**BAHG Call \_12 - Project Discussion reschedule-20240531\_125848-Meeting Recording**

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2h 3m 39s

 **Hammen, Jeremy J** started transcription

 **Erik Skeie (Guest)** 0:20  
Jeremy, I see your hand is raised.

 **Hammen, Jeremy J** 0:25  
I've got a lot to say.  
A lot to say.

 **Erik Skeie (Guest)** 0:28  
Like we haven't even started and this ends up.  
And I'm I may ask you, Jeremy, just to give a brief overview of what we can expect for the science advisor presentation on the 17th.  
If that's cool.

 **Hammen, Jeremy J** 0:56  
Yeah, I'll.  
I'll do.  
I'll do my best on on that.  
We'll know more once we get a little bit closer, but yeah, I can kind of summarize what the what we kind of decided on.

 **Erik Skeie (Guest)** 1:40  
Alright, what is officially time, but we'll give it a couple more minutes for some other folks to join in here.  
In the meantime, I'm going to pop a quick slide on the screen.  
Maybe.  
Yep, there we go.  
To see how we can contemplate the remaining timeline while we wait to start here.  
Alright, we got about 20 folks on.  
So I think I can go ahead and get started with the quick overview of the timeline that is remaining.  
So just wanted to highlight some key dates for everybody instead of throwing up the usual Gantt chart and all that good stuff.  
So big upcoming key date for everyone is going to be June 12th.  
Jeremy sent out an email that comments from everyone on the twig.  
Amweg and bag are going to be due to Seth, Andrew, Jeremy and myself all on June 12th.  
The reason we're having you email everybody all at once is so that nothing gets lost in translation.  
We don't have to forward between people so greatly appreciate getting those comments in on the 12th to everyone so that we make sure everyone who needs a copy gets a copy.  
That's a big one.  
Coming up June 17th, we have these science advisors presentations.  
So along with everybody on this call, signs, advisors got the second draft of the training work plan.  
On the 28th, they'll be working between then and the 17th to come up with some reviews for us using the guidelines that Jeremy has talked about before.  
Jeremy, do you want to briefly give us an overview of what we could expect for the 17th?

 **Hammen, Jeremy J** 4:13  
Absolutely.  
So on the seven well go a few days before they are hoping to have a summary of the reviews into a draft report.  
Hopefully that 14th at the latest for us to have in hand it again.  
That doesn't give us a whole lot of time before the 17th, but a little bit of time to have actual report that you know, some for some weekend reading.  
Who?  
Whoever wants to attack it that way, we are going to try to go through on the 17th.  
We are planning a 2 hour presentation which means they were thinking that'll give roughly a few minutes of a review on the major points for each project that the independent reviewers brought up on each project and then a little bit of room for discussion to ask questions to, to the the sound science.  
The reviewers are going to be asked to be there, but they are not.  
They they we don't, they don't have to be.  
It's not mandatory, but if some of them can fit into their schedules, we were asking them to be online just in case there are some questions for for the group would like to ask them directly, but again that is not mandatory of of the reviewers.  
Once that it is kind of finished it, like I said, it's just gonna be a big overview of all the of what the reviewers found for each project, what they're suggestions are what their feedback is, and it'll be focused around kind of the major things.  
But the detailed report that you will be receiving that the few days before will have the the actual will be a lot more detail on on what the reviewers feedbacks are.  
So that's kind of what it looks like right now.  
If anything changes, I'll let you know and I'll try to send out some more.  
A more detailed agenda once we get closer to it as well, so that would that's kind of the info I have at this point.

 **Erik Skeie (Guest)** 6:18  
Awesome.  
Thank you, Jeremy.  
And if you guessed that, we're gonna have to have a conversation about these science advisor review and our own review immediately afterwards, you are correct.  
So either on June 19th or June 20th, we're going to have a bag follow up.  
I'll send out one of those handy dandy polls to see which dates going to work best for folks.  
If we need to talk about the whole try and work plan which is absolutely on the table, we may end up doing both days.  
So it's either going to be one or both, because that next week the very next week, the third draft of the Triennial work plan will be due and that is June 25th.  
So from that third draft of the triennial work plan, we're going to have just shy of a week to get our reading done and get our review done and come up with a recommendation to twig.  
And when I say July 2nd, I don't mean that we have to have the absolute final recommendation on July 2nd.  
I'm talking about that week in general, so we'll meet about it on July 2nd.  
Just to stick to the usual bag Tuesdays and then throughout the week, we can probably button up anything that needs to be buttoned up, the email, or if we need to hold another meeting, we absolutely can.  
Because you gotta get that recommendation two twig the following week on July 9th.  
That's when we're gonna have our summer twig meeting where they're going to contemplate our recommendations, see if the twig wants to make any changes and move their recommendation forward to and wig.  
Now, there may be some additional work for the bag between July 9th and August 7th when that training word plan final draft is due, that's really going to be up to the twig if they're like, hey, we want you guys to have some more conversations, we will be having some more conversations and I believe that that did happen for the 2021 through 2023 training work plans.  
So just because we don't see any bad calls between July 9th and August 7th doesn't mean they're not gonna happen.  
Just wanted to point that out.  
And then final final key date for this entire process August 21st, 2024, the AMWEG meeting where this entire triennial work plan is going to be recommended to the Department of Interior for adoption.  
So that is our timeline for the remaining months of bag and if anyone else has heartburn, join the club.  
I'm right there with you.  
Thinking about it, July 2nd recommendation.  
So any questions on our schedule moving forward?  
Seeing none.  
Looks like there was something in the chat that I'm just going to read out here.  
Kirk Dongzhi asked if we can provide a list of who the signs advisors are and their area of specialization.  
And Jeremy said, hoping to provide the names and resumes of the reviewers once the reviews are finished, leave it as an option for the reviewers.  
But in the past, the reviewers have allowed for their names and resumes to be released, so there's that quick little Q&A.  
Umm, alright, so the next thing that wanted to chat about today, Jacob Mason and I had a phone call earlier this week and we were talking about some of hope.  
He's concerns and I thought they were very pertinent to our discussion today.  
So I want to turn the MIC over to us talking and raised hold up set here.  
Dave topping, yes.  
Sir Jacob will use that.

 **Topping, David** 9:40  
I'm just because there's some issues with people just not being around.  
When will the scientists be getting the final comments from everybody that need to be included in the third draft?

 **Erik Skeie (Guest)** 10:02  
That is a.  
So we've got the follow up call on June 19th or 20th.  
So I will strive to get you any final notes and comments very soon after that meeting.

 **Topping, David** 10:14  
Yeah, that's the problem.  
Because everybody in project A is gone from the 21st through the beginning of July.  
So that's why I was asking.

 **Erik Skeie (Guest)** 10:24  
Gotcha.

 **Hammen, Jeremy J** 10:25  
David, this is Jeremy.  
We're hoping we do have a deadline of the 12th right now for for comments from this group from the twig.  
So what were you releasing those comments and feedback?  
Ohh do you right, at least on the 12th, 13th and then if as things as we go through discussions in the bag in the presentation we we'll try to get those as soon as we possibly can to you.  
But you will get you will get initial comments as early as as probably the 13th.

 **Topping, David** 11:00  
Yeah.  
Perfect.  
We'll just submit whatever we have on the 20th and that's when we're not around anymore.  
So we'll just do what we can.

 **Hammen, Jeremy J** 11:09  
Awesome.  
That sounds great.  
And like I said, we we could try to get him to you as soon as possible to David as as if they come in earlier.

 **Topping, David** 11:11  
But.  
Are.  
Thank you.

 **Erik Skeie (Guest)** 11:19  
Thanks, David.  
All right.  
Any other scheduling questions?  
I don't want to do it twice.  
Alright Jacob, the floor is yours.

 **Jakob Maase: Hopi** 11:32  
Added folks, I apologize.  
I've been able to attend many of these beatings cause they've overlapped with my other duties that do the change.  
It not be staffing and especially the last meeting which happened in my river trip, which was a very important, uh one.  
However, yeah, I mean a lot of this, you know, have to say, but should have been said earlier, but due to the time schedules, I have not been able to see it.  
So yeah, first, I just want to reiterate.  
The hilltop as under the rod and are, you know, main duty, which is to restore to the extent practicable ecological patterns and processes within the range of natural variability, including the natural abundance, diversity and genetic and ecological integrity of the plant and animal species native to those ecosystems, and we have written down adaptive management as a focus on ecosystems, experimentation and manipulation of the managed ecosystems, time scale and biological generations, or longer over long period of time and ultimate of our uncertainty which were very good about though and equivalent quotation of plan of action designed to be.  
Revealed they critical knowledge that we've covered for experiments and monitoring of key response indicators.  
You know, in a timely manner.  
So that's from the rod.  
And when I look at this budget, you know, they have, you know, seen several times, you know, that we have failed to fully appreciate and get to the depth, you know, of, you know, what state of what we need to be doing.  
We've done this for 30 plus years.  
True good science is repeatable, but when I look at this budget and what we're doing, there's a lot more we can be doing with it.  
You know, we allow more than just a fish program.  
You know, a lot of money gets put there, so many resources we are not getting at, not protecting, not the full in our obligations of stewardship through agencies and programs.  
And things have changed in, you know, one of those things between repeating science versus, you know, new science, you know, version science, you know, new things we can do in and looking at to the same thing, you know, constantly or with the same amount of effort, especially with the change, you know, to the Trump population.  
Although there is great danger, you know, with the small mouth bass and other issues which of course things that could have been, you know handled way way earlier in their time span.  
So I just needed to say that and get that out in the open.  
But yeah, what?  
Me and Eric and Jeremy, you know, talked about.  
Is concern over some of the budget pushes? Uh.  
Kind again without, you know, trouble, consent or talking and kind of as another big surprise left with the face of two projects, you know, that were said to be moved out under the GCC or MSC side and the The Dor at the main budget hole and that one of them was.  
Family Pascal's vegetation projects, which is a big deal then that is a core ultimate goal.  
I mean the repertorium, you know, vegetation is he core ecosystem, you know if that's changed and altered then it is, you know by the dam and climate change and increasing drought.  
You know, so when I get to keep eye on, that's a lot of birds and plants and everything in there and then that's not a tribal project.  
I mean, that's something we need to be all of us, you know, considering, you know, in this budget, been in the back in the late 90s.  
If my miracles and Kirk can correct me, the meditation was dropped.  
And that led to a way more issues.  
You know that we're dealing with now and then, you know, we wouldn't try to, you know, fix it.  
I mean, that's not just a tribal thing.  
That is a core Elton component is vegetation, and then the E DNA.  
Project is a brand new idea.  
It's useful.  
You know, it's back to looking at the ecosystem in the past and when it's, you know and how it's changed, it's not just you know something you know, but archaeological sites.  
That's everything.  
I mean, that's a great new project.  
You know the money can be spent on that helps all of our agencies and programs.  
That's very app political science.  
So yeah, those two are not just tribal projects, although mean I approve of them both.  
And so yeah, that's, you know what I had to say on that.  
So thank you very much for your time.

