement	24	manage that effectively, but the ultimate decision is
25	that was that was established in the early '60s that	25	still left with the dam owner and operator. So how that
	Page 19		Page 2
1	said, for 22 percent of the construction cost of	1	translates oh, yes, Senator?
2	Oroville up to \$85 million for that cost up to	2	MR. NIELSEN: On that point
3	750,000 acre-feet of space will be provided at Oroville		MR. FORBIS: Yes.
	· · ·	3	
4	for flood control purposes. So it it it's I	3	MR. NIELSEN: I just call it the term my
	· · ·		MR. NIELSEN: I just call it the term my old term the "flood control reserve" that
4	for flood control purposes. So it it it's I	4	
4 5	for flood control purposes. So it it it's I mean the contract's several pages, and it goes into more	4 5	old term the "flood control reserve" that
4 5 6	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	4 5 6	old term the "flood control reserve" that MR. FORBIS: Yes.
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4 5 7 8 9 10 11	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	4 5 7 8 9 10	old term the "flood control reserve" that MR. FORBIS: Yes. (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
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1	the ground is, the ground can either soak it up, or it	1	were just talking about in terms of how the reservoir's
2	can't soak up anymore and it can run off. A so there's	2	divided up in these different zones into the reservoir
3	few different things at Oroville that they did; how	3	operation rules and the graphical representation of
4	empty the flood (unintelligible) Oroville's supposed to	4	that, is what's shown on this slide here. So that red
5	be. And during summer months, Oroville can be 100	5	trapezoid kind of in the middle of that diagram, that
6	percent full because the risk of rain, and	6	just represents simply, like, how much flood control
7	(unintelligible) are so low. So it's not a stationary	7	space may be required based off of certain dates and
8	750,000, it's a maximum that	8	other parameters. Every dam has its own criteria for
9	MR. NIELSEN: That figures in the protocols	9	how much space is require and when.
10	for the operation of the dam	10	And then above that space, as I mentioned
11	MR. FORBIS: Yes.	11	before, there's a separate diagram that aids in the
12	MR. NIELSEN: would that the not be	12	operation when the storage of Oroville is at is above
13	correct?	13	the flood control pool and the gross pool in the
14	MR. FORBIS: Yes, yes. Absolutely.	14	surcharge zone. This emergency spillway release diagram
15	MR. PITIMAN: Quick question I have here.	15	has different criteria that, if these things are true,
16	When you're talking about this specific reservoir	16	release this much water. And when you're in that
17	MR. FORBIS: Yes.	17	zone and that's in that diagram, where those sets of
18	MR. PITIMAN: does the Army Corps have any	18	rules are in play flood control operations is no
19	other control of flood ops upstream, the reservoirs	19	longer the main concern; your concern about whether or
20	before that?	20	not the dam can hold back all the water that's coming.
21	MR. FORBIS: No, sir. No. Just at Oroville.	21	And so most of the releases that would be
22	MR. PITIMAN Just at Oroville?	22	required if that diagram's in use are going to be above
23	MR. FORBIS: Right. Just at Oroville.	23	what we normally see; and it's in order to maintain the
24	MR. PITTMAN: Thank you.	24	integrity of the dam safety at Oroville. So it, like,
25	MR. CONANT: Here's one other quick question.	25	shifts the context of what's driving the decision
1	Page 23 MR. FORBIS: Yes. Go ahead.	1	Page 25 making. Yes, sir?
2	MR. CONANT: I just want to make sure I	2	MR. LAMALFA: Do you have a current figure on
3	understand it. The 750,000 acres only is only	3	what river capacity is; maximum flow taken into account,
4	pertaining during flood event periods, and can never	4	the silt and the other material that got into the river,
5	exceed that number, no matter what the pool of water is	5	however much may or may not have been removed? What is
6	in the runoff in the (unintelligible); correct?	6	its maximum capacity, anywhere from here to south to
7	MR. FORBIS: If I understand your question	7	Yuba and Sutter, that you could push without negatively
8	correctly, the most that would ever be required for	8	affecting any community at any time; just take into
9	flood control operations, per the rules in the water	9	account river dam outflow?
10	control manual, is 750,000 acre-feet.	10	MR. FORBIS: Good question. So we are
11	MR. CONANT: Okay. That's what I thought.	11	still we are still using the number of the 100 I
12	MR. FORBIS: Yup. And during the winter	12	think it's the 150 is what's is what the maximum
13	months, it could be as low as 375, so half that. And	13	150,000 CFS coming from the dam.
14	that would be dependent upon on how dry or wet the	14	MR. LAMALFA: I think it was 160 in my mind,
15	watershed. So if we're coming out of five years of	15	but I could be
16	drought, then it's very likely that the minimum required	16	MR. FORBIS: I'd have to I actually have
17	during the winter months is what would be in play. But	17	the diagram on the next slide, so we can actually check.
18	if we've had October, November, December of rain upon	18	So it's either 150 or 160. I think it's 150, and I
19	rain upon rain, it's likely that the watershed is	19	think we went up to 160 in the past one time, I think,
20	saturated, and therefore, it could be that 750,000	20	around '97, I believe. But we're still using that dam
21	acre-feet may be required.	21	(unintelligible) capacity. And the Feather, up to where
22	MR. CONANT: Thank you.	22	it meets the confluence of the Yuba in which you have
23	MR. FORBIS: Yes. Sure. So to translate	23	objective flows of 300,000 CFS at that location. And
24	that these are great questions, because these are	24	then, I think, when the Bear River comes in, it's about
24 25	that these are great questions, because these are moving into the next few slides. To translate what we	24 25	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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1	know there's also been setback and the work that's been	1	I think this is a fantastic conversation for
2	done.	2	the public to also understand with us that, in a
3	And so part of the FIRO effort, which I'll	3	relationship, flows that are coming in from different
4	talk about in a little but, and also updating the flood	4	watersheds. It's a very dynamic system, it's a big
5	control manual. It's the verification that these	5	system, and it's going to take everybody to get us on a
6	downstream objective flows are still viable. Because	6	path into the future where we're protecting the public
7	these were established, as Senator Gallagher mentioned,	7	no matter what watershed you're living in. Thank you.
8	back in the '60s and '70s. So it's likely it's	8	MR. FORBIS: Yes. Great point.
9	likely different in some form or another. I don't know	9	MR. GALLAGHER: I was just going to say, yeah,
10	to what degree, but it's likely a little bit different.	10	historically 150 has been that number. And that's kind
11	MR. LAMALFA: If you don't mind, is there	11	of that's what, I think, a lot of people consider
12	anybody else on the panel that would have a concern to	12	capacity at what the levees can handle downstream. Now,
13	that number? Especially from Big South, Yuba, Sutter.	13	when you're at 150, there's going to be a lot flood
14	Mat? Anybody? Is there a is there a number that	14	planning going on, levee districts are going to be
15	would make you is that number too high? What do you	15	sandbagged heavy. I mean, it gets really hairy. I
16	think about that?	16	think it was in '85 we went to 150 and we had a break.
17	MR. CONANT: You know, a lot of it depends	17	And then, in '97, we had to actually go to 160, it was
18	upon what releases are in the shaft. But because the	18	the first time it went over that number, which is, you
19	higher this release is, and this the higher Shasta is,	19	know typically you're supposed to stay at 150, but
20	and the higher the (unintelligible) on the Bear is, you	20	they went over. I was going to ask you, how often have
21	know, that could be 43. If you only have 20, and you're	21	we ever been in the actual emergency surcharge
22	releasing 43, that's what happened in '86. Of course,	22	situation, historically? Have we operated in that?
23	we all know what happened then, too; a lot of things	23	MR. FORBIS: I'd have to check and like,
24	flooded. So, you know, when you got a somehow we	24	I'd have to check and see if the the decision making
25	need a I don't know how we get this number to be	25	around going up to 160, to see if that was following the
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1	we're all talking to each other and making sure it's a	1	rules of that emergency spillway release diagram or not.
2	doable number.	2	Because under the slide I have up right now, is under
3	MR. FORBIS: And what helps is our	3	like, for normal flood operations, this is what we call
4	coordination with DWR and the realtime operations is	4	the flood control diagram, the water control diagram; it
5	that, we have, at all of our projects, a list of ongoing	5	doesn't prescribe anything more than 150 in this case.
6	project concerns and considerations that, maybe the	6	And so if the other diagram, which is this one I
7	rules say this, but here's something you need to know,	7	won't go into what all this means.
8	like, this landowner's property gets flooded at this	8	This is pretty complicated and a little but
9	level. Now, maybe that's not the driving force for your	9	convoluted, especially in a venue like this. But it
10	decision making, but it's important to know that. If	10	would be this diagram that, if you're following by the
11	it's safe to keep something at a lower level, as in your	11	letter, that would dictate at least more than 150. So
12	operational decisions, that you can do so without	12	if in '97, if it didn't come into play there, and it was
13	causing these more peripheral nuisances of the problems	13	done based on other factors, then that leads me to
14	along the downstream areas. Yes?	14	believe that we've never made decisions based off of the
15	MS. NEMETH: I'd like to add, if I could, this	15	rules on this graphic. But that would require more
16	is great conversation to be having. And the department	16	investigation on my part.
17	has a lot of history working with the local flood	17	MR. CROWFOOT: Could you go back a slide and
18	control districts, our partners at the Corps; we've got	18	just let us know what we're looking at?
19	a very good working relationship. It's going to be	19	MR. FORBIS: Yes. So you may have seen a
20	essential to draw on that working relationship to turn	20	version of this diagram before. What I did this is
21	our attention to the future and come to some agreed upon	21	the water control diagram. So this dictates what
22	understanding what about we expect in future hydrology,	22	release and what operational decisions would be made at
23	and establish plans that accommodate all the different	23	Oroville when the amount of storage at Oroville is more
24	responsibilities from the local, state, and federal	24	than what's allowed per flood control rules. And what I
25	level on multiple different watersheds.	25	did was, I highlighted the area in which that flood

3watershed is, and the time of year, the amount of flood3don't have the actual nu4control space being required would occur somewhere4the pool was the store5within that blue polygon.5would consider just bare6Just to orient you, along the X-axis are the6So it was encroached in7dates, so, like, months of the year; and then along the7flood so the rules in8Y-axis is storage. So that's what we're looking at9the flood control release, and9here. So if you're if it's really dry, like I was 109the flood control release12control space required which is kind of the11schedule was for. It wa13inverse the flood control space required would be 1413the concrete chute, was14hugging the top line of that polygon that goes down and 1514from a flood control per15concern at that time if	Page 32 e flood pool, et cetera. Sure. With those, actually I mbers with me this morning, but rage at Oroville was just I ely into the flood control space. the flood control space. The in the water control manual were it was at the time of increasing se to what was appropriate. Up is the time, is was the release as in that process of during the al damage in the gated spillway, observed. So it wasn't in a respective, there wasn't any there's still a lot of space
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12control space required which is kind of the12increase when the initia13inverse the flood control space required would be 1413the concrete chute, washugging the top line of that polygon that goes down and 1514from a flood control perthen horizontally back up.If there's been a lot of 16rain15	al damage in the gated spillway, observed. So it wasn't in a spective, there wasn't any
13 inverse the flood control space required would be 1413 the concrete chute, washugging the top line of that polygon that goes down and 1514 from a flood control perthen horizontally back up. If there's been a lot of 16 rain15 concern at that time if	observed. So it wasn't in a rspective, there wasn't any
hugging the top line of that polygon that goes down and 15 14 from a flood control per then horizontally back up. If there's been a lot of 16 rain 15 concern at that time if	rspective, there wasn't any
then horizontally back up. If there's been a lot of 16 rain 15 concern at that time if	
	there's still a lot of space
in the watershed saturated, then the flood control 17 space 16 being provided in the re	
	eservoir. And releasing 60,000,
required could be all the way down to the bottom 18 of the 17 I mean, it doesn't neces	ssarily happen every year, but
outside border of that polygon, and then 18 it's should be that's	well within the channel
19everything in between.19capacity down the stream	1.
20 MR. GALLAGHER: I'd like to go back to the flood 20 MR. CROWFOOT:	That's helpful.
21 capacity which you were talking about. Even at 150, we 21 MR. FORBIS: Y	/es?
22 lose two parts every time we reach that capacity; 22 MS. WIDENER:	I have a quick question.
23 bedrock and riverbed. 23 MR. FORBIS: Y	/es.
24 MR. FORBIS: Okay. 24 MS. WIDENER:	Does the owner have the ability
25 MR. GALLAGHER: So I just want you to be aware 25 to increase the flood co	ontrol pool beyond what the Army
Page 31	Page 33
0	has dictated for that month or
2 \$10 million in damage to the one part. I don't know 2 time, and what (unintell	igible)?
3 what the flow was there; I know it was more than one 3 MR. FORBIS: Y	Yes. That's a great question.
4 150. 4 So the rules in the wate	er control manual govern a
5 MR. FORBIS: At least from the reservoir, I 5 specific space in the re	eservoir. And so if the dam
6 think it only got a 100,000 CFS. But I don't know how 6 owner or operator wishes	s to provide more space, or make
7 that compounded downstream and where that impacted, the 7 any releases that are	while the reservoir is below
8 part that you're talking about. 8 the flood control space,	they absolutely have all the
9 MR. GALLAGHER: It wiped out two city parks. 9 ability and power to do	so.
10 MR. FORBIS: Okay. In Oroville? 10 MS. WIDENER:	Okay.
11 MR. GALLAGHER: Yes. 11 MR. FORBIS: Y	Zes.
12 MR. FORBIS: That is an example of something 12 MS. WIDENER:	And so even so you the
13 that we would want to make sure that we know and have 13 Army Corps of Engineers	just dictates the maximum flood
	n so, like, there's that
15 considerations; that if you might not be able to 15 750,000	
16 avoid going up to something that high because of the 16 MR. FORBIS: Y	les, yes.
	If we're in that still, but
18 is any chance that you don't have to, and you can't 18 we're still under the Ar	my Corps of Engineers' line,
19 avoid some of this type of damage, then we might have 19 they can still release i	f they choose to?
20 that flexibility to not to avoid those sorts of 20 MR. FORBIS: Y	-
21 situations. 21 MS. WIDENER:	-
	Because we don't govern the water
	the flood control space. So
	le for environmental reasons,
	flood control, like, any of

