

Final Minutes

TRINITY MANAGEMENT COUNCIL

December 4-5, 2019
Shasta-Trinity National Forest Supervisor Office
3644 Avtech Parkway, Redding, CA

Day 1, Wednesday December 4, 2019

Attending Members

Member	Representative Seat
Justin Ly	National Marine Fisheries Service, Chair
Dan Everson	U.S. Fish and Wildlife Service, Vice Chair
Michael Dixon	Trinity River Restoration Program, Executive Director
Mike Orcutt ¹	Hoopa Valley Tribe
Elizabeth Hadley ²	Bureau of Reclamation
Teresa Connor	California Department of Water Resources
Dave Hillemeier	Yurok Tribe
Terri Simon-Jackson	U.S. Forest Service
Keith Groves	Trinity Council

George Kautsky replaced Mike Orcutt after lunch on Day 2

Paul Zedonis replaced Elizabeth Hadley at 1:45 on Day 2

Other Attendees: Kyle DeJulio, DJ Brandrowski (YT), Jenny Norris (FWS), Seth Naman (NMFS), Justin Alvarez, James Lee, George Kautsky (HVT), Eric Peterson, Logan Negherbon, Kathy Martens (TRRP), Bill Brock, Scott Russell, Lois Shoemaker (USFS), Ryan Hennigan, Cary Fox, Steve Melavik, Dall Vallejo, Paul Zedonis (Reclamation), Fred Mayer (McBain), Jeremy Brown (Trinity County), Ken Lindke (CDFW), Stacey Alexander (CSU Chico), Nick Zettel (REU)

Attending by Phone: Conor Shea, Bill Pinnix (FWS), Todd Buxton (TRRP), Wade Sinnen, Tony LaBanca (CDFW)

Notes: Sabrina Kleinman (EPP)

List of Motions

Keith Groves moved to approve the December TMC agenda.

Dave Hillemeier seconded the motion.

The motion passed unanimously.

Keith Groves moved to approve the September TMC minutes.

Dan Everson seconded the motion.

The motion passed unanimously.

Hillemeier made a motion that the TMC send a response to the RD (Reclamation) requesting they begin looking for funding to implement a long-term solution to implement diurnal flow variability and in the interim, BOR fund initial concept designs for such a solution.

Connor seconded the motion and offered a friendly amendment to add “long-term solution to implement diurnal flow variability.”

Hillemeier accepted the amendment.

Orcutt offered a friendly amendment that the TMC request that Reclamation seek authority for the \$5 million.

Simon-Jackson added a friendly amendment to include “fund initial concept designs”

Hillemeier and Connor accepted the amendment.

Motion passed with 6 votes in favor, one vote oppose, and one abstention.

Reclamation abstained. Trinity County voted against.

Connor made a motion to direct the TRRP to continue and/or initial studies to analyze the effects of synchronizing Lewiston Dam flows and tributary *flows* on TRRP goals, *contingent on available funding*, that assist in the development of potential environmental documents.

Groves seconded.

Hadley made a friendly amendment to add “assist in the development of environmental documents.”

Simon-Jackson offered a friendly amendment to move the phrase “contingent on available funding” to after the “TRRP goals.”

Everson made a friendly amendment to replace “flow events” with “flows.”

Connor and Groves approved all the amendments.

Simon-Jackson made a competing motion to table the discussion until after the FY20 Science Work Plan Update tomorrow.

Orcutt seconded the motion.

The competing motion was denied with a vote of 5 in favor and 3 opposed. Trinity County, NMFS, and Reclamation opposed the competing motion.

The original motion failed with a vote of 6 in favor and 2 opposed. USFS and Hoopa opposed the motion.

Simon-Jackson made a motion to reconsider yesterday’s motion to direct the TRRP to continue and/or initiate studies that analyze the effects of synchronizing Lewiston Dam flows and tributary flows on TRRP goals, contingent on available funding, that assist in the development of potential environmental documents to support adaptive management of the 2000 ROD flow releases.

Groves seconded the motion.

Everson made a friendly amendment to remove “to test flow hypotheses”

Connor made a friendly amendment to say, “that could assist in the development of environmental documents to support adaptive management of ROD flow releases.”

Orcutt made a friendly amendment to add 2000 in front of ROD

Simon-Jackson and Groves accepted the amendments.

The motion passed with 7 votes in favor and 1 opposed. The Hoopa Valley Tribe opposed the motion.

Hadley made a motion to approve funding, *in the following priority order*, for the Refinements Coordinator, Onsite Government Inspector, Trimble Survey gear, and the Flow Synthesis Report if additional funds are available (*per approximate amounts listed on the ‘Potential FY20 Surplus Funding Options’ Handout.*)”

Simon-Jackson seconded the motion and made a friendly amendment to include, “(per approximate amounts listed on the ‘Potential FY20 Surplus Funding Options’ Handout.)”

Hadley accepted.

Ly offered a friendly amendment to add “in the following priority order.”

Hillemeier made a competing motion that the TMC fund the projects in the TMC prioritized order listed on the Spreadsheet “Potential FY20 Surplus Options” as edited (*per approximate amounts listed on the sheet*)

Groves seconded.

Hadley made a friendly amendment (per approximate amounts listed on the sheet)

The competing motion passed unanimously

Groves made a motion that the Chair write a letter expressing the TMC’s feeling on it.

Hillemeier seconded

The motion passed with 7 votes in favor and one abstention. Hoopa Valley abstained.

Action Items

- Elizabeth Hadley will provide TMC members with updated dates and the schedule for The CVP EIS.
- Justin Ly and Michael Dixon will draft a response letter to the RD about control and infrastructure needs related to flow variability
- Elizabeth Hadley will work with the engineers to develop a cost estimate for an initial study on infrastructure options.
- Kathy Martens will send out calendar invites for the monthly and quarterly TMC meetings.
- Terri Simon-Jackson will reserve the USFS conference room for the December 16-17 meeting.
- Ly will send an email to the TMC to provide suggested changes to the bylaws.

- Dixon will work with Sacramento to see how to have the TMC involved in the selection process for the Refinements Coordinator by the January conference call.

Regular Business

Welcome and Introductions

Justin Ly opened with introductions.

Approval of Agenda

Ly opened discussion of the proposed agenda for the meeting,

Keith Groves moved to approve the December TMC agenda.

Dave Hillemeier seconded the motion.

The motion passed unanimously.

Approval of September TMC Meeting Minutes

Ly opened discussion on the September TMC minutes.

Keith Groves moved to approve the September TMC minutes.

Dan Everson seconded the motion.

The motion passed unanimously

Public Forum

Ly invited the public to provide public comments to the TMC. No comments were submitted.

Report from Executive Director

Michael Dixon reported that since the September TMC meeting, the TMC had met twice as part of the Refinements process and has successfully adopted new purpose and goal statements. The Implementation team is currently finishing up revegetation work at the Chapman Ranch site. The remodel of the TRRP Office has been delayed and should be done sometime in December. Currently the lobby is done, along with work for the office subdivisions and the new sidewalk window display. Dixon acknowledged Kathy Martens' work in designing the new window displays and in coming up with a design concept for the new lobby area.

Organizational Update

An offer was made for the new Science Coordinator. Since the candidate was coming from outside the federal government, the TRRP could not make an announcement during the first day. Logan Negherbon was moving to take a position with NMFS in Portland to do fish passage consulting work for other government entities. In terms of priorities for hiring, the Implementation Branch Chief is the next in the queue to be filled. This position was bumped up in the priority list to get the branch chief positions filled before hiring other staff positions, allowing the branch chiefs to build the teams. Dixon noted that there are still several positions that will be vacant for much of the next fiscal year, which affect the budget surplus that will be discussed on Day 2. Filling those positions is still a priority as the TRRP office is understaffed currently.

Science Update & Synthesis Report

Eric Peterson, who is shepherding the development and review of the Synthesis reports, gave a brief report. The original due dates for the reports were provided along with the current due dates. He noted that many of the original due dates were shifted once new AFAs were in place that accounted for the additional work. In the handout provided, Peterson noted that reports in orange were late, while those in green have been received and are currently in peer-review. So far four reports have been received, one report has finished the peer review process, and six are currently overdue with dates provided on when the drafts will be done. Simon-Jackson asked about the Channel Complexity report that did not have a note on when it would be finished but was overdue. Peterson stated that there was currently no clear timeframe on when it would be done. He noted that the report on the Delta would be late by about a month but should be submitted by the next TMC meeting.

For the flow management research questions, Peterson reported that six pre-proposals had been submitted and some outside peer reviews had been completed. IDT is waiting on the rest of the peer reviews and plans to review and prioritize the pre-proposals then. Peterson noted that a more in-depth discussion on the pre-proposal is planned for tomorrow.

The update on the Work Group Science objectives and targets discussion is planned for tomorrow.

Implementation

The TRRP heard that the Junction City House owner is soliciting bids and still deciding whether to have the TRRP do the proposed work or not. TRRP has not heard from him since September but the process is likely delayed due to the amount of time and reduced capacity for contractors to travel to Junction City to work on a single house. The project is still on the radar.

Chapman Ranch Phase A is almost done. The design for the site is unique as it was built to change over time with features built for a range of restoration flows. The project marks a shift in the Design team's approach and a pilot for how sites will interact with flows.

The USFS did receive an objection to its Dutch Creek EA. The objection was based on concerns that the work would invite more trespass near an existing private cabin. The TRRP and USFS have scheduled a meeting next week to review the objection and come up with a response. Dixon noted that the EA did articulate why the current location was selected. As a result, the USFS FONSI will be delayed.

The DOI FONSI for Dutch Creek will also be delayed due to the new DOI NEPA policy. To expedite the NEPA process, compliance documents have specified timelines. When the timelines are past due, agencies are required to get concurrence from Washington DC. The FONSI is ready to sign but Reclamation and BLM will need permission from Washington first. Currently, they anticipate that the FONSI will be ready in January with initial work early this winter

Chapman Ranch Phase B project is getting ready to start. It will be an independent project from Phase A with work in the side channels and meanders to provide additional habitat and

revegetation work. The design team is working on minor revisions and is in discussions with the BLM and USGS while surveys are conducted for vegetation and cultural resources. Draft NEPA documents and permits are anticipated either late this fiscal year or early next year.

For the Sky Ranch Project, a parcel owned by TPUD is being transferred to the BLM while USFS will transfer land to TPUD in a three-way land exchange. The cultural concerns on the USFS property have been ironed out and they are optimistic that the exchange will be completed, but likely not in time to allow for NEPA work and the proposed action to be prepared until later this year or next year.