 **Erik Skeie (Guest)** 16:31  
Thank you, Jacob.  
I appreciate that Mark Anderson, you're up first.

 **Anderson, Gregory M** 16:37  
I just wanted to thank you, Jason, Jake, Jacob, for that perspective there.  
I wanted to just make the statement that those projects were not moved in any way to to denigrate them, or or put them in a lesser light.  
That is, some of the earliest cuts that we were finding were, were those things that we thought could get funded in other places.  
And so we were really pleased to to find those and move them to that in moving out, we felt like we're finding like almost certain funding for them and that they wouldn't go through this gauntlet of cuts that all the other projects have faced.  
So I just wanted to make that point so that nobody would think that we were looking down on those projects in any way.

 **Erik Skeie (Guest)** 17:29  
Thank you, mark.  
We had a question in the chat from Shannon.  
Jacob, can you specify which E DNA project we're discussing?

 **Jakob Maase: Hopi** 17:38  
Is there more than one of us?  
Uh.  
Helen's eating a project through.

 **Erik Skeie (Guest)** 17:44  
So specifically V4.

 **Jakob Maase: Hopi** 17:44  
Decide whether Jesus mercy is there's more than one.

 **Erik Skeie (Guest)** 17:49  
There's a lot of projects that incorporate it, but I'm guessing you're talking about D4.

 **Hammen, Jeremy J** 17:50  
Umm.

 **Jakob Maase: Hopi** 17:53  
Yeah, before would be the one.

 **Erik Skeie (Guest)** 17:55  
OK.

 **Hammen, Jeremy J** 17:55  
Yeah, the D4 which is the pilot study to evaluate potential to extract cultural and ecological information from Colorado River deposits using E DNA and pollen.

 **Jakob Maase: Hopi** 18:13  
Yeah.  
And that's the one.

 **Erik Skeie (Guest)** 18:19  
Thank you.  
Ben, you have your hand up.

 **Ben Reeder** 18:24  
Yeah.  
Thank you all for this opportunity and all the hard work.  
I I also been absent for a lot of these discussions and I apologize as my work has also kept me away from doing these.  
I think you know, I I recognize that this is the first one of the first big, big steps in identifying a budget that fits and it's important step I feel as you know, representative for Grand Canyon River guides, a little concern that the the the budget at a first glance feels really fish heavy, maybe even more so than it's ever been.  
And I feel like the foundation of this program, some of the physical sciences, including sediment, nutrients and.  
Vegetation are being kind of left out as a foundational building block of of of science that helps us.  
I.  
May.  
Good.  
I'm.  
Sorry, make good recommendations on how we ought to be operating the dam.  
That's kind of a big thing for me.  
I feel like specifically C4 and B4 and I think Mark just alluded to that, but I think those those, umm, those particular projects should have more priority within this process.  
I think that I3 sounds really, really interesting.  
The is that the fish DNA?  
I think really, really interesting and cutting edge science, but with the as I've looked at the budget with the the huge number of of dollars allocated, I feel like we could fund so many other things and especially some of the small things that got cut out like $8000 for the adopt A beach program that I feel like is very really valuable.  
Tiny tiny amount $8000 but that gives us a huge data set that we would like to see continue.  
So I'll be submitting some of these ideas in my comments, but I just wanted to throw that out there that we're a little concerned that the direction of the program is more headed towards a multi fish recovery program rather than a multi resource program, which is what at the heart that we are.  
The last thing I'll say thank you for the time is that, you know, let's not forget why this program started.  
You know the Grand Canyon River guides witnessed the stripping away of this ecosystem.  
Umm.  
High fluctuating flows, the sand being washed out of the Canyon.  
David Wagner and the Grand Canyon Protection Act of 92.  
Let's not forget where we where we came from within this process and and thanks for the time.

 **Erik Skeie (Guest)** 21:44  
Thank you, Ben.  
Well, this is exactly the kind of dialogue that today is all about.  
I want everyone to feel like now is a good opportunity to talk about these things that you think maybe missed the mark and that's kind of those survey results.  
What they showed, where there was some disagreement amongst the projects and just while Jacob made his statement, and while Ben was talking, I've highlighted a couple more than what I sent your way.  
Like Bennett specifically highlighted this B4, Jacob had talked about D4 in the vegetative things here and there was kind of the general idea that, you know, maybe it is a little fish heavy.  
There's a lot going on in project I and Project G and all that good stuff, so let's just let's start opening up this conversation.  
Uh.  
It asked you all to think about in respect to these projects and project elements.  
What there?  
Is there anything in these projects that would cause you to not recommend this triangle work plan moving forward?  
So let's looks like Robbie got some comments in the chat.  
Rob, if you wanna unmute and go for it.

 **Billerbeck, Rob P** 23:02  
Yeah.  
Thanks.  
Appreciate it, Eric.  
I mean, we're still looking at these numbers and evaluating them.  
Uh, it's clear that a lot of work has gone into trying to look at cuts and you know, it's gonna take cuts in order to get to a balanced budget.  
But I just wanted to express some agreement with some of Jacob's thoughts particularly, you know, the importance of some of the veg projects in the L temp rod.  
And again, the direction in that rod to ensure we follow through on the environmental commitments and the priorities from that Rod and I agree with Ben about just making sure we don't cut the sediment projects, you know, projects A&B too deeply.  
So that we keep the key understanding and key factors that we need from that.  
So I I just wanna, you know highlight that and say we're going to follow up more as we look carefully at these numbers and we appreciate the tough work that Andrew and Mark are doing with the overall budget.  
Just wanna want to make sure the key products important to the L temp keep coming through.

 **Erik Skeie (Guest)** 24:19  
Thank you, rob.  
Jacob, you have your hand up.

 **Jakob Maase: Hopi** 24:23  
Yeah.  
Thanks, Bill and Ben, really great comments.  
I did wanna talk about before briefly too, because it's something been on my mind recently and I feel like I should just say my original comments are sent on all these should just if you know it for before cause I after long discussions on the river trip this year my opinion has completely flip flopped for a more neutral standpoint to add.  
These are very important and of course you know the worries about water levels and you know the amount of sand we can, you know flow through those.  
But it doesn't mean we need to stop doing it or this one like before begins to become a what do we do now, ongoing in the future, with new ideas of maintaining that sand?  
You know that affects the vegetation and alright look ological sites that are on those beaches very open for, you know, looting than protecting them for, you know, 20 years largely longer than 20 years since the 70s.  
You know, so it's big questions with something like before, where what used to work in the past can't work the same anymore.  
But it's such a central for everything.  
And what new ideas can be put into before and thanks.

 **Erik Skeie (Guest)** 25:39  
Thank you, Jacob Leslie.

 **Leslie James** 25:49  
Thank you.  
Sorry guys, I'm a I'm a little bit slow on the uptick this morning.  
I I guess since this is kind of a general.  
Point in these conversations.  
I I appreciate fully what everyone is saying.  
Everyone has.  
Everyone has their resources.  
They're advocating for everyone, has, umm, the same mandates we all have the Grand Canyon Protection Act.  
We all have federal law.  
We all have ESA.  
We all have those things and it it is a it is a big challenge, especially when a budget budgets are tight.  
You know, this program has seen in.  
I'm not gonna go on for a very long here, but over the 25 years I've been involved in it, we have seen ebbs and flows of.  
Focuses on different areas for a while.  
And there's lots of different reasons for it.  
For a why it it could be staffing, it could be leadership, it could be certain things going on in the system.  
It could be like we're seeing now some things that we never would have.  
Well, that we didn't think we would see with these temperatures.  
So we have to.  
It's very challenging, but we've gotta learn to be flexible enough to be able to address those things that we can, that maybe short term crises, but to also look, look out to the future for these resources.  
So that's kind of my general.  
Now my my specific.  
I was at Mark.  
The way I read some of the changes, uh to a couple of those projects.  
Related to some of the tribal interests was I thought they were being moved over more to the reclamation side of things, because then there would be more of a link or a tie.  
Excuse me to programmatic agreement and HBA kinds of things.  
So yeah, that was my sense on why maybe some of the the shuffling around I I wasn't seeing umm, they're being a a reduction in effort.  
Maybe I'm just misreading that I I certainly also see and I I would like the tribes.  
I'd like to hear from the tribes cause I have held off commenting about the tribal and forbidden from you, the recreational stuff that's included in project.  
Jay, I'm interested from those stakeholders on how you see that.  
OK, so now my general comment I'm I'm continuing to be.  
I guess disappointed or frustrated with continuing umm to.  
Perceive that uh GCMRC is interested in developing its own hydropower models in in a tight budget time frame?  
I don't think that is necessary.  
I don't think it's appropriate.  
It kind of underscores having started to read the Altemps EIS final that came out and this issue that we've been going around and talking about with dueling models, I think it's something that we can purposely avoid.  
But in looking at the rewritten.  
Part of Project Ji think we're walking into that morass again so.  
My fix or my suggestion or my recommendation will be to continue on the path that I thought we were going where the old project in stuff got moved over to the reclamation side of things and that in the hydropower modeling piece that is important to provide inputs to any integrated modeling effort that may go on in this program that those inputs and that modeling need to be done by WAPA with data inputs from reclamation as they have been for all of these past nipa processes.  
So I'm gonna stop there.  
Thank you.

 **Erik Skeie (Guest)** 30:27  
Thank you.  
Appreciate it.  
Keep having before I call on you.  
I was hoping because I had the same need for clarification on those projects that were suggested to be moved to reclamation.  
I'm trying to look at the reclamation budget.  
So either Mark or Jeremy, can you please clarify where those are moved and whether they're still fully funded as initially, but proposed what's just some clarity around that would be appreciated.

 **Hammen, Jeremy J** 30:56  
I can jump in first and and bill you can you can help me out.  
They have not been moved at all.

 **Erik Skeie (Guest)** 31:03  
OK.

 **Hammen, Jeremy J** 31:04  
They're they are still on GCM RC's side of the budget.  
They have not been moved before we did anything.  
We wanna hear tribes and what their thoughts are on all this.  
And we have heard a little bit from them, heard a little bit from Jacob earlier.  
So the our feeling right now is we're we're still trying to figure out umm, exactly what what we wanna move for this.  
But we have heard from the tribes and we're trying to get as much information as possible.  
But like I said, we have not moved them as of as of this draft and it's unknown if if we are going to at this point.