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1	Page 34	1	Page 36
1	those any of those reasons and more, the dam	1	over when some gets too high.
2	owner/operator, they do not need our permission to	2	Since you can't really control that with
3	govern releases throughout the entire pool, the entire	3	opening or closing gates, this type of diagram doesn't
4	reservoir.	4	exist for those projects. But Oroville, Shasta, Folsom,
5	MS. WIDENER: Okay.	5	places like that that have gated spillways, they would
6	MR. FORBIS: So yes, they in fact, also	6	have a diagram that looks kind of like this. So before
7	in 2017, there's another reservoir down in the San	7	I jump into water control manuals, I wanted to at least
8	Joaquin Valley that, based off of what was forecasted to	8	give you a brief list of the other things that the water
9	come in, they worked with us and let us know that they	9	management group for the Sacramento District does. We
10	thought it was appropriate to release more than what	10	talked about overseeing flood operations. When water
11	they were required to at the time because they were	11	control manuals get updated, that includes establishing
12	seeing that the amount of space made available per their	12	new rules for flood control operations; that would be
13	water communal may not be enough to capture what was	13	something that we would do. We also train dam
14	coming in. And that sort of preemptive decision making	14	operators.
15	is especially when justified and warranted by	15	Typically, that's for Corps damns, but we also
16	forecast information and other things can be very	16	meet with some of our Section 7 partners that, like,
17	appropriate.	17	refresher trainings on how the water control manual gets
18	MS. WIDENER: Thank you.	18	used and implemented. As you can imagine, if there's
19	MR. CROWFOOT: So just to provide context for	19	several years of drought and staff turnover, they're
20	this year, you know, unfortunately, from the water	20	making people that have never had to make flood release
21	supply perspective, we're obviously having this dry-lake	21	effort, or never even had a need to open up a water
22	winter.	22	control manual. So we do that with some of out partners
23	MR. FORBIS: Yes.	23	to make sure that we're all prepared before flood season
24	MR. CROWFOOT: So how would you I mean, if	24	of what to do if the weather warrants flood control
25	the hydrology kept up the way it is, we're going, you	25	releases to be made. And then last thing I wanted to
	Page 35		Page 37
1	know, dry the rest of the winter, what would that look	1	point out on this list was preparing deviation packages.
2	like in a year like this? What would the Army Corps	2	That's Corps term for when temporary modifications to
3	would you end up even would your rules control	3	the normal flood control operations are being requested
4	because we don't even nearly hit that flood pool?	4	or are necessary.
5	MR. FORBIS: Since the rules only control when	5	It's not just coming out in an emergency, but
6	the reservoir is in the flood control space, like, the	6	it could because we're in the middle of the drought and
7	folks at DWR that we work the most with, they'll let us	7	a reservoir owner reason would like to store more water
8	know and keep us in the loop of, like, you know, "This	8	than what the water control manual would normally allow.
9	is what we're doing," but they're not, obviously,	9	There's a process that you can go through. For example,
10	required to do that. And there wouldn't be any rules of	10	for this water year alone, you are allowed to store up
11	ours that would dictate the decisions that they would	11	to this much extra water in your flood control space,
12	need to make, because they would be nowhere close to the	12	and releases would now be dictated this way. It's a way
13	flood control space.	13	to accommodate temporary changing conditions. And it's
14	MR. CROWFOOT: Got it.	14	just an official Corps process, and it actually fairly
15	MR. FORBIS: So I showed this one. I just	15	mimics the water control manual update process where
16	want to let you know there is another graphical	16	you're looking at flood risk, dam safety risk,
17	representation of operations for the events that are	17	environmental impact, things like that.
18	more rare and more significantly large than what we	18	And if things are properly accounted for and
19	consider being normal, that the water control diagram	19	mitigated, then deviation requests are typically
20	would dictate. So it there are rules and guidance	20	approved, and it's done so at the South Pacific Division
21	that apply for the bottom of the flood control pool, all	21	office. So the regional office that the Sacramento
22	the way up to the top of the dam. And this type of	22	District falls under.
23	diagram would only really exist at projects where there	23	MR. CROWFOOT: Question. Karla reminded me
24	is a gated spillway. Some dams have ungated spillways	24	that our FERC license from the Federal Energy Regulatory
25	that are just, like, a concrete sill that water flows	25	Commission also, you know, dictates some of out
1		1	

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1	Page 38 operations. What is the Army Corps' role in, like, the	1	Page 40 we get to an approved water control manual. So you
2	relicensing process that FERC has authority over?	2	establish that, obviously, very early on.
3	MR. FORBIS: Usually, it's it's usually	3	And another thing that you establish very
4	fairly minimal, and that's typically because, at least	4	early on is the public and state holder outreach; it's
5	in our experience, FERC includes language where it will	5	something that, as you can see, it's the longest
6	specifically say that refer to the regulations, like, to	6	duration item on this chart, and it's because through
7	that (unintelligible) by the Corps of Engineers. And so	7	down through stakeholders, operating partners, you want
8	unless there's something that's going on that would	8	to get them involved in the very beginning. In fact,
9	inadvertently conflict with that, then, for the most	9	it's in our own Corps regulations to do so, to make sure
10	part, we're notifying that it's going on, but in terms	10	that they are sufficiently involved and informed and can
11	of operation, we're not. And since we don't have a dam	11	provide input throughout the water control manual update
12	safety authority over projects like Oroville, we don't	12	process. At one point, like, halfway through this, it
13	typically have a very involved role in the FERC process.	13	might shift from the initial development of the water
14	But er definitely like to know what's going on in case	14	control manual, it might shift to their role the public
15	there is some sort of impact to the way we normally do	15	would serve in the NEPA process, the environmental
16	business, and that we would need to be aware of.	16	impacts.
17	MR. CROWFOOT: Got it.	17	But involving the partners and stakeholders is
18	MR. FORBIS: So water control manual. So	18	something that starts from the beginning, ands lasts,
19	we've been talking about that a lot already this	19	essentially, through the very end, until it gets to the
20	morning. The water control manual is book that contains	20	point where it's final review and approval. So and
21	more than just the operating procedures and the rules;	21	that's extremely critical for things like this. As the
22	it contains a lot of background information and context	22	director mentioned, making sure that concerns are
23	about the project, historical facts and performance and	23	captured in developing the new operations. Like, that's
24	other data, description of physical components. It's	24	critical. It's extremely important. Another
25	the handbook that DWR can have at their disposal for	25	cornerstone of the work of updating the water control
	Page 39		Page 41
1	Oroville, and it is a document that is a Corps of	1	manual, especially if the update includes reoperating a
2	Engineers document.	2	facility, is establishing and assembling the appropriate
3	So it's something that, when it needs to be	3	hydrologic data to make sure that you're using
4	updated, there could be discussions on which party does	4	everything that you know that's at your disposal, so
5	what work. But in the end, it's a Corps of Engineers	5	that way, when you're comparing the alternatives and
6	document that needs to be reviewed and approved by the	6	evaluating them, you're doing so that in that in a
7	division commander at the division office. So you can	7	way where it represents the reality as best as we can.
8	view it as, like, the flood operations bible that there	8	And even if there weren't the incidents in
9	is for each project. So it's I wanted to hit a	9	2017 at Oroville, and even if there wasn't the
10	caveat for the next few slides that this I tried to	10	comprehensive needs assessment that was going on for the
11	put together a general, simplified chart of what the	11	(unintelligible) structural changes with Oroville, the
12	water control manual update process could look like. It	12	fact that the manual was last approved in 1970 indicates
13	could vary from project to project, based off of the	13	there's decades of hydrologic data that could that
14	needs of updating the water control manual, what's being	14	very well would update our understanding of, well,
15	looked for. But in general, it's at multi-year process	15	what's a 200-year event look like? How what do those
16	that looks at a bunch of different things, and has quite	16	flows look like? The hydrology, there's so much data
17	a few components, and several levels of review.	17	there that has that we've collected and observed
18	And I wanted to point out some of our	18	since it was last updated.
19	highlights, some of those things. So we were just aware	19	That in and of itself affords another look
20		1 20	rules to see, like, are the rules that are in place
	of when the Oroville water control manual gets updated,	20	
21	what are the different areas that are being focused on	21	still appropriate, and if they are, are they optimized?
22	what are the different areas that are being focused on through that work. So the first step is establishing a	21 22	still appropriate, and if they are, are they optimized? So making sure that you've got hydrology that's updated
22 23	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	21 22 23	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
22 23 24	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	21 22 23 24	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,
22 23	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	21 22 23	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

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1	next few sides. But anything to do with water data, you	1	internal to the Sacramento District, one internal to the
2	want to make sure you have all of it before you get	2	Corps of Engineers, one where you get an independent
3	started in developing the alternatives.	3	expert outside of the Corps of Engineers to review.
4	MR. PITIMAN: Quick question.	4	Like, especially depending on the whether it's a
5	MR. FORBIS: Yes?	5	controversial, or it's a new and improved, there's
6	MR. PITTMAN: Does the Corps do its own data	6	you want that to make sure that you looked at it
7	analysis or reception in the Feather River range, or	7	thoroughly before you implement it into the new way of
8	does it rely on DWR's state inflection?	8	doing things.
9	MR. FORBIS: At least at the dam and upstream,	9	And then finally, there's obviously the
10	I do not believe that the Corps has any gauges of their	10	approval process where you the whole water package is
11	own. But along the Feather and Yuba, there might be	11	put together and given to the South Pacific Division,
12	some. I'd have to check. But for most of our Section 7	12	and they make sure that all the right policies and rules
13	partners we rely on the data collection or the data	13	are followed in the review. And then, it eventually
14	collection infrastructure from those partners.	14	gets approved by the division commander. So those are
15	MR. PITTMAN: Thank you.	15	the broad strokes of what would go into updating a water
16	MR. FORBIS: So one of the next steps up is	16	control manual. And most of those things would occur to
17	also characterizing the existing conditions, to make	17	that detail for Oroville. Now, one thing to keep in
18	sure you fully understand what is it doing now. So that	18	mind that makes it unique at Oroville is that there's
19	way, whenever you're preparing potential future changes	19	also the forecasting (unintelligible) operations project
20	of the operation, you know the increases, and hopefully	20	going on; FIRO is underway.
21	no decreases, in performance are. So understanding	21	And through that effort, some of the things
22	existing conditions is very important. Then you go into	22	that would normally go in that would be completely
23	identifying well, what are the different ways that we	23	confined within the water control manual of this
24	can change the operation at the project? So identifying	24	process, some of that technical work is already being
25	multiple alternatives, and concluding and determining	25	done as far as RND effort. And so though I was
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1	which one is would performs the best, is the next	1	indicating that the five-ish years might be what it
2	logical step there.	2	takes to update a water control manual, with FIRO going
3	In part of that, that it's so significant I	3	on at the same time, we would fully expect for a
4	pulled it out as its own component is the	4	timeline of five years to be shorter, because you're
5	environmental effects analysis. So you're preparing	5	looking at same type of things that can be used for the
6	alternatives for rotating the water control manual,	6	update process, and it should we should see some time
7	typically evaluating flood control of performance, flood	7	savings there.
8	risk management performance. But you also need to look	8	Another thing that I wanted to highlight that
9	at and see what those changes could do to the	9	I wasn't sure if everyone knew about, but in fiscal year
10	environment upstream and downstream throughout the whole	10	2020, through the federal budget process, the Corps of
11	a stress of the task should be about the start of the sub-off to	1 1 1	
	system. So that is a significant chunk of the schedule	11	Engineers has actually received \$4 million to update a
12	for updating it, that there's the established and deeper	12	water control manuals that meet a few criteria. I have
12 13	for updating it, that there's the established and deeper process for what type of document you create, what sort	12 13	water control manuals that meet a few criteria. I have a screenshot here of the language. If we look at the
12 13 14	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	12 13 14	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
12 13 14 15	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	12 13 14 15	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
12 13 14 15 16	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	12 13 14 15 16	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
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1	Page 46 the Corps of Engineers, especially the Sacramento	1	Page 48 MR. NIELSEN: If you need any help on that.
2	District, we don't really ever receive money to update	2	MR. FORBIS: And I think it wouldn't be so
3	water control manuals. Like, it's something that we ask	3	much as a lose-it situation as maybe a not being able to
4	for year after year, but it's something that's never	4	manage expectations appropriately of what the 4 million
5	been well, I won't say never, but it rarely gets	5	will how far that will get us. I think we would
6	given.	6	still be able to use it, but if the 4 million was
7	So to not only to get funding, but to get	7	provided with the intent of, we expect it to be used by
8	funding to this degree, to do something in Northern	8	the end of September, it's on us at the Corps of
9	California is something that we're really excited about.	9	Engineers to make sure that we communicate, "It could be
10	Now, it's going to be a unique challenge to where we're	10	used better if you give us more time." And so that's
11	balancing the RND FIRO effort at the same time updating	11	that's the improvement we've got from headquarters, and
12	the water control manual. Usually, you'd want one to	12	so that's the path we've moving forward. I'll try to
13	happen before the other. So it will require some	13	I know that I've used up a lot of your time, so I
14	careful planning and establishing a schedule and	14	apologize.
15	delineation of roles and duties. But if it's done	15	I'll try to go through the Folsom example that
16	right, then we should be able to see time savings there.	16	I have as efficiently as possible. This is a picture of
17	Yes, sir.	17	the new spillway there. As I mentioned earlier, this is
18	MR. NIELSEN: Is the 4 million adequate? Is	18	a really good case study for us for us before with
19	it getting there timely and where it needs to be?	19	Oroville, because it has a lot of the same types of
20	MR. FORBIS: 4 million would based of what	20	components and aspects between the two of. Like, where
21	changes we expect to see structurally at both projects,	21	it's located regionally, how reliable the forecasts are,
22	and with FIRO going on, the \$4 million is likely not	22	the capability of what can be released from the
23	enough to cover the entire total. But that's heavily	23	projects. So it's a really good thing that we have
24	dependent upon how much our partners like Yuba Water	24	recently updated this.
25	Agency and DWR take on some of the trichinal work	25	This water control manual was updated and
1	Page 47 themselves and figuring out how best to optimize the	1	Page 49 finally approved in June of 2019, so really not that
2	funding that we received. Because this was intended to	2	long ago. So we've got some very pertinent and timely
3	be just for this fiscal year initially. Now, what we're	3	lessons learned that we can use. This is me one of
4	pushing for at the district level is to spread that out	4	my favorites that I like to show because what what it
5	beyond this fiscal year because we can use that money	5	really is indicating you don't really need to know
6	more intelligently if we have more time to do it.	6	much about what the numbers, but just blue and black
7	MR. NIELSEN: You have the latitude to extend	7	rainfall variability is greater. And so if you look at
8	the funding to extend the time? Does it have to be used	8	the eastern half of the United States, the rainfall from
9	in the time?	9	year to year is vary fairly consistent.
10	MR. FORBIS: The direction I've been given is	10	As we all know out here in California, you can
11	that as long as we have a plan established for when we	11	swing from the worst of drought years to the worst of
12	want to use it, there is the (unintelligible) that we	12	flood years back to back. It create a challenge for how
13	can use it beyond the end of this fiscal year.	13	do you operate reservoirs responsibly and smartly. And
14	Carry-over funding is a concept that we're looking to	14	one of the main drivings forces, and part of what is
15	carry over money from fiscal year to fiscal year. And	15	the of which has been developed in the FIRO project
16	that is typically allowed as long as you're showing that	16	is the weather (unintelligible) atmospheric triggers and
17	you're doing so responsibility.	17	how our ability and desire to improve our ability to
18		18	forecast these phenomenon is what could result in more
19		19	reliable forecast, and therefore, smarter decisions
00		20	being made about what space is required for reservoirs,
20	MR. NIELSEN: Yeah, and I wouldn't want you to	20	
20	MR. NIELSEN: Yeah, and I wouldn't want you to get caught in a use-it-or-lose-it situation.	21	and what water needs to be released and when.
	_		
21	get caught in a use-it-or-lose-it situation.	21	and what water needs to be released and when.
21 22	get caught in a use-it-or-lose-it situation. MR. FORBIS: Right.	21 22	and what water needs to be released and when. So I am by no means a weatherman, so I won't
21 22 23	get caught in a use-it-or-lose-it situation. MR. FORBIS: Right. MR. NIELSEN: So please keep our office	21 22 23	and what water needs to be released and when. So I am by no means a weatherman, so I won't bore you with the details that I'll let the Weather