Oregon Gulch is moving ahead with the Yurok design team working on the 90% design report. There was concern that the land could be foreclosed. Dan Hillemeier said carryover funding was being used to acquire the property and that the tribe has received federal authorization to use the funding for the land, which should be completed by Friday. Dixon explained that having the parcel in tribal ownership allows for flexibility in how to approach the restoration work. This made the project more feasible and allows a huge opportunity for change in the Junction City Valley now that 45-50% more floodplain could exist if implemented as currently designed.

The design for Evans Bar is moving forward, but the State Team is currently focused on finishing Dutch Creek. A site visit will likely take place in the fall.

The Hoopa design team will work on Upper Conner Creek. There has been some delay due to the design work for Chapman Ranch Phases A and B.

The BA for formal consultation for the restoration program is in development and the TRRP is in talks with NMFS, USFS, and BLM and are inviting participating agencies to submit letters to NMFS by mid-December. This will provide coverage under the TRRP action, which will cover the entire watershed. The hope is to make watershed implementation more efficient by creating a nexus of ESA coverage for multiple partner federal agencies.

Public Outreach

There was decent turnout at the Salmon Festival. Kevin has scheduled for a number of events at local schools. The River Night in Lewiston has not occurred as indicated but is being planned. There are a few public meetings on the horizon for channel rehab projects as well.

Budget

The budget will be covered during Day 2, but Dixon highlighted that there is currently several hundred thousand in undesignated funds remaining in the budget due to the TRRP receiving more money than originally planned from FWS and some salary savings from unfilled positions. The TMC will discuss potential options for how to use those funds tomorrow, but Dixon noted that the amount is based on the current projections for how long it will take to fill those vacancies and is subject to change. The options presented tomorrow will be to set priorities for using available funds.

Program Publications and Reports

Peterson reported that a number of reports are in the final stage of development including two synthesis reports awaiting final edits. A bird report based on work done several years ago was accepted into a formal science journal for publication. On the website, the fall run size estimates and aerial photography from this year have been posted. Dixon asked when the LiDAR data would be available. Peterson stated he was not sure but that it would need to be done by mid-February based on the contract. Dixon explained that there was some remaining funding in the geophysical contract was used to gather high resolution LiDAR data for the watershed. The USGS is doing a major data collection effort with the USFS related to the Carr Fire and this effort uses the same contractor to gather additional data outside the Carr Fire footprint, which will ease data needs for design work.

Work Group Updates

Ken Lindke from the Fish group reported that the WG met once since September to work on the Objectives and Targets Refinement. They decided to dial back this work to half their meetings. The WG provided the IDT with a list of their work plans for the remainder of the fiscal year. A few members prepared pre-proposals for the flow management questions and others are working on the synthesis reports. Another meeting is scheduled in January, with quarterly meetings planned for the rest of the year.

Logan Negherbon from the Design WG started with an acknowledgement of the work done by the Hoopa Valley and Yurok Tribes on the Chapman Ranch Project. The Design WG held one meeting in September. They have completed 60% reviews for the Oregon Gulch and Sky Ranch designs and final reviews for Dutch Creek. The WG is looking at needs for long-term gravel augmentation at the Sawmill sourcing site. Work is anticipated to enter the 100-year floodplain, which will require additional design work to allow for floodplain compliance with the surface and target surface. There is interest in continued operation there and a long-term strategy is needed to facilitate permitting. The Yurok Tribe has asked for the design work, which will consider a side channel where a recent evulsion has disconnected it. Currently 90% designs for Oregon Gulch and Sky Ranch are planned for January/February, which are close to starting work on potential permitting. They are considering revegetation efforts based on those used at Chapman Ranch and Dutch Creek with a 2 to 3-year project planned to account for changes in the field design as civil work is completed. The WG is currently looking for a coordinator and not sure when that will be in place, but their next meeting is scheduled for the second week in February.

Todd Buxton from the Flow WG reported that they are ramping up work for scheduling this water year's flow release schedule. Their next meeting is scheduled for December 17.

Eric Wiseman from the Watershed WG was not available to report. The WG has not met since the last quarter as they are waiting for the FY20 funding opportunity to open to receive proposals.

Conor Shea from the Physical Work Group was not available. Peterson reported that they have worked on the Objectives and Targets Refinements. The WG has worked on identifying additional gravel augmentation locations and how and why the TRRP does its sediment augmentation work.

James Lee from the Riparian Work Group reported that a meeting was planned for next week. The WG hadn't met since the Sept TMC. Participants in the WG are wrapping up the revegetation work at Chapman ranch, finished drafts for a few synthesis reports and a riparian monitoring report, and worked on Cottonwood recruitment surveys. They plan to continue the work on the Objectives and Targets Refinements into the next year.

Informational

CVP Operations Update

Elizabeth Hadley reported that Shasta and Trinity Reservoirs are looking good with Shasta at 70% full and Trinity at 79%, marking a good start to the water year. Reclamation has not started its flood management obligations and flood space requirements. Rain and snow totals from the last year are good and Reclamation is not seeing any need for increases. Warm ocean conditions similar to those seen during the recent drought have gone and are no longer a concern. They are waiting to see what rainfall will look like this season and are prepared to conduct flood releases as they become necessary. Hillemeier asked what the flood control curves would be for this year. Hadley answered that she did not have them, but that they usually start flood control releases in December, adding that it is not yet a concern until there is a significant amount of rain fall. Mike Orcutt asked if she could provide a reminder on the upcoming dates and schedule for the CVP EIS

- Hadley will provide TMC members with updated dates and the schedule for the CVP EIS.

Reclamation Regional Director's Response to TMC flow variability letter and CVO Response to Safety of Dams memo

Hadley noted that agenda topic would focus on options and constraints related to dam operations for flow variability with a limited discussion on the Regional Director's response letter to the TMC. She noted that the letter did request a look at the timing of flow releases, constraints related to the aging infrastructure, and the impacts from reduced funding over the next two years. The letter notes that Trinity Powerplant and Lewiston Dam are still in repair and are planned to be back in service early next year.

BREAK

Infrastructure Constraints/Opportunities on Flow

Steve Melavik and Ryan Hennigan, along with Cary Fox and Dall Vallejo from Reclamation, gave a presentation on the current machinery used at Trinity and Lewiston Dams. Melavik spoke about the machinery used at Trinity and Lewiston Dams while Hennigan spoke about the conveyance systems. They noted that at Lewiston Dam, the gates are designed for flood control

releases, which allow for large changes in volume. In its design, both gates at Lewiston need to move simultaneously. While the spillway is SCADA controlled, the river release control point is not. By reference, 1.2 inches of gate travel, translates to about 180 cfs. When a small pulse is sent, it takes time for the gates to move and while operators wait for the downstream river gage to register the change.

Fox spoke about the operational sequence needed to trigger changes in the river flows. For a 100 cfs flow, an operator in Sacramento sends a pulse signal from the controller for about 1 to 2 seconds. A rotary encoder gives the signal to motors. He noted that 1-2 seconds of run time requires a high current load about 8-10x higher than if the motor ran continually. While the motor is cooled by an attached fan, it's only on for a short amount of time. Thus, the short run time, the short cooling period, and the extreme heat loading for pulse flows coupled with the need for 2-5 adjustments due to lags in the line result in significant wear on the motors. The worry is that making these changes over the summer will reduce the reliability of the motors, which could affect their ability to make large-scale flood releases during critical situations.

Hillemeier asked how many linear feet the motors travel based on turns. Melavik stated that the motors move about 26 feet between the gear boxes and added that they were not designed for pulses and that their use for pulse flows is beyond the design for a radial gate. DeJulio noted how well the gate adjustments have been at matching the flows and asked if the gates were designed to make smaller adjustments if they were moved to the powerhouse. Melavik answered that the radial gates are controlled from the office, but not the regulating gates. Fox added that the powerhouse is very old and has not had significant technical upgrades. While operators can see it on SCADA, they cannot operate it remotely. He added that the changes there are all done by hand and if its burned out, it takes a long time to fix and get replacement parts.

Teresa Connor asked what adjustments the operators would be comfortable with. Fox answered that they are able to do the 50 cfs but at a cost to the equipment, however 100 to 200 cfs target adjustments would provide a bigger target that was easier to hit. Todd Buxton asked if they could assume that scheduling flows at 100 cfs changes was reasonable. Hadley answered that while its more challenging, they were more comfortable with higher flow rates. Melavik added it would be helpful to also know when the releases would need to be made as well.

Seth Naman asked if there was equipment that could be used to reduce wear on the system, possibly related to the \$5 million mentioned in the letter. Melavik was not sure where the figure came from and that the team has not looked at options since funds are not appropriated. They would need to evaluate potential concepts, which has not been done yet. The operators don't normally pulse radio spillway gates on dams. Naman said that while the TRRP is interested in making the adjustments needed to mimic hydrological conditions for the program, the priority should be safety first. Melavik explained that to make an operational change, Reclamation has a process they go through which considers potential problems down the line related to the full functionality and integrity of the system. Hadley added there is a cost associated with the process, which requires an appropriation.

Groves asked if the TMC could get a cost for a study on potential options that the TMC could help fund. Dixon asked if there was a conceptual engineering idea that the \$5 million was based on. Melavik explained that the figure was likely a rough estimate for a concept but that for engineering problems, their team looks at different concepts, evaluates them, and gets design estimates based on Reclamation standards. Fox added that none of their other facilities use the same type of gate and that it would be a major undertaking to change it. Hadley asked what a value engineering study would cost. Groves asked if the TMC could fund the conceptual study. Melavik explained that the engineers would review the facility and operations criteria, which can be an iterative process to determine if it is worth pursuing.

DeJulio noted that the small changes they've requested are stipulated in the 2000 EIS, with 50 cfs over a two-hour period and that it is overdue for Reclamation to figure out how to do it. Hillemeier clarified that the issue with the equipment was not about fish or resolution but about safety since the motors could burn out. While Reclamation has Congressional authority to deal with it, they need the appropriations. Hillemeier asked if they could look into having a back-up motor or a larger motor with a better fan as potential options. Fox responded that it would need to be looked at under a formal study process. Hillemeier clarified that he was asking whether Reclamation had the priority and appropriation to do that.

Orcutt commented that they should clarify where the \$5 million figure came from the RD's letter, adding that they should focus on the safety risks of using an antiquated system, which should be a top priority when looking at concepts as it is a concern for the health of safety of community below. He voiced his support of getting the \$5 million appropriated. Hadley explained that the safety issue is due to the pulses being requested. Orcutt stated that the pulses were authorized by Congress and related costs should be built into the NCAO/MP Region's request for funding.

George Kautsky asked what the significance of the Carr Fire was, as mentioned in the RD's letter and if Reclamation had an annual budget for maintenance. Melavik explained that they have a maintenance management program to address predictive and issue-based needs. The Carr Fire was mentioned to note that Reclamation was still working to bring back Trinity Powerplant Unit 1 but noted it was not connected to the \$5 million figure.

