

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 28, 2024

Facilitator's Summary

Facilitation Team: Emily Stranz & Colby Mills, DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions, and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings; it is not intended to be the "record" of the meeting. Official minutes can be found on the TMT website: <https://pweb.crohms.org/tmt/agendas/2024/> Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Review Meeting Summaries & Minutes – TMT Members approved the official meeting minutes and facilitator's summary from the August 21 meeting.

Dworshak Operations – Jessika Solleder, Corps, reported on operations at Dworshak Dam (DWR), updates are posted to the TMT website. To begin, local temperatures in Lewiston ID, have trended cooler in August than July, with only a few days hotter than average.

DWR is currently releasing 9 kcfs, continuing through end of August; the pool elevation is 1,539.78 feet, with a projected elevation of 1,535 feet by August 31. Temperatures at Anatone are hovering around 70 degrees F, and are slightly cooler between 65-68 degrees F at Orofino; the LWG tailwater is averaging between 65-66 degrees F. Temperatures in the LWG forebay have cooled over the month, with the 15-meter mark ranging between 63-66 degrees F.

Regional forecasts over the next 10-days show warmer temperatures starting Friday and through weekend, with not much precipitation expected. Lewiston is forecasted to reach the upper 90s by Friday, peaking to 102 degrees F on Sunday, then back into 90s and then 80s by mid-September.

Temperature modeling results show that despite the forecasted warmer temperatures this weekend, DWR has not needed to increase outflows thanks to the cooler mid-August temperatures providing some buffer to absorb the hotter days. Jessika emphasized that the project will begin ramping down in September; modeling results will be finalized later today for TMT Members.

Dworshak Board – Jay Hesse, Nez Perce Tribe, reported that the Dworshak Board coordinated the 2024 Operational Plan (posted to the TMT website) for the release of 200 kaf from DWR, water reserved under the Snake River Basin adjudication. The plan will be finalized and posted later today. DWR Board objectives for allocating the water are to:

1. Maintain tailrace temperatures below LWG.
2. Consider environmental conditions within the lower Clearwater for fish rearing and holding within those habitats.

The Board recommends extending the water out as late as possible into September via a gradual ramp down starting on September 1 throughout the month and small-scale adjustments depending on weather conditions. Flow augmentation water will run out around September 27, when the DWR reservoir will be at an elevation of 1,520 feet. Jay noted that Doble testing will not occur at the project this year and so will not impact the release timeline.

McNary (MCN) Update – Chris Peery, Corps, reported on issues regarding the current MCN spill patterns. Low flow levels have resulted in a diagonal flow across the tailrace and navigation lock entrance that is affecting barge traffic. Barge operators have requested a spill reduction during navigation.

An in-depth discussion among TMT Members highlighted concerns about the impacts of a spill reduction on fish, as well as the low flows on navigation safety. Suggestions included splitting spill between bays or using one Temporary Spillway Weir (TSW) with additional bays to maintain 20 kcfs of spill. Some of the fish managers present suggested using a single TSW and training spill for attraction, although TMT members emphasized that further discussion is needed to fully consider future operations.

Operations Review - Reservoirs: Chris Runyan, Reclamation, reported on Reclamation projects:

- **Hungry Horse (HH):** inflows continue to slowly recede, with a three-day average of 0.7 kcfs; the weekly average was 59% of normal. Temperatures have been seasonal over the last week, with a slight amount of precipitation. Today is cool, and snow is expected above 5,000 feet ranging from a possible 6-10 inches throughout the current brief cool down. Outflows are 2.7 kcfs, with a midnight elevation of 3,549.52 feet (10.48 feet from full), drafting about 1.3 feet since last week. HH continues to operate to the end of September draft (20 feet) while also providing steady-slightly decreased inflows at Columbia Falls. Reclamation expects the project to end up around 17-19 feet of draft by the end of September.

Chris and Brian Marotz, MT, further discussed the current operations and challenges at the project due to unit outages and warm temperatures in July that led to the reduced outflows. They noted the biological benefits of maintaining current operations for river and reservoir ecosystems, with a focus on maintaining habitat for macroinvertebrate production and sub-adult bull trout. Reclamation proposed to continue current operations and stop drafting at the end of September, following Columbia Falls minimums thereafter. Both David (USFWS) and Kelsey (NOAA) mentioned that based on the current situation and not wanting to spill due to TDG concerns, the proposed operation was acceptable for this year.

- **Grand Coulee (GCL):** inflows yesterday were 70 kcfs, with a weekly average of 81% of normal. Outflows were 91.1 kcfs, and the midnight elevation was 1,278.6 feet (11.4 feet from full). GCL continues to meet downstream flow objectives and the August 31 draft requirement of 1,277 feet, which includes 12 feet of draft for the flow augmentation and an additional 1-foot for the Lake Roosevelt incremental storage program.