 **Erik Skeie (Guest)** 31:48  
OK.  
Thank you.  
Alright, Dave Topping, you had your hand up next.

 **Topping, David** 31:58  
Yeah.  
I just wanted to follow up on the something that Jacob said earlier.  
I just wanted to point out Project C4 because that's another project that's been forgotten.  
I think that I personally think is a particularly important project, but that I think also might address some of the issues that Jacob was raising.

 **Erik Skeie (Guest)** 32:19  
Actually, David now might be a good time because you sent out a little budget spreadsheet.  
Little while before this meeting, would you mind kind of explaining what exactly that is?

 **Topping, David** 32:34  
Uh, the budget spreadsheet or?

 **Erik Skeie (Guest)** 32:37  
You sent out a the unfunded elements spreadsheet.

 **Topping, David** 32:42  
Right.  
Yeah, we weren't told, actually, that you're gonna be including a lot of this stuff in in your spreadsheet, so it's probably somewhat redundant.  
Basically it was just a list of things that were zeroed out in the and the most recent full draft that you folks have received and some people had included some narratives as to what how much funding was originally in those unfunded elements and others didn't.  
So, umm, that was basically just sent out because not every API include that information, they're narratives, but it looks like it's largely in this spreadsheet you have on the screen right now.

 **Erik Skeie (Guest)** 33:19  
OK.  
Thanks, David.  
I wasn't sure.

 **Topping, David** 33:21  
So it's not necessarily a thing on top of what you have here.  
The numbers may or may not agree completely, but it's basically the things that go from some value that's not zero in the first budget to zero in the current budget.

 **Erik Skeie (Guest)** 33:37  
OK.  
Thank you.  
And just to be clear, this spreadsheet was really all Jeremy's work.  
Jeremy did all the heavy lifting, so he deserves all the praise for this.  
This is freaking awesome.  
Thank you for doing this.  
I just highlighted the ones where we had the disagreement in the survey.  
So thank you.  
Thank you, Jeremy, and thank you, David, for putting together that more things were zeroed out and having those comments in there where things were proposed for reclamation.  
So with vets Ben, you had your hand up next.

 **Ben Reeder** 34:11  
Yeah.  
Thank you, Eric.  
And I just wanted to follow up with Leslie comments and make you know, Leslie, you made some good, good points.  
I I kind of was under the understanding that the the modeling through GCRC well I guess there was a lot of discussion about it falling under the reclamation budget.  
I I didn't hear any any final things about it, but I my thoughts were that that's where the direction where it was headed.  
Obviously see, it needs to get back to work and that's on me.  
I just a heads up for folks who are here and on both.  
I'm I I'm.  
I'm gonna be setting up a another opportunity to kind of get into those things because I feel like that's the place to really make some headway there.  
Obviously, budget here is the focus and I I would like to understand that process, Jeremy, if it you know and what that would take within the the process to be funded under reclamation as we kind of discussed maybe just to understand what or uh OK and and you mentioned we we we we we need to finish the consultation with the tribes and it and that's you know obviously extremely important to get get thoughts from all of our stakeholders on on priorities that that's why we're having this conversations but just to kind of put a plug in.  
Where I've been gone for home for about a week out of the last six, so I apologize for not being more active in the CIA and that's coming up so little plug there.  
Thank you.

 **Erik Skeie (Guest)** 36:04  
Thanks, Ben.  
Appreciate it.

 **Hammen, Jeremy J** 36:07  
Eric, can I jump in real quick?

 **Erik Skeie (Guest)** 36:10  
Yes.

 **Hammen, Jeremy J** 36:11  
OK, this Jeremy, I do wanna say too.  
I I believe in Helen if she's on here, might be able to speak to this more, but I believe it.  
Our last tribal meeting, GC Marcy, was planning to have going to plan a meeting with the tribes as well to to have discussions over the entire triennial work plan.  
And I'm not sure if Helen is able to speak to that, but if somebody might be able to from GCC Marc side, that would be awesome.

 **Fairley, Helen** 36:41  
Yeah, I'll just mention that.  
Yeah, we did talk about that.  
We, you know, we briefly talked about it at with the.  
With the tribes about the projects that were being contemplated to be moved over to reclamation side of the budget, but there was general agreement that we needed to have a more in depth conversation about the tip as a whole.  
And so I have not sent out a meeting invite yet.  
I was kind of waiting to for Andrew to come back.  
He's been gone this week so I could make sure to schedule it when he would be available, and obviously everybody else too, which could be a challenge.  
But yeah, we do plan to do that in the next couple weeks if possible.

 **Erik Skeie (Guest)** 37:25  
Thank you for that.  
Helen, would you mind sending me an invite to that as well, if that's OK?

 **Fairley, Helen** 37:32  
We will discuss that I I'm not sure I was gonna be a meeting between the tribes and GCM RC, but uh, we'll let you know.

 **Erik Skeie (Guest)** 37:41  
OK.  
All right, Ben, is that the same hand from before?  
OK, cool.  
So someone else put their hand down.  
So Ben.

 **Ben Reeder** 37:59  
Legacy and sorry legacy hand.

 **Erik Skeie (Guest)** 37:59  
All right, look.  
No worries, Lucas.  
You're up.

 **Bair, Lucas S** 38:05  
Thanks, Eric.  
I just I wanted to respond to to Leslie's comment and sort of question about the budget element.  
So if you notice on Jay one, there was a reduction in umm in the budget between the two versions of the work plan and that was in response to on power stakeholders, but then also some other stakeholders kind of questions about you're the the coordination between modeling when it comes to hydropower.  
And so we did remove that sub element that explicitly mentions further development of the hydropower components, specifically to report on metrics, right, because that's part of this, you know, moving forward, the idea under the metrics project was to report on the various metrics that have been identified on a regular basis to the the program.  
Now I will say that there is still language in the integrated projects concerning, you know hydropower, so not necessarily forgetting the hydropower modeling, but just within that project but just reducing the effort or any effort necessarily for specific development associated with you know not only energy but capacity and emission.  
So it's significantly reduced, but.  
Still included, you know, and I think that's an important.  
Umm.  
A port important component because you know, as we develop models related to umm sport fish below the dam, small mouth bass flows, et cetera, you know having a model that is on the hydropower side that allows us as a screening tool to look at some of these issues in a fairly seamless way is is important.  
So as we continue to develop, you know system models under J1 having the ability to use previous tools that we've developed for hydropower is important.  
And I I might, I might know too, that on that, that topic, when it comes to hydropower and recreation, you know, I did put, you know, under the J1 and then J2 an emphasis on having some ongoing work under those topics because you know this last year or two, I was asked to contribute to a lot of the compliance when it comes to hydropower modeling and recreational modeling.  
And with no base funding, it's really difficult to, you know, stand up those efforts.  
So continued integration of sort of these resource topics and making these modeling efforts available to help support the program when asked is is important, especially as as things change significantly and we need to be fairly nimble to address address stakeholder requests.  
So I thought that was an important component and then I'll also just really quickly address.  
Uh, kurtz's.  
Comment in the chat.  
You know, we haven't talked to every, Umm travel representative on J3 sufficiently acknowledge that we have talked to others, you know, tribal representatives more than others.  
We had a call.  
Helen mentioned a call where we discussed communicating.  
Now umm and and getting a little bit more in depth on the work plan elements.  
Now that we have kind of the the broader direction flushed out, so that is still.  
To be forthcoming, as Jeremy mentioned, you know once we need that tribal support before those, those projects move forward so that that will continue to make that effort to communicate and and have discussions with tribal representatives on J3 specifically.

 **Erik Skeie (Guest)** 42:02  
Thank you, Lucas.  
Craig Ellsworth handles up next.

 **Ellsworth, Craig** 42:09  
Yeah.  
So Eric, early in the email you asked if there were things in the budget that might block consensus on a budget recommendation and those things that locust just spoke to would likely lead to a situation like that.  
And we're happy to talk about those issues more.  
And I think we can get to to language where we could possibly agree to helping GCM RC with their modeling needs.  
Umm, but we are extremely hesitant on agreeing to a budget and work plan that has.  
Funding in there for GCC mercy to continue to take a lead position and modeling hydropower impacts.

 **Erik Skeie (Guest)** 43:03  
Thank you for that comment, Craig.  
So I guess I would ask the question if.  
That's something that GCM C would be willing to do.  
Between now and the third draft, let's work with Bob.  
The hydropower folks, it's kinda nailed down that language for the Jay one.

 **Bair, Lucas S** 43:32  
We're uh, we're open to having a discussion.  
I mean, I do not wanna remove the hydropower modeling element from JJ one.  
Like I said, I think that's a critical part of integrated models and given their requests that we have from stakeholders to undertake that research and modeling, that's an important component of the work plan.

 **Ellsworth, Craig** 44:04  
So just to follow up, Lucas, and when you say stakeholders are requesting you to do that with which stakeholders are you talking about?

 **Bair, Lucas S** 44:14  
We're talking about the the compliance modeling that we did for the El Temp SIS, for example.

 **Ellsworth, Craig** 44:23  
So so I don't believe like reclamation is considered a stakeholder in this program.  
There, they're lead there.  
This is their program.

 **Bair, Lucas S** 44:37  
Yeah, that that's a good point.

 **Ellsworth, Craig** 44:38  
But but I don't think stakeholders in this program are asking, do you see mercy to do hydropower modeling?  
And in fact, there's stakeholders in this program that are requesting you to not do the hydropower modeling.

 **Bair, Lucas S** 44:55  
Yeah, that that's a fair discussion.  
And I think that's a discussion between, you know, wappa and.  
The Bureau, because I know there's, you know there's other stakeholders that are requesting that the modeling occur. Umm.

 **Billerbeck, Rob P** 45:17  
And sorry my my hand.  
Uh is up.  
Just wanted to say from NPS perspective as one of the management agencies on, on the group, we we do feel like there is a benefit to the whole program to having the ability to have you know some quick hydropower modeling done to evaluate things and that may have a different role than full analysis by you know WAPA, yeah you know for more complete modeling purposes but having a screening tool available to look at things seems like it would have great benefits for all participants in the app including the hydropower participants.

 **Erik Skeie (Guest)** 46:17  
Thanks, rob.  
Jacob, you have your hand up.

 **Jakob Maase: Hopi** 46:26  
Yeah.  
I mean, it's part of the end of the hobby, is concerned.  
Umm at least the previous.  
Treble resources and concern of power and values and things like that.  
It didn't mesh well with the hopes of the Hopi, you know, did not wish to be involved in that project.  
But if there was a, you know, new approaches or ideas, you know there you know I'll be, you know, might be Cokes are interested again, but as it stood in the past, you know that doesn't mesh well with you know, the Hopi epistemology is released.  
You know, the older research questions.  
But new things, you know, in the future you can lead a new ideas and outcomes.  
But yeah, just needed to add that there.  
As it is a tricky with, you know, getting the tribes involved this most of the tribes.