Pages 50..53

1	Page 50 driving phenomenon for creating rain and snowpack in our	1	Page 52 with the operation of with the operation. Yes, sir?
2	state. So that's helpful to be aware of. The watershed	2	MR. LAMALFA: Just two words: Auburn Dam.
3	for the American River, it's a fairly steep watershed,	3	MR. FORBIS: I've heard of that, sir. So to
4	so whenever rain falls, it gets to Folsom Dam very	4	highlight a couple of the problems with the existing dam
5	quickly. It has the potential for heavy rain and snow,	5	is that we're finding more and more that the 400,000
6	and it also has winter snow pack. So I think you're	6	acre-feet that was required as part of the Folsom water
7	able to pick up on some similarities between the	7	control manual wasn't enough to provide the level of
8	American River and Feather River.	8	protection that was intended. It couldn't pass the
9	Quick things to be aware of, Folsom Dam is not	9	probable maxing flood or the PMF without
10	quite a million acre-feet when it's completely full.	10	overtopping. And even though the maximum downstream
11	It's required to have up to 600,000 acre-feet of flood	11	objective flow is 115,000 CFS on the American River, the
12	control space there. So a majority of its entire volume	12	flood control space would have to be 30 percent occupied
13	maybe required for flood control purposes. And it has	13	before you could actually physically release that from
14	different ways to release water, the newest one being	14	the dam. So you had to be fairly full before you had
15	the auxillary spillway, which we call the JFP, which	15	enough head to push that much water out. So if more was
		16	
16 17	stands for Joint Federal Project. It introduced additional release capacity at a lower elevation so you	10	required when Folsom was emptier, you physically couldn't do it.
18	additional release capacity at a lower elevation so you can release more water sooner from the reservoir, which	18	And so how do you address these things? So a
19		19	
20	is helpful for being able to respond to changing forecasts. So that's an important feature for making	20	few different solutions were proposed, and it was determined that building an auxillary spillway, adding
20	forecast-based operations at this location work.		more flood control space, and looking to see if
21	So I'm going to show that when Folsom Dam was	21	forecasting operation framework would be appropriate,
22	authorized in 1944, it was designed to provide what was	22	was determined to be the path to pursue. And actually,
23	thought to be a 500-year level of protection. And then	23	in the language in (unintelligible) 1999, it actually
24	a few years later, along the American River, there was a	24	said, "Look at the forecasting," the new and improved
25	a lew years later, along the American River, there was a	25	Said, hook at the forecasting, the new and improved
	Page 51		Page 53
1	8	1	8
1	record flood. 1956, which was the year that it was	1	forecasting capability from the Weather Service, "and
2	record flood. 1956, which was the year that it was built, there's another record flood. Yes, yes. In a	2	forecasting capability from the Weather Service, "and see if you can use that in the operations." It actually
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2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	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	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	forecasting capability from the Weather Service, "and see if you can use that in the operations." It actually dictated how much flood control space would be required. So I think we all recognize that if you know what's going to come, you can make smarter decisions; so the better forecasting you have, the better off you'll be. But this all forecasting uncertainty. You never really know exactly what's going to happen. So if you are basing your decisions off of a forecast and more comes in that what was originally thought, you likely didn't release enough before the event got there, and you're increasing the flood risk. Or, if more was forecasted then what actually occurred, you may have released more than what you intended to, and then that's impacting water supply. So we know those are the ends of spectrum. So what's the responsible way to optimize that? So we looked at several alternatives, one of which includes the forecast-based approach; the other ones did not. And the team that worked on it wasn't going into it expecting forecast that the forecast-based approach would necessarily out perform the others as well it did.

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2 3 4 5 6 7 8 9	Page 54 little bit of why that is. And I think you guys are already picking up on that, of why that would be. So this is what the water control diagram of		
2 3 4 5 6 7 8 9	already picking up on that, of why that would be. So this is what the water control diagram of	1	Page 56 thing to say: That this type of forecast produced four
3 4 5 6 7 8 9	So this is what the water control diagram of	2	times a day wasn't something the Weather Service could
4 5 6 7 8 9		3	do when we started, and it was something they were able
5 6 7 8 9	Foldom looke like. It has a trapezoid diagram kind of	4	to do, and are currently doing when we're done. And I
6 7 8 9	Folsom looks like. It has a trapezoid diagram kind of like what Folsom has, except with one main difference;	5	
7 8 9	•		think with Oroville, we would want to look at something
8 9	it's got a release schedule that's based off of	6	like this as a potential alternative to see if that
9	forecasting inflow, and it's got a ramp and	7	could produce and maximize the benefits of the projects
	(unintelligible) included. So a lot of the same	8	in a similar way that it has at Folsom. Just as one of
	components that the Oroville water diagram has. But if	9	the opportunities there. That is an example of one of
	you look at that trapezoidal diagram in more detail I	10	the products that it has on the forecast.
	have it covered up with this other chart here but	11	This is for Lake Mendocino, that was the first
12	that square there, where it says, "Variable flood	12	location. It's got a whole bunch of potential
	control reserve," the amount the flood control space	13	hydrographs, and that could occur 68 of them, in fact.
14	required at Folsom is solely based on the forecasted	14	And you're using that statistical analyses to your
15	inflow that's coming into the reservoir across a few	15	benefit of making smart decisions at the dam. That's
16	durations, between, like, one and five days.	16	more visuals of what I was talking about. I think where
17	You're looking at the inflow that's expected	17	I want to skip to there's a robustness testing to
18	to come in over the next day, over the next two days, up	18	make sure that like, what if the weather forecast
19	to the next five days. And depending on which of those	19	were early or late? What if were wrong? Like, how bad
20	inflows results in the more conservative operation,	20	would that be for the performance at Folsom? I wanted
21	that's what dictates how much space you need. It	21	to highlight one thing that I think is helpful for you
22	required the Weather Service to improve their modeling	22	guys in the room.
23	capabilities and their functionality in order for them	23	There's a sensitivity analysis done on what if
24	to produce forecasts of this nature, up to four times a	24	was forecasted was so great that you weren't able to
25	day of this type of forecast, which they weren't able	25	get you released all this water, and you weren't able
1	Page 55 to do before we started it.	1	Page 57 to get back to where you started before the event
2	So it required not just technical analysis	2	happened. That analysis was done for Folsom, and it was
3	savviness to figure out that this is good, but you	3	figured out that for these different types of
	also but different partners had to do something that	4	hydrographs that, essentially, for you have the
	they hadn't had to do before in order to make this work.	5	forecast would have to be for forecasting a hundred-year
	So it was a heavy lift for all involved. So I won't	6	event, and you would only get a two-year event in order
7	spend a lot of time on this, because it' getting a	7	for you to not get back where you started.
	little bit in the weeds, but essentially, the type of	8	And the forecasts are always wrong to some
	forecast that is being used at Folsom and has been shown	9	degree; they're never that wrong. Like, to forecast a
	to be really productive and beneficial is this ensemble	10	100-year (unintelligible) like, one of the biggest ones
	forecast project where you're using historical	11	you've ever seen, and to actually have something that
	climatological data, current forecast skill to produce	12	you see all the time come, like, there's never that big
	probabilities of certain volumes occurring. So what's	13	of a discrepancy. So that really put those real
	the likelihood of what's the 25 percent chance of	13	concerns with the water supply performance at ease that
	_		
14	inflows above this occurring, coming into the reservoir? And so you can adjust your conservatism or	15	basing stuff off the forecast isn't going to lose you
14 15		16	water. And we just get the benefit from that from being
14 15 16		17	on the west coast, with the intelligence and skill of
14 15 16 17	aggressiveness based off of what probabilities you think		Lie Dimen Demonstra Grades and based in City in the
14 15 16 17 18	aggressiveness based off of what probabilities you think are appropriate for the operation there. I'm trying to	18	the River Forecast Center out here in California, and
14 15 16 17 18 19	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.	19	the fact that atmospheric rivers are a driving force.
14 15 16 17 18 19 20	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	19 20	the fact that atmospheric rivers are a driving force. Like, we get to benefit from having reliable
14 15 16 17 18 19 20 21	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	19 20 21	the fact that atmospheric rivers are a driving force. Like, we get to benefit from having reliable forecasts that they're never that wrong. Other parts of
14 15 16 17 18 19 20 21 22	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	19 20 21 22	the fact that atmospheric rivers are a driving force. Like, we get to benefit from having reliable forecasts that they're never that wrong. Other parts of the country, they might be. They could be that wrong in
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14 15 16 17 18 19 20 21 22	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	19 20 21 22	the fact that atmospheric rivers are a driving force. Like, we get to benefit from having reliable forecasts that they're never that wrong. Other parts of the country, they might be. They could be that wrong in