Aaron Marshall, Corps, reported on Corps of Engineers projects:

- **Libby (LIB):** midnight elevation was 2,453.6 feet, with inflows of 6.9 kcfs and outflows of 8 kcfs. The project will operate over the next month to drop to 2,449 feet by the end of September.
- **Albeni Falls (ALF):** midnight elevation was 2,061.9 feet, with inflows of 7.8 kcfs and outflows of 7.8 kcfs. The project will operate to hold Lake Pend Oreille within summer range through late September.
- **DWR:** midnight elevation was 1,539.7 feet, with inflows of 300 cfs and outflows of 9.2 kcfs.
- **LWG:** midnight elevation was 733.5 feet, with inflows of 23 kcfs and outflows of 24.9 kcfs. The project is still operating at MOP range from 733-734.5 feet through the end of August, then will return to normal operating range.
- **McNary (MCN):** midnight elevation was 338.6 feet, with inflows of 88 kcfs and outflows of 118 kcfs.
- **Bonneville (BON):** midnight elevation was 75.0 feet, with inflows of 109 kcfs and outflows of 103 kcfs.

Water Quality: Dan Turner, Corps, reported that TDG levels are all below criteria.

Fish: Kelsey Swieca, NOAA, reported that sub-yearling passage continues to be relatively low at all projects. The LWG passage index was below 500 over the past week, with Little Goose (LGS), MCN and BON all well below 100 (except for the last day of index counts at BON).

For adults, Chinook and steelhead counts are steadily increasing at BON. Kelsey noted that the fall Chinook run appears to be earlier than usual as of now (based on the 10-year average). Both species are moving through the system, and the lower Snake River numbers are expected to rise over the coming weeks. At ICH, fall Chinook are at 278% of their YTD 10-year average, fall Chinook jacks are at 338% and steelhead are at 93%.

Dave Swank, USFWS, reported that lamprey are approaching the end of their run, and are still a bit below average for daytime ladder counts, at 54% right now. Dave expects that once the season is over, additional counts will boost the final numbers; he will present these finalized numbers once they are available.

Power System: Ben Hausmann, BPA, had nothing to report.

Questions and Comments from Members of the Public: There were no questions or comments from members of the public.

The next scheduled TMT meeting is on September 11, 2024, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, August 28, 2024
Minutes: Andrea Ausmus, BPA (contractor, CorSource Technology Group)**

Today's TMT meeting was held via conference call and webinar, chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. A list of today's attendees is available at the end of these minutes.

1. Review Summaries and Minutes

a. Draft Summary & Minutes for August 21

- Summary and Minutes were approved.

2. Dworshak (DWR) Temperature Augmentation Update – *Jessika Solleder, Corps-NWW*

a. NOAA NWS Climate Data – Lewiston, ID

- Temperatures in August have been starting to trend cooler than July.
- There are still a few days that were above average, but fewer than in July.

b. DWR Current Hourly Data

- Releasing: 9 kcfs
- Current Operation: Plan to maintain 9 kcfs through the month of August.
- Forebay Elevation: 1539.78 feet
- End of August: 1535 feet

c. Snake (Anatone) and Clearwater (Orofino) Rivers Temperature Data

- Anatone: ~70°F
- Orofino: ~68 – 65°F
- LWG Tailwater: ~66 – 65°F

d. LWG Forebay Temperature String

- Have been cooling as month progressed past the Alternative Operation period from August 1 – 9.
- Temperatures – 15m mark:
 - Max: 66°F
 - Low: 63°F

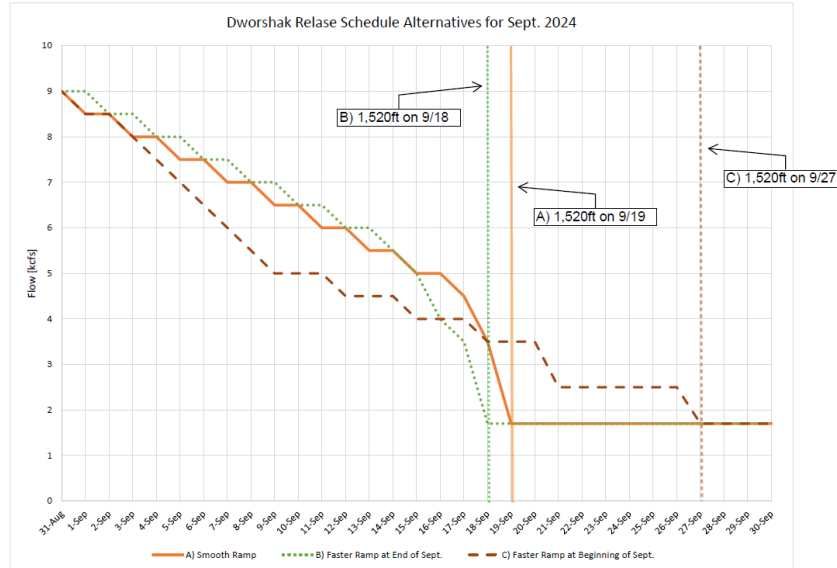
- e. 10-Day Regional Weather Forecast (Aug 29 – September 6)
 - Warmer temperatures into Friday and continuing into the weekend.
 - Some precipitation but not much anticipated.
- f. Weather Forecast for Lewiston, ID
 - Temperatures by Friday are up to upper-90s.
 - Sunday temperatures will peak at 102°F.
 - Before slowly coming back down to the 80s and 90s by mid-September.
- g. Temperature Model Run Results – updated August 27 @ 11am
 - Despite the warmer temperatures anticipated this weekend LWG has been buffered by cooler mid-August temperatures that are able to absorb the hotter days without needing to increase flows out of DWR.