 **Erik Skeie (Guest)** 47:19  
Yeah.  
Thank you, Jacob.  
So, Ben, before I go to you, Christine and Oscar put something in the chat.  
New Mexico would like to note that we would also support the funding of hydropower modeling being done by WAPA.  
Do not recommend you CMRC conduct a hydropower modeling and a basic question.  
Are we supposed to propose more cuts today?  
So no, Christina, we're not proposing more cuts today.  
Today is all about trying to have these more controversial conversations about these project elements that we may not necessarily have agreement.  
On and that's kind of why in the email I posed that question of what is present in these more controversial projects or in the work plan as a whole, that, as you've reviewed it so far, that would cause you to not make a recommendation for it to move forward to come July.  
Cuz now between now and June 25th, we really need to let GCRC know what our deal Breakers are so that they can help develop that third draft on the 25th.  
So hopefully that makes some sense.  
Umm, give me a hand up then, then Craig, then Kirk.  
To Ben reader, up first Ohh hand is down.

 **Ben Reeder** 48:34  
Thank you.  
Yeah, I do.  
I do think there's value in having a a hydropower screening tool that I I think with the efficiency that we can create in this program to identify what what specific alternatives or or different different opportunities that that wappa can dive deeper in.  
I think there's a huge value in in being able to identify that.  
I do think that this is work that we need to do and in the city, but it, you know, there's there's absolutely a huge value in having a screening tool and I don't think that it it should be.  
I don't know in my, in my opinion GCR G had on here see this one I I think that there's a huge value in in and not just having one entity owned all the numbers.  
I think it should be very transparent and I think we need to get better at the transparency.  
Yeah, it's Grown Ups.  
Thank you.

 **Erik Skeie (Guest)** 49:46  
Thank you, Ben Craig.

 **Ellsworth, Craig** 49:48  
So I just wanted to clarify something.  
You know from what Christina said, maybe what I said too is we we're not opposed to helping GC Marcy with their modeling needs.  
Umm, what?  
We are opposed.  
Is GC Marcy taking a lead and developing, running and reporting on those modeling and they're outputs?  
We need to work.  
We need to be involved and work together and and what we're proposing too is is, you know, working in the CAD developing further developing these models with GCC mercy in the cpag so that people can feel like that process is transparent.  
But we feel like we need to be an elite position when it comes to.  
To.  
Working with GC Mercy on those models, if they have ideas then great will work with you.  
When it comes to to to looking at what what data should be used for inputs?  
Yes, we will provide those inputs, but we need to be in the lead position when it comes to hydropower modeling and analysis.

 **Erik Skeie (Guest)** 51:05  
Thank you for that clarification, Craig.  
Daniel Green and the Chats Colorado River Commission of the data agrees with you, Craig.  
We would like to see collaboration with data provided by WAPA.  
Yeah, and Leslie also clarified in the chat, would not opposing screening tools want to ensure wappa slash BOR lead roles and developing the hydropower portion of such a tool not dissimilar to water quality or other water models that are managed by state entities and produce data that is used in other models.  
Thank you all for those comments, Kurtz, you have your hand up.  
Go for it.

 **Kurt Dongoske (Guest)** 51:52  
Thank you.  
Would like to start off by just stating that the area that we're talking about, the Grand Canyon and the Colorado River.  
Were tribal lands and waters, lands and waters that were taken by the federal government without the free, prior and informed consent of the tribes, the tribes are much more than just stakeholders in this program.  
They they are sovereign nations that have a response relationship with the federal government that transcends the stakeholders in this program.  
And I don't think that that relationship is appreciated in this program is as much as it should be.  
Umm, the federal government has a trust responsibility to the tribes that many ways they are failing in this program.  
To respond to Lucas's comment at this point, when you're if, if you're gonna start talking to the tribes now, at this point in the development of this triennial work plan and budget, you are doing the tribes and great disservice.  
If you really wanted to collaboratively work with the tribes in an equitable manner, you should have engaged them long before you even produced the draft triennial work planning budget, because like so many federal agencies, GC Murray GC Mercy has habitually identified the tribes as a monolithic entity that they'll 5 tribes will participate at the same level of funding before even asking the tribes whether or not they want to participate and at what level the tribes will determine what, how they wanna participate in that research.  
One of the.  
If J3 is associated with providing ecosystem services to the tribes, I would argue to Zuni that they not participate because that's going to be again a top down approach to Zuni utilizing Western science as a monolithic way of understanding the ecosystem and disenfranchising and dismissing Zuni traditional knowledge and their special stewardship relationship to this sacred place.  
Until this program can give equitable consideration to tribes, ontologies and epistemologies, it's going to continue to fail the tribes.  
Thank you.

 **Erik Skeie (Guest)** 54:41  
Thank you, Kurt, and appreciate those comments, Lucas.

 **Bair, Lucas S** 54:47  
Yeah.  
I just wanted to respond to Curtze comments.  
Kurt, thanks for the thanks for that perspective.  
I mean, I just wanted to reiterate and I've mentioned this on a few bags calls that this, this proposed research, umm, while you know I I did admit that you know it took us a while to kind of formulate what direction we wanted to go with the description of the the work and the work plan is based on ongoing work that you know starting from from Kurt your session that you held at an annual reporting meeting now several years ago our continued collaboration with you know Kristen halting and Dorian Martinez and others.  
Umm, who?  
You know Kristen's a copy I on the project.  
You know, continued workshops where we, you know, invite tribal representatives to participate, including, you know, this coming December.  
Umm, so there's been a lot of back and forth and while I think to some tribal representatives who are new or haven't been as engaged in in this effort, you know, none of this work or the material that has now been published and I'm going to be in review should be that new, right.  
Like I said, we because a little while to come up with plan for this work plan on on how to how to move forward within the program.  
A lot of this is work that we've been communicating and and working with.  
You know, Kurt, yourself and and others for for quite some time now.

 **Erik Skeie (Guest)** 56:34  
Thank you, Lucas.  
Or their thoughts on projects.  
Jay, folks, since that has the main topic of discussion at the moment.  
Looks like there is a conversation in the chat going on here.  
Uh.  
Well, I do see a hand coming up, Shayna.

 **Shana Rapoport** 57:03  
Thank you all, this is very good discussion and I'm just hoping Lucas can give us a brief synopsis of Project J.  
Seems to have increased more than most of the other projects from the previous from from the previous twip.  
And if we can kind of wrap our heads around what the, what the, what the large increases are gonna gain potentially if if the if the project is funded the way it's proposed.

 **Bair, Lucas S** 57:29  
For sure.  
No, that's a good question.  
Umm, you know, I in in the last work plan I had umm, put in some ideas about a umm, a more comprehensive model related to recreation to help in the planning process and then identify help also identify areas of of research needs to build on kind of past nonmarket valuation work through surveys that have taken place with the different recreational groups and it just became clear that with these changing conditions and a lot of concerns about how uh you know future scenarios with a reduced hydrology in the Colorado River below Glen Canyon and that could have.  
Significant impacts on recreational resources that this is important, right?  
It didn't get funded in the last work plan, but as I mentioned, I still, you know, was called upon with some additional funding to be, you know, transparent by the Bureau of Reclamation to help in some of the compliance, to undertake recreation and modeling.  
And that's not going to necessarily go away over the next, you know 567 years.  
So having those tools and being able to identify where there are important research needs and information needs that a collection needs in cooperation with Game and Fish and Park Service because they're, you know, important partners in this recreational, umm, research and and monitoring is going to be needed.  
So that's where the majority of the uh increase has come from, right?  
We just haven't over the last now because we had a somewhat of an extension in fiscal year 24 and over the last four years we have no no funding for the recreational component of the program.  
You see, you'll see that the tribal proposed work got zeroed out and potentially may move over to the reclamations budget after further discussions with recreation in the tribes.  
But you know that's sort of 1/3 component just because we haven't been, uh undertaking bunch of any, you know, tribal specific related research.  
Obviously, when we do research and monitoring in the Canyon with other resources, those are also travel resources so that it's not black and white.  
But that is the the component is that that you know those those components are the what have increased that budget and I think it's important because right this socioeconomic project does take on more attempts to take on tribal recreational aspects of the resource goals associated with L TAP and and you know the small percentage of funding that had been received in the past just didn't allow us to do that and adequate fashion.

 **Erik Skeie (Guest)** 1:00:27  
Machina, further question and Lucas for the answer.  
Then you're up.

 **Ben Reeder** 1:00:35  
Yeah.  
I just wanted to mention that you know I.  
I have expressed how, umm within Jay this this proposal, that it would be nice to have a some values attached that for recreation that we can use to compare.  
There other other resources for lack of better term, so I appreciate that that's in the budget.  
Thank you.

 **Erik Skeie (Guest)** 1:01:11  
Thank you, Ben.  
Other thoughts?  
And Jay?  
So there's quite the conversation happening in the chat right now.  
Rather than try and summarize it, I may have to call on Ryan and Craig to summarize their own conversation.  
Is trying to keep up with the chat and listen at the same time.  
Didn't hasn't worked out too well for me today, so I'm putting Ryan man on the spot here.

 **Ryan Mann, AZGFD** 1:01:45  
Yeah, sure.  
Yeah.  
I mean, I think you know we've discussed a lot about how significant portions of these uh project elements are paying for salary time and I, you know, I think that at least this stakeholder perspective, I think having you know GC MERCYS input and and external review on some of these modeling efforts is very valuable.  
Umm.  
And I just wonder how much of the discussions about leading the efforts on that is actually going to change, you know, really impact the budget as proposed?  
Umm.  
And whether it's a conversation that maybe can be tabled? Thanks.

 **Erik Skeie (Guest)** 1:02:38  
Thanks, Ryan.  
I appreciate that comment.  
I would say that even if it doesn't impact the numbers altogether, it's good to have the discussion to an extent.  
So given that Ben wants to reinvigorate the C tag, I may ask the CG to kind of take on this monster of figuring out that language and trying to make sure that wappa GCMC and Bureau of Reclamation and Creta are all comfortable with both all stakeholders.  
Let me just yeah, all stake holders are comfortable with how that shakes out.  
There was a suggestion in the chat for uh and making sure that just boppin reclamation are the lead, which doesn't make sense given that project and was moved over to reclamation.  
So I may put that task on to see egg if Ben you're willing to take that on and then we could table that discussion.  
But it is important for the budget as it could impact whether or not certain stakeholders would adopt it via consensus and a recommendation.  
So that's where I was ultimately going there.  
But Ben, is this something that we could ask the CX to take on in more depth?