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1	MR. FORBIS: Oh, sure.	1	got Shasta, you got Bear River out west, and then you
2	MR. NIELSEN: I don't want to take too much of	2	have when you all the way down, going into
3	your time on the thing here. But I think looking at the	3	Sacramento, you got all the problems with the American
4	dynamics of snowpack melts are just in my, you	4	River and Folsom and all that. So has anybody looked at
5	know I've seen it in the past (unintelligible) it	5	actually big, key flood event issues, trying to figure
6	looks like a couple of years ago I forget which water	6	how to or maybe earlier view flood data and, you
7	years it is now but there was a great, great concern	7	know, (unintelligible) water water analysis of the
8	on snowpack melt being a factor in raising the lake	8	inflows, estimated inflow, because of the snowpack melt
9	really quickly. And, you know, some years when there's	9	and/or rain effects.
10	a lot going on, I'm watching the C-Deck owners more	10	MR. FORBIS: Yes. The group that does that
11	often than I'm looking at Twitter.	11	within the Sacramento District isn't the we're on,
12	MR. FORBIS: Sure.	12	operation, like, the realtime operations implementation
13	MR. NIELSEN: When the snow is going over, I	13	side. So I think what you're describing is more of a $% \left[{{\left[{{{\left[{{{\left[{{{\left[{{{c_{{}}}} \right]}}} \right]}_{z}}} \right]}_{z}}} \right]_{z}} \right]_{z}} \right]_{z}} \left[{{{\left[{{{\left[{{{{c_{{}}}} \right]}_{z}} \right]}_{z}} \right]_{z}}} \right]_{z}} \left[{{{\left[{{{{c_{{}}}} \right]}_{z}} \right]_{z}} \right]_{z}} } \right]_{z}} \left[{{{\left[{{{{c_{{}}}} \right]_{z}}} \right]_{z}} \right]_{z}} } \left[{{{\left[{{{{c_{{}}}} \right]_{z}}} \right]_{z}} \right]_{z}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}} } \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}} } \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c_{{}}}} \right]_{z}} \left[{{{c$
14	was in New York City getting it every, you know, few	14	is like a feasibility study, or some sort of a study,
15	minutes. So I think there was a lot of fear snowpack	15	like, a system why watershed management study. And ${\tt I}$
16	and, again, I forget which water year it was and it	16	know that there's been some in the past for different
17	never really turned into a lot; you know, the peaks,	17	regions in California, and I know that there's current
18	inflows. I would say that the worse days, or the	18	talks for looking at other parts of the state where
19	biggest days, 30,000 CFS inflows, and that's pretty	19	you're looking at multiple reservoirs at once. So I
20	manageable.	20	know that work is down, but when (unintelligible) the
21	MR. FORBIS: Yes.	21	water control manual, you typically don't go to that
22	MR. NIELSEN: So for water discharge to be	22	extent.
23	happening at a time when you're getting into that March	23	The scheduling cost get blown out of the water
24	period era where you're not going to have a lot more	24	if you do, like, an extremely detailed look at, like,
25	opportunity to fill the lake, then that's where I would	25	nine reservoirs at the same time. But there is a
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1	want to see what, you know, we can talk about later on	1	mechanism where that is looked at. It's just, usually,
2	as to how we can better predict snowpack. I mean, this	2	we're a part of the team, we're not the ones driving
3	year we don't have anything to worry about.	3	those sorts of projects. So I'd have to defer to some
4	MR. FORBIS: Right.	4	of my colleagues to better answer what's been done, and
5	MR. NIELSEN: But in a big snowpack year,	5	what's looking at being done in the future.
6	looking back on old data on that, you know, I mean, the	6	MR. CONANT: Thank you.
7	scariest CFS inflows was 150,000.	7	MR. FORBIS: I think I can probably forego
8	MR. FORBIS: Exactly. And I think for	8	some of the FIRO slides. I'm at the end, so I think
9	projects like Folsom and Oroville where they have the	9	it's important I at least cover this last one for water
10	outlet capacity, and the downstream channel capacity to	10	manual update. Some lessons learned that we found
11	where that the timeline that snowmelt occurs is so	11	through this several year process of updating the water
12	much more, like it did for the rain flood events, that	12	control manual and probably a lot of it's
13	even the high inflow from a snowpack is something that,	13	(unintelligible) we had but we had several project
14	in general, for these types of projects, are more easily	14	managers throughout the course of that update. And it
15	managed than what you're saying, like the 175, 200,000	15	definitely created some challenges to shift from one to
16	CFS inflows that occur within the day-and-a-half kind of	16	the other to maintain consistency throughout the
17	a thing. That's something that, for projects as large	17	multi-year projects. So if at all possible, maintaining
18	as Oroville, would be more of a concern of how you best	18	consistency in key leadership roles, it would be really
19	manage that.	19	valuable in updating the water control manual for
20	MR. NIELSEN: Thanks.	20	Oroville. Another one that we saw that what we did
21	MR. CONANT: Quick question. So we've seen a	21	that worked out the most: Keeping the lines of
22	lot of data about the individual dam operation, but has	22	communication open with stakeholders.
23	the Army Corps done any work on how one dam affects the	23	There were task force meetings, stakeholder
24	other dams which affects another dam until you got the	24	meetings, set up and maintained throughout the entire
25	water (unintelligible), you got Oroville out here, you	25	process. And it helped get everybody on the same page.
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1	Page 62 With Folsom it was entities like the Bureau of	1	Page 64 needed to focus on to get on the same page, DWR, Yuba
2	Reclamation, SACA, DWR, there are several partners that	2	Water, and the Corps were kind of already all on the
3	had different concerns at different times, and if you	3	same page and have been that way for a while in terms of
4	weren't meeting at a regular basis, your ability to	4	flood operation. So it's having that already in place
5	address those concerns was significantly impacted. So	5	should really benefit us as we move forward in
6	the fact that that was done was really helpful. We also	6	implementing these lessons learned. Some of them might
7	worked with the Weather Service to develop comprehensive	7	not even apply to the same degree as they did for
8	hydrologic data sets, including forecast information	8	Folsom.
9	that was used to verify the forecast-based operation	9	MR. GALLAGHER: Okay. So you're thinking that
9 10	would be appropriate.	10	maybe five years is a realistic timeframe for having a
10	Another thing that we noticed is ensuring that	10	new manual?
11		12	MR. FORBIS: That was a number that I
	the language in the water controlling on the graph, and		
13	the modeling stayed consistent throughout. There are	13	estimated assuming no FIRO stuff started from scratch
14	at different stages one got ahead of the other, and	14	for just a reservoir X
15	didn't realize that, "Oh, this model isn't	15	MR. GALLAGHER: So you're thinking it could be
16	(unintelligible) this new sentence that we added into	16	even faster?
17	the operation," or, "Oh, model's doing this, but we	17	MR. FORBIS: Yes. We don't have any schedules
18	didn't add that to the diagram, we should add that."	18	set yes that identify, like, a water control manual
19	Those little hiccups just slowed us down at different	19	update would be completed by this date. But with FIRO
20	times. So making sure that you're consistently keeping	20	in place, it should expedite
21	those consistent throughout the whole process is	21	MR. GALLAGHER: I mean, Folsom took, like, ten
22	important.	22	years or more; right?
23	And then lastly, making sure that you identify	23	MR. FORBIS: More. Yeah.
24	and appropriately narrow scope for the NEPA process.	24	MR. GALLAGHER: I mean, five or less, I mean,
25	What we did for Folsom, we weren't sure what had to be	25	that's, certainly something I think we want to hear.
1	Page 63	1	Page 65
1	looked at so we kind of looked at everything. And then,		MR. FORBIS: And just to clarify, our goal
2	when we got further down in the process, we realized,	2	would be to have an updated water control manual
2 3	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it	2 3	would be to have an updated water control manual approved for Oroville and Yuba before any final
2 3 4	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it doesn't play a role." But by that time we had spent	2 3 4	would be to have an updated water control manual approved for Oroville and Yuba before any final construction is completed at those projects. I know
2 3 4 5	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it doesn't play a role." But by that time we had spent time and funding looking at that. So making sure that	2 3 4 5	would be to have an updated water control manual approved for Oroville and Yuba before any final construction is completed at those projects. I know that Yuba Water is pursuing a secondary spillway at
2 3 4 5 6	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it doesn't play a role." But by that time we had spent time and funding looking at that. So making sure that you don't jump the gun and start doing the environmental	2 3 4 5 6	would be to have an updated water control manual approved for Oroville and Yuba before any final construction is completed at those projects. I know that Yuba Water is pursuing a secondary spillway at their facility, and I
2 3 4 5 6 7	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it doesn't play a role." But by that time we had spent time and funding looking at that. So making sure that you don't jump the gun and start doing the environmental impacts too early on to where you end up creating more	2 3 4 5 6 7	would be to have an updated water control manual approved for Oroville and Yuba before any final construction is completed at those projects. I know that Yuba Water is pursuing a secondary spillway at their facility, and I MR. GALLAGHER: We may be doing that at
2 3 4 5 6 7 8	when we got further down in the process, we realized, "Oh, we didn't need to look at this part over here; it doesn't play a role." But by that time we had spent time and funding looking at that. So making sure that you don't jump the gun and start doing the environmental impacts too early on to where you end up creating more work for yourself.	2 3 4 5 6 7 8	would be to have an updated water control manual approved for Oroville and Yuba before any final construction is completed at those projects. I know that Yuba Water is pursuing a secondary spillway at their facility, and I MR. GALLAGHER: We may be doing that at Oroville.
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2 (unintelligible.) Folson actually did a full, complete additional auxiliary spillew. 2 the federal government versus the Statef But this at the additional auxiliary spillew. 3 MR, CALLAGHER: In the project. 5 MR, CALLAGHER: And so the manual took that into account. 5 MR, CALLAGHER: And so the manual took that into account. 5 MR, CALLAGHER: Yes. Exactly. 7 MR, CALLAGHER: Yes. Exactly. 7 MR, CALLAGHER: Yes. Exactly. 7 MR, CALLAGHER: Yes. 10 work together to make - and you've got Lesson learned, 10 10 work together. 11 work together. 10 work together. 10 work together. 10 <	1	8	1	Page 68
3 additional auxillary spillacy. 3 gefority of ours, which is, you know, doing this work. 4 NR. TOBUS: Yes. 5 NR. GULAMER: In that project. 6 NR. TOBUS: Yes. 5 6 NR. TOBUS: Yes. 5 NR. GULAMER: And so the manual took that 6 Into second. 7 9 7 NR. TOBUS: Yes. Dactly. NR. TOBUS: Yes. Dactly. NR. TOBUS: Yes. Dactly. NR. TOBUS: Yes. Dactly. NR. GULAMER: So in the five-year timfrum. 11 you know, the 4 million gives it shat you new. 10 NR. GULAMER: So in the five-year timfrum. 12 patters can provide technical. you know, on a gutter that's all very promising. 10 13 patters can provide technical. you know, on a guttery thosis where 14 separt that's act saile for this finent year, and 11 you know, form doing is this at Polem., no 1 bink the focal 15 million that's act saile for this finent year, and 11 you know, form doing is this at Polem., no 1 bink the focal 16 assupport that's act saile for this finent year, and 11 you know, form doing is this at Polem., no 1 bink the focal 20 bes the achieve the chilion 10 11 the chiche the mathedite the chilion		-		
4 MR. PORSIS: Yes. Figure out have, safety, flood control, and water apply/let's 5 MR. COLLAGES: An interproject. Signed control, and water apply/let's 7 MR. COLLAGES: And so the manual took that Figure out have to optimize all three. 8 MR. CORLEGES: Yes. Exactly. MR. CORLEGES: Yes. Exactly. 10 MR. CORLEGES: Yes. Exactly. Figure out have to optimize all three. 11 you said, you know, they they are thin form Yes water and provide technical. you know, and they you read. 12 yes and, you know, they are thin form Yes water and provide technical. you know, and you rep the same technical. 13 partners. All they keep etc. Where a theoder. 14 you said. Yes and the weight the weight to the same technical. Yes and the weight the weight to the same technical. 15 departnert. Like, do we feel like we have with the 4 Yes were the ladership. Arm Corp. Weight appropriation. 16 assumpt that we keep string. Yes the theorem and the weight theorem. Yes the theorem. 16 assumpt the bandwidth to keep the theorem. Yes the theorem. Yes the theorem. 16 asthe as pass would like to do it. And				-
5 MR. GALLAGER: In that project. 5 figure out how to optimize all three. 6 MR. FOREIS: Right. MR. GALLAGER: A do to the manual took that 7 MR. GALLAGER: I had so the manual took that MR. FOREIS: Yea. Exactly. 8 MR. FOREIS: Yea. Exactly. 9 11 You aid, you know, the 4 million gives it what you recentimate 9 12 right now. Also assuming that DR and the other 10 13 partmers can provide technical. Journamy - centributes 11 14 seams technical. Information, mayle just to the 11 15 department. Like, do we feel like whow - with the 4 14 16 augnort that's set saide for this fixed year, and 15 17 NR. NOMET: So I think we'ne identified 15 18 are conversations we'n bawing internally with the 26 20 the you know, four agences. Thisk hadre the food 21 upport that. I think certainly we were yary provide 22 the orps language. Ad. you know, tonic 11 23 the you know, four agenceis. Thisk prove on the and provide 24 the orps language. Ad. you know, too augnort that. I think' certainly we were yary				
6 MR. FORMIS: Right. 6 MR. GALLAGER: Yeah, I mean, I thick that 7 MR. GALLAGER: And so the manual cost that 7				
7 NR. GALLAGER: And so the manual took that 7 everybody's on the same page and want to see this dame 8 into account. 9 PR. FOREIS: Yes. Exactly. 9 pastiser: Caller and the same page and want to see this dame 10 NR. GALLAGER: So in the five-year timefrace. 10 work together to make and you've got leasons learned. 11 you know, the 4 million gives it what you need 10 work together to make and you've got leasons learned. 12 you know, the 4 million gives it what you need 10 work together to make and you've got leasons learned. 13 pastners can provide technical. you know, contributes 11 work together to make and you've got leasons learned. 14 asseming that we keep getting. you know, contributes 12 can king deck-in. you know, on a garcetry basis where 15 assuming that we keep getting. you know, continual 13 the you any observe the hailing 16 assuming that we keep getting. you know, continual 13 the you any observe the hailing 17 the you any abse the bandwidth to keep that you got keep deck-in. you know, an a garcetry keep deck-in. 11 the you any abserve the hailing 18 the yoa				-
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9 NR. FCRENS: Yes. Exactly. 9 possible: right? And then so certainly we all wart to 10 NR. SCREARS: So in the five-year timeframe, 10 work together to make and your got leasons learned, 11 you sind, we halling gives it what you need 11 work together to make and your got leasons learned, 12 right now. Also assuming that DMR and the other 12 can bring that all together, that's all very promising. 13 samptortical information, mybe just to the 14 we have a check-in, you know, on a quarterly basis where 16 milling that's set aside for this fiscal year, and 15 for you all, you can hold us accountable for continuing 18 support there, do you think we can keep the timeline 14 stateholder operations, et corera. I like that because 19 bring at the apace would like to do it. Ard so thee 16 MR. GALLARER: Yeah. Assolutely. And then 20 bring at the apace would like to do it. Ard so thee 16 MR. GALLARER: Yeah. Assolutely. 21 support that. I think certainly we ware yaugoritive 10 MR. GALLARER: Yeah. Assolutely. 22 secretary within the administration about how be tow 10 MR. GALLARER: Yeah. Assolut				
10 NR. GALLAGER: So in the five-year timeframe. 10 work together to make and you've got lessons learned, 11 you said, you know, the 4 million gives it what you need 11 you work (together to make and you've got lessons learned, 12 right now, Also assaming that Be Re and the other 12 can bring that all together, that's all very promising, 13 partners can provide technical, you know, continual 13 We have a check-in, you know, can gamer. 14 sagnort that, is set aside for this fiscal year, and 16 for you all, you can hold us accountable for continuing 13 support there, do you thik we ver identified 16 for you all, you can hold us accountable for continuing 14 probably an additional 4 million wold be regained to a same that 10 NG. GALLAGER: Yeah, Alsolutely. And then 15 support that, I thirk certainly we were very sagnorite 10 NG. GALLAGER: Yeah, Alsolutely. And then 16 probably an additional 4 million wold be regained to a same that 10 NG. GALLAGER: Yeah, Alsolutely. And then 17 support that, I thirk certainly we were very sagnorite 10 NG. GALLAGER: Yeah, Alsolutely. And then 18 support that, I thirk certainly we were				
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 9 from the State to help do this? Or are we looking maybe 9 from the State to help do this? Or are we looking maybe 9 have, and then later on down the line use the better 10 biously, they are putting 4 million in this fiscal 11 Obviously, they are putting 4 million in this fiscal 12 year. 13 MS. NEMETH: Right. 14 MR. GALLAGHER: Is that something we should 15 maybe be talking about in our budget committee hearings, 16 Senator Nielson and I? 17 MR. CROWFOOT: Well, I'll say we want to move 18 this process forward as fast as appropriate. In other 19 words, as fast as possible. But also, doing this 10 takeover outreach that we need to 21 MR. CALLAGHER: Right. 22 MR. CONANT: And I know you do, too. So we 23 should have that conversation. Maybe start it as an 24 offline conversation around what are the resources we 	7	timely manner.	7	Folsom's approach was to use what we have to the best
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Page 70 sk this of out people, too when would we be able to ook at that sort of (unintelligible) chart that chedules out the different pieces of the water control anual update and FIRO, and then understand when it's oing to take place? Is that your last bullet about eveloping the final work plan? MR. FORBIS: Actually, no. That work plan is pecific just to the FIRO effort, not the water control anual update. And I think you're highlighting one of hallenges that we're going to face is that we have two eparate efforts looking at the same things but, like, till different. But a lot of the same people are	1 2 3 4 5 6 7 8 9 10	Page 72 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.
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eparate efforts looking at the same things but, like, till different. But a lot of the same people are		
till different. But a lot of the same people are		MR. FORBIS: Sure.
	11	MR. CONANT: And we can sort of tally up any
	12	questions that members of the public can offer you to be
orking on both. So this specifically talking about	13	able to answer too.
hen the work plan outline, the technical work that's	14	MR. FORBIS: Absolutely.
oing to be done, as part of the FIRO R&D project.	15	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
asks going through the update.	25	we talked about before, as we got to since that was
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		in the conservation space, the changes were in that
		region and not in the flood control space, they had all
		the authority they needed to implement the things that
-		they so chose.
		MR. PITTMAN: Mr. Forbis, I appreciate your
		presentation; it's really informative. I have a
		question about your visions in terms of your Corps area.
		MR. FORBIS: Sure.
		MR. PITTMAN: In most of your drainages, do
		you have one point of flood control, or do you have
		multiple points throughout drainage?
		MR. FORBIS: I guess it kind of depends on how
		you're dividing up the drainages. The two we have
		four primary California watersheds that we kind of
-		organize; the Sacramento, the San Joaquin, the Tulare
-		Lake bed, and then Tuolumne River, and each of those
		contain multiple reservoirs. Like, the San Joaquin, for
•		example, there's all these stem sloughs and
		(unintelligible) San Joaquin main stem. Like, all those
		feed into the San Joaquin and eventually go down through
		for analysis and so there's typically there's usually
		one reservoir per one of those major river systems that
		has flood control purposes for which there's a water
		control manual for.
I IES, IU'S APPROPRIATE FOR THESE NEXT FOUR MONTHS,	25	MR. PITTMAN: Well, the point of my question
	In terms of creating an Oroville-specific mater control manual update schedule, we have our first, guess, interagency meeting with DWR and the Corps acheduled for next month to talk about the tasks that me'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 nclude 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.	In terms of creating an Oroville-specific 16 ater control manual update schedule, we have our first, 17 is guess, interagency meeting with DWR and the Corps 18 cheduled for next month to talk about the tasks that 19 re've identified that we can do, and who should do what 20 or really use the federal the \$4 million federally 21 provided as smartly as possible. And that would likely 22 nclude Yuba Water taking on some of the tasks of what 23 ould go into an update, and DWR taking on some of the 24 asks going through the update. 25 So we have a meeting scheduled, coming up for 1 he update is scheduled, but it would come following 3 hat at some point. 4 MR. NIELSEN: Real quick. If it's looking 5 ike it's a three or four, five years process, but you 6 ind elements that you would say, "Hey, this could be 7 eally helpful in the operation," are you precluded from 8 using new bits to add to the manual, or do you have to 9 use the old manual and then get all the new and improved 10 n order to make any running changes? 11 emporary changes that would benefit the various 14 uurposes. And that's, in fact, what we did for Folsom 15 s, while we're still waiting for manual to be 16 officially approved, we did deviations to the water 17 control manual for Folsom that were essentially the 18 traft water control manual that we were currently 19 guating. 20 So we were using the operations in the 21 ewere looking at it just at this several month or 23 me-eyear window. "Yes, it's appropriate for this year," 24