Connor asked what level of study could be done without Congressional approval, noting that Reclamation had funded prior studies. Hadley answered that they did not need Congressional approval to do the initial study, just funding. Ly asked how someone makes changes at the powerhouse. Melavik said the NCAO dispatches someone from Shasta Dam to make the changes.

Orcutt commented that failure of the motors due to the additional stress of the diurnal flows would result in loss of control for 30,000 cfs, This would compromise the integrity of the whole system, which should be the priority and dealt with quickly. Groves commented that Trinity County had looked into a \$2.2 million turbine upgrade for Lewiston and asked if that could add to this situation. Melavik answered that the costs for that upgrade got so high that it wasn't

feasible noting that TPUD had put a halt to the discussion. Groves asked if there was a way to cut cost overruns by having TPUD involved.

Kautsky noted that one of the alternatives used in the appraisal study for Lewiston looked at bypassing Lewiston and reconnecting the river at the base of Trinity Dam to solve some of the temperature management concerns. He asked if there was more control at Trinity, based on that approach. Melavik answered that Lewiston is a regulating reservoir and that removing it would result in a major change to the system. Fox added that they have fine control with the power turbine, but they're so big, a small change results in a 100,000 cfs flow. Dixon added that the study did account for the dams' function and that some of the alternatives were in the \$100s of millions.

Orcutt asked where Reclamation was in getting the \$5 million in funding. Hadley answered nothing had been requested and that the amount was a guesstimate. Orcutt stated it needed to be requested based on the potential pitfalls if Reclamation does not repair the dams and for the benefit of fisheries. Hillemeier noted that the Yurok have an electric hoist on the Lower Klamath, and they keep an extra motor in case it breaks. He asked if Reclamation could do something similar. Melavik and Hennigan explained that a motor replacement during flood releases is a significant safety risk to the mechanic. They added that many of these parts needed to be custom-made. DeJulio asked if there were other places in operation where small adjustments were done. Hadley answered that it was unique.

Groves asked if Reclamation could do the preliminary study and get back to the TMC on the cost. Hadley explained that it would require a request from the TMC for the TRRP to fund it as there were not funds available in Reclamations' O&M budget. She added that it would cost roughly \$50,000 for a week and that the best thing would be for the team to figure out some initial costs for the first steps. Dall Vallejo commented that Reclamation would need a scope first before they moved into evaluation. Connor suggested using the 50 cfs adjustments at Lewiston as a starting point. Lindke added that the hydrograph from the last year had the best resolution of what was needed as it had diurnal fluctuations and the 50 cfs increment changes on 2-4 hour time frames. Dixon noted that the CVPIA stipulations require that implementation and development of flow regulation in b(23) are O&M costs and that it would not be appropriate for the TRRP to fund it.

Dan Everson thanked the engineers for coming to the meeting and explained that the impetus for the TMC's concern was that the program is at a critical point. The salmon numbers in the Trinity are looking grim and flow is a key factor in their efforts to reverse the trend. Having the ability to make incremental changes in flows has the potential to impact the salmon numbers.

Orcutt commented that O&M for b(23) has never been funded and suggested that the TMC support Reclamation's request for \$5 million with a reference to the TRRP's long-term needs in its response to the RD. Ly noted Hadley's previous comment about needing to go back to look at potential costs and steps.

Hillemeier made a motion that the TMC send a response to the RD (Reclamation) requesting they begin looking for funding to implement a long-term solution to implement diurnal flow variability and in the interim, BOR fund initial concept designs for such a solution.

Connor seconded the motion and offered a friendly amendment to add “long-term solution to implement diurnal flow variability.”

Hillemeier accepted the amendment.

Groves commented that writing the letter would seem adversarial. Orcutt responded that his intention is to support Reclamation in finding the funding. Connor asked if the request would support the initial design work. Groves added Hadley had outlined a process for the engineers to look at costs to bring back to the TMC and then go from there. Sending the letter would likely keep them from doing it.

Orcutt offered a friendly amendment that the TMC request that Reclamation seek authority for the \$5 million.

Terri Simon-Jackson commented that the letter should emphasize the points Kyle and Dan made about the TMC’s concerns about the fish and about the 2000 flow requirements. DeJulio asked if a joint letter with TPUD would help if they were unhappy with infrastructure at Trinity Dam too. Groves answered that it would need to be discussed with TPUD. DeJulio added that the TMC could lobby people to work with the Bureau to address the concern. DeJulio and Ly reminded the TMC that Hadley had outlined a process that might help the TMC show buy-in. Hadley stated that they could try to get a basic analysis done by the next meeting to look at the amount of money needed. Everson commented that the letter should describe the problem that the TMC needs Reclamation to solve without being adversarial. Ly commented that he and Dixon would share the draft letter with TMC so it reflects the issues raised and the desire of the group. Everson added that the letter should state that the status quo is not working and that the TMC would like to problem-solve with Reclamation

Simon-Jackson added a friendly amendment to include “fund initial concept designs”

Hillemeier and Connor accepted the amendment.

Motion passed with 6 votes in favor, one vote oppose, and one abstention.

Reclamation abstained. Trinity County voted against.

Buxton asked the engineers how the Flow WG might determine the periodicity of flow changes to prevent burning out the motors. However, the engineers had left when the question was asked. Dixon suggested that the Flow WG use what is outlined in the EIS.

- Ly and Dixon will draft a response letter to the RD about control and infrastructure needs related to flow variability
- Hadley will work with the engineers to develop a cost estimate for an initial study on infrastructure options.

LUNCH

Flow Variability Through Trigger-Based Hydrograph

Seth Naman presented a conceptual analysis on synchronizing Lewiston Dam flows based on storm flows in the Trinity River. Appendix O of the 1999 Trinity River Flow Evaluation study noted that while high-flow releases synchronized to storm water flows were not planned, they should be evaluated as part of an adaptive management process to assess opportunities to maximize restoration efforts. In the ROD, the schedule for daily water releases is based on monitoring and studies for the year's hydrology. While timing may be adjusted, the maximum annual flows are not changed. However, annual hydrology may only be adjusted in the time period analyzed in the EIS (April to July). There have been attempts to shift the water releases to before April, such as the small fall peak last year (2019) for spawning and other needs, but Reclamation has stated that those are outside the EIS analysis, resulting in an administrative and procedural hurdle to implementing adaptive management of Lewiston Dam releases.

A subgroup of the Flow WG has worked on a conceptual idea of how to release the water outside of the traditional period. In a typical year, Lewiston Dam releases are 350 cfs for 7-8 months of the year, while spring release ROD flows occur during a 4-month period (April-July). The TRRP determines the water year in April, which has led to issues with water temperature. In 2016, tributaries had already receded, while the mainstem flow was high, leading to asynchrony of dam releases and tributary flows. Peak flows measured in the Trinity versus those in Indian Creek were separated by 60 days, which could delay messages to fish by keeping things cold during warmer months. This likely resulted in low temperatures in the mainstem and environmental miscues for aquatic species. In 2017, the Pear Tree rotary screw trap showed 80% of Chinook had already emigrated by the time the spring flow releases were made.

Studies published since the Flow Evaluation Study show that simplistic, static, environmental flow rules can be misguided and could further degrade environmental systems. Previous comparisons of a natural flow regime for Lewiston Releases with a typical ROD hydrograph using the same water volume found large differences in water temperature and the size of the fish, with a 50% greater difference in biomass in parr and fry for the natural flow regime. The river stayed much colder under the standard hydrograph than one where flows were distributed throughout the year leading to slower fish growth.

The Flow WG developed an algorithm to distribute the flows differently while staying within the allocated water volumes. The goals were to mimic natural flow regimes in nearby rivers and to meet the mandates of the ROD and stay within flow volumes. They used the Trinity River gage above Coffee Creek, which accounts for 22% of Trinity Reservoir inflow. They broke the flows down into monthly periods to get monthly multipliers of how the flows change over the year. The flows were capped at a maximum of 11,000 cfs and a minimum of 300 cfs in the winter and 450 cfs in the summer. The remaining volume was used for the new flow distributions based on flow changes in the Trinity River above Coffee Creek.

The modeled flows were compared to the different hydrograph scenarios, with a focus on years where the water volumes were neutral with ROD volumes. The TRRP keeps flows higher in the spring than would occur otherwise under virtually all scenarios. In most water years, there are large peaks in nearby streams in the winter months that are not seen in the ROD flows. The current approach for the modeling is to bin water flows by water year to make it simpler. Using this approach, the number of stream flow events above 5000 cfs at Junction City would double due to synchronizing dam flows with tributary flow events. In terms of emigration cues, there were 63 events under the modeled flows versus 10 under the ROD flows, one for every year. In a Klamath River study, PIT tagged coho salmon movement and dispersal in the fall and winter was positively correlated with flow events in the Klamath River. Currently coho salmon in the Trinity River are likely missing these important environmental cues. The group also looked at reservoir storage at the end of Sept and showed that the new flows could result in slightly higher storage, which would reduce the need for flood control measures and allow for better metering on storage.

Overall, this analysis supports the hypothesis that using a modified natural flow regime for flow releases could improve system performance and meet several program metrics. Using a computer algorithm to develop a formulaic approach could also improve system performance. Naman recommended that the TMC consider directing TRRP to initiate studies to support the development of environmental documents to analyze the effects of synchronizing Lewiston Dam flows with tributary flow events based on TRRP goals.

Bill Pinnix asked if the analysis showed whether the volume exceeded the ROD volumes and if the ROD allowed a change on when the water year could be decided. Naman explained that Nick Som was working on that modeling and is still developing the methodology. There is a conceptual way to do it, but they need to work on the computer coding. The minimum flows are set in the program, and the program would look ahead to make sure that the allocated volumes were not exceeded and check it against the amount of water currently spent during the water year. This approach would eliminate the need to establish the water year on April 1. The checks in the program would ensure that the program didn't spend too much and allow for base flows to ramp down during drier years. The ROD would need to be changed to allow for that, which would require a supplemental EIS to stay within some bounds while creating a program that would hit water year volumes all the time using daily forecasts of total water yield.

Dixon asked if the algorithm would be more conservative at the beginning of the season to prevent exceedances. Naman stated that the monthly multipliers and any methodology would inherently be more conservative in the beginning of the water year, while still allowing more flow variability than current ROD releases. There would still be storage in the winter while allowing for some flow variability in the system. Lindke asked how this approach would benefit the Program's other management tools. Naman said the Program was limited in its current management potential for change and ability to implement adaptive management for flows. Using this approach could allow for earlier channel construction since flows wouldn't be as high

in the spring and could better meet optimal temperatures for salmonid rearing. Lindke added this is a major change for the program that has the potential for big success in the restoration efforts. The current approach is pretty far from natural hydrology. This approach could help with geomorphic flows and resetting benthic communities. DeJulio commented that this approach could have the largest impact by affecting every mile of the river versus the smaller rehabilitation/construction projects they do in small sections of the river. Naman suggested that one of the next steps is to use the metrics and tools developed to evaluate the model and see how they perform to avoid pre-decisional actions.