 **Ben Reeder** 1:03:47  
Yeah.  
Yeah.  
And I think given the the acceptance of the charge that we we we received in our April Twig meeting that we can and should continue these conversations.  
And I'll be working with Jeremy and with Craig and with Lucas to dial up an agenda for our next meeting so that we can be concise.  
So yes, absolutely long answer.

 **Erik Skeie (Guest)** 1:04:19  
Awesome.  
Thank you kindly.  
So we'll have the C act take on that particular task there.  
I'm calling.  
You did have your hand up, but it went down.

 **Cunningham, Colleen, OSE** 1:04:31  
Yeah.  
I just I think we do need some clarity on the budget because I'm not sure how it wouldn't have some effect in reducing the budget, depending on who's the lead in this.  
But Leslie captured it.  
I think about the breakdowns in.  
Jerry one.

 **Erik Skeie (Guest)** 1:05:04  
Thank you.  
Around your comment was very helpful.  
We were able to hand in assignment off to the sea egg, so good old delegation.  
That's always helpful.  
Alright.  
What other comments do we have around Project Jay?  
I think the CX going to be taken out and a lot of that, but just want to make sure because something that we do want to get into are these fish projects.  
As we heard at the very top of the meeting, there is concern that this program is moving more towards fish program as opposed to the other resources.  
So I wanna make sure that we have some opportunity to discuss some of these other highlighted projects here where there was some disagreement amongst the back members.  
So, Helen, you're up.

 **Fairley, Helen** 1:05:54  
Yeah.  
I just wanted to remind everybody that, yeah, I got going originally because of discussions about the need for some socio and economic information in this program beyond what was being provided by wapas estimation of what was being lost every time we did a high flow or some other kind of experimental flow.  
And that led to a lot of discussion in the early years of this program and it led to a a panel review of what had been done in the socioeconomic realm and some pretty critical feedback from a panel of socioeconomic experts that reference reviews of this program that predated even the existence of Amway.  
And going back into the GCS days and so forth, and I believe I sent that information around previously if I didn't or you didn't see it and you wanna see it again, I really would encourage you to do so because we haven't done a very good job in this program of bringing independent socioeconomic information to bear on how we are affecting not.  
And when we talk socioeconomics, we're not talking about money per se or finances per se, but the trade off in values that this program is all about.  
And I would end and these projects that Lucas has proposed is trying to bring some of these are concepts to bear in the program which were recommended by these review panels years ago and which have been basically ignored and neglected up to this point in time.  
And I would really encourage people to think hard about the reality of needing this kind of information if we really want to do meaningful tradeoff analysis of these resources in the future.  
And and I guess I'll leave it at that.  
But if anyone has missed those reviews or would like me to send them again, I'm more than happy to do so. Thanks.

 **Erik Skeie (Guest)** 1:07:59  
Thank you.  
I would appreciate it.  
I think it would be helpful if you could send that information to this larger email changes so that we've got it all in one spot.  
That would be amazing.  
Let's talk a little bit about this warm water and non native fish monitoring and research.  
Now I will say this with the caveat that the S bag is actually going to be meeting on Monday.  
So they're gonna be chatting about some of the warm water invasive stuff, but I want to give us an opportunity to talk about it too, because these two projects elements, it was pretty much an even split between the need to know is nice to knows don't need to knows.  
So I'm curious if any of those beings have maybe changed with this second draft and again, going back to my original question of is there anything in these two project elements either missing or currently there that would cause you to not recommend the triangle work plan?  
Is there any thoughts on I-2 and I3?  
OK.  
Some kind of curious what that disagreement was about, maybe.  
If we could get some folks to maybe chat about their thoughts on it, two and I3, that would be great.  
I may start with.  
I may call on Ryan Mann to maybe chat about your thoughts on Itune and I3 since you're with Arizona Game and Fish and that just seemed to be low hanging fruit here.

 **Ryan Mann, AZGFD** 1:09:50  
Well, most most of this.

 **Erik Skeie (Guest)** 1:09:51  
I'm not afraid to call on people.

 **Ryan Mann, AZGFD** 1:09:55  
OK, this is Ryan.  
But I mean most of the component, at least in terms of monitoring that game officials involved in IS is contained within I-1, although UMM it, we have experienced some cuts within even the cooperative agreements that maybe isn't as noticeable or, you know, reflected in the the the move from version one to version 2.  
Yeah.  
I mean, I think there's obviously value in in a lot of these aspects and I would advocate for quite a few of of, umm, all of the the fish programs and you know with recognizing the need to be.

 **Erik Skeie (Guest)** 1:10:40  
Right.

 **Ryan Mann, AZGFD** 1:10:46  
Yeah, that it's a finite budget and and need to distribute funds across multiple resources.  
So I think there's a lot of value in E DNA work, but it's also has its limitations just in terms of of utilizing it for abundance estimates and and.  
Umm yeah, there's, you know, multiple methods that we have for detection.  
And I think we're set up to to do that quite well within the work plan and and have in the past, umm, you know some of the concerns or or what do we do in terms of what's detections are present and and working through solutions on, on management and species and and control methods and prevention.  
So yeah, I don't.  
I don't have necessarily too much to add, but but can be more than willing to answer questions if if folks have questions about different work, you know, project elements within the fish programs.

 **Erik Skeie (Guest)** 1:11:57  
Thanks.  
I appreciate the perspective.  
Like one of my thoughts.  
So it all admit I was one of the folks on this I3 that was kind of like it might be nice to know E DNA is popped up so much throughout this work plan.  
I was curious to hear more about this.  
Is that discussion that occurred about making sure that there's efficiency amongst all the DNA and I do see that there is a hefty decrease from what was originally proposed to us on April 2nd to this latest draft.  
Almost a yeah, that went down to about half of its original proposed amount.  
And so I just wanted to maybe get some clarification from Mark or GC Marc folks who are on the call, if that is a reflection of that conversation of making sure that there are efficiencies and all the DNA projects.

 **Ryan Mann, AZGFD** 1:12:47  
Yeah, I think that's definitely related to that.  
And my I think Kim is on the call and my I asked that that she speak on those differences and and what what has changed between the work planned.

 **Dibble, Kimberly L** 1:13:04  
Sure.  
Good afternoon everyone.  
This is Kim Devil with the GC.  
Mercy umm.  
So what changed between draft one and Draft 2?  
Umm, there was a really hefty presence of this idea to monitor parasites using E DNA.  
The the the project partners at OHSU had proposed, I think it was 167,000 in year, 150,000 in year two and maybe 55 and year three to develop a marker for Asian tapeworm and lernia.  
So anchor worm.  
And as we took a look at the budget and some of the questions around it, we decided to to table that for now and just put it as unfunded.  
Umm.  
And right now, we're just proposing to use the same methods that have been done since, I guess about 2005 with using Praziquantel Bath to expel the parasites.  
And so that was one big change.  
Umm, I also had proposed some small mouth bass E DNA work that I moved in concept over to the experimental fund because that would be related to a flow and I reduced greatly the scope and the number of samples that I was trying to run and so so there was kind of those main things that changed between draft one and Draft 2.

 **Erik Skeie (Guest)** 1:14:37  
Thank you.  
Can appreciate those points of clarification there been reader you up first.

 **Ben Reeder** 1:14:47  
Thank you.  
Yeah, I wanna have I couple of precursor comments to my comment.  
And does one that I know we're not in the business of in the process of adding more to the budget, which is already stretched type.  
But I would.  
I would just like to make the comment that all this fish work feel like it's super important.  
I think it needs to be streamlined a little bit as far as the overall amount in the budget.  
As I mentioned before, but I would like to see more of an emphasis on addressing the slew which I see is a a human.  
You know Adam related problem where the fish are spawning the green sunfish and the and the small mouth bass are spawning.  
We find over and over and over and over again.  
I feel like the the the root of the problem needs to be addressed and I I you know we can spend, you know, all this money on on different things, but it's not gonna do us any good if we're not really addressing the root of this this problem that we're facing.  
So just wanted to throw that out there.  
You've all heard it before, but yeah, thank you.

 **Erik Skeie (Guest)** 1:16:08  
Thank you.  
Ben, appreciate the comment.  
China.

 **Shana Rapoport** 1:16:14  
Umm, I will echo Ben's comments and I had a follow up question for Kim.  
I was just curious the I I hadn't realized that the some of that DNA work was for marker development.  
And I'm just curious, since those parasites are prevalent in other systems, if it's possible that that work is being done elsewhere that we could then utilize the markers.

 **Dibble, Kimberly L** 1:16:35  
So yeah, so this is a conversation that came up with do you vital and Justin Sanders at OSU?  
There was some previous work in the LCR to develop a marker.  
Umm, maybe 10 years ago for Asian tapeworm.  
It's sensitivity is really low basically for some of that work.  
There is like a, you know, 5050 chance of detecting it using the marker that had been developed at that time.  
And so there is, there is an idea to to take what's already been done and and kind of refine it.  
And so we talked a little bit more with those folks at the university and they came up with a a much reduced budget.  
Umm, I think it was maybe 75,000 for the first year and it tapered off, but it's still was a little bit too big to fit into this work plan.  
And so I will say that they did come down based on.  
Figuring out what could be done with data that's already been generated, but also figuring out some efficiencies with graduate students working on various pieces of that project.  
Umm, but it it still wasn't at a low enough cost where I thought we could put it in the budget this work plan.

 **Shana Rapoport** 1:17:58  
Thank you.  
And just a quick follow up, so all of the work so far has been done in the Colorado River system, not in other areas.

 **Dibble, Kimberly L** 1:18:06  
The the work that I'm aware of that would be most applicable.

 **Shana Rapoport** 1:18:11  
Thank you.

 **Dibble, Kimberly L** 1:18:12  
You're welcome.

 **Erik Skeie (Guest)** 1:18:17  
Alright, Danielle, before we get to you, there was a question in the chat for Jeremy.  
Give an update on the progress of solute modification.  
It's my understanding that that is funded outside of the amp.  
Is that correct?

 **Hammen, Jeremy J** 1:18:32  
That that is correct.  
I mean, it's funded outside the amp and it is actually NPS will would be the best contact for that information since they are they're kind of leading the effort.

 **Erik Skeie (Guest)** 1:18:47  
Perfect.  
And that is more than likely buddy Fazio Ryan.  
So reach out to him and will be able to get that, but.  
Yeah.  
So that is funded elsewhere, all right.

 **Ryan Mann, AZGFD** 1:19:00  
Yeah.  
I sorry, I was right again.  
I just to to answer benjy's questions and concerns.  
I just wanted to make sure he was aware that some of that work is being done to address specifically the lower slew.  
So I'm familiar with what's moving forward up there, but just wanted to make sure he was aware.