Jay Hesse, Nez Perce, asked if the model that Solleder shared for the early September timeframe applied static releases out of DWR. He said that this is not the plan. Hesse asked if she had a model that shows the stepping down and decreasing of flows starting September 1.

Solleder said that they are working on that today and they will have that produced by the end of the day. She said that she is currently the only one available on their team and Jonathan Roberts is in a meeting, but they have something scheduled for later August 28 just to finalize that. She said that the plan shown was what would happen if that had just kept it at 9 kcfs, which it will be kept through August 31. They will definitely be ramping down in September. Solleder said that she apologized for the confusion, but they would have an updated plan for TMT by the end of the day and she could email that to Hesse as well.

3. Dworshak Board – Jay Hesse, Nez Perce

- Dworshak Board met and developed a plan for the release of 200 kaf from DWR.
 - Water is reserved underneath the Snake River Basin Adjudication.
- Dworshak Board Objectives for the 200 kaf:
 - Maintain tailrace below LWG
 - Take into consideration environmental conditions below the Lower Clearwater for fish that are rearing and holding within those habitats
- Criteria for ramping the flows down take different paths as to how that water would run out and that is represented by the following graphic.



- Dworshak Board is recommending the “Faster Ramp at Beginning of Sept.” (Brown Dashed)
 - Starts September 1, so that water gets extended out.
 - Recommending extending water out into late September.
 - DWR does not have double testing that would impact timeframe when release of that water would be of concern.
 - The full month is available to work with but there is not enough water to make it to the end of the month.
- September 27 DWR Elevation: 1520 feet
 - Small scale adjustments depending on weather adjustments.
 - General plan will be to extend the water out with a gradual ramp down through the entire month.
- DWR plan will be finalized later today and will be posted on the TMT meeting notes.

4. McNary Spill Patterns – Chris Peery, Corps

- MCN has had some issues with the TSW Low Flow levels at the river where they are creating some diagonal flow across the tail race and the entrance to the navigation lock.
- Barge traffic has requested changes in spill or reduction in spill while they are entering with the barges.
 - Implemented over the weekend.
 - Getting 3-4 barges per day
 - During the week, when things are busier and the Corps is not always able to adjust accordingly, it takes time to close and open the TSW.

- There has been some internal discussion about possible alternative spill patterns for the rest of the week until MCN is out of the summer spill pattern.
 - Ryan Laughery, Corps, suggested a couple of ideas during the internal discussion:
 - Split spill between a couple of the split leaf bays (e.g., Bay 4 and Bay 21 or Bay 4 and Bay 17).
 - Have one TSW running and have other bays operating (e.g., Bay 17 or Bay 4) to make up the other 10 kcfs of flow.
- Peery suggested that he would like to implement that change for the rest of the week.
 - He would like to do a different spill pattern so that they are not trying to reduce spill in the middle of the week and still provide the 20 kcfs continuously throughout the day.
 - Request suggestions, comments, and response.

Hesse said that the 20 kcfs spill over the two TSWs is the preferred operation for fish and any changes would not be positive to fish. He asked if there has been a discussion about adding additional spill as training flow to straighten out the cross current that has developed. Those types of alternatives would be consistent with the Commitments Document – that we would balance objectives and not just degrade fish. He asked Peery if he could explain what other operational considerations were on the table that would balance those impacts and not just degrade fish.

Peery said that they could potentially add spill through Bay 17 to see if that helps to straighten out the TSW. He did want to remind TMT that normally this time of year the TSWs would not be in place, they would normally be removed back in June for the benefit of subyearling passage. This was the ongoing operation for this time of year and MCN would be using deep spill. Because of the limitations in the cranes and the hoists and because MCN has TSW spill in September the decision was made to not remove the TSWs this year. Peery said that is why we are in a situation that is different from typical at this time of year as compared to past years. Normally the TSWs would not be operating right now.

Trevor Conder, NOAA, asked for a reminder of what the operation is in late August in terms of the Agreement and the FOP operation.

Peery said this year the Agreement was the Summer Spill would be 20 kcfs or surface weir flow through the end of August.