Norris asked if the temperature changes in the river had been assessed over time and by year using this approach. Naman referred back to the presentation he did in September at the TMC meeting in Weitchpec that modeled growth and water temperatures for five different water year types, noting a 20% reduction in fish growth by the end of the season in the coldest modeled water temperatures. Norris clarified that these initial reports and analyses are a first look and that more thorough investigations are needed along with weighing them against the metrics.

Groves requested that the analysis look at lake levels and asked if they had looked at potential impacts downstream. Naman said that rules are needed to limit how high flows could go during a tributary event. Currently it is evaluated based on worst-case scenario flow events. If flows are higher at Lewiston during storms, a check in the model code in addition to rules implemented by dam operators are needed to make sure the levels were not above certain flood controls. Hadley commented that such checks are done constantly by Reclamation as they have an obligation not to flood people. Hillemeier commented that a 100-year flood event was only thought to affect one property and that the maximum fishery flow was in the middle of May. Connor clarified that that was referring to a May flood event. DeJulio added the maximum fishery flows were analyzed in the EIS, but others would need to be analyzed. Naman noted that the new approach would potentially allow Reclamation to generate more power based on their preliminary analysis. Lindke added that lake levels were initially included in one of the pre-proposals, but it was dropped because it was better in a NEPA analysis for recreation since its higher and more stable. Naman noted that under the modified flows, more years would have higher reservoir levels since the flood control curve was hit less often.

Connor said the State was supportive of the idea and asked what was needed in time and cost to get the environmental approval in place. Dixon explained an EIS was almost certainly needed with additional NEPA analysis on the beneficial and adverse impacts. However more information is needed to determine what the impacts could be, but it would probably take a few years. Hillemeier asked if a SEIS would not be adequate. Dixon said it was functionally the same as an EIS with the same timelines and page limits. He explained that the analysis would need to be done first since preparation of the EIS is limited to a year. Many of the pre-proposals discussed during Day 2 could be completed by 2022, which could start NEPA in early 2022 with it done in early 2023. Hillemeier asked if the proposed projects were using existing data and asked if an EA would work. Dixon explained that an EIS is needed rather than an EA as the

proposed changes are outside the original schedule, noting that FONSI's are not as robust as RODs. He added he felt an EIS was needed since there is probably significant controversy with the science to raise the level of the analysis to a significant impact. Simon-Jackson asked that the USDA be included as a signatory as they have had a hard time incorporating by reference to the existing 2000 ROD due to its age.

Ly noted that this effort could address a limiting factor for the fisheries since the status quo has not yielded the salmonid returns needed. Flow is a key issue in the reach and it would be beneficial to adaptively manage them to better mimic natural conditions. He asked if there was interest in a motion. Connor stated that it sounded like the Flow WG was already working on that and asked what a motion would do. Dixon explained that last year the TRRP asked the TMC to look at potential flow studies, which will be voted on tomorrow. As a body, the TRRP wants to pursue a trigger-based hydrograph and the steps needed to get there, but there is no clear guidance. Since the TMC has not officially decided to explore it, it is possible that the TRRP is out ahead too far in looking at this new flow management approach.

Connor made a motion to direct the TRRP to continue and/or initiate studies to analyze the effects of synchronizing Lewiston Dam flows and tributary flows on TRRP goals, contingent on available funding, that assist in the development of potential environmental documents.

Groves seconded.

Hadley made a friendly amendment to add "assist in the development of environmental documents."

Connor and Groves accepted the amendment.

Kautsky asked if it would best to include what the effects analysis would be anchored to in the goals, stating that this effort should be anchored to the ROD. Dixon explained the focus was more on fish production, but that other objectives were affected as well. Naman suggested that the motion could get long if they tried to define them all and Groves stated that the TMC is generalist in nature and that the motion should provide a general goal.

Simon-Jackson offered a friendly amendment to move the phrase "contingent on available funding" to after the "TRRP goals."

Connor approved the amendments.

Groves seconded the amendments.

Hillemeier suggested the IDT should decide how best to anchor the effects analysis for this new approach. DeJuilio noted that consideration of lake levels or recreation are not related to TRRP goals and TRRP would need direction on analyzing those. Simon-Jackson explained that those issues would get included as part of the EIS process by the public and collecting them would occur then if not before. Dixon added that they would need to do internal scoping to know what to include. Kautsky stated that these preliminary studies should be done before looking at the human environment, cautioning against convincing ourselves that such changes would benefit the TRRP too early. Naman agreed and explained that the initial studies would see if this

approach fits the TRRP goals. He suggested starting with the 1999 EIS for what to look at in the human environment and adding to it as needed.

Buxton asked if the motion limited considerations for synchronizing the flow events and if the approach would also synchronize base flow. Naman stated that it did and Lee added that there are currently hard stops at 300 and 450 cfs. Naman added that it would be good to analyze what would happen if the base flow went below that but doubted that the group would recommend doing so. Buxton clarified that he worried that the language would limit effects of scaling.

**Everson made a friendly amendment to replace “flow events” with “flows.”
Connor and Groves approved the amendments.**

Peterson asked if the TMC was limiting the analysis by only looking at synchronizing, which could potentially limit their flexibility. Simon-Jackson stated that such questions were getting too far into the science and ahead of management. Lindke added that the WG and the IDT had already created a list of studies related to flow management which would address the main bulk of questions about flow management if done. These studies would be reviewed during Day 2.

Simon-Jackson made a competing motion to table the discussion until after the FY20 Science Work Plan Update tomorrow.

Orcutt seconded the motion.

Peterson explained that the Science Work Plan discussion was based on a request from the TMC last year to pursue questions related to variable flows. The IDT presented a list of questions to the TMC in June and received pre-proposals based on those. Lindke added that his point about the studies was that the IDT has already come up with a list of questions and studies at the direction of the TMC. Dixon commented that the first motion was more of a referendum on the Science program in light of the direction from last year. The motion would commit the TMC to exploring this path. Simon-Jackson explained that she felt the TMC needed to hear about the pre-proposals first since there wasn't a clear synthesis of what information was available and what was still needed. Groves stated the motion was to give direction to staff to move forward and that a discussion on the proposals wasn't needed. Buxton added that the Flow WG has been hesitant to jump into this analysis due to a lack of direction from the TMC. TMC approval was needed to legitimize the work and provide an idea of where the work was needed.

The competing motion was denied with a vote of 5 in favor and 3 opposed. Trinity County, NMFS, and Reclamation opposed the competing motion.

The original motion failed with a vote of 6 in favor and 2 opposed. USFS and Hoopa opposed the motion.

BREAK

FY20 Technical Work Group Work Plan Priorities

Peterson reviewed the Work Group priorities for FY20. This was done to help the WGs focus on maintaining multiple tasks during the year to ensure that priorities are addressed and to help partner agencies understand the time commitments expected of work group members.

The Flow WG priorities are to schedule the FY20 flows, incorporate results from the synthesis reports into flow scheduling, developing a tool for flow scheduling, and work on the flow synthesis report proposed to the IDT, if approved by the TMC.

The Riparian WG will work on the Objectives and Targets Refinement, develop a science symposium for the upcoming year, look at carcass use for soil augmentation, macroinvertebrate studies, and work on an SRH2D study using flow patterns to forecast vegetation growth.

The Fish WG will work on the Objectives and Targets Refinements, develop a fish habitat metric to use across the program and for rehab site designs, work on finding compatible juvenile vs. adult temperature targets, prepare the annual report on adult return runs on the Trinity compared to other rivers, and continue work on synthesis reports, design reviews, visions for Hamilton Ponds, and a series of field visits.

Orcutt asked if the annual report on fall adult Chinook run size would segregate the Trinity population from the balance of Klamath Basin. Presently, PFMC incorporates the aggregated population across Klamath-Trinity sub-basins for fisheries management. Lindke answered it is usually looked at after the fact. He explained the cohort reconstruction work was still being worked on but that the comparison of escapement on the Trinity to other rivers was separate. The cohort study follows the fish over a number of years while the river comparison was for one year with a regional look. Kautsky added that by just looking at run size in Trinity River, the study would neglect impacts/contributions occurring prior to ocean escapement and would collapse multiple cohorts into an annual run run-size. Impacts/contributions of the Trinity stock below the Trinity-Klamath confluence should also be tracked. Kautsky concluded this type of analysis could be mis-leading and a true cohort-reconstruction is what is needed to determine brood-year specific performance of Trinity River naturally produced fall Chinook. Lindke added that they could add the harvested numbers back to the escapement but it would be different than looking at the performance of a single cohort over a number of years.

The Design WG is reviewing projects for the next two years, developing 100% designs for Sky Ranch and Oregon Gulch, looking at future conditions for the Sawmill gravel extraction site, developing protocols for effectiveness monitoring, and evaluating existing conditions at Evans Bar with effectiveness monitoring at Dark Gulch and Sheridan Creek.

The Gravel/Physical WG will develop 2020 gravel augmentation recommendations and return to the Objectives and Targets Refinements work when they have refined a long-term gravel augmentation strategy. The Watershed WG is waiting until the funding opportunity is opened. If it is, they will review proposals.

The IDT will review the pre-proposals on the variable flow questions, review the current peer review guidelines, and continue evaluation of the synthesis reports.

Chapman Ranch Phase A Implementation

DJ Bandrowski from the Yurok Tribe and Fred Meyers from McBain Associates gave a presentation on the Chapman Ranch Phase A project. The Powerpoint of their presentation is available on the TRRP website. Meyers noted that the project was the first done with a fully tribal team, with design and civil teams led by the tribal groups and all operators and laborers were Hoopa Valley or Yurok Tribe employees or tribal members. The site is currently in the final stages of the revegetation work.

The site had lost habitat as flows increased through the reach. The site is one of the few not confined by bedrock, but sits in an alluvial channel. The design approach was to open the floodplain and let the river bounce off existing tailing to connect the floodplain with contemporary flows. The design installed a series of meanders and lowered the adjacent surfaces to allow for more interaction. The original river channel is now used as a series of off-channel areas and the tailings piles provide terraces for processing material. When installing the meanders, the water surface was raised three feet. The meanders were built dry at grade and then fill was added to the river to activate the flow to them, which was a challenging process.

During construction, turbidity requirements needed to be met, so the team used monitors 500 ft down the river and a complicated system of barriers to isolate the work zones with pumps to clean the water before returning it to the mainstem. All excavators used bio-oils in case of a line break. Over 500 pieces of large wood were used for habitat, with every plant harvested on site was replanted in the area. The existing canopy was maintained in the full riparian corridor while changing the architecture of the river.