 **Erik Skeie (Guest)** 1:19:25  
Awesome.  
Thanks Ryan.  
Alright, Daniel Greene, you're up.

 **Danielle E. Greene** 1:19:32  
Yeah, bit of nitty gritty nitty gritty question for Kim.  
What's the turn around time for analyzing E DNA?  
If we do on identify emerging threats and is that lab work outsourced or is it done in house?

 **Dibble, Kimberly L** 1:19:50  
Yeah, great question.  
So right now we don't have the ability to analyze samples in house, although there have been discussions among the Park Service and the Forest Service on potentially developing our own lab down here as well as the Bureau.  
Umm, we have a a cooperative agreement set up with the Forest Service, the National Genomic Center.  
The turn around time has been really long in the past, but they have.  
And allowed us or some of our partners to have agreements that specify 2 week turn around, you know, sort of truly Max on sample results.  
And if we were to use this in the future, I would specify that in the next agreement that samples would need to come back within two weeks.  
And Tommy said that they can come back as early as one week if there's not a lot of inhibition of samples.  
Umm.  
And then there are technologies emerging now to to actually do qPCR in the field, but there are some issues with contamination and I've got some folks that I need to talk to you in the Midwest about the feasibility of actually doing that in the Colorado River.

 **Danielle E. Greene** 1:21:09  
Thank you.  
That's very good to know.

 **Dibble, Kimberly L** 1:21:12  
Welcome.

 **Erik Skeie (Guest)** 1:21:19  
Alright, any additional thoughts?  
Alright, so like I said, the small mouth bass ad hoc group is going to be meeting on Monday.  
I imagine that there's gonna be a lot of conversations regarding project I, so they'll be able to have some of these conversations as well, but I appreciate you all sharing your thoughts today.  
All right, Speaking of other fish projects, the next of our controversial projects of kind of the split of the need to know don't need to know, nice to knows, was this G9 that the movement of Habakkuk and Western Grand Canyon from system wide antenna monitoring.  
So looks like there was a little bit of a budget increase between the April and the second draft here in the first year, but it has been zeroed out in fiscal years 26 and 27, right?  
Yeah, that's what we're working on.  
So what are folks thoughts on G9?  
Is there anything about G9 again, either that's present or missing that would cause you to not recommend the triangle work plan?  
Jacob.

 **Jakob Maase: Hopi** 1:22:43  
No.  
Like really can't answer your full question there, but just backing out from, you know, my perspective is you know we have been find the truck for 30 years.  
The great population increase that's threatened by, you know, external factors and you know the woman water levels does impose positive where they might be moving to now versus you know their past movement.  
So that's why you know, least hopes responses were kind of in the middle.  
There is.  
There's still things to learn.  
They're still dangerous.  
You know where they could possibly moving to, but you know the previous large budgets, you know versus you know this budget is you know always something to kind of take consider there.  
But that's all I have to say on that.

 **Erik Skeie (Guest)** 1:23:32  
Thank you, Jacob.  
Appreciate the comment.  
Very jewel, you're up.

 **Dzul, Maria C** 1:23:37  
Hi.  
Yeah, I'm a biologist at TCMC and I am and kind of in charge of project you.  
So I just thought I would kind of can I give a PRF description of this one because it's umm, at least from my standpoint, I don't know if that's OK.

 **Erik Skeie (Guest)** 1:23:51  
Yeah.

 **Dzul, Maria C** 1:23:52  
Umm, OK cool.

 **Erik Skeie (Guest)** 1:23:52  
Go for it.

 **Dzul, Maria C** 1:23:54  
So the reason I propose this one was because we had been doing work.  
Umm.  
In the Western Grand Canyon and we had a lot of uncertainty about the survival of the fish because they could move out of the sampling site.  
And so, you know, if they moved out of the sampling site, we wouldn't know what their.  
If they had, you know that you can't tell if they died or if they moved out because you you just never see them again.  
Either way, right.  
And so this antenna monitoring was proposed as a citizen science project to try to give river guides, antennas and pay them to put these antennas out in areas of the river where.  
You know.  
We don't normally sample and fish are not easily detected, so that was kind of the idea behind it.  
Was this idea to try to leverage citizen science and these the idea that people are out there and actually camping in these areas that we aren't really able to sample.  
So that was kind of the motivation for it.  
They are being said JCM.  
West did get cut from this.  
So you know there is there, but there's still the aggregations trip that's going out which goes into the Western Grand Canyon.  
So anyway, that was kind of the motivation for for that study.  
Umm, so a lot of it.  
Yeah, it's it's purchasing the antennas and then the citizen science fee mostly.

 **Ryan Mann, AZGFD** 1:25:25  
And where you have a quick question.  
So the initial cost in the first year is that just to buy the antennas, because I think you know there's, umm, that's one of those projects where, you know an initial investment needs to be made in order to get the those data collected.  
And then you have, you know, we'd be able to utilize.  
Uh, there be, you know, return on that through multiple years?  
Potentially umm.  
And I know we're still planning on hopefully helping with that if but I haven't.  
I haven't seen the.  
I haven't looked at the the difference between the drafts to to see if what's included.

 **Dzul, Maria C** 1:26:04  
Yeah.  
No, I'm sorry.  
And I told that, like, totally spaced out on that.  
But that's also in there too, because Arizona Game and Fish they're sampling when they do the main stem, they do these random sites as opposed to fixed sites.  
So that project element also does would like buy some antennas for them to take with them on their monitoring, so they could also provide information on that.  
So thank you for mentioning that actually because I don't, I guess.  
Uh, yeah, I that totally slipped my brain. Thanks.

 **Erik Skeie (Guest)** 1:26:44  
Don't let it your hands up.

 **Leavitt, Daniel J** 1:26:47  
Hey.  
Yeah.  
I just wanted to point out that when we talk about bang for your buck.  
62K70K, those are pretty small price tags for a a pretty significant amount of information that would be provided, umm back to the program that can fill in some critical gaps.  
Umm Maria identified the western Grand Canyon population and part of our understanding or lack of understanding out there is how to best model that population and if we don't know if Fisher moving or if they're dying between sampling locations as indicated by Mario's mention, then if this can help us fill that gap a little bit better.  
Umm gets us a little bit closer to understanding what's going on out there and ultimately I think you know we're we're looking at humpback chub in this reach of the Colorado River because one of the four T&E species and it's probably the one that has the greatest likelihood of of coming off the the threatening endangered species list in our lifetime, maybe even I'm not speaking you know because I know this.  
I'm just saying it has a higher likelihood than any of the others and so little bits of investment for this species can go a long way.  
I think in the long run and I just wanted to bring that perspective.

 **Erik Skeie (Guest)** 1:28:32  
No, I appreciate that perspective.  
Alright.  
Any other thoughts regarding G9?  
And something I want to point out as we're continuing to move through kind of these more controversial things, it may be a little frustrating that we're not coming up with any kind of concrete recommendation or product from this meeting or I do want to point out that a lot of these discussions can be helpful in just hearing what other stakeholders are at and helping us formulate our own thoughts as we're approaching this June 12th comment deadline for the second draft.  
So these conversations, while won't have a physical product to come out of them or any kind of recommendation at the moment, they are I at least feel personally that this has been very productive and I appreciate everyone's input thus far as we keep going.  
So I just wanted to bring that up one more time as we're nearing the end and maybe getting a little tired thinking, OK, we're almost through.  
Just wanted to bring that up.  
I appreciate everyone's insight and it is, I think, incredibly important to the process.  
So with that, let's go ahead and move to our next controversial topic here, element F3.  
This was another one of those where it was an even split between the need to know is the Nice to know is don't need to knows and the less effort needed versus effort about right.  
So let's talk about it.  
What are people's thoughts on F3?  
Jacob.

 **Jakob Maase: Hopi** 1:30:05  
Yeah, this has always been in the fence as long as this has existed.  
I do appreciate it because there's a push and the new direction with new ideas.  
You know, we've only ever got to do it three times as an experiment in good science is repetition.  
There's a big issues with the amount of water to continue and carry on these experiments.  
I am not an entomologist.  
I always having extreme questions that I feel like I would be, you know, heavily debated on.  
The Hopi on the morning trips do pay attention to bugs and it's important to you know, because they are part of the ecosystem, do so much.  
But we, you know, invertebrate Mundaring, you know, happening or you know, the bug flows having or not you know has always resulted at the same observations by Hopi on the river and concern of you know, but bug populations.  
You know the cat flies, it may just and stuff and always seem in the same spots.  
And so, I mean as a non and demonologist, you know my questions is how much because there's always missing data and always just things that going deeper you know with the bug flows you know what and aware you know can there be adding stuff is mean I usually see them on tributaries you know and how much of that versus you know the rolling cobblestone and stuff.  
So yeah, I'm always going on the fence about it, but it is just always kind of give and take with that experiment.  
Yeah.  
Why I feel so. Thanks.

 **Erik Skeie (Guest)** 1:31:56  
Thanks Jacob.  
Then yeah, you're up.

 **Danielle E. Greene** 1:32:01  
Is anybody able to answer why the budget went up for F3 in the second draft?

 **Erik Skeie (Guest)** 1:32:11  
That is a good question.  
I don't see Ted or Dave little on the call, maybe Mark?

 **Anderson, Gregory M** 1:32:18  
No, the the.  
Yeah, this is Mark.  
With GCM, RCM know that TK is just getting off the river today, so we weren't expecting to have him, and I can't give you the details necessarily what specifically happened there, but each of these projects when we, Andrew and I established like target cuts for the PI's to reach and they had to move things around to make it work at those new levels.  
And so it's not that shouldn't be too surprising to see something go up by a little bit that it shouldn't be all that much, and it's probably making sure that salaries are covered and then picking up little pieces of other things that are cut out.

 **Erik Skeie (Guest)** 1:33:06  
Thank you.  
Appreciate that answer, Jacob.  
Your hands up again.

 **Jakob Maase: Hopi** 1:33:12  
That was the kind of a legacy hand that been thinking.  
I just kind of, I don't know, like this needs and malwares in the back of my mind in all honesty is a project that needs really deep rethinking of what it actually is doing and what it needs to present an ad is on the surface it's you know sounds good.  
It's just everything we get is not deep enough.  
And it is always feel it just like always feels like something wonky is going on.  
That is like wasteful.  
I I guess that's just the and hopefully I'm not saying this.  
You know, I wish I had better words explain it, but you know that's just I'm saying on that right things.

 **Erik Skeie (Guest)** 1:33:58  
No worries.  
Appreciate it.  
Other thoughts?  
Do we have on F3?  
Well, I can tell you one of my thoughts when I was reading through this.  
It's another project with some ednas to again going back to my earlier question regarding the Edna efficiencies, I it just would be nice to have CMR separate how much is spent just on EDA throughout the projects and how that all relates like whether one project is fronting the whole DNA bill like for example if they're just got a giant price tag for DNA, whereas this F3 is about half of that.  
So I just I'm curious how it relates across the whole program, all the different Edna things.  
I would just be good information to have.