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1	is, the Feather River system, upstream from Lake	1	agency's typically comfortable with. And so we're
2	Oroville, has a lot of dams and a lot of facilities that	2	pushing the bounds a little bit out here in California.
3	are exceeding 100 years old.	3	It's exciting work for us. And especially knowing that
4	MR. FORBIS: Okay.	4	it's resulting in better performance from these projects
5	MR. PITTMAN: So my thought pattern is, as the	5	so they can do a better job than what they've typically
6	Corps has been in partnership with this project, my	6	done. So I'm happy to come back and share any progress
7	wonder is, as those projects have to be redone, rebuilt,	7	we've made.
8	whatever, is there a possibility the Corps might be	8	MR. CROWFOOT: Thanks so much.
9	interested in partnerships for flood control upstream?	9	MR. FORBIS: Thank you.
10	MR. FORBIS: I think there's a possibility. I	10	MR. CONANT: Those who want to make comment,
11	know I've attended one meeting where the not	11	you can fill out a speaker card, or you can also just
12	specifically the Feather River, but that one meeting	12	come up. But I will take the one card I have received
13	where the discussion of future federal interests in	13	already, which is Hellen Dennis. And would ask you to
14	infrastructure changes at dams in various watersheds	14	come forward, if you would, Helen. And what we do, as
15	came up. So I know that's a question that can be asked,	15	you know, Helen, is try to ask each of the public
16	and it's usually I'm not as familiar with the process	16	commenters to keep their comments focused so we can hear
17	of what comes from there, but I know those conversation	17	from everybody. And then if you have specific questions
18	occur and have specific entities or people are	18	that we can answer or Army Corps can answer, please feel
19	interested in pursuing that. I could find appropriate	19	free identify those. Welcome.
20	point of contact at our office to flush out those	20	MS. DENNIS: Thank you very much. As part of
21	details, because, unfortunately, I'm not the right guy.	21	the community, I'm more interested in what's happening
22	MR. PITIMAN: Well, I appreciate your answer	22	for the citizens, for us as a public. I don't want to
23	because I see Folsom as an example of getting the lower	23	know everything about water, I just want to be kept safe
24	exit of the pool. It may be an example to use as many	24	from it. I don't want Lake Oroville to only be for
25	other reservoirs, maybe (unintelligible) we have that	25	boaters and fisherman. I want it to be for regular
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1	discussion. But that makes a lot of sense for all the	1	family members who want to go, say, swim, or who want to
2	other reservoirs. I mean, Feather draining is huge, as	2	go camping, who want to see the wildlife. And I don't
3	we all know, and so is the Sacramento River drainage.	3	see that happening. I see only boating, boating, and
4	But if you can get it in all the other pools, it might	4	boating going on at the lake.
5	help the reservation. So I appreciate your	5	Specifically, I've been up to Loafer Creek,
6	conversation.	6	the dam, the spillway, over to the other side where the
7	MR. FORBIS: Absolutely. Yeah, sure.		boating is; I don't see a lot of activity going on for
8	MR. CROWFOOT: Thank you, Mr. Forbis.	8	the common citizen who doesn't have the money to own the
9	MR. FORBIS: Thank you. Thanks for the	9	boat, or maybe isn't interested in having a boat or
10	invitation.	10	going out on the lake, but just wanting to enjoy the
11	MR. CROWFOOT: Have a seat.	11	lake from the shore. I'm seeing taking down more and
12	MR. FORBIS: Okay.	12	more trees, more wildlife is being chased away of all
13 14	MR. CROWFOOT: And just one request as you do, which is this body is, you know, formalized moving	13 14	the equipment and explosions and everything that are going on. When I come to these meetings, I want to here
14	forward and we meet on a quarterly basis. So would be	14	about Oroville.
16	great if you or a colleague from time to time could come	16	I do understand that Folsom is important to
17	and update us on this process. Obviously, we have	17	what is happening in Oroville, but I really want to hear
18	director of Department of Water Resources, but really	18	about what's going on right now in Oroville in and at
19	appreciate your engagement. There was a lot of interest	19	the dam, and at the surrounding waterways. And that's
20	in having you come, and hopefully we can just stay	20	my comment. Also, another thing I read was that on one
20	looped as a commission to your process.	20	of these sheets (unintelligible) about Oroville is that
21	MR. FORBIS: Absolutely. I'm happy to share.	21	the Department of Water Resources, DWR, owns and
23	This sort of work with FIRO and (unintelligible)	23	operates the Oroville Dam facility. I believe they get
24	operation, that's brand new for the Corps of Engineers	24	licensed which, last time I heard, they were still
25	as an agency. So it's on the forefront of what our	25	trying to get the license. And I was opposed to it

Page 78 Page 80 1 because of the way they had been if the past. But that MR. JERRY: First of all, I would like to 1 2 thing I'm commenting on: Why are they making statements thank the director for follow-up on my concerns about 2 3 if they own it? the Palermo tunnel. Dave Sarkisian and I had a 3 MR. CROWFOOT: Thank you so much, Hellen. Just half-hour meeting prior this meeting here discussing 4 4 5 on the topic of recreation, this commission and its 5 some concerns of mine, and he presented some conclusions 6 members can identify any topics we want to make sure to 6 of his. And I'm going to discuss that here when this is 7 over with, with Senator Gallagher about the Palerrmo address in future commission meetings. So if there's an 7 8 interest in diving into recreation, both challenges and 8 tunnel. Okay? And I'll comment on that in a minute. 9 opportunities, we can certainly do that. Just a 9 But getting back to the Corps of Engineers' quick -- let's turn Helen's last point into a question, 10 presentation. Very, very complicated, very convoluted. 10 Like an air traffic control tower taking care of Delta 11 which is: Does DWR own the dam? And maybe a couple 11 12 and American Airlines and all these different airlines sentences on relicensing. 12 13 MS. NEMETH: Sure. DWR and state water 13 coming into a central area, controlling the flow. I 14 project is the owner of the dam. And that means that we 14 kind of think the same analogy would be for PJE, (Unintelligible), water coming into Oroville, south-end 15 acquired the land and financed the construction, so we 15 16 are, in fact, the owner-operator. And we have a water water coming in from the dams up there, Shasta; all 16 17 right to the water that we store in Oroville Dam. And 17 going into a common Sacramento River, going into the Bay 18 that is essentially, as you know, it provides water to 18 Area. 19 the Californians in the bay Area, all the way down 19 And handling all those concerns with 20 through Southern California throughout the central 20 saturation of the watershed, releases from concerns, 21 valley. So we are, in fact, the dam owner and operator. 21 maybe a radio gate (Unintelligible) like at the Folsom. 22 The state water project has 25 other dams throughout 22 All these different concerns, and now we're talking 23 California in which it is the owner and operator. So 23 about -- what I'm hearing here is an update of some 24 it's a very familiar role for the state water project. 24 flood control manual. Now, realizing that it takes 25 On the relicensing, we do, as many of you in this room 25 people to read and comprehend and understand a manual as Page 81 Page 79 1 know, that the relicensing was completed in, I think, it a guidance, I would just hope -- and maybe you can 1 2 was 2006. 2 clarify this -- is there somebody that has algorithms 3 We received the final environmental permit, it 3 once these manuals are compiled? The analysis is made was a biological opinion from the National Marine for each one of these dams, reservoirs, releases; what 4 4 5 Fisheries service in 2016. And we await final approval 5 they can hold, what they can't hold, what the weather is 6 from the Federal Energy Regulatory Commission to at the time, what the saturation is at the time. 6 7 7 actually activate that license. Until that time, we Is theres an algorithm of some sort going into 8 deal on an annual basis with a temporary license. 8 a centralized computer to where you have people there There's a lot of recreational benefits that are part of that are manning the control tower with all this stuff 9 9 10 our new license, particularly ones that are in what's 10 coming in? Is that existing now, or is it proposed, and 11 called the FERC boundary of the facility. To the extent 11 who's doing it? 12 that there are other recreational projects that the 12 MR. CROWFOOT: Really good question. Let me 13 department has committed to that's outside of that 13 just ask -- I'm going to ask Mr. Forbis. I have a 14 boundary, we have accelerated those -- particularly partial answer. But if you would, if you could just 14 since the Oroville spillway failure -- as the way to do finish up and identify if you have other questions too, 15 15 16 everything that we can to more immediately enhance 16 and then we'll answer them in --17 17 recreational opportunities, understanding that some were MR. JERRY: Well, I have concerns of different (Unintelligible) concerns of (unintelligible) canal. So 18 lost during that incident. 18 19 That continues to be a work-in-progress. We 19 if you want to focus on what the Corps of Engineers 20 are very focused on getting the license so that we can 20 presentation was to get that question, that I'm sure the start to do all the projects that we've committed to 21 21 gentlemen over here from Sutter County asked a similar 22 doing, now 14 years ago. So it's a huge priority for 22 one, along with this gentleman here, about all this coordination of these different dams and reservoirs 23 the department to do that. 23 24 MR. CROWFOOT: Thanks so much, Karla. Other 24 agencies --25 members of the public that care to share perspective? 25 MR. CROWFOOT: Yeah.