Conder said that Peery said this year. He asked Peery if that would be the agreement moving forward as well.

Peery said that he believed that this would be an ongoing issue as the Corps would get cranes and hoists back into operation. The potential was to adapt back to what would be what they thought was precondition normal operation. He said that they do not foresee that happening for a number of years so the conditions that they used this year would be what they would use going forward. Peery said that he would suggest that it looks like in August that this is not a good operation and that we need to come up with alternatives.

Conder said that with only 20 kcfs of spill the TSWs are really attractive, but it is like a windsock, it is very untrained. The deep spill is not as attractive, but it could be trained better, but it may not be as effective at attracting fish to the spillway from the powerhouse. He said that there would be a compromise there. Conder said that he would be willing to look at Hesse's idea or he would also be willing to look into Laughery's ideas or a compromise of a single TSW with a deep spill with the remaining 10 kcfs and trying to make it behave in a way that is still attractive to the fish but avoids the navigation conflict. Conder said that he wondered about how much the Unit outages have to play on this. He asked if this is something that we can expect to occur next year as the powerhouse is fully capable.

Peery said that Units 3, 4, and 5 are out right now. Units 3 & 4 are out for maintenance on the transformer and will be done next year. Unit 5 is out because of an unexpected maintenance issue. It sounds like there was a panel or something that is inside the scroll cases that has come loose, and it has been causing blade strikes. There were horrendous noises and so it was shut down. Until Unit 5 can be dewatered and they can get in and look at it that are not quite sure of what the issue is. By next year they will have moved on to different transformers and Units 1, 2, 3, & 4 will be operating.

Conder said he did not think that having those units out would have a huge effect, he though this is probably going to be an issue moving forward that TMT is going to have to address.

Peery agreed with Conder's assessment.

Baus asked for clarification if the navigation is happening in the forebay or the tailrace.

Peery said that it is the tailrace. He said that it is the boats that are coming into the navigation lock channel and moving upstream.

Tom Iverson, Yakama, said that he did not think that Peery answered Hesse's question. He said that it does seem like some training spill might work. He asked if Peery had looked into that as an alternative. Iverson said that with the USG Commitments we had agreed to look at more creative options rather than going straight to curtailing fish operations for other industrial uses of the water. He asked if we could view this as using spill to benefit navigation rather than looking at using spill to benefit fish and use some training spill as a safety measure so that the barges can get up there while we are implementing the agreed upon fish operation.

Peery said that he had said that they could look at that, but they need some and are looking for some guidance on some other ideas to try. He said that they have some ideas from Laughery and those from Hydraulics and Hydrology [H&H]. MCN was contacting Peery this morning (August 28) saying we need to do something and that is why he asked to bring it up in the TMT meeting this morning. He reminded Iverson that in previous years using the TSW during this time of year would be considered bad for fish passage, and that is why we would normally not be using TSWs this time of year.

| *from Ben Hausmann to everyone: 9:25 AM*

| *Is this barge issue in the tailrace or the forebay?*

- | *from Emily Stranz to everyone: 9:25 AM*
- | *The tailrace*
- | *from Ben Hausmann to everyone: 9:26 AM*
- | *OK, thanks. I had heard yesterday that it was in the forebay so I wanted to clarify.*

Julie Ammann, Corps, asked for clarification. She asked Peery if he was saying for this operation, he does not necessarily think that changing this operation from what we have in 2024 is detrimental to fish. She said that is what we have done in past years, it is different this year and if we were look at August 2023 flows, we could see that was done in previous years.

Peery said that previous studies with Subyearling fall chinook have not shown a significant advantage of using the TSWs for this time of year. That is why in previous years the Corps would have taken the TSWs out. But the process of taking the TSWs out means the Corps has to close bays, move gates around, and there would be almost a week where they would be causing a significant change in the spill patterns at MCN, and they do not have that flexibility with their cranes and hoists right now. So, the decision was made this year to not remove the TSWs. Starting in September they are going back to TSW flow for the steelhead overshoot. The decision was made to not take out the TSWs in June, and they are seeing now there are some issues with that decision. He said that he is looking for alternative operations to get them through the rest of the month and then they can talk about what to do different for next year.

Stranz clarified that it's just for the rest of this week, through August 31.

Erick Van Dyke, OR, said that this has been a discussion over the last couple days, and he appreciated the effort that Peery had been putting into it. He said that one of the other things that stands out is whether there are some factors that the barges running that actually correlate to the problem has been described. He said that not every barge has requested a reduction of flow from the spillway. Van Dyke said that he thought that he asked early on if there were other factors that were out there associated with the barging set up that was going on at the time of the request. He asked if Peery had found any information about any of that yet because it still seemed to be missing.

Peery said that there have been requests from towboat operators that have not accommodated because MCN operators did not have the time to make the change. He said that it had happened last night. He said that they heard from the tugboat dispatcher from the company is that it is more the inexperienced captains requesting the change. Some of the more experienced captains think that they can deal with it. Peery said that seems to be one of the factors that has been influencing whether it is requested or not.