During construction, the boat dance flows provided an opportunity to test the design. During the flow, they saw recruitment and augmentation of riffles and saw floodplain surface inundation that could contribute to plant recruitment.

In terms of revegetation, an on-site nursery was used. They did surface treatments to prep the planting surfaces and irrigated the site until rain started. The riparian corridor was expanded using increased sinuosity, increased floodplain connectivity, and the addition of large wood in the river. PBS did a piece on the project, located at: <https://www.kcet.org/shows/tending-nature/what-it-takes-to-restore-a-river-for-salmon-runs>

Hillemeier thanked the TRRP staff and the Hoopa Valley and Yurok staff who worked so hard on this project. Everson noted that when sinuosity is added to streams, there is a tendency for the stream to revert back to its original channel and asked if the design adjusted anything to address that. Meyers answered that the site was designed to adjust rapidly and was treated as a ¾ mile pool, with slope redistributed along the entire stretch with a different emphasis on each portion. One meander is a gunshot to redistribute gravel. Another is broad for salmon spawning habitat. Oversized material was also used to keep the river from reverting back.

Meyers continued that they will start work on Phase B, which will put a second meander upstream and add some velocity to the river. There is a $\frac{3}{4}$ -mile side channel where flows can enter at three points using old hydraulic scars and tapping into existing round water. The habitat is larger, which will expand the floodplain to the far left valley wall.

Work Group Objectives Update

Work Group leaders provided a brief update on the Objectives and Targets Refinements work. Lindke, for the Fish WG, reported that they have completed 11 objectives with 16 targets, with multiple targets for some objectives. Seven are complete, two are being revisited, and 4 are being refined. They developed three new targets: fall Chinook harvest, juvenile rearing temperatures, and prey-food availability. They are currently unsure of how long the remaining 5 targets will take to complete and currently do not have a timeline for them. They have had good participation from partner agencies in recent months and have made more progress than before. They want to keep the momentum going with continued engagement from partners and agencies. The few remaining should be relatively easy to finish this year, and one may be abandoned. Lindke was unsure of an estimated time frame as they are working in subgroups, but believed they should be done in a year.

Lee, for the Riparian WG, estimated they were $\frac{3}{4}$ of the way done with the exercise. They brainstormed some new objectives and looked at the existing wildlife and riparian objectives. These have been distilled to four new objectives and broken out into targets. There is still work needed to finalize the targets and the metrics that go with them. Meeting attendance has been good and continued participation from program partners is appreciated as support for staff time is needed to write the document. The WG expects to be done by mid-summer of 2020.

Buxton reported that the Flow WG has finished their Objectives and Targets. They developed two new ones: targeted flow release volumes met and inundation of ephemeral habitats based on time of year.

Conor Shea from the Physical/Gravel WG reported that many of their Objectives and Targets are fuzzily defined or based on objective events. While they can identify individual traits to promote, it is hard to optimize a single metric. For example, one metric they are looking at is to create and maintain spatially complex channel geomorphology. There are also a few metrics that have been shared with the design team, but many lack an integrated assessment.

The WG plans to look at the synthesis reports for coarse sediment, fine sediment, and large wood for guidance on how to develop a comprehensive assessment for complexity that increases physical habitat diversity. The synthesis reports will be important for improving metrics related to gravel augmentation, which is a priority. While fine sediments have been reduced, there was never a defined target value and the subgroup is interested in what fine sediment amounts should be. In terms of large wood, different studies have identified targets but none have been adopted because they were too far out. Overall, the process is evolving and they foresee long-term work to plan and figure out how each reach of the river should function over the long run. For now, the group will work on gravel metrics for the year. Shea noted they have had good contributions

from the program partners but have been delayed without a Science Coordinator and a TRRP geomorphologist. Having full-time support in Weaverville would help their progress.

Dixon added that during a recent IDT call, the various WG coordinators agreed that fundamental objectives were not needed and that means objectives could easily tier to the goals outlined in the new goal statement.

Public Forum

Ly opened for public comments. No comments submitted

ADJOURN DAY 1 4:00pm

Day Two, Thursday, December 5, 2019

Regular Business

Public Forum

Ly opened the floor for public discussion. No comments were submitted.

Information/Decision Items

FY20 Science Work Plan Update

Peterson reviewed the development of pre-proposals for the IDT flow management questions. In 2019, the IDT developed a list of questions on flow variability for the TRRP to address on whether to manage flow variability at other times of the year. The IDT met in June 2019 to review the questions and prioritize them into a list of 13 questions. The pre-proposal process started in Sept 2019 to develop projects to tackle the proposed questions. Pre-proposals were received in November and outside reviewers started external peer reviews. Peterson reviewed the submitted proposals with the intent for the TMC to potentially provide guidance and continue the process with the submittal of full proposals in 2020.

Three additional questions were added to the list of questions in Sept.

1. Influence of summer flows in narrowleaf willow
2. Influence of unconstrained summer flows on the yellow-legged frog
3. Synthesis report on the history of flows conducted by the TRRP.

The IDT did not receive proposals on every question. Six proposals were submitted. Orcutt commented that the Hoopa Valley Tribe did not believe the intent of this effort was to allow for additional environmental compliance when it was proposed a year ago. Peterson explained that the discussion was not limited by the need for environmental compliance, the concern was part of the context when the IDT developed the questions. Connor noted the original motion was not tied to compliance but was more to see if the TRRP should look at changes to flows. Dixon added that previous efforts to introduce experimental flows were limited due to the lack of environmental compliance and Peterson added that potential compliance needs did not limit how the questions were developed.

Simon-Jackson asked if these questions were coming from the IDT and how that potentially affected the distribution of funds between administration, science, and implementation. Dixon said that upcoming budget discussion would provide some context for that. Simon-Jackson asked if the synthesis reports could answer some of these questions. Dixon answered that these questions have largely come from additional questions raised in the synthesis reports. Simon-Jackson explained NEPA does not require agencies to have all the data before moving forward with the process. The 2000 ROD is currently 19 years old and expressed concern about waiting another two years for additional data collection given the aging infrastructure.

Peterson continued that the discussion would focus on the proposed projects, while costs would be included in the upcoming budget discussion. He reminded the TMC that the point of the proposals was to have a prioritized list of potential projects to work on if funding is available in the future. The projects are listed based on the prioritization of the IDT science questions.

The project for Priority question #1 deals with how water management may influence the timing of juvenile arrivals in the Klamath. UFWS and the Yurok tribe submitted a proposal to assess the risk of disease as they arrive in the lower Klamath and how flow scheduling relates to the timing of their arrival. The project uses previously collected data on spore concentrations and runs S3 models to look at timing of fish arriving there. S3 models will look at the duration of fish in the Lower Klamath, such as timing of arrival, how long they're there, and disease concentrations during that time. The timeline was based on months from project assignment and would be 16 months of work. Positive peer reviews recognize that some of the methods need to provide more context, but that is likely due to the page limitations of the pre-proposals.

The proposed project for Priority question #2 will address pool stratification for adult holding in the Upper Trinity which does not stratify at 450 cfs. This study will inventory stratified pools on the South Fork of the Trinity and select pools of interest to develop topography and 3D hydraulic models to look at how water moves through them, how pools stratify. The project requires data collection to extrapolate to the mainstem. There is a 2-year timeline and peer reviews indicate it is well written and addresses the questions but needs more development on the methods.

Orcutt commented that while the study looks at what is needed when they get to the reach, there are a whole host of factors on the Klamath that affect them before they even arrive. Those factors should be considered as there are a number related to the fall flows and interrelationships between spring and fall runs that should be considered. One question to consider is how many fish will get to areas in the river where they are protected and what their health profile may be upon arrival. Hillemeier added that a good literature review for the model development could be helpful for this project.

No proposals submitted to cover Priority Question #3 as the current macroinvertebrate study already addresses this question.

For Priority question #4, the USGS and TRRP proposed a project to develop a hydrophone method for monitoring sediment transport in Trinity. Sediment monitoring is a useful dataset for

adaptive management of sediment transport and could guide augmentation in the spring. However, it is expensive and there has been hesitation to fund the data collection. This proposes a method of sediment transport monitoring that could result in savings to the TRRP. Hydrophones are microphones in the water that listen to sounds of gravel moving. Changes in the audio signal can determine the quantity and size of materials moving. The method requires calibration data to set it up. It is an expensive one but would set-up substantial cost savings in the future. The current proposal is for the first year only and will likely require a second year at a lower cost. Afterwards, costs would drop dramatically. Reviews asked if it could dispense with future calibration or would it need for calibration in the future.

Connor asked if this new method would replace current monitoring work. Peterson answered it would and that the costs for the first year are similar to the standard costs for sediment monitoring. However, monitoring is not currently funded for this spring. Normally, sediment monitoring is close to \$200,000 based on a simple hydrograph, with costs going up during wet years. The first year of this proposal is less than the annual costs and would set up for substantial cost savings in the future. Ly asked if there was initial data for this work, Peterson answered that there are currently hydrophones at one site where the initial data collection has shown proof of concept. Buxton agreed and added that the data has not been fully worked up yet and the proposal needs additional work to determine stations and how to predict grain size and motion of sediment. Peterson added that this method could also allow for more continuous monitoring.

Orcutt stated that there was already a ton of information on sediment transport from the Physical WG. Peterson agreed, but that the use of hydrophones was limited. Buxton added that it would a different way of getting the numbers along with additional information that could help with gravel management. Everson asked if the USGS was part of the proposal. Peterson answered they were as they had done some preliminary research on hydrophone use.

Everson asked how the projects and questions were prioritized. Peterson recalled the IDT did a sticker exercise in June on the questions to assess agency priorities. The proposals are presented here based on the prioritization of the questions. DeJulio added that during the exercise, full funding of the habitat proposal was also agreed upon. Ly asked who was peer-reviewing the pre-proposals. Peterson said that they were outside of TRRP and that they tried to keep the reviewers anonymous but that John Buffington, from the SAB, had been one reviewer.

For Priority question #5, a study on how flows connect with off-channel habitat and how it impacts juvenile fish was submitted. This project proposes to install fish cages in a number of off-channel habitats on the Trinity. Fish in these habitats would be monitored for growth rates and other condition factors and compared to fish in the mainstem. Some of the fish will be sacrificed to fine tune the growth rates and otoliths along with PIT tags for a population study. Timeline is about 2 years and reviews are pretty positive with more detail on the methods and one questioned if the pit tags was worthwhile with such a short-term study. Simon-Jackson noted that the project proposed starting Task 1 in the first quarter of FY20 and asked if that would

change. Lindke answered it would since it depended on the hydrograph. Likely, they would get the cages in the water in April or May.