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1	Page 82	1	Page 8
1	MR. JERRY: Everybody is at the throttle and	1 2	authority for the flood control operations within our district.
	the control, but is somebody controlling them?		
3	MR. CROWFOOT: Joe, maybe you could talk a	3	MR. JERRY: Not your district. In the
4	little bit about the flood operation center and the	4	MR. CROWFOOT: Let me ask Karla just and I
5	partnership between DWR and the Army Corps.	5	don't mean to cut you off just to directly answer the
6	MR. FORBIS: Yeah, absolutely. That's the	6	question. I'll tell you that, from my perspective, I am
7	first thing that came to mind. Thank you, sir, for your	7	confident that we have a flood operation center that
8	question and comment. So there currently exists with	8	integrates gaits all of this realtime data with each of
9	DWR, the joint operations center, which is a facility in	9	these agencies, and then ultimately, on our system, the
10	Sacramento that has the Weather Service, the Bureau of	10	buck stops with our director of DWR and her team. One
11	Reclamation, and DWR located in one facility. And	11	of the suggestions at out first meeting was to actually
12	within that is the flood operation center where the	12	offer a tour of the flood operation center to this
13	release the proposed releases from all these	13	commission, and I'd like to ask our organizers to put
14	reservoirs are shared and submitted and incorporated	14	that to the top of list.
15	into the Weather Service's stream flow forecasts.	15	And maybe before we get out of the winter
16	So you can see the impacts of future releases	16	season, offer that to this group, because I think it's
17	at various downstream gauges and control points. During	17	really informative to see. It does feel a little bit
18	this time of year, we have a video conference call or	18	like mission control at NASA, so I want to reassure that
19	meeting at least one a week during the flood season	19	they are. But, Karla, and the question of, sort of, who
20	where we get together, look at the upcoming weather,	20	is the decision maker as it relates to the State owned
21	share our plans for releases, and coordinate and ensure	21	and operated facilities and flood control?
22	that all the information is known by all parties so that	22	MS. NEMETH: So every entity that owns its
23	way, the forecast provided by the Weather Service are	23	facilities makes decisions about how to operate them.
24	up-to-date and show realistic results of what would	24	But all the controls for flood control are approved by
25	happen when these release changes, if any are scheduled,	25	the Corps. So we're making a decision on the lever, but
	Page 83		Page 8:
1	are making. Since that's a DWR, like, facilitated	1	it's all approved by the Corps.
2	in-house function, I don't know the entire history with	2	MR. JERRY: Yeah, but do you have control over
3	it, but I know we've been a party to that for a very	3	PTE (phonetic) that's coming into your lake from Lake
4	long time.	4	Almanor? Suddenly they say, "We got a horrendous amount
5	And there's been the subgroup with the	5	of water coming up here," and you're sitting here, based
6	another term for you the Forecasted Coordinated	6	upon, you know, Ponderosa and the works with a certain
7	Operations Group that has been in place for over ten	7	amount coming in, and suddenly they say, "We have a
8	years, specifically for the Yuba and Feather watersheds	8	problem here."
9	with the Corps of Engineers. And that has quarterly	9	MS. NEMETH: We are absolutely incorporating
10	meetings where we meet and discuss the goings on of the	10	all these inputs into our decision making.
11	different projects, and also have a shared, like,	11	MR. JERRY: Then you have Shasta up there with
12	modeling tool that can show if releases are coming from	12	their releases. Okay. Now, I want to get to the other
13	these different locations, what does that mean at these	13	thing that I'm up here for; that's the Pulermo tunnel.
14	downstream points?	14	I mentioned that Dave Sarkisian and I had a meeting a
15	MR. JERRY: But is there a general in charge	15	while ago. I have grave concerns about the Pulermo
16	of all this operation? You got the Navy, you got the	16	tunnel. Take into consideration that this is a
17	Air Force and all this; and your corps being a federal	17	2,430-foot tunnel going through Oroville Dam, releasing
18	plan to keep them from flooding out. And you've got all	18	its contents just above the access road going into the
19	these different outfits that are making progress. Some	19	underground power plant. And should that break up
20	are. You know, keep it simplistic. I don't care about	20	there, it's going to flood right into the underground
21	all this other stuff. I want it simplistic. Is this	21	power plant. Once you lose that, you don't have that
22	going to somebody that is a decision maker that has	22	almost 17,000 CFS stability to release water, because
23	algorithms and a computer coming up with all these	23	the power plant will be flooded. And then the only
	A shahili ka ka salar a dashahara	1 0 4	alless and a new address the standard state of the second state of
24	variabilities to make a decision?	24	other way you can release water is the spillway because
24 25	Variabilities to make a decision? MR. FORBIS: The Corps of Engineers has the	24	of the river valve outlet would be unusable at all.

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	Page 86		Page 8
1	So now you've got a situation where you're	1	opportunity to connect directly with Department of Water
2	filling a whole reservoir up with nobody to control it	2	Resources. Can we just ask somebody at Department of
3	until it gets to 813, which is where the radio gate	3	Water Resources, just for the purposes of our
4	controls are. And all this jeopardy is only to provide	4	commission, just come up in about two minutes, at least
5	Feather River or South Feather Water Agency, I call	5	just give us so we're all understand what the Pulermo
6	it Old WID with 40 CFS of water. And I could jump	6	tunnel is from DWR's prospective, and an update on
7	over the ditch that's 40 CFS full of water. So the	7	addressing this gentlemen's concerns. Yeah, great.
8	whole concern is to take care of those people when they	8	MR. JERRY: Do you want know me to stand here,
9	have a situation where they could open a valve on an	9	or do you want me to sit down?
10	existing pin stock up there now and recover their 40	10	MR. CROWFOOT: Please have a seat. Thank you.
11	CFS.	11	MR. JERRY: Thank you.
12	Or, for that matter, DWR can go down on the	12	MR. CRADDOCK: Good morning, commission. Ted
13	river and put a pump and pick it up 200 feet and put 40	13	Craddock, acting deputy director of the state water
14	CFS in that canal to continue their operations. I	14	project. And, Jerry, good to see you today, and really
15	mentioned to Mr. Sarkisian there that a legal	15	glad that we were able to have our chief dam and safety
16	requirement and I brought this up in that meeting	16	engineer David Sarkisian connect with Jerry. So to your
17	with you. I have a copy of that, of which he has a copy	17	question, Secretary, I'll just give a very brief
18	of it. Going back to the 1960s to read about the	18	description of the facility. And then if we want to
19	conditions that water resources had to put those	19	talk in more detail, maybe this is something the
20	facilities in and guaranteed them the water. So they	20	commission would be interested in a future presentation
21	give you several options to be able to maintain that 40	21	on. It's a the facility is a small tunnel that's
22	CFS.	22	located below the dam, and it was bored through the
23	Having that tunnel there through the dam, in	23	bedrock underneath the dam. It's a facility that
24	my feeble estimation, is jeopardizing that whole side of	24	includes a concrete-lined tunnel for about halfway, and
25	the dam up there should it go out. You're looking at	25	then a tunnel plus, so a concrete plug in the tunnel,
	Page 87		Page 8
1	150 PSI. You're looking at 300 foot of head over the	1	which transitions to a steel pipe.
2	top of the inlet. You're looking at a situation if you	2	The steel pipe then exits the other half of
3	had to shut that facility down, you have to set the	3	the way out of the tunnel. And so we're able to walk in
4	(Unintelligible) down 300 feet, pick up the stock log,	4	to part of the tunnel and view the condition of the
5	pull the pins out of the side gate, and lower it down to	5	steel pipe and the valves. So we do those inspection
б	shut it off. You're looking at a facility that's 60	6	regularly. And then additionally, we have also brought
7	years old.	7	up in submersible equipment to inspect the upstream
8	Okay. Right now, according to Mr. Sarkisian,	8	portion of the tunnel and look at the condition of the
9	they have looked into it, and it looks good for the next	9	concrete.
10	20, 30 years maybe. But how long is that facility going	10	We really take Jerry's seriously. We had our
11	to be up there? 100, 200 years? Somewhere in the	11	team take a close look at it, they briefed me on the
12	meantime, you're going to have to go in there and do	12	condition of the facility. Additionally, right now we
	, 1 3 3 3		
13	something to that; the valves that rust or the whole	13	have the benefit of the independent comprehensive needs
13 14		13 14	have the benefit of the independent comprehensive needs assessment team taking a look at it, the
	something to that; the valves that rust or the whole		
14	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the	14	assessment team taking a look at it, the
14 15	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the dam itself. Creating pressure on that 6-foot diameter	14 15	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at
14 15 16	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the dam itself. Creating pressure on that 6-foot diameter tunnel, sometime, sooner or later, you're going to have	14 15 16	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2
14 15 16 17	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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	14 15 16 17	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at
14 15 16 17 18	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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.	14 15 16 17 18	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and
14 15 16 17 18 19	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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	14 15 16 17 18 19 20	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and I think the overall view is the facility's in good
14 15 16 17 18 19 20	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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	14 15 16 17 18 19	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and I think the overall view is the facility's in good condition. But we to continue to have additional
14 15 16 17 18 19 20 21	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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	14 15 16 17 18 19 20 21	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and I think the overall view is the facility's in good condition. But we to continue to have additional dialogue with Jerry to make sure we're addressing his
14 15 16 17 18 19 20 21 22	something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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)	14 15 16 17 18 19 20 21 22	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and I think the overall view is the facility's in good condition. But we to continue to have additional dialogue with Jerry to make sure we're addressing his concerns.
14 15 16 17 18 19 20 21 22 23	<pre>something to that; the valves that rust or the whole (Unintelligible), you know, the whole settling of the 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.</pre>	14 15 16 17 18 19 20 21 22 23	assessment team taking a look at it, the (Unintelligible) part 12 team has also taken a look at it. And then Congress required us to assemble a Level 2 risk assessment team, so we have also had them look at the facility. So we're taking all that information, and I think the overall view is the facility's in good condition. But we to continue to have additional dialogue with Jerry to make sure we're addressing his concerns. MR. CROWFOOT: Thank you. That is really