 **Dibble, Kimberly L** 1:34:58  
Here and I'm.

 **Anderson, Gregory M** 1:34:58  
This is mark.

 **Dibble, Kimberly L** 1:35:00  
Sorry, Mark, go ahead.

 **Anderson, Gregory M** 1:35:01  
But.  
I know you.  
You please go ahead, Jim.

 **Dibble, Kimberly L** 1:35:06  
OK.  
So Ted has been working with Dave Widell at OU as well for I think maybe four years now.  
I think I I'm actually don't know what how much that agreement is, but that's supports a graduate student to work on invertebrate monitoring using E DNA.  
So there isn't any overlap with what I3 is proposing, and there shouldn't be any overlap with the the tribal E DNA project that Helens proposed.  
Because I I believe that's more land based.  
And Helen, please correct me if I'm wrong.  
Umm.  
And then I guess for I3 in general, a lot of that is salary and then there is a a cooperative agreement to the US Forest Service, which I think is like 60 to 70,000 a year.  
But I could be wrong.  
Umm, I haven't looked at that in a couple of days.  
But I if it's helpful, we can come up with a kind of a road map of what each project pays for and where that money's going to.

 **Erik Skeie (Guest)** 1:36:14  
I think that in and of itself was incredibly helpful for me.  
But yeah, a road map of like where there is overlap in the DNA projects would be awesome.

 **Dibble, Kimberly L** 1:36:24  
Yeah, I I don't think there's any overlap that I can think of right now.  
And actually, Emily Omana and I met a couple of weeks ago to talk about the Park Service at use of E DNA.  
Cause Kurt Shellenberger is actually taking DNA samples and and paired with their electrofishing samples and I think some training samples and so we met and and that actually reduce resulted in a reduction of the number of samples I would take using Git mark funds and so or GCMP funds and so umm.  
So we are trying to make sure that we're not overlapping in terms of where we're taking samples and and when we're taking samples.

 **Ryan Mann, AZGFD** 1:37:10  
It can just cause, I think I'm hearing folks maybe trying to look for ways to.  
Be efficient and and sampling.  
There's there's no overlap on those E DNA because it would be logistically.  
Uh, impossible to do, right?  
I just want to clarify that.

 **Dibble, Kimberly L** 1:37:29  
Uh, yeah, that's correct.  
And like so for example, we have a a project in there and association with.  
She thinks.  
I think Maria, please correct me if I'm wrong, but it's basically adding a boat to the fall aggregations trip to do some scanning of backwaters to look for non natives and that was originally proposed to be funded in all three years.  
But it's been reduced to FY25 and so we kept a small portion of eating a sampling in there for a pair of approach.  
And after talking to Emily, I reduced that even further because they were planning false sampling using E DNA down to the LCR.  
And so I only had my samples start at the LCR.

 **Dzul, Maria C** 1:38:23  
Yeah, that's 2.5, but it's part of the aggregation.

 **Dibble, Kimberly L** 1:38:25  
OK.

 **Dzul, Maria C** 1:38:26  
That's an extra vote on the aggregations trip in 25 Yep.

 **Dibble, Kimberly L** 1:38:30  
OK.  
Thanks Maria.

 **Erik Skeie (Guest)** 1:38:36  
Thank you for all those clarifications.  
I really, really appreciate that.  
Right, you have your hand up.  
No.

 **Ryan Mann, AZGFD** 1:38:50  
That was leftover, sorry.

 **Erik Skeie (Guest)** 1:38:50  
All right.  
No worries at all.  
Uh Sheen and the chat would be helpful time permitted to have a road map of which projects are ongoing monitoring and which are short term projects that should yield answers and be completed during the twip.  
That is a good point to believe that is part of our if it's not part of our outstanding information request, I will throw that in there.  
Shane's that is a very good point.  
It's going to make sure you've been captured and while I'm getting that captured, any other thoughts on F3?  
Alright.  
So moving right along to Project D so we heard Jacob's comments at the top of the hour regarding this D4, but I wanna hear from you all.  
What are your thoughts on this one?  
Because this was another project that was kind of like, well, we wanted to hear what the tribes were were thinking.  
There was some of the written comments in both the twig and the bag surveys.  
So what are people's thoughts on D4?  
I know that there's going to be, as Helen mentioned, the conversation between GCM, RC and the tribes regarding the triennial work plan, but.  
Anyone have any other thoughts they want to share now?  
Jacob.

 **Jakob Maase: Hopi** 1:40:26  
It was a D4.  
I mean the uh, the keywords are extracted cultural and ecological information.  
The the deposits you know, it's not just a cultural thing there.  
So it's a, you know very, you know, just useful in that regard.  
And this is how I wanted to add to that.

 **Erik Skeie (Guest)** 1:40:49  
That's a good point.  
Any other thoughts on D4?  
And how about D3 and D2?  
Because we did skip over these, we talked a little bit about sea, which we'll get back to, but D2 and D3.  
What are people's thoughts?  
Jacob.

 **Jakob Maase: Hopi** 1:41:22  
Yeah, I mean, D2 is really, really cool and.  
You know, it's a small budget and you keeping up those, you know, photos takes, you know, every year and the to a larger conversation of, you know, is it important to do it every year versus, you know, long term versus, you know a shared responsibility that something every agency can do.  
But seeing that river change is important because when I get those photos from, you know, the 90s, you know or early 2000s versus the day, you know, because of its continued, I'm able to be like ohh this is really how it's changed and even year to year and you know you'll sit there and look at that, you know predam slew photo and how that slows is changed and they helping us make it the decision to the slow.  
So it's not something that kind of blow off there.  
And as I said, yeah D3, I have been completely my opinion on D3 is completely changed.  
I mean, there's always concerned about water levels and how much sand we have again, but we've kind of feel like talked about these archaeological sites on these beaches wrong because these sites are right on beaches where people come and camp visitors fact we creation and there's a lot of stuff packed in there, you know, possible burials and things and that opening up is an insanely big issue.  
And if we do not find an alternate means to keep that sand in place, the options are going to either be closed down, you know those beaches from visitations, which is not going to fly with the Park Service Friday or find new means to keep the, you know, sand in there because that has been issues in the past of visitors at these places, you know, disrespecting these sites that it only held by, you know, so much sand in our change in the.  
River flow, you know, over the decades.  
So but if we can spend the three in the future on new means and without sand flows too, because that is along the term idea that Kent, like sustain itself, I mean putting new ways either from, you know, Whoopi vegetation planting techniques or something else but or win blocks we have that's that's all I have to say about him. Thanks.

 **Erik Skeie (Guest)** 1:43:49  
Thank you, Jacob.  
Appreciate it.  
And in the chat, Kurt pitted in, there is a false dichotomy.  
When you separate cultural from natural to cut that comment, it captured in our notes here.  
Thank you for that, Daniel Greene writes.  
With the information taken from repeat photography in D2 still be beneficial if it occurred less often this way, it isn't completely cut.  
Joel, your hand is up.  
Sorry it took me a while to find you there.

 **Sankey, Joel B** 1:44:27  
No problem.  
I just wanted to follow up on Jacob's comments and just say, yeah, it was incredibly eye opening and helpful that both Helen Fairly and I were invited to participate in the Hopi monitoring trip just last month in April and got to both, you know, talk about some of the work that we've been doing and specifically here underneath three with the experimental vegetation management treatments at the Park Service is doing under L temp, but also to have a lot of conversations about possibilities of umm, you know, using for example some traditional Hopi agricultural practices for other other.  
Approaches I guess on this vegetation management, San management, but most importantly management of these these archaeological sites that are otherwise as Jacob pointed out, in many cases eroding away.  
So I just wanted to say thanks to Jacob again for inviting us to do that and it was really eye opening and really beneficial for us.

 **Erik Skeie (Guest)** 1:45:35  
Thank you for the comment, jewel.  
Anything else regarding Project D?  
All right.  
And apologies for starting to lump things together now, but I do have to go right at the scheduled closing time for another meeting.  
So let's chat about Project C.  
Quite a few elements here, 2 through 5, all had disagreement amongst the bag members, so I'm curious what folks are thinking now at the second draft out.  
Anything standing out as a red flag to folks.  
Going once.  
Twice.  
There we go.  
Craig Ellsworth.

 **Ellsworth, Craig** 1:46:34  
It's not just looking back at like that heat map that we did for the bag survey, and there just seems to be a lot of, you know, this is a a nice to know type.  
Project or or group of projects.  
When it comes I I think that's how a lot of the stakeholders view these vegetation projects, but then it reminds me your earlier discussion and and observations like it does seem that this program is becoming fish centric and becoming a fish recovery program and and so.  
So now you know I think of all the need to know.  
Need to do DOS when it comes to a lot of the the things that that reclamation needs to do in order to maintain compliance and a lot of those do have to do with fish, but then you do have the Grand Canyon Protection Act, which is much, much broader than just focusing on on Fisher Aquatics.  
So so now I'm I'm kind of looking at this.  
I'm like, well, maybe we should have a broader focus.  
When it comes to some of these other projects that may have scored lower on some of those earlier bags surveys.

 **Erik Skeie (Guest)** 1:48:08  
Thank you, Craig.  
I appreciate the comment and the reflection there.  
OK.  
Dave Topping in the chat here says C4 is absolutely critical.  
There's a serious risk of river narrowing as lower releases cause vegetation expansion lower in the channel and then sediment deposition anchors the plants before the next spike flow can remove the plants.  
That is good information to have there.  
OK, Emily palmquist.

 **Ellsworth, Craig** 1:48:37  
Yes.  
So.  
So Emily, real quick, just I was gonna talk about your your phragmites.

 **Palmquist, Emily C** 1:48:41  
Yeah.

 **Ellsworth, Craig** 1:48:45  
I mean, we have a huge problem with phragmites up here and that's the channel narrowing and the effects on a lot of different resources and and that sort of thing.  
And and I don't think stuff like that gets the airtime that it probably needs.

 **Palmquist, Emily C** 1:49:03  
Yeah.  
Thank you, Craig.  
I was.  
That's a really nice lead in the one I was just gonna say is that you know it it's really easy for people to think about how dams affect fish.  
Umm, but I want.  
I've been trying over the last couple of years to try to make it clue like as clear as I can that plants are as affected by dam operations as fish.  
Are they actually like they're riparian plants?  
They're literally tied to the river, so every change to the river changes the plant.  
So plants are every bit as influenced by dam operations as as fish are, and then we can actually design dam operations to change plant communities.  
It's been done on other river systems.  
That is definitely something that can happen on this one.  
If there was interest to do that.  
Oh, we're paying plant communities are actually an independent species.  
I talk about communities a lot because this one project looks at about well.  
I mean, we've recorded 300 species, but we can actually only focus on a handful just because of the number of people and the number of dollars we have, we we could actually support an entire project just on tamarisk, we could support an entire project just on Arrowhead.  
We could support an entire project just on Phragmites.  
You know, we could actually break it up into each one of these independent species and have whole projects and and people who devote their lives to studying them.  
But that's not what we do.  
So we so we're trying to focus on like 40 of the common species, but if you think about us trying to actually understand 40 species.  
Each one of those species changes other parts of the ecosystem.  
The riparian plant communities are these foundational parts of ecosystems.  
They are a foundation species and river systems so that they actually change how the river is shaped.  
They change the habitat for everything.  
That depends on plants, which is most things they actually change the amount of water that's in the river because they actually use water.  
So there's actually a lot of studies out there that look at plant water use.  
I don't know that there's another resourcing uh in this program that actually changes the amount of water in the river.  
We didn't propose that for this work plan, but we could totally do that.  
Umm, but so I just.  
I don't want it to get lost that the plant communities, uh, touch all these other resources that are in the altemps goals.  
They have their own L temp goal altogether and we could actually spending a lot more time and money on them to really understand how the dam is changing them.  
So thanks.

 **Erik Skeie (Guest)** 1:51:50  
Thank you, Emily.  
One of the thoughts do you folks have regarding C2 through five?  
So on the chair that there were some comments that C4 seems critical.  
Going once, twice.  
Alright, Dave Topping in the chat had a longer kind of response there.  
So I'm not going to read that out.  
So you think you for raising your hand?  
I appreciate it.

 **Topping, David** 1:52:28  
Uh, I just want to, you know, to degree of scientists can lobby for anything.

 **Erik Skeie (Guest)** 1:52:28  
Go ahead.

 **Topping, David** 1:52:34  
The Colorado River and Grand Canyon is pretty much the only big ticket river that I work on.  
The West, where this problem isn't being looked at, and if we talk about the future of lower flows and longer periods of lower flows, there's a serious risk of the lower parts of the banks becoming densely vegetated and a way that may or may not be desirable.  
And once we have tributary sediment supplying events, those plants will not ever get removed and so C4 was developed and collaboration with Emily, Emily and David Dean, who's a cop PIN project a developed that to address this critical hole in our program.  
Yeah.  
And it got zeroed out pretty quickly, for reasons that remain a mystery to me because it is the linkage between stream flow, sediment and vegetation with a direct feedback into how better to operate the dam.  
As I tried to describe in the in the chat.  
So someone one of the stakeholders and I apologize.  
My memory is not as good as it used to be mentioned that, umm, the gene 9 project, which is obviously very valuable, was pretty cheap.  
I would also say this project is actually pretty cheap.  
Umm.  
To some of the bigger ticket items out there.  
So umm, I I just.  
I've been perplexed.  
Why C4 has been tossed to the wayside so quickly?  
Because this issue is being looked at actively on the Rio Grande and Big Bend, it's a big deal there.  
There are people working on this in the upper Basin.  
Jonathan Friedman's doing a bunch of this work on the Upper Colorado and Green, and we collaborate with him on that.  
Dave Dean's an expert in this.  
I mean it.  
It's a it's a huge deal and and I was really surprised to see it go to zero.  
That that's all.

 **Erik Skeie (Guest)** 1:54:34  
Thank you for the comment.  
Right man.

 **Ryan Mann, AZGFD** 1:54:42  
Dave, can you can you maybe speak a little bit more to that just in terms of what's being the component itself that is not being done within this system?  
And then I might ask.  
To relate things back to management practices, right.  
So how is?  
How would be?  
How would the information that we learned in form?  
Our operations in the context of like high flow experiments that are.  
Triggered to occur as often as we can within the system.  
Does that make sense?

 **Topping, David** 1:55:19  
Yes, I mean, and I apologize, I'm not actually.  
I'm representing Dave Dean here.  
He's on vacation at the moment.  
Umm, this is really his project with Emily.  
They developed this.  
Umm.  
Basically, the whole idea here is to is to basically merge physics and biology and see four.  
So we're basically looking at as people have been in other rivers, look at the drag exerted on the flow by plants as they get established and how that results in basically sequestering sediment and anchoring the plant in to provide feedback on how often you need to have higher flows released from the dam to basically prevent that from happening.  
So we're not just talking about, you know, hfes that we can go years without an HFE.  
You folks are spoiled.  
Sometimes the Pre River shuts down for a long time and that could happen.  
The the other thing you know in bass spikes might be a tool to use too, but basically if you're looking at a period where you have not much water and you're stuck with really low releases, the real question is, is how often do you need to have an emergency spike of some type release from the dam to prevent the fundamental river from changing?  
As plants just colonize and then get anchored in by sediment and then never go away again.  
Umm, that that's that.

 **Palmquist, Emily C** 1:56:49  
Hey.

 **Topping, David** 1:56:49  
That's the.  
So basically that's, that's the thing.  
It's like, yeah, vegetation moving in is the flows are lower, they get established, they get anchored in by sediment.  
Umm, what kind of flows do you need to do to to release to prevent that from happening so that you you don't end up with a fundamentally different river?

 **Palmquist, Emily C** 1:57:10  
Yeah.  
And David, I'll just add on to that.  
So this C4 in particular the entire cost of it is myself and Dave's salary.  
So we we are also proposing to collect some trait data on plans on like their their surface area like their vertical surface area but also how resistant they are to river flows.  
But we can actually collect that data on existing river trips, so there's no extra cost associated with the trait data collection.  
So the entire cost of C4 is salary for myself and David, Dean uh.  
And it uses.  
Is also going to be using the aerial imagery that was already collected, so all of Joel Spanky's great datasets of aerial imagery and this is actually a broader collaboration.  
So Dave, Dean and I came up with it, but we're actually collaborating with Dave Topping and Paul Grahams and Joel and Helen on this as well.  
But they didn't.  
We didn't include their salary in this, though.  
All the contributing in kind.  
But that's what the cost of C4 and then and then in addition to understanding kind of the general patterns that David Topping was talking about, one of the things that we actually wanna get at is the kinds of vegetation that are causing the greatest change because then we could identify flow regimes that could promote species that have different kinds of change with sediment.

 **Topping, David** 1:58:19  
There's one more collaboration.

 **Palmquist, Emily C** 1:58:42  
So the hope is that we could actually look at the different species and how they've changed the river over time as well.  
And I see Craig's 3 minutes warning.

 **Topping, David** 1:58:52  
And we have free modeling expertise from Japan.  
So there's that too.

 **Erik Skeie (Guest)** 1:58:59  
There we go.  
That's a good selling point to end on for C4.  
Yeah.  
Craig brings up a good point.  
We got 3 minutes left.  
I think we heard a lot of discussion about stream flow, sediment and sandbar modeling.  
The one thing that I wanted to Scroll down to that we really haven't had a chance to today is the brand new native fish population dynamics project.

 **Jakob Maase: Hopi** 1:59:20  
The.

 **Erik Skeie (Guest)** 1:59:22  
So yeah, we got 2 minutes.  
Who wants to give a parting thought on this one?  
And this acronym said Dad, that's that's brilliant.  
Just going to throw that as a good parting thought, but any what do we have on project and?

 **Dzul, Maria C** 1:59:47  
I'll chime in for that, I guess.  
Umm, yeah.  
So this is Maria.  
I'm not the Pi on this one, but I think the thought here was, you know with, I know that there's a lot of thought that this get a lot of attention, but the the fact of the matter is we tend to focus a lot on humpback chub and not on a lot of the other native species.  
So this a lot of this project.  
The thought here is that we would.  
I'm just kind of be given that this chunk of change that we could use to just analyze the the really long data set that we have from our ongoing monitoring efforts, specifically looking at planner mouth sucker, bluehead sucker specular base, some of these other native species that really kind of have been getting ignored somewhat.  
So I it's again just the idea is to at least that's what and end .1 is focused on.  
I'm actually, yeah.  
The other two elements, umm, one is kind of a a decision analysis and then the third one is looking at predation tags but the the end one component is just trying to, you know look at this, all this data that we have that's actually a pretty long term data set at this point to to look at what are these, how are these fish surviving, how are they moving, how are they growing, what impacts those things and.  
You know, and how are their abundances changing through time because we're starting to see things like potentially decreases in speckled days.  
Potentially decreases in flannel sucker, but this is all based on catch data, so we have to go that extra step and look at abundances.  
You know, we have to do a little bit more \*\*\*\*\*\*\*\* modeling.  
So I think that's kind of where this project, that's the main thing about it.

 **Healy, Brian D** 2:01:35  
Yeah.  
Thanks Maria.  
This is Brian.  
Yeah, good job explaining that.

 **Dzul, Maria C** 2:01:39  
Oh, sorry Brian, I did.

 **Healy, Brian D** 2:01:41  
That's that's OK.  
I mean, I know we gotta go, but the main point was to try to link it to, like, damn operations and decision making.  
That modeling for informing how damn operations affect those species in the future.  
That's kind of the goal of of N2 and then also to calculate all the metrics for other native fish.  
That was just a couple of pieces that you missed, but thanks here.  
Umm great summary.

 **Erik Skeie (Guest)** 2:02:15  
Yeah.  
Thank you both and I apologize that we don't have any additional time to discuss this one.  
But once again, I really wanted to thank everyone for your thoughts and discussion today.  
I, like I said, even though there's not going to be a like salt product that comes out of this particular meeting, I think it was really helpful to hear those stakeholder perspectives on these projects where we have the disagreement and it's made me think about some of my kind of need to know Nice to know things as we move forward.  
I don't think we're going to be doing any kind of survey between these second draft and the third draft.  
I think this is just going to be a edit and submit your straight up comments to everybody by June 12th and by everybody I mean Andrew, Jeremy, Seth and myself.  
That's all outlined in Jeremy's email from earlier this week.  
So with that, thank you all again for your time.  
We're not going to have anything going on next weeks.  
There's a salinity control for meeting, so a lot of us may be on that, but appreciate your time if you have any questions about what needs to be done between now and June 12th, please don't hesitate to reach out.  
And with that, have a great afternoon, everyone.  
Have a great weekend.

 **Danielle E. Greene** 2:03:27  
Thank you, Eric.

 **Hammen, Jeremy J** 2:03:28  
Thank you, Eric.  
Thanks everyone.

 **Bair, Lucas S** 2:03:29  
It's Eric.

 **Leslie James** 2:03:32  
Thanks Eric.

 **Jakob Maase: Hopi** 2:03:32  
Big, thankfully.

 **Shana Rapoport** 2:03:35  
Thank you.