Van Dyke asked if barge size or the number of barges connected to the tugs associated with it. He asked if there is anything like that going on.

Peery said that he did not have in information on that.

Van Dyke said that those details would help give a round assessment of how to recommend what to do. He said that if the Salmon Managers (SM) could those... Van

Dyke said that it has been something that has been lacking in conversations and he would appreciate trying to discover how to make more whole.

Stranz said that this decision needs to be made soon so it might be one where you do not have all of the information that you are hoping for. She asked Peery what it takes to get information that Van Dyke is looking for.

Peery said yeah that they would have to start calling up the tug company and see if they have that information available with the different [interrupted by Van Dyke] over the last couple of days.

Van Dyke said that he thought that was a recording of what is locked. He asked if the Corps is tracking any of that at the site itself.

Peery said that he is not aware if they track those details. He said that they track when a tow comes through and when it leaves.

Van Dyke said know what information is available would be helpful. He said that there has got to be something. He said that it is hard for the SM to make much sense of a lot of it when they have nothing really to work with. He said help getting to that spot would be useful. He said that the other thing that they have not gotten clear understanding of (Van Dyke said that Ryan is on it) but the confusion in the flow is creating the issue. He asked if it is close to the shoreline, between the walls and the navlock, or if it is an eddy being formed somewhere on the North shoreline. Van Dyke said that all these details are things that they still have not heard much about to understand how to provide constructive input.

Peery said that Tiffany Dixon, Corps, was out there yesterday and he had asked her to take a look at that and she took some video that he could share. Peery described it as:

There is a diagonal flow going right across the tailrace, it goes across the end of the navigational guide wall on the downstream end of the navigational channel, and it goes diagonally across that opening between the guide wall and the shore. It then hits the shore and the flow divides into two. There is a portion that goes downstream and makes curves downstream, and a portion that curves upstream and creates a back eddy that then goes back across the opening of the navlock channel.

Peery said as the barges are coming up, they first get hit by flow that pushes it toward the channel, then as they get to the opening of the navlock channel there is a flow that pushes it toward the guide wall.

Conder asked if someone could pull up as Ammann had mentioned what we had done in 2023. He said that he went and looked at the spill bay flow data and that was in line with what he was thinking with the single TSW with training bays. He said that it looked like we did that for the latter half of August in 2023. He asked if we could look at that spill bay flow data quickly and see if that is an operation. He said that he did not recall having a navigation issues in 2023. [McNary Spillbay Flow Data - August 2023 \(crohms.org\)](https://www.crohms.org) Conder specifically directed TMT to look at the dates on and beyond August 16, 2023. He said that we were running a single TSW with training spill.

Lisa Wright, Corps, said to clarify the TSW was not actually physically in the spillbays and they were operating as conventional (deep) spillbays at that point. She said that they actually removed the TSWs in June so they were not operating in the bays in August.

Van Dyke said that he was trying to remember he said that he did not remember taking the TSW out.

Wright said that they took them out in June, that was the operation.

Van Dyke confirmed that it was 2023, he said that was confusing but it could be his memory.

| *from Lisa Wright to everyone: 9:39 AM*

| *In 2023, both TSWs were closed on June 20 and converted to conventional spillbays through August.*

Conder said regardless it is 7.2 kcfs, we could run 10 kcfs from that and provided that we have adjacent split-leaf bays available, or whatever bays available, do a similar training spill and probably make this work to get through the next three days.

Peery said right now Bays 16 and 17 available, Bays 15 and 18 are closed, so those are the closest available to use for training spill. He showed the video at this point of the meeting.

Van Dyke said that when looking at the moment of time TMT loses track of how the flow generally occurs at this spot. He said that because they have not been at the model and that there is some variability there this is giving a clearer picture of that. He said that will help in the long run.

Peery said that they are open to talk about the long run and next year. He said that they can run ERDC models this winter when they are available.

Van Dyke said that this is blurring the lines between FPOM conversation topics and TMT. He said that he thought he got why Peery was hoping to have some discussion about what to do this week. Van Dyke said that was recognized but getting some more information on what all of us can to address this issue would be a huge step forward. He said that it would be something that he would hope that we would try to get to.

Peery said that he understands that Van Dyke is asking for more information, but he said that he wondered what Van Dyke would actually do with that information. He said that we know that we have an issue with some barge captains, they are asking for a change in spill according to the FOP they have the right to do that, and the Corps will accommodate that to maintain navigation safety. He said that what he is asking for is an alternative spill pattern so that they do not have to make multiple changes a day in spill and Peery said that he thought that it is reasonable to expect that if we have some combination of TSW and other split leaf spill that we can generate good flow conditions in the tailrace and not really compromise fish passage.