For Priority question #6, a modeling exercise would use an S3 model calibrated with data from the Junction City screw trap to look at conditions of fish over a dozen years and compare them with the hydrographs to calculate consumption. This project has a quick timeline with deliverables at the end of August. Peer reviews asked if calculating the consumption based on the model really assesses if food is limiting. The other reviewer said it was a great example of using program data with projection model but had some question on the analytical methods.

For Priority question #7, this proposal focuses on redd scour and does not address channel meander and bank collapse. It uses existing data and looks at where redds are created. It will compare low and high numbers of redds and analyze where scour is anticipated based on a 2016 topography model, which has already had flow modeling done with sheer stress to indicate scour. The project would bring these datasets together and look at the potential for redd scour. This project will take one year. Peer review indicates it is worthwhile to leverage existing data but noted that it does not answer the entire priority questions and needs details for methods.

The remainder of the questions are believed to be addressed in other parts of the program. Some are addressed in the synthesis reports. In addition to the proposals, the IDT received a proposal for a new synthesis report to look at flows over the history of the program with 16 years of ROD flows. Phase 1 review by the SAB focused on channel rehab and lacked a similar review on the flow hydrographs. This report would look at the hydrographs and assess against the objectives to determine if the TRRP is achieving its objectives. This report should take a year to prepare.

Hillemeier asked if this report had been prioritized by the IDT with the priority questions. Peterson explained the idea came up during the September TMC meeting. The IDT agreed to hear the proposal and present it to the TMC since it had not been considered. Ly asked why this report was not included in the original list of synthesis reports given how important flow is to the Program. Peterson answered while there were a number of reports related to flows, the idea of reviewing the past hydrographs was not included on the list. Buxton added that the idea of flow as a primary driver in the system and synthesizing the flow came from preparing the other reports. DeJuilio added that the original synthesis effort proposed a few select topics on flow, but that a comprehensive review was not proposed.

Orcutt asked how long the proposals were valid. Peterson explained that the questions themselves would be valid indefinitely, but that the pre-proposals would likely be valid for the next couple of years depending on funding availability and interest among the TMC. His understanding was that the TMC wanted to have questions ready so, if funding was available, they could go ahead with them. Orcutt asked why the flow synthesis report was overlooked and if there were costs associated with each proposal. Peterson explained that all the costs for the proposals would be addressed in the budget discussion. For the synthesis report, that proposal is still in peer review as it came in after the other pre-proposal questions were submitted. The IDT thought it was a relevant topic that was needed and wanted the TMC to decide what to do. Orcutt

commented that the report could provide insight into the other flow topics. Dixon agreed and added that because flow is a means toward achieving the TRRP's goals, they need to look at how the flows were getting them there.

Groves asked if these studies and the synthesis report would complete the information needed for the EIS. Dixon stated that it would depend on the findings. The TRRP knows the direction they are headed based on the literature, but there are outstanding questions about the system. These questions would answer the bulk of what would help them decide where to go on flow management. Groves asked if the information would still be needed if the TRRP decided not to go in that direction. Dixon answered that these studies would help the TRRP understand if the approach to flow management was achieving what they wanted while evaluating the hypothesis proposed in Appendix O. Ultimately, the TMC will need to decide if they want to use a flow variability approach or not.

Orcutt commented that if the TRRP is pursuing winter flow variability and developing an SEIR to the ROD, the Hoopa Valley strongly objected to it a year and a half ago when it was originally proposed and would continue to. They are receptive if there are new approaches and major new findings that indicate what's limiting fish production. However, all the water presently secured was fought for and the courts have defined how to use it. He suggested looking at getting additional Proviso 1 water if they can prove things have changed but did not think they were there yet. Ly responded prioritizing staff to look at these questions could help the TMC get more information to feel confident in whether they needed to supplement the ROD. Orcutt stated it depends on how the process is scoped and noted that the risks associated with practiced releases of water between October and April could provide insight into how to innovatively provide additional water. Ly asked if Orcutt was suggesting looking at more water beyond the ROD, which would be beyond the TRRP's scope, such as going after Proviso 1 water. Orcutt responded that the 2017 ROD on the Lower Klamath allowed for use of Proviso 1 and the 2014 Solicitor Opinion allowed for possible use of Proviso 2, stating the winter flows could use Proviso 1. Ly agreed that the Lower Klamath fall flow augmentation ROD relied on Proviso 1, but that effort was outside of the TRRP. Ly reiterated that the scope of the TRRP is the 2000 ROD flows and how to implement them. Dixon added that the ROD is very specific to how the water is used and there is legal authority if the fish need more water for returns. However, discussion of Proviso 1 is not legally appropriate since the Secretary indicated that there was flexibility in the ROD. He added that the TRRP has 20 years of science that indicates they can manage the water they have allocated better, but that may not justify the need for more water in court. Hillemeier added that he hoped that by conducting the studies they can better meet the needs of the fish since they are concerned about the populations in the Trinity. If there is a legal authority to get water, they should pursue it. Connor noted that the last TMC meeting suggested that the water might be too cold but that they could increase the total volume of ROD flows. What the TMC is looking at is how to use the ROD flows better since April might not be the best time for releases.

Orcutt added that these ideas were not fully funded. While there is a surplus in the budget, without knowing the costs of the proposals its hard to prioritize them. He thought that the flow synthesis report should be the highest priority. Connor and Simon-Jackson asked if it would be valuable to look at the proposal costs. Groves noted that discussing funding might be premature if the TMC decided not to pursue the flow management issue. Ly and Simon-Jackson noted that the original motion from yesterday did not obligate the TMC to fund the projects.

Orcutt asked if the TMC should discuss other options for spending. Dixon explained that the motion was a referendum from the TMC to pursue flow variability and provide direction to the scientists on how to use their time and efforts. Orcutt asked if the flow synthesis report would affect whether to pursue the research questions. Peterson thought that the direction toward synchronization provides the most direction to the scientists how to look at flows.

Simon-Jackson asked if the water coming from Lewiston was really cold. Peterson answered the water is held at a constant temperature and then split at the Carr tunnels. Several thousand cfs are needed to meet temperature compliance on the Trinity, so how fast the water heats up depends on the flows in part because the outlets were not designed for that function. Simon-Jackson followed up by asking if flow and temperatures were tied together. Dixon replied that they were when the WG had looked at them. Orcutt added that there were appraisal studies that looked at how the temperature warms through additional steps, but that additional feasibility studies were needed.

Simon-Jackson made a motion to reconsider yesterday's motion to direct the TRRP to continue and/or initiate studies that analyze the effects of synchronizing Lewiston Dam flows and tributary flows on TRRP goals, contingent on available funding, that assist in the development of potential environmental documents.

Groves seconded the motion.

Orcutt asked if considering synchronized flows was premature given the concerns about the ability to manage a refined flow release schedule from the previous day's discussion with Reclamation. Ly thought that the diurnal flow variability was not necessarily related to the \$5 million Reclamation needed and that not doing 50 cfs flows would not necessarily prohibit synchronizing flows on the river at a grander scale. Hillemeier and Connor agreed and Hillemeier noted that while there is some overlap, winter flows might add more floodplain connectivity when other tributaries are also flowing. The \$5 million related more to the resolution of the flows rather than timing.

Everson made a friendly amendment to remove "to test flow hypotheses"

Simon-Jackson asked if it was necessary to include the development of environmental documents. Dixon explained including it would provide direction to staff to do some initial leg work and scoping in the direction of NEPA. Without that direction, there would be less ability to frame the work as a proposed action. Simon-Jackson asked if the TMC had done a risk assessment of what could be done under the EIS. Dixon explained they originally tried to pursue variable flows under an EA, but the Solicitor's informal opinion was there was not adequate

analysis in the ROD, so a supplemental would be needed. It would not replace the ROD, but would provide new bounds. Simon-Jackson wondered why they were pursuing adaptive management if they couldn't use it. Hillemeier explained they thought they could shift when the water was used as long as they didn't change the volumes, but the Solicitor disagreed. He clarified that this discussion was about when to use the water to better match natural flows. DeJulio agreed and added that these have been discussed in the WG, but decided it was not possible and acknowledged the informal opinion of the Solicitor that the current language didn't cover that option, although it implied that it could. Hillemeier explained that doing the studies would provide guidance on whether to proceed with additional NEPA and help with preparing the documents, if pursued.

**Connor made a friendly amendment to say “that could assist in the development of environmental documents to support adaptive management of ROD flow releases.”
Simon-Jackson and Groves approved the amendments.**

BREAK TO CAUCUS

Orcutt asked to take the environmental documents off the motion, since they haven't been discussed. Hillemeier liked having them mentioned because without them, they would still be bound to the Solicitor's opinion and limited in how to use adaptive management. Ly added it would likely be a supplemental that would tier to the 2000 ROD, so the 2000 ROD would still be valid. Simon-Jackson agreed it would provide a chance to consider new science and impacts. Dixon added that it would make the existing ROD stronger.

Orcutt explained that one thing that bothered him was there was good information that implementing the 2017 Lower Klamath Long Term Plan ROD was at the Secretary's discretion and was concerned about pursuing new NEPA under the current Administration. He noted that it could change with the next election, but the intent should be to get information. Orcutt did not think that the TMC had hit all the hard walls yet in making a decision on NEPA and the Hoopa Valley would not be supportive of it. Simon-Jackson asked if it would be better to put off discussions on NEPA since the TMC had not yet committed to pursuing it. Orcutt thought there were other documents that could be developed instead. Ly commented that these studies were being done first, and that NEPA or other documents would come later. For now, the TMC wanted to do robust studies and analysis before deciding to pursue such changes. Simon-Jackson noted Connor's amendment would address Orcutt's concern as it includes the current ROD. Ly added that this discussion was important since current flows are not enough. He believed that exploring other options would help the TRRP.

**Orcutt made a friendly amendment to add 2000 in front of ROD
Simon-Jackson and Groves accepted the amendment.
The motion passed with 7 votes in favor and 1 opposed. The Hoopa Valley Tribe opposed the motion.**

FY20 Budget Update and Request for Funding Decision

Dixon reviewed minor changes and adjustments to the FY20 budget. Since March, the TRRP budget has had a \$900,000 increase in available funds over its original budget. This is due to a higher than expected contribution from FWS and two budget items that were removed. This included a value engineering study and a geologic engineering study. The value engineering study was bumped to FY21 since the designs needed for the work will not be done in FY20. The geologic study was removed after other sites for processible rock were identified. Some cost savings came from unfilled positions.

Potential Surplus Funding Options

Dixon asked that the TMC avoid prioritizing all the funding as it is fluid based on personnel changes. Dixon added the Channel Effectiveness monitoring study for channel rehab to the list of surplus options, which would cost \$40,000. The table included the IDT ranking of the science flow pre—proposals and categories for where each item would go towards in terms of program needs (i.e., Administration, Science, Implementation). Simon-Jackson asked if the monitoring protocol had been approved and peer-reviewed. Dixon stated that it had as it was a continuation of work done the previous year.