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1 bev it. So thank you very much. Any other members of 1 So tools like lake levels are still low to the 2 the public that wish to comment? Gray. For our last point that we wouldn't even be able to use the nain 3 item. 1 id adk our colleague from Department of Water corrandicuts. I think one clear measage from Covella 6 add aurrounding communities is that, over the last three point that we wouldn't even be able to use the nain 7 aparts, is that FMR and our state needs to do better job point, and through the communication with the Amy 8 actually whating information. And we're taken that point and through the communication with the Amy 9 seriously and have made progress on that, our last meeting. So like 1 just entrices we out to 10 our last meeting. So like 1 just entrices we with thind of memorializes acom it be horizent 11 as the orizent that, we nucl to do. It talks about when its we hould of adjust that. So every time that 12 our last meeting. So like 1 just entrices its we hould of adjust that. So every the that 13 our last meeting. So like 1 just entrices its we hould of adjust that. So every that hould adjust that, so every that hould adjust that, so every that hould adjust that we na like we hould it do that we hould it do that we hould it do tho		Meeting on	041	21/2020 I ages 90
2 the public that wish to comment? (Key, For our last 2 point that we wouldn't even be able to use the sain 3 item, I'd sek our colleague form formation. And we made greatment of Water 3 applies. So every time we goats our operation 6 and surrounding communities in that, over the last three 5 Comp. we want to make aure we're putting the dot 7 years, is that BMG and and state media to do batter job 5 plane, and through the communication with the homy 8 actually sharing information. And we we takes that 5 plane, and through the communication with the a poing tog 10 werking of how made progress on that, 9 into the wearthed, we want to communicate that expline on 11 you, commissiones, i tailed about this a little bit at 10 communicate i and the score will now or change, and 12 you consistence, and the (intimicigable) that we do that 10 work there thing we're trying to get more accurate 13 our last meeting, and three are paper copies in the back for 10 we how accurating and weither wey. The back for 14 pestes a digital article that kind of memory and and this and progress and and the we'n last accuration we'n the accuration we'n the accuration we'n the accuration we'n the accuration we'n that we'n thake down accuration we'n that accuration we'n that accura	1	8	1	Page 92
3 item, I'd ask our colleage from Department of Nater 3 spilleny. There's a lot of conversation about 4 resources, Erin Hello, come and give us an update on 5 spilleny. There's a lot of conversation about 6 and nurrounding communities is that, over the last three 5 spilleny. There's a lot of conversation about 7 years, in that DBS and our state meaks to do batter job our last attes meaks to do batter, job our last attes meaks to do batter, job 10 variant, in the DBS and our state meaks to do batter, job our last meaks. The last thread that our last meaks to do into a last dout this a little bit at 11 NS, MELGN: Theshe. Thank you all. That Namination with law event that all point about that 12 you, comissioners. I talked about this a little bit at communicating. So little is that communicating with law point is a with the obset of the 11 Nor thesh actions to do. the operations of we'll have to kind of digut Attices as the representative from the Amy Orga mentioned. 11 We have not do is in a variety of ways to make sure black for we'll have to kind of digut Attices 12 went to do batt outreach based on some annual we'll have to kind of digut Attices 11 Ma				
4 Resources, hrin Mellon, one and give us an update on 4 operations plans. So every time we update our operation 5 comminications. If think one clear meanage from dorwill 6 operations plans. So every time we update our operation 7 years, is that DNE and our state needs to do betrey job a clauly sharing information. And we've taken that 6 Operations plans. No every time we see large storms on 9 sericoly and have need progress on that, 0 10 operations plans. And through the communication with the Army 10 work-in-progress. And min will update us on that, 0 10 and they observe the weart bod, on the state of the outreach that want to do that outreach based on none armail 11 Again, with the cave at the screet have were put trying to get more acourace 16 weant to do that outreach based on none armail 11 with thing like PID, but the adoptement. 17 milestone, and the (infinitely ind wear intoward) 10 with thing like PID, but we weare the reary proyon. 18 weare to do is in a variety of ways to measure the back for 10 with thing like PID, but we weare the acay weare the acay weare the acay weare the reary of the outreach that. So we use evently set in the weare the theore outreach that. So we use evently set in the back for 19 rearetyroper. Like Secretary pointed out, we measure set				-
5 communications. I think one clear message from Coville 5 plans, and through the communication with the Army 6 and surrounding communication is that, over the last three 6 Corps, we want to make sure we're putting that out 9 actually sharing information, and we've taken that 6 Corps, we want to make sure we're putting that out 9 werking orgenses. And first will update us on that. 9 into the watershed, we want to communication with the Army orgen are into a start meeting. So like 1 just mariname (we just and the storm will move or change, and and or cores armal 11 Again, with the cover that scores: that early and are to kind of adjust that. So every time that 10 our task meeting. So like 1 just mariname (we just an other storm will move or change, and the (inintelligible) that we do that 10 We'll have to kind of adjust that. So every time that 11 as the outreach that we want to do. It talks about when 10 inno, these things - we're trying to get more accurate 12 everynee, like Scorestary pointed out, we really sent 10 we'll have to kind of adjust that. 10 we'll have to kind of adjust that. 10 we'll have to kind of adjust that. 10 10 10 our each that we want to do. It talks about when 10 inno, with the cave an				
6 add surrounding communities is that, over the last three 6 Oreps, we want to make are we're putting that out 7 years, is that URK and our state needs to do better job a cruliply adming information. And we're taken that 9 eartoully adming information. And we're taken that 9 10 work-in-progress. And Fin will update us on that. 9 11 No. Fin.Fin.Str. Thanks. Thank you all. Thank Again, with the caveat that sometimes we'll 12 our, commissioners. I talked about this a little bit at and often. 13 our last meeting. So lite is just metindend, we just 11 14 posted a digital article that kind of memorializes some 15 forw, these things - wire trying ogt more accurate 14 posted a digital article that kind of memorializes some 15 forw, these things - wire trying ogt more accurate 15 othe otherawit have so bath 16 which fin the we work that is a some accurate 16 our weaking, we use that news chank are paper copies in the bach for 17 with things like FIDO, but there will be adjudgents. 16 our weaking, we use that news chank are paper copies in the bach for 19 with things like FIDO, but there wait have so what you gue can weaking and othen. 16				
7 years, is that TMR and our state meaks to do better job 7 productively as well. Any time we see large storms on 8 astroully sharing information. And we'we taken that, 7 productively as well. Any time we see large storms on 10 work-in-progress, And Erin will update us on that, 8 10 9 11 Work-in-progress, And Erin will update us on that, 11 Again, with the covent that command, we just 12 you, commissioners. I taike about their 11 commissioners, and the fund of amorializes come 13 our last meetings, So like I just mentioned, we just 13 well here to kind of adjust that, 's, you 14 pooted a digital article. That kind of amorializes come 16 as the representative from us, now that it's, you 15 off the outreach have went to do. It taiks about them 19 well he up there, actually a well, he adjudgments. 16 as the orgeness multiceless well 19 well he up there, actually a week from today. And we went to do is in a variety of ways to make sure that 17 DRR as a whole, and obviously. Orovill specifically. 20 well he up there, actually a week from today. And we well he commission well you gong acquet 2 weak to do is a variety of ways to make sure funds of mores, ore mergency atim plan				
8 actually sharing information. And we've takes that 9 9 ericually and have made progress on that. 10 10 work-in-progress. And this will update us on that. 11 11 you, commissioners. I talked about this a little bit at 11 12 you, commissioners. I talked about this a little bit at 12 13 our last seetings. O that, the progress and the index weat to do that uresed haded a conce annual 12 14 posted a digital article that kind of memorializes same 15 know, these things we're trying tog et nore accurate 15 of the outreach that we want to do. It talks about when 16 work like greenstruiker (Thom the Amy Ousp entriford). And we all we than seak coming from us, know that it's, you 16 ore exercise. Like secterabry pointed out, we really want to 10 17 milestones, and the (Unintelligible) that we do that 17 with things like FIRO, but there will be adjudgents. 16 proactively abare information about the operations of 10 we'll be onton. 10 17 Me a whole, and, obviously, Orovilla specifically. we'll be mountains to what you gays can expect 12 there we be print advertisements in local 24 which I think many of y				
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1	Page 94 this information, or adjudgments to the language we're	1	miracle March. Page 96
2	using, we're all open, ears are wide open. I really	2	MR. JOHN: Yes, so we're experiencing what's a
3	appreciate that kind of feedback to make sure that we're	3	very usual dry period right now. February there's a,
4	communicating to you all in a way that's actually	4	based on the forecast that we're looking at right now,
5	helpful.	5	we could be completely look at a zero for total precip
6	MR. CROWFOOT: Thanks so much, Erin. The	6	for the month of February, which would be unprecedented.
7	community feedback and input has been really helpful to	7	So, you know, this as we are for the year, we saw a
8	improve our communications. And so let me ask, first of	8	pretty decent December, but we had a late start in terms
9	all, are there commission members that have any	9	of precip. We're probably running about I think it's
10	suggestions, observations, questions in term of these	10	about 50 percent of where we should be at this point.
11	these recent ways that we are communicating? I might	11	So it's a little bit concerning based on our experience
12	just ask Ted oh, sorry.	12	back in '14, '15 where we essentially, in January
13	MR. PITIMAN: I just want to add that 80	13	of 2014, it was the start of a 13-month essentially
14	percent of our learning today or more is generated	14	no significant precip for 13 months. We're still in the
15	by visual. So the more pictures, the better. I just	15	water in the wet period of year, so there's still
16	have the say that. That's a big deal and it really	16	hope.
17	helps.	17	- Although, still looking out ten, 14 days,
18	- MS. MELLON: Me too.	18	there's no significant precip. The good news is our
19	MR. CROWFOOT: Yeah, and I say, too, video	19	storage is relatively good coming off of a wet year. So
20	that can shared as well.	20	we're, you know, 2.2 million-acre feet. We're kind of
21	MS. WIDENER: I have just an observation for	21	leveling out, though, on storage. We've had to increase
22	the public. There's, like, a contact us at the end	22	the releases here just recently for the fact that the
23	of through one of those community update e-mails.	23	system is drying out downstream. And in order to meet
24	And you can click on it, and you can get a hold of Liza	24	the flow and salinity requirements in the delta, we are
25	really, really quickly. I had a little bit of an issue	25	having to up our releases along the Shasta and Folsom,
	Page 95		Page 97
1	with some dates that were not showing on the website;	1	which is a little bit unusual for this time of year to
2	she fixed it really quickly and got back to me, and it	2	start that this early. So, you know, we're not
3	was very much appreciated.	3	positioned very well right now.
4	MS. NEMETH: Thanks. Yeah, if you don't know	4	Although, like I said, it is as relatively
5	her already, Liza Whitmore is our public information	5	healthy storage coming off a wet year, so we could
6	officer here in Oroville. She lives up in Chico. That	6	withstand one dry year. If it's prolonged into another
7	was a new addition what have we been? A year now and	7	year, then we wold start to be a little concerned.
8	a couple months now? In or around?	8	But
9	MS. MELLON: So that was direct feedback from	9	MR. CROWFOOT: And, John, the flip side of
10	you all that we needed someone here, who lived here, who	10	that, of course, you're talking about water supply. At
11	was more accessible, and who also kind of understands	11	least there's a silver lining as it relates to flood
12	what you guys are dealing with on a daily basis, as	12	control. So plenty of space in the reservoir.
13	opposed to, you know, me in Sacramento. So thank you	13	MR. JOHN: Yes, plenty of space in the
14	for pointing that out. Liza's all yours.	14	reservoir. I think as was in Joe's presentation, we're
15	MS. WIDENER: Yeah, it's really good, I think,	15	not even close to having being open to that required
16	for the community. If you have questions or anything	16	vacant flood control space for this year. So that is
17	that you want put out there right away, and, you know,	17	the flip side. There is no concerns at this point
18	some kind of response, it's a really good tool for us.	18	whatsoever for any type of flooding.
19	MR. CROWFOOT: It's really great. You know,	19	MR. CROWFOOT: Got it. Questions of John?
20	while we have this slide up, maybe to conclude the	20	John is, like, the chief operator of the entire state
21	meeting and maybe it's Tad or John I see back	21	water system. He's got some fancy title I forget.
22	there if you want to just give us the sort of status	22	MR. JOHN: Yeah, I forget, too. Congressman?
23	report on the reservoir this season and what we can	23	MR. NIELSEN: Thank you. What could we figure
24	expect for the remainder. Not that we're asking you to	24	on having an updates, or even a final number, on ag
25	predict the weather. Tell us if we're going to have a	25	district allocations here locally, or farther down the

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Page 30 that for DBF 1 how you get a - 1 think for maid that we have a next week. And is that optic poke have of the final? Area we have have the and that we're a gene to have the type of parameters. The second is poke that we're as a harded parameter week we're as a harded parameter based on an agent lat. So we're looking at a handed parameter of the second late pak the lake final on that is going to be based on an agent lat. So we're looking at a handed parameter of the second late pak the lake second late as a harded parameter of the second late as the second late pak the lake second late as a second late pak the lake late pak the pak to a late second late pak the lake second late as a second late of the second late as a second late pak the lake second late as a second late pak the lake late as a second late as a second late pak the lake late as a second late as a second late as a second late pak the lake late as a second late asecond late as a second late as a second late as a second					
2 take another pole here on the stow next week. And is 2 open to that type of phenomenon. 3 that going to be kind of the final? are we sping to NR. NIELSN: Yeah, I work down a few C-bek 4 marker from - browline liabes, and NR. NIELSN: Yeah, you know, an for the 5 NR. UCHN: Yeah, you know, an for the 3 6 allocation for thekind the same kind of the local search or an Agril list 5 7 randof for course. List is now wire at a hundred percent. 5 10 solve re locking at a hundred percent for them, for the 10 11 serier follok locally. For the south delta: I or the 10 12 state water projects survey, we're only locking at 11 13 forecast: a labuye based on a conservative earling to 10 The same any we're a signification at this polit. 13 ber end in a labuye based on a conservative earling to 10 10 Solve the locking at how we have the same and we have an any were application we'll see through the 13 berefore and her final? allocation at the seq sing to how allower 10 14 the singer final see through the 10 Sone anawy we're application we'll see	1		1		
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4 https:/forminacle March? What are we kind of looking at %. JOBN? Yeah, you know, so for the allocation for thekind of the local series resoluting for contractors, per contract, that's going to be are the final on that is going to be based on a April lat smarfer forceast. Fight now we're at a hundred percent. 4 numbers from Oroville Lake reached it peak four days go 00.55 is already transing dow miless something the peak on urn 2015. A year ago body is percent allocation at this point. Are that is that's very low for this time of year. We will see how the smarfer follow as go through the state water projects survey, we're colly looking at the ware as go brough the spring. That the same as bed conveyer-ago the hundre of percipitation we'll see through the seminder of the year. Now the convert the genting the the same as go through the the survey is not see through the seminder of the year. 9 MRIEGEN: Workrew are construct to go year the ware. So if you blieve that we're going to have the the survey recess that takes place where all the seminder of the year. Now all the the surve that we're work of the sourch the sourch of additional inflow, you know. 10 MRIEGEN: Workrew are construct dry ware seesanted comprehensively up and down to the surve than we're have all we're source as wery morth. And what bagenes is, during that source as autually deliver to are construct. The source as autually deliver to are construction. The source that see and autually deliver to are construction. The source as autually deliver to are construction. The source that source as autually deliver to are construction. The source as autually deliver to are construction. The source as autually deliver to are construction. The source as the source as autually deliver to are constructin any the source as autually deliver t		-			
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24 atmospheric rivers. So that, you know that has the 24 assessments, are those things that are in the way of a					

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21 this path of improvements.

17 we have now three separate, independent entities that

18 are reviewing the work, I think, helps us, you know, make the case to FERC that we're crossing T's and

20 dotting I's, and that we're committed to delivering on

23 case. But these very specific things that we can and

24 cannot do given the FERC boundary, particularly as it

relates to the recreational amenities. We just want to

Here at Oroville ought to help us make the

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22

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1	Page 102	1	Page 104
1	get that resolved? And also, there's obviously a local	1	get to those as soon as we can.
2	concerns of the County and the City on some things being	2	MR. NIELSEN: Do I hear in there that you
3	met. I think everybody in favor of getting this done	3	have FERC has some boundaries on that, but are you
4	and having the a long term hydropower. Everybody	4	able make firm commitments independent of what FERC
5	wants that. But just, you know, the concerns	5	might that we can take to the bank locally as far as
6	immediately after the spillway failure and some of the	6	those recreation and facilities upgrades? Kind of like
7	more local issues.	7	what the lady was asking about, one of our public
8	What are you looking at with that whole matrix	8	members. On facilities that are accessible to her too,
9	as far as what you need to get out of the way as far	9	too.
10	as needs assessment. Is that a job that needs to be	10	MS. NEMETH: Absolutely.
11	done first? And the FIRO and that update there, are	11	MR. NIELSEN: But do we have and I might be
12	those things that need to be done, or is that	12	ignorant because I'm not here all the time, but do we
13	independent of what you need to do for a relicense?	13	have that plan? Is that something that we can put our
14	MS. NEMETH: I think technically it's	14	finger on, and then I can help reassure our locals at
15	independent. But I think the dynamic is, you know,	15	the City and the County, "Hey, we're looking good, and
16	post-spillway failure, a real interest in the County and	16	I'm going to go ahead and do my part to help encourage
17	the City and, you know, especially some of out friends	17	FERC to move forward once we have those assurances"?
18	recreational community really wanting to understand what	18	MS. NEMETH: Yeah, so we've done a handful of
19	out long-term plan was to enhance the facility. We are	19	projects and we can give you an update on those
20	close. And a lot of folks around some of the	20	projects that we're helping on the both on the
21	commissioners others have been participating in the	21	fish front, in the Feather, but also some of the work
22	comprehensive needs assessment. And, Ted, you can tell	22	that has been done around improvements to Loafer Creek
23	us the timing on that. But I believe we're close to	23	and other paces. So I'd be happy to provide you with a
24	reaching completion on the forecast and foreign	24	lost of work that's ongoing. But I think we have
25	reservoir operations, which is really exciting stuff, we	25	identified that as the universe of things that we can
	Page 103		Page 105
1	expect to have a work plan completed by the end of this	1	accelerate absent a FERC license.
2	year, which, of course, is all of this new information	2	MR. CROWFOOT: But, Karla, it also sounds like
3	that the Corps is committed to considering as it moves	3	it would be helpful to get the list of projects that
4	towards a separate process, which is updating the the	4	we've committed to within the FERC license, too.
5	control manuals.	5	MS. NEMETH: Sure.
6	So all those things are converging. I think,	6	MR. CROWFOOT: I think that's important for
7	ultimately, it's at the discretion of the FERC	7	you to know what we're stepping up. And do you recall
8	Commission in Washington, D.C. to make the	8	off the top of your head the amount of investment as it
9	determination. And, you know, I think I mean, my own	9	relates to the amount of funding?
10	observation if FERC was you know, as we were moving	10	MS. NEMETH: John, can you remind me? Or Ted.
11	through this realtime emergency and sorting things out	11	MR. CROWFOOT: Half a billion dollars?
12	through the aftermath, and we were rebuilding our	12	MS. NEMETH: One million.
13	relationship with FERC, and the engagement of many	13	MR. CONANT: Say again. Maybe on the
14	independent technical bodies that could help provide	14	microphone.
15	more confidence that we were looking at everything, we	15	MS. NEMETH: Yes.
16	were accounting for everything. I think the fact that	16	MR. CONANT: Sorry to put you on the spot.
1		1	

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24

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22 total.