Van Dyke said that is good and he can appreciate that too. He said that he would like to give Peery some options, but they are working blind on some details. Knowing some of the factors is what they are after before they had to get to this conversation they just do

not know yet. Understanding how the barge, if the newer captains are actually responsible for a larger load than some of the others, whether that could be rebalanced would be an idea to explore, but they do not have that information, so they do not know details. He said that his point is understanding the factors that play here and why and if they could see where there are some things that stand out like load size or experience.

Peery reminded Van Dyke that they do not have control over load size or what captains are assigned to what tugs. What they do have control of is operations at MCN.

Van Dyke said that they have control over a conversation with the component – those that are actually active and doing these things so if we limit ourselves from having the conversation then what Peery is saying is going to apply every time. He said that he was just trying to get to having a more open discussion about the things that we could do to actually keep everything balanced. He said that what he was hearing at this point was that people are frustrated because they only control one piece of the pie. He said that he thought he was hearing what Peery was saying.

Stranz said another thing to add to that was that Peery and others are open to the broader conversation in the long run and right now what Peery is hoping for is input and guidance from TMT on what to do over the next couple of days. She said that it sounds like the information that Van Dyke was asking for right now around barge captains' experience would not be available within the next decision-making period but maybe that can fold into the longer-term conversation. Stranz said what she heard in the meeting so far has been:

- Peery presented a couple of ideas that Laughery had come up with.
- Hesse had the idea of increasing spill to train the spill
 - Conder was open to both of these ideas.

Stranz said that she had not heard other ideas thrown on the table from TMT and she was not sure if there were any. She said that what she would like to see is some direction from TMT about how they all want to provide guidance right now. She said that Van Dyke mentioned that this is something that has been in conversation for the last couple of days so she wondered if Kelsey Swieca, FPAC Chair and NOAA, or others who can speak for FPAC is there any kind of FPAC consensus around what everyone would like to see moving forward.

Conder said that Stranz kind of mischaracterized his intent. He said that his is open if the Corps wants to look at that, but he thinks that NOAA's preference one this would be to try to go to a single TSW and train it if possible. Then they would go to the deep spill and that is assuming that the Corps is not willing to increase spill and train it like that. He said that the quick solution to this problem this year is just to try to go to a single TSW and train it if possible.

Stranz asked if this was what Hesse was saying as well.

Conder said no, that the FOP is 20 kcfs and Hesse was saying to add to the 20 kcfs to try to train that spill from a fish perspective. Conder said that he did not know, he thought that was a big conversation and did not know if TMT had time for that. He said that was a

good future conversation, but he is willing to talk about that, and that was his point. Conder said that he thought for today if they were going to give a recommendation today, it would be NOAA's recommendation to maintain one single TSW and train that, and if that is not feasible, then do what Laughery said and go to deep spill.

Stranz thanked Conder for the clarification.

Van Dyke said that the problem here is that the issue is occurring over an undefined hour of the day and whether the change is being described to address the hour or addressed for the entire day or the rest of the year. He said that this is part of the hang up for coming to a common space. He said even what they got from the suggestions so far have been a little more obscure on how they would be applied, and they will require actually looking at it. He said that making a decision today is going to be a hard one.

Dixon told Van Dyke that she was the one that spoke to Tidewater. She said that they had several reports of the problem, but they had brushed it off at first and did not contact the Operator. Then they started receiving several phone calls from the Senior Captains saying this is a problem. The Junior Captains are experiencing it, the Senior Captains are experiencing it. They said that they talked to Shaver and their barges were experiencing it as well. She said that it is not dependent on size or experience. The senior captains can navigate it better, but they are all experiencing the problem of being pushed closer to the edge than typical.

Ammann thanked Dixon and said that it was helpful. She said it was a good reminder, and Peery said it too, we do have navigation safety built in and if good navigators are telling us that they have unsafe conditions than we generally listen to that. Ammann said that she thought that Dixon's conversations added some value to that statement. She asked Peery if we could shut off one of the TSWs and open Bay 16 and 17 like Conder suggested. She said that she was trying to get an alternative proposal out there based on what she heard from Trevor and looking at the patterns from last year. She said that it was unfortunate that Hesse had to drop off before he heard the rest of the conversation – that changing this may not necessarily be degrading fish passage measures. She wanted to note that he had been asking for more spill, but he did not hear the whole conversation, so it is unfortunate that he had to drop off. She asked Peery if Conder's suggestion of keeping one TSW on and maybe using some of the deeper bays to distribute the rest would be possible. She said that she was looking to Peery for a proposed operation that TMT could react to.

Peery said that they could close a TSW and open up the split leaf gates that are available right now connected to hoists in the upstream slots, bays 16 and 17. Further out there are other bays that can be opened with the hoists because they are in split leaf configurations. He said that it might take a little bit of trial and error to get something to work. In these cases, they are relying on the experience of Laughery and actual operators to see if they can remove that cross flow from across the tailrace. The alternative they are considering is do as they have been doing for the last couple of days; when a barge captain comes through and asks, close the TSW and shut down spill for the ~45 minutes that it takes for the barge to come through and hope that it is staffed appropriately to do that multiple times a day. Alternatively decide on a different spill pattern to maintain spill at 20 kcfs 24/7 through the end of Summer Spill. He said yes closing one of the TSWs and adding

spill to bays 16 and 17 (or 12, 13, and 14) to develop a pattern that produces direct downstream flow out of the tailrace.

Jonathan Ebel, ID, said that he thinks the Corps is looking for stability at MCN across the whole spill season for the last couple of years because of maintenance and other things. He said that his recommendation is that he agrees in the short term to closing one TSW and trying to straighten it out with spill. He would also like to have discussions about how to address this in the future. He said that Hesse has his proposal of increasing spill beyond 20 kcfs, just the two TSWs, they effectively do the same it is just that one requires more water spilled going through the powerhouse than the other. Ebel said that is always going to be a fight and this is a short-term problem. He said that he would prioritize stability of a 24-hour operation over what is being done currently.

Swieca said that part of her comments are going to be a little wishy-washy as FPAC Chair because she did not think that FPAC anticipated that they would be making a recommendation on an alternative spill pattern today. She said that it was their assumption that they would continue what had been done over the past couple of days. She said that is why TMT is seeing a little bit of live think through this morning. She said that she thought that Conder portrayed this perspective well. She said that she wondered if there were any concerns from the Corps about minimum generation with considering Hesse's proposal of two TSWs plus training spill. She said that this could be a topic for off-season. She said that Conder accurately conveyed NMFS's perspective on this. She said that she did want to give all the FPAC members an opportunity to weigh-in because they did not know that they would be making this recommendation this morning. She wanted to hear from everyone and did not want to speak on everybody's behalf as FPAC chair.

Stranz said that she thought that TMT had heard from all FPAC members but left it open in case any members wanted to circle back around. She asked Peery what level of support he needed today. She said that if he needed to work more towards a consensus from FPAC they might need to take a caucus. TMT has heard from a couple of agencies that support going to one TSW and trying to train spill and from Van Dyke that more information would be helpful to have this conversation. She asked Peery if he had thoughts on how he would like to move forward. She also pointed out that TMT had a light attendance today so we did not have everyone that would normally provide thoughts.

Peery said that what he would like to do is talk to the operators at the Project and get their input. The new information that came to light this morning was that they were able to make these changes, shutting spill down for each barge on the weekend but during the week there are other things going on and operators are busy. They do not know if they can make the changes, and they are worried about having a barge incident where the barge is grounded on the shoreline and then have to shut down navigation on the river. That is why they requested a pattern or different operation that they can use and not have to keep stopping spill and adjusting throughout the day. He said that he had not had the opportunity to talk to them specifically about these ideas that we come up with today. Peery sent an email but had not gotten a response, so he will need to make a phone call. Peery said that he would like to talk to them and get their input and if there is a specific

pattern that they think would work he could then report back to FPOM via email. He said if it looks good, he would like to be able to implement for the next four days.

Stranz said that Peery listed a couple split leaf bays that could be used, 16, 17, 12, 13, and 14. She asked from TMT and FPAC's perspective if there was a preference for those.

Conder said that the two closest and then get Laughery's input. It would be okay to take some of that flow and spread it out over the other bays if he thinks it is necessary. He said that he is skeptical that only two bays could train it. He would leave it up the Laughery's expertise on the first shot, but Conder would be okay spreading it out among the available bays.

Van Dyke said that there is still some uncertainty why the 80% of the flow through the powerhouse is not helping train flow at this time. Getting more information on that would be helpful too.

Peery said that he would ask Laughery. He did ask him, but he did not think that was the main contributing factor because we would normally have that kind of operation this time of year anyway.

Van Dyke said that was confusing.

Peery reminded Van Dyke again that they are using TSWs this August whereas previously they were using deep spill.

Van Dyke said that the volume of water in the tailwater on the South shoreline is what he was talking about.

Peery said that it is not the volume it is the pattern.

Van Dyke said that the volume of the water that is in the tailwater that is actually active is part of the process, so he is trying to understand that better. In addition to the pattern there was also some training spill that was often used on the North shoreline, so we do not have as much flexibility there as in the past. Recognizing how that might help would be helpful too.

Stranz said that is something to add to the long-term conversation too, especially if they are able to do some modeling this Winter.

Van Dyke said that Stranz kept saying the future whenever he made a comment, he said that he was trying to actually identify somethings for immediate action. He asked to not push it away. He said that he wanted to build on the hope of trying to expand our thoughts and the details.

Stranz said apologized and said that it was her understanding of her issues is not as detailed as everyone's at TMT. So, she thought that she was hearing future conversation. She said that Van Dyke's clarification was helpful. She said that she also wanted to manage expectations because from what she was hearing from Peery is that this is a decision that needs to be made soon and she was not sure how feasible it was to get that information for this round of decision making.

- Peery will take input from TMT and bring it to MCN operators and Laughery. Communicate via FPOM.
- Longer term communication will happen through FPOM with ERDC modeling when available.

5. Operations Review

a. Reservoirs

Reclamation – Chris Runyan

- Hungry Horse Dam
 - Inflows (3-day avg.): 0.7 kcfs
 - Continue to recede slowly.
 - Weekly average: 59% of average
 - Temperatures have been more seasonal and received a couple tenths of an inch of precipitation. Temperatures will warm by the weekend.
 - Snow above 5k feet: 6 – 10 inches (Glacier)
 - Outflows: 2.7 kcfs
 - Midnight elevation: 3549.52 feet
 - Feet from Full: 10.48 feet
 - Drafted: 1.3 feet
 - Operations: End of September draft while also providing steady to slightly decreasing flows at Columbia Falls.
 - May – September Forecast: 64% of average
 - End of September Draft: 20 feet
 - RFC ESP data set and five other historical years projecting 17 – 19 feet of draft by end of September.
 - Main limiting factor was that two out of four units were available during the modernization project. All four will be available next year.
 - Very warm temperatures in July forced HGH to reduce outflows due to transformer overheating issues. Rather than ramp flows each day HGH chose to hold flows at a level that would not cause heating issues or the reduction of flows.
 - HGH was keeping flows flat to slowly receding at Columbia Falls for downstream fishery and invertebrate food base on the river.
 - Prioritized meeting end of September Draft but also targeting decreasing flow at Columbia Falls and not causing TDG issues downstream.

- Based on conversations with Montana (et. al.) they proposed for 2024 for continue with the current operation and when HGH gets to September 30 stop the draft there (projected 17 – 19 feet).
 - After this HGH will go to following Columbia Falls minimums so it will eventually hit 20 feet. Will likely be later in October.
 - In a typical year HGH would draft further than that following minimums.

Montana and Hungry Horse Operation – *Brian Marotz, MT*

- Past years: Shoot for the End of September Target but maybe a little above or a little below because we prioritize the river over the reservoir.
 - The reservoir can fluctuate with less effect than the river.
 - Do not want to spill to get to the target because of the TDG and the potential for double peaks.
- Gradual declining flow keeps ripple habitat for macrozone benthos insect production.
 - It takes keeping the zone wet for 4 – 6 weeks for production, if it is dewatered it does not take long to lose production from the area.
- Sub Adult Bull Trout
 - Come out of their natal tributaries and move to the river but do not move to the lake.
 - Instream flow research has shown two triggers: ripple habitat and how long it has been wetted.
 - Subadult bull trout prefer low velocity habitat.
 - Fall period is still very productive. The young bull trout are transitioning to eating fish, but they are eating insects as well. The species that the trout prey on are insectivores.
 - Focused on the river to grow food and provide for the bull trout.
- Reservoir
 - Having 3 feet more water in the reservoir in the Fall period the insects that the insectivores are eating two fly well, but beetles and leaf hoppers do not. Pulling the water away from the shoreline vegetation prevents fish from accessing this food source.
 - Hedging for a low water year next year.

Marotz asked Runyan to provide the difference in flow between the two scenarios.

Runyan said that looking at things right now, coming off the flow augmentation draft and moving into the Columbia Falls minimums for this year it is looking like a 500 cfs decrease out of HGH.

- Downstream
 - Fall Chinook and Steelhead are tapering off after September 30.

- The effect is not as great, so local effects are much greater.

Swieca said thank you for the update. She said that it is important to NMFS that TMT weighs the costs and benefits to both anadromous and resident species. She said that they appreciate the conversation today and they continue to find it important into the future. She said that they are encouraged by the fact that this issue is primarily related to turbine capacity limitations because of some maintenance concern this year and that it likely will not be an issue into the future. She said previously when we had talked about this issue, we had contextualized it to include flows out of the basin, in that flows out of Libby (LIB) have been higher than expected for this year. She asked if that was something that someone could touch on or speak to in a general sense so TMT could get an idea of total flows out of the basin coming downstream.

Marotz said that he had been intending to talk to her before the TMT meeting, but it did not happen. When he had talked to previously about this topic about a month ago, it brought up the resident fish to the forefront. Back then because there was more water than expected coming out of LIB the Corps wanted to ramp up much more than he had found desirable at the time, when we got within 4 feet of full pool, and it appeared there was a risk of filling and forced spill. What happened was there was a double peak on the Kootenay River but there was a smaller second peak and they extended that and protracted it over more days so that the water would be released without impacting the Kootenay River. That amount of water that was release more than compensated for the shortage coming out of the Flathead. He said that was his point back then and he maintains that was correct.

Dave Swank, USFWS, said that he talked to Marotz