Connor appreciated the list of items but noted that FY21 could have a budget shortfall. She asked if they were pre-funding items they knew the TRRP was planning to do. Dixon noted that it should be a consideration that some items would be done in FY21. However, he was hesitant to recommend funding items in FY21 since they still need to think about how to fund the technical agreements. He noted that one-on-one conversations with the partner agencies were still needed. Currently, the USFS and the BLM are underspending, but that could change. Simon-Jackson agreed that USFS needed to talk with TRRP as some NEPA is coming out in FY20 that wasn't previously planned for. Dixon agreed and added that the same is needed with NMFS since they are reinitiating consultation and may need additional funding.

Dixon reviewed the list of 20 items that could be funded. He noted that the Refinements Coordinator had been obligated, but the number is still fuzzy as it will change with the government estimate and actual contract amounts. Groves asked if it was the estimate for the term of the contract. Dixon said it was, but it excluded potential options and no cost extensions.

The next two items are funds for a government inspector and new Trimble survey gear for the Program office. A government inspector is needed for the channel rehab work. Currently the TRRP office has assumed that responsibility with existing staff to cover per diem, but the current budget cannot support an on-site inspector for FY20. They need someone from the Willows office to continue the work to comply with their permits. The number is an estimate, but fairly close to what is needed. The estimate for Trimble gear is based on GSA contractor estimates. The existing equipment is near the end of its life and will soon be unable to receive updates. Its high dollar value means it cannot be funded from the office budget.

The studies are presented in the priority order as determined by the IDT, which is different than the order of the Priority questions they address. If the studies are not funded in FY20, the TRRP

may lose the opportunity to get them on the budget for next year. Simon-Jackson asked if the amounts provided funded the entire study or were for one year. Dixon explained that all were for the whole study except for the hydrophone study which just had the first year of funding provided. The total for the entire study was estimated at \$289,000. Dixon noted that in-kind contributions were not included and that approving all of them may risk over-extending staff.

Groves asked if there was a high confidence rate with the hydrophone study over the long-term. Dixon noted that John Buffington thought it was a worthy protocol but was skeptical that it would not require calibration in the future. The method is very site-specific and the TRRP would need to gather data to build the curves. Calibration would likely be revisited as channels can change with flows. Buxton added they have been collecting hydro-acoustic data for a few years. In Lewiston, the acoustic signal was highly effective at estimating the gravel loads. He expected that the hydrophone approach could work extremely well since they have good sample data, an expert in the field, and the state of the science could provide significant cost savings. Dixon added that use of the hydrophone method would be the difference in tens of thousands of dollars versus hundreds of thousands for the current monitoring. Peterson added that it could also stabilize costs between wet and dry years, as wet years require more funding for monitoring work. Buxton explained that the costs associated with calibration could be minimal to unnecessary at about \$20,000 a year without the need for collecting physical samples.

Dixon recommended that the science items be funded as a block with the flow synthesis report ranked as equal to the flow studies. Lastly, for Science needs, the IDT ranked new SAB agreements as last. Dixon noted that there are several synthesis reports and studies proposed for the year that may exceed the SAB's capacity for reviews. Currently there are three SAB members, one who is a volunteer. Two of the SAB contracts expire next summer, so rebuilding the SAB is important.

Orcutt asked when the IDT ranked the proposals, as indicated in the spreadsheet. Dixon explained that the IDT will review them and assign PIs after the peer-reviews are done. Orcutt stated that the funding for the hydrophone study jumped out at him, especially since the IDT had not reviewed them yet. Dixon noted that the \$171,000 cost was for one year and fully funding the project was closer to \$300,000. He noted that funding of the projects would need to be contingent on peer-review based on Reclamation requirements.

Continuing, the out-year channel rehab funding is related to the Oregon Gulch project, where there is the potential to do mass targeted grading without impacting other resources that would require additional NEPA. He noted they are waiting on around \$1 million in mitigation funds from CalTrans that would have to go towards implementation. Currently the amount for the channel rehab is unknown since there may not be mass grading at Oregon Gulch.

The Sawmill channel addresses concerns about gravel processing over the next few years at the site. The site generates fish rock, but processing is getting into the 100-year floodplain. Adjusting the work there would require a county floodplain map revision and the team would

need to design it based on the current CLOMR. This design work would go to the Yurok tribe, but there has not been a cost estimate prepared for it for future years.

The requests for large wood and gravel processing are needed for larger projects. This would place money in these categories that wouldn't expire. These budget lines are currently fine if no additional tasks are added. For Watershed, IDT has requested an additional \$500,000 be added. Dixon recommended it be a lower priority since the WG is unsure if they can spend those funds.

Ly asked how much time the TMC has to decide on priorities. Dixon explained they needed to submit funding for new or existing agreements by March and the TMC needed to decide either during this meeting by at a special TMC meeting. Ly noted that the surplus items amounted to over \$960,000, while there were only \$908,000 available in additional funds. Dixon agreed and explained the TMC would need to prioritize how to fund them. Ly asked if TMC's approval to fund these projects would preclude additional administrative funding. Dixon said it was the TMC's budget to decide but assigning amounts to some items was not recommended since they were unsure of the FY21 budget. He expressed misgivings about the participation level of some agencies since it could change to less next year.

Hillemeier noted that the proposed FY21 budget included \$115,000 for the SAB even with the contracts expiring over the summer and asked how much funding went toward that from FY20. Dixon explained that the amount was a carryover from when Lindsey and Caryn put the budgets together. The amount is for five fully funded SAB members for one year. If funded, it would move the \$115,000 to the FY20 budget. Ly asked when the contracts expired. Dixon answered one expires early 2020, and the two others expire in June and July.

Simon-Jackson asked if the studies would fall off the list if they did not pass the peer-review process. Dixon confirmed they would. DeJuilio added that the redd and bed scour project had not been sure when the project would be funded and much of the proposed costs are largely in-kind, so they could be covered from support services in FY 2020.

LUNCH

The session was called back to order at 12:47

Ly asked if Nick Zettel from Redding Electric Utilities (REU) could present on REU's request after the budget discussion, and Nick agreed. Groves asked for his discussion topic on the bylaws be moved to the next TMC meeting.

Simon-Jackson asked if it made sense to fund the entire hydrophone project. Dixon said they should since his understanding was one year would not result in meaningful data. Groves commented that the hydrophone study would likely result in no immediate costs savings since no funding was currently designated to it in FY19 or FY20. Dixon agreed that funding for sediment monitoring stalled in 2018. Hillemeier asked if they would still need to use the current sediment monitoring protocol to estimate the sediment budget. Buxton explained the calibration only

required a dozen physical measurements while the current method requires two to three times that many.

Dixon advised the TMC not to fixate on the proposed costs since the amount of surplus funds could change over the next ten months. The TMC added a column to the spreadsheet to denote the TMC priority ranking. Hadley recommended eliminating the Refinements Coordinator option since funding was already committed. Groves asked if the TMC needed to fully fund the contract this fiscal year. Dixon explained Reclamation must fully fund the contract amount when the contract is awarded even though the contractor will have 24 months to complete the work. Simon-Jackson noted that if the item staying on the list, then the Program would not need to go back and request it again. Dixon added it would only apply unless the proposed amounts were capped. Connor asked that the Coordinator remain on the list so the TMC could see how it obligated the funds, but to keep it as a high priority.

Hillemeier commented that the SAB agreements did not need to be fully funded until next year. Dixon said that would leave a lapse in the SAB at the end of FY20 based on what Caryn proposed. The challenge will be in FY21 when they will have less funding and the amount would only buy three months. Hillemeier suggested getting what reviews they could until July before the lapse takes effect, noting that there are long periods where the SAB is used less frequently. Ly commented that the new contracts would likely take a few months to negotiate/finalize with FY21 funds, so getting the SAB on board in October is unlikely. Hillemeier asked if Reclamation could work on negotiating the contracts before October 1. Hadley answered that they cannot negotiate contracts until they have the funds available.

Hadley made a motion to approve funding, *in the following priority order*, for the Refinements Coordinator, Onsite Government Inspector, Trimble Survey gear, and the Flow Synthesis Report if additional funds are available (*per approximate amounts listed on the ‘Potential FY20 Surplus Funding Options’ Handout.*)”

Simon-Jackson seconded the motion and made a friendly amendment to include, “(per approximate amounts listed on the ‘Potential FY20 Surplus Funding Options’ Handout.)”

Hadley accepted.

Hillemeier asked why the top four priorities were included in the motion. Hadley explained that her intent was to parse out the clearer priorities before tackling the contentious ones.

Ly offered a friendly amendment to add “in the following priority order.”

Hillemeier asked the TMC to fully prioritize the list done before voting on a motion. He asked the TMC do what Caryn anticipated with the SAB contracts and wait until new ones are in place. He asked why large wood and gravel were on the list as they were funded already. Dixon explained they were included as they would be one of the only places they could put the mitigation funds and asked the TMC to allow them to place the funds there when available.

Hillemeier suggested the TMC keep the IDT's order for the studies, with the exception of moving the flow synthesis report to the top of the group.

Groves suggested combining the large wood and gravel items into one line item and Connor asked if it would limit where they could put the CalTrans funds. Simon-Jackson suggested adding an item for interagency agreement reviews and placing it as the first priority.

Kautsky suggested moving the hydrophone study down in priority since the TRRP can keep doing what they've been doing rather than exploring new methods. Dixon added that currently there were no plans to do sediment monitoring. Buxton explained that while the hydrophone study had less to do with flow, there was a need to figure out gravel and scheduling augmentations with current data. Kautsky asked how the Physical group would anticipate gravel augmentation using the flow algorithm. While the new proposed flow distributions would mean a new way of doing business, understanding gravel is still important and it is unclear how the hydrophones would inform flows and gravel augmentation. Buxton explained gravel augmentation is one of the concerns for using a trigger-based approach. Hydrophones would allow for real time estimates of transport rates that would allow for better augmentation of upstream volumes. Hillemeier asked if the study was scalable. Buxton noted it could be since the proposal included three monitoring stations and they could remove one to proportionally cut the costs.

Hillemeier made a competing motion that the TMC fund the projects in the TMC prioritized order listed on the Spreadsheet "Potential FY20 Surplus Options" as edited (per approximate amounts listed on the sheet)

Groves seconded.

Hadley made a friendly amendment (per approximate amounts listed on the sheet)

BREAK TO CAUCUS

The competing motion passed unanimously

Dixon announced that James Lee had accepted the offer as the new Science Coordinator.