25 50-year license.

18 billion with the license.

MR. YARBOROUGH: Sorry. An entire

MR. NIELSEN: Say that again, please.

MR. NIELSEN: One billion with a "B"?

MR. YARBOROUGH: With a "B" over the

MR. YARBOROUGH: Would be one billion in

MR. CROWFOOT: Got it.

Page 106 Page 108 1 MR. NIELSEN: Invested over what? 1 think, just for some background information, you know, MR. YARBOROUGH: The anticipated 50-year for those that might not know. There is a lot of 2 2 pushback from the community about the new license where 3 FERC license. 3 it relates to recreation because of things like the 4 MR. NIELSEN: In what zone? What geographical 4 5 area? original recreation plan that was done in the '60s. 5 6 MR. YARBOROUGH: All around the --6 And, you know, a lot of those things were not 7 within the FERC boundary where the Oroville facility is. implemented in our community. And then, you know, when 7 8 MR. NIELSEN: (Unintelligible) over 50. Okay. that was brought to FERC's attention in the '90s, they 8 9 MR. CROWFOOT: And it seems like a good 9 were deemed to be not necessary. But there's a lot of follow-up would be -- at the Congressman's office, would 10 people still here that remember that, that remember the 10 11 be just some overview that detail in terms of what are 12 11 promises that were made a long time ago that never came the projects. I mean, we're excited about this, for 13 what 12 to fruition. So it's difficult for a lot of people in it's worth. And I think that we recognized that we 14 need to 13 the community to visualize a new license creating all of work with the community on finalizing the FERC 15 license, 14 these things that were being promised, because we have but, you know, we're sort of excited to get 16 this stuff in 15 been burned before, to say it simply. the ground. 16 MR. CROWFOOT: Well, that's helpful. And 17 MR. NIELSEN: I hope, again, that 17 really appreciate your candor. And that's what this 18 (unintelligible) remaining positive relationship there. 19 18 commission's all about, to actually bring that stuff to I know -- there's been a really good (Unintelligible) 20 with 19 the fore. So Karla had a good point. We're hearing is, the local chamber being the promoter for DWR. And 21 20 as we continue this conversation with local leaders who (Unintelligible) up there, so those are all good inputs. 22 I 21 offer the support for finalizing FERC, we feed to think everybody really wants to be going in this right 23 same 22 continue to identify how we will be held accountable for actually materializing these improvements. We're past direction. It's like, once you finally get to that 24 point 23 where boom, you get a 40 or 50 year operating 24 the hour. I want to give the final word of this meeting 25 license, it seems there's nothing really to talk about 25 to certainly Senator Nielson; this commission is sort of Page 107 Page 109 1 much after that. And we all want that license to a child of yours and Senator Gallagher's. And then also 1 2 happen. 2 Congressman LaMalfa, who we are honored to have here 3 3 today. Gentlemen? MR. CROWFOOT: Right. 4 MR. NIELSEN: Great, green hydro generation. 4 MR. NIELSEN: Well, to me, as I said, 5 MS. NEMETH: That's what's so good about this 5 it's humbling to be a part of this for so long. My whole life's actually been river and water issues all 6 commission. 6 7 MR. NIELSEN: Thank you. 7 over California. But to see the success of this, and 8 MR. CROWFOOT: Helen, quick point. 8 the commitment of the administration, it's really MS. DENNIS: All right. My quick point is, 9 9 encouraging. And I would hope so to the citizens. 10 when I made my comment, it was not solely for disabled 10 There were not too many private citizens here today. I 11 people. It's for everybody. 11 would hope that they would realize at least that this is 12 MR. CROWFOOT: Totally. 12 their opportunity to come. 13 13 MS. DENNIS: When I was younger and my And this is a rare thing that -- this is a 14 children were home, I used to take them out to the Loaf, rare thing in government, to have your government come 14 for instance, or the (unintelligible) and take them out 15 15 out to you. And you're getting the highest level 16 to go swimming and have a picnic and a barbecue or 16 officials. They are busy people, and they are devoting 17 whatever. I've taken Girl Scouts out. I've taken, you a lot of time and attention to the citizens here. So 17 18 that's a rare opportunity. So it's incumbent on the 18 know, lots of kids out there to enjoy the lake, and from 19 the shore, not necessarily in a boat. 19 citizens to involve themselves and pay attention to 20 MR. CROWFOOT: Yeah, I think the point we take 20 what's going on here. Because in that you have a very 21 from your comment is that we need all types recreational 21 direct voice. You don't have to send a letter and wait 22 access. 22 a month to get a response, "Thank you for your letter." 23 MS. DENNIS: That's right. And for everybody. 23 But you're getting to talk to the real shot callers. So 24 MR. CROWFOOT: Absolutely. 24 that's really helpful. I do want to just revisit and 25 MS. WIDENER: And if I can add to that. I 25 mention, again, the issue of siltation. I don't think

	Meeting on 02/21/2020 Pages 110113				
1	Page 110 we've got any problems.	1	Page 112 with trashed.		
2	I'm not hearing complaints. But it's	2	Then I realized that we had a couple of very		
3	something that we must always be aware of. And it can	3	heavy days of rain and there's a little creek just to		
4	becomes problematic when we create islands and much	4	the north of us. And the toilet was flushed along that		
5	goes on. So let's just not forget that, as far as our	5	creek, the refuse of the campers. Now, I certainly		
6	conveyance, silt is an issue. I used to have fun	6	talked to Director Bonam about this I think that's a		
7	thinking about the people who would say we needed to	7	fish and wildlife issue, too, because of the geese and		
8		8			
	control the flow of the river. Well, I said, "No,		ducks were swimming around in that mess. But it is a		
9	you're never going to do. We're peons, that river's	9	real problem. And dealing with the agencies, there's a		
10	going to go where it wants to go." So we tried to work	10	wariness in the legislature of dealing with this very		
11	along with (Unintelligible) we can, but it's more the	11	important issue. And I'm going to say that I'm		
12	boss than we are. But they are things that humans most	12	encouraged Governor Nielson not Nielsen He's never		
13	assuredly can do.	13	going (Unintelligible).		
14	I want to make just an observation that I	14	MR. CROWFOOT: You never know.		
15	consider an encouraging one. Many of us deal with the	15	MR. NIELSEN: No, no. That's long		
16	federal government; Congressman LaMalfa literally every	16	history. Governor Newsom has been really focused on it.		
17	day. But my perception and I've gone to Washington	17	And focused very much so in his State of State Address.		
18	many times on many issues. And under irrespective of	18	But (Unintelligible) there would be some follow-up on		
19	the administration, usually, when you to go to D.C., you	19	this, and some action taken. The legislature most		
20	meet with high-level officials, and they welcome you to	20	assuredly is dealing with it. I have to deal with it,		
21	the office and smile and listen to you and patronize	21	and Gallagher, and LaMalfa, all of us in elected		
22	you. And the conclusion is, we'll take it up with the	22	office. In many capacities, you local officials as		
23	regions. Fine. Now, that's maybe a little harsh, but	23	well. And you're doing certain things with certain		
24	not much. My point being, it's important to go, but	24	local ordinances about camping. We have got to attend		
25	sometimes don't harbor high expectations. I never have.	25	to that because it is of crisis, of course. And we're		
	Page 111		Page 113		
1	However, in the last couple of years, I've	1	having severe public safety, human persons safety on our		
2	seen a big difference when I've gone back with the help	2	streets and out cities. My own staff have been harassed		
3	of Congressman LaMaltha arranging things for Gallagher	3	walking to their homes in downtown Sacramento. And one		
4	and I to visit. You sit down with these directors or	4	of them just made the decision this week to move, she's		
5	secretaries, whoever you're meeting with, and it's a	5	been so harassed and fearful.		
6	very direct conversation. They're all hands on desk	6	And as I mentioned as far as our waterways,		
7	listening to you. And there are even commitments made	7	there are issues here. We really need to focus on it.		
8	in the meeting. "Yeah, we're going to do that and	8	And I think that we are on the threshold of being able		
9	here's how. We're going set it in place and work on	9	to do that. And the governor has done something		
10	it." Now, that meant that were well prepared for the	10	addition, although there's no meat on the bone yet, and		
11	meeting, because they don't just make decisions on the	11	that's the key to how successful this will be.		
11	fly like that without examining the issues.	12	Addressing not just providing shelter for the homeless,		
13		12	but also other needs to allow those homeless individuals		
172	But my point is, it's an encouraging thing to		to become self-sufficient and self-supportive and not		
1/	see the federal government being a bit more responsive		to become sett-sutticitent and sett-supportive and not		
14 15	see the federal government being a bit more responsive	14			
15	to us. And lastly, the issue of homelessness, $\ensuremath{\text{I}}$ want to	15	homeless. And we've got a long way to go with that yet,		
15 16	to us. And lastly, the issue of homelessness, I want to revisit that. Last year we took a little cruise up to	15 16	homeless. And we've got a long way to go with that yet, but at least encouraging it's talked about.		
15 16 17	to us. And lastly, the issue of homelessness, I want to revisit that. Last year we took a little cruise up to Feather and the Yuba and down the Sacramento. And I was	15 16 17	homeless. And we've got a long way to go with that yet, but at least encouraging it's talked about. And that's encouraging to me because that's a		
15 16 17 18	to us. And lastly, the issue of homelessness, I want to revisit that. Last year we took a little cruise up to Feather and the Yuba and down the Sacramento. And I was really shocked the degree of campers. I know there was	15 16 17 18	homeless. And we've got a long way to go with that yet, but at least encouraging it's talked about. And that's encouraging to me because that's a core problem, and that's getting to the core of the		
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1	Page 114 We enjoy your attention, and we appreciate it.	1	Page 116 again, it's been a very positive relationship since
	MR. CROWFOOT: Yeah, thanks so much. I would		we've had this happen the last three years. And the
3	just respond that we heard, I think at the last two	3	communication had been pretty incredible, and I think
4	meetings, members of the community that are concerned	4	Jim and James would commend that, as well as our state
5	about camping on the waterways below the dam. And, you	5	reps. So with that, thank you all, everyone. And on
6	know, we should think about how we may want to talk	6	the things we need to follow up with the Corps,
7	about that here at the commission. I mean, obviously,	7	please you know, the dollars, et cetera will want to
8	it's not related specifically to the dam, but its of	8	be apprized of how we're doing on that, and make sure
9	importance. And we state agencies need to do something	9	you have the flexibility to keep going. Thank you.
10	about it, along with our local partners. So let's	10	Appreciate it.
11	explore that. Congressman?	11	MR. CROWFOOT: Yeah, I would just say we
12	MR. NIELSEN: I had plenty of mic time, but I	12	cannot underestimate the huge news that you and the
13	just wanted to say thank you to the group. Thank you	13	president's administration was responsible for as it
14	Director and Secretary. And I want to pass up the	14	relates to the reimbursement of for the spillway and
15	chain, too, the thanks to the Trump administration for	15	the dam. That's a big deal. And I think, you know,
16	their responsiveness to Northern California's needs the	16	what we see above the fold of the newspapers is often,
17	last three years when we had the spillway, the car fire	17	you know, policy disagreements we have, but underneath
18	in Redding, and we had the campfire in Paradise. And as	18	that, there is just a ton of good work happening between
19	Jim was, you know, talking about, the responsiveness has	19	state and federal agencies, and certainly with the local
20	been really good on a (Unintelligible). And that goes	20	agencies. And so really appreciate your leadership on
21	hand-in-hand with our state-level folks.	21	the water issues and the forest issues. And we will
22	We don't always agree when everything down	22	definitely pledge to work more with you on that.
23	there's is as you noticed sometimes. But we've all	23	I have as homework from this meeting one sort
24	agreed on how the immediacy of things that need to	24	of, like, quarterly update where DWR and the Army Corps
25	happen in response to these disasters has been. And	25	could give an update to the elected members and
	Page 115		Page 117
1	it's been really good. So, you know, I look at two	1	certainly the commission in terms of how the manual
2	of those are fires and one of is this. And Governor	2	update is proceeding along with the forecast and
2 3	of those are fires and one of is this. And Governor Brown and I were getting on a plane to Washington, it's	2 3	update is proceeding along with the forecast and important reservoir operations. I'd also like us to be
2 3 4	of those are fires and one of is this. And Governor Brown and I were getting on a plane to Washington, it's been almost three years ago, and he threw out a figure	2 3 4	update is proceeding along with the forecast and important reservoir operations. I'd also like us to be able to advance an invite to the commissioners to join
2 3 4 5	of those are fires and one of is this. And Governor Brown and I were getting on a plane to Washington, it's been almost three years ago, and he threw out a figure of what the State was going to need on the dam, and by	2 3 4 5	update is proceeding along with the forecast and important reservoir operations. I'd also like us to be able to advance an invite to the commissioners to join us at the flood operation center.
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	Page 118	
1	REPORTER'S CERTIFICATE	
2	I, Olivia M. Rendon, a Certified Shorthand	
4	Reporter in and for the State of California, hereby	
5	certify that the witness in the foregoing deposition was	
6	by me first duly sworn to testify to the truth, the	
7	whole truth, and nothing but the truth in the	
8	within-entitled cause; that said deposition was taken at	
9	the time and place therein stated; that the testimony of	
10	the said witness was reported by me, a disinterested	
11	person, and was thereafter transcribed under my	
12	direction into typewriting; that the foregoing is a	
13	full, complete, and true record of said testimony; and	
14	that the witness was given an opportunity to read it	
15	and, if necessary, correct said deposition and to	
16	subscribe the same.	
17	I further certify that I am not of counsel or	
18	attorney for either or any of the parties in the	
19	foregoing deposition and caption named, nor in any way	
20	interested in the outcome of the cause named in said	
21	caption.	
22	Executed this 7th day of March, 2020.	
23	Olivea Jendon	
24		
	Olivia M. Rendon, CSR 14306	
25		
1		

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