Potential Changes to Bylaws Section 605(a)

Moved to next TMC meeting

REU/TPUD Request for TMC Membership

Nick Zettel, from REU, came to represent the power companies and explain why the REU and TPUD is interested in partnering with the TMC. Zettel oversees power acquisition for customer side programs. Zettel understood the TMC is in the middle of Refinements and that now might not be the right time to ask for membership. He iterated that power customers were open to alternatives if a voting seat was not right. Overall, they are looking for a partnership. REU is in the process of signing a 30-year contract with Reclamation that means they need to step up their partnerships with Trinity, the Delta and Sacramento. In terms of the CVPIA, they need to know what is going on in these areas since they help with restoration efforts. As power customers, their

interest is in the policy of restoration efforts instead of technical assistance. They see the system working together and how they can influence operations and maintenance needs.

Zettel explained REU is owned by the City of Redding and is mandated to provide safe, reliable service in an environmentally responsible manner. In recent years, power costs have increased and as REU enters this new contract they want to keep the system moving forward as infrastructure gets older and needs updates. Zettel explained SB100 set goals for increasing renewable use, with the goal of zero carbon emissions by 2045, which is in the middle of the Reclamation contract. Currently, power companies are mandated to have 60% of their power from qualified renewable power sources, of which does not include hydropower.

While the CVP was one of the more cost-effective sources of power in the area, costs for solar and wind have become much more competitive. Many companies are looking to transition out of natural gas as well. Hydropower makes up 30% of Redding's supply with solar and wind increasing their load profiles. As Redding negotiates its new contract, it is looking to include off ramps to allow them to leave if prices for hydropower become too high. The concern is that the price for hydropower is currently unknown. To maintain hydropower as an option, REU is looking to meet with groups at the policy level to help keep costs down.

Kautsky asked if REU would sever its demand from the Central Valley if they used the off ramps. Zettel explained they would as they have a fiduciary responsibility to keep their costs and prices down. While wind and solar are becoming more competitive, hydropower is an important part of how they want to get to the zero-carbon goal. Groves asked if the power market in California dropping and if Redding was following the same trend. Zettel said the market has flattened as California's growth has flattened. In Redding, it has flattened to declined due to better energy efficiency, new electronic units, and population declines.

Ly asked why the 100% renewable goal did not include the use of hydropower. Zettel clarified that the goal is for 100% zero carbon, not renewable. Hydropower is considered zero carbon but not renewable. REU lobbied to keep hydropower as a source but wind and solar are working to edge out other sources. However, there are supply concerns with wind and solar that makes hydropower a good resource to use.

Connor asked if the REU had been involved in other restoration programs. Zettel explained they participated in the ROC on LTO and provided input on as many projects as they could. Most of their work has been with the Northern California Power Agency.

Groves commented that TPUD has a legislative fix that classifies them as renewable. He asked if the exclusion of hydropower was because water users were not paying enough. Zettel's understanding was that the classification was being remanded and that the restoration would move the cost responsibilities between the power and the water customers but was not sure if it would modify CVPIA. REU's view is that they will still be contributing millions of dollars each year, so they have an obligation to be partners.

Hillemeier asked if REU were part of the TAMWG before it was suspended. Zettel said Leslie Bryan had when Hadley left for Reclamation. Connor commented that the state was open to having more partners in the program but was not sure how that would look. Ly added that a partnership would be great and that the TRRP is looking at new hydrographs that could potentially increase power production. Zettel said it would help them understand hydropower maintenance needs because the increase in wind and solar has shifted when hydropower would be in high demand during the year. He closed by thanking the TMC for their time and for speaking with him

Shasta Trinity NF Plans for TMC Participation

The TRRP presented Bill Brock and Simon-Jackson with a cake to celebrate their upcoming retirements. Scott Russell, Shasta Forest Supervisor, will be the new TMC member, with Lois Shoemaker as an alternate for the time being, until a new forest supervisor is hired. Both will need to be debriefed on the TMC and the TRRP.

Brock shared that is his proudest moment on the Trinity was opening the Hoopa Valley Tribe Fisheries program. Simon-Jackson shared that working with the TMC has been one of the highlights of her career.

BREAK

REU/TPUD TMC Membership (cont.)

Groves noted that the TMC had not discussed REU/TPUD's request for TMC membership. He suggested writing a letter explaining that changes in membership are on hold as the TMC is in Refinements. Once the process is over, the TMC will decide if they should expand.

Groves made a motion that the Chair write a letter expressing the TMC's feeling on it.

Hillemeier seconded

Connor appreciated having REU come and was encouraged by their offer and desire for partnership. Simon-Jackson suggested using the TAMWG mailing list to keep its membership informed about the quarterly meetings to participate as the public. Kautsky commented he was not sure if the Hoopa Valley's position on expanding TMC membership hinges on the Refinements process. Connor commented part of Refinements was to look at how to bring in the public and other entities.

The motion passed with 7 votes in favor and one abstention. Hoopa Valley abstained.

Connor noted CDWR and CDFW will be rotating the primary and alternate representatives on the TMC starting in January based on their two-year rotation. Tony serve as the primary at the next meeting.

Schedule 2020 TMC Meetings

Kautsky and Connor asked that the March meeting take place later in the month. Kautsky noted conflicts with the Pacific Fishery Management Council schedule and Connor commented that

having the meeting later in the month would give the TMC a better idea of what the water year looked like. Ly noted that the bylaws indicate the meeting be held on the second week in March and that a change to the bylaws may be needed. Groves asked that meetings not take place on Tuesdays due to scheduling conflicts.

Simon-Jackson noted the September meeting might be hard for Scott and Laurie to attend if there are fires on the Shasta-Trinity as they would be involved. She noted Regional Leadership holds off-site trainings in the beginning of December, which Russell would miss.

The proposed TMC schedule for 2020 is:

March 18-19 – Weaverville

June 3-4: Eureka

Sept 2-3: Weitchpec

Dec 16-17: Redding

USFS indicated that the monthly teleconference calls did not work for them during the third week of the month. Russell explained that they have all-day leadership meetings on Wednesdays and Thursdays during the third week. Dixon asked if shifting the calls to the second of the month would work better.

Monthly teleconferences 2nd Wednesday from 10 – noon.

- Kathy Martens will send out calendar invites for the monthly and quarterly TMC meetings.
- Terri Simon-Jackson will reserve the USFS conference room for the December 16-17 meeting.

Topics for March TMC Meeting

The following topics were suggested for the March TMC meeting:

- Sediment transport monitoring and hydrophone study – Ly wanted to know why annual sediment transport data was needed.
- Discussion on watershed funding – is the current process a viable option? The TMC would discuss potential alternatives to move that funding mechanism forward successfully.
- Flow and gravel recommendations. DeJulio suggested a review where the physical workgroup is with gravel augmentation strategy.
- Flow recommendations
- Chapman Ranch A Site visit
- Discussion of FY21 budget proposals, knowing that they may not know what the budget is with the Trump embargo
- Update on fisheries management. Kautsky offered to lead the presentation on the abundance forecast and river run data available in early February.

- Synthesis report summaries. Peterson noted that several should be done by then.
- Bylaws 605a discussion – Ly suggested that all proposed bylaw changes be covered. DeJulio and Ly raised concerns about voting over the phone and public notification.
 - Ly will send an email to the TMC to provide suggested changes to the bylaws.
- Discussion on variable flows and flexibility with NEPA. Ly noted that Hadley said the Solicitors were backlogged so the discussion might not accomplish much. Dixon added that Paul Zedonis said he sent a series of questions on the existing bounds to the Solicitor. They hope to have a reply by January. Groves suggested looking at a few options since they were still 3-4 years out with the data collection. Simon-Jackson suggested that it might be a good time since USFS has been encouraged to take more risks under the current Administration.
- FY20 budget update.
- Status of new Science Coordinator and the Program
- DeJulio offered to present on a proposal he will submit in April to extend the fly-fishing season into steelhead spawning season below Lewiston Dam for surplus hatchery need.
- Visual summary of Objectives and Targets update

Next Steps in TRRP Refinements Process

Dixon submitted the scope of work and procurement checklist to Acquisitions. He needs to prepare the government cost estimate next. Next step will be sources sought to determine if it will be full and open or require set asides. It should take 4-5 months to have a contract in place.

Groves asked if the TMC had decided how to handle hiring and selection of the coordinator. Ly and Dixon stated they had not, and Dixon noted that during the previous contract, the tribes had been invited to participate. Dixon offered to talk with Acquisitions to determine what level of input the TMC could have in the selection process, at the very least so the TMC could provide feedback on the proposals and inform the selection. Hillemeier suggested running the process through an AFA to avoid getting overruled by a contracting specialist who is not part of the process. Dixon noted that while it was an option Sacramento would push back on using the tribes since it would circumvent a free and open selection process. Everson mentioned that previous discussions indicated that an AFA would require a new agreement, which could take months. Dixon noted they were currently working on one with the Yurok, which could be awarded by the end of March. That AFA could be modified to include the Coordinator and the timeline would be comparable to contracting. Groves iterated that the TMC should be part of the process and provide input.

- Dixon will work with Sacramento to see how to have the TMC involved in the selection process for the Refinements Coordinator by the January conference call.

Hillemeier requested the TMC schedule a meeting and agenda for the next Refinements meeting during the January conference call. Connor asked if the contractor would serve as the facilitator and if it should be on the agenda. Dixon explained that the scope of work does have the

contractor serving as the facilitator but TRRP's ancillary support services contract includes an optional task for TMC meeting facilitation due to their experience with Mike Hardy. Another option is for the NEPA contractors to provide that service. Ly asked if the TMC wanted facilitators at the next Refinements meeting. Dixon did not think the volunteers worked out well, but that Mike Hardy was better and more willing to work with the TMC on the agenda. Groves agreed that having a coordinator who sets up the meeting well can make the process more ordered. Hillemeier suggested not having a facilitator in the interim.

Ly asked what the team would like to tackle for the next Refinements meetings. Kautsky suggested working on the targets now that the work groups have made some progress on them. Dixon noted that many of the WG are still working on them and will for the next year, reminding the TMC that Ly asked for a visual update on the Objectives and Targets exercise at the next quarterly meeting. Hillemeier suggested reviewing the recommendations in the Refinements report and identifying which ones were non-starters. DeJuilio noted that the Hoopa Valley did want to discuss how the Program needs had changed. He recommended looking at other large structured programs to provide some context for how the TRRP could restructure. Kautsky suggested having Scott McBain walk them through what adaptive management could mean for the TMC including inviting representatives of functioning AEAM programs across the country to join in the discussion. Everson noted that one of Chad's recommendations was that the TMC needed to get to know each other and suggested having the next meeting as a more casual gathering or cook out to take the heavy topics off the agenda.

Public Forum

Ly opened discussion on public comments. No comments submitted.

ADJOURN DAY 2 3:34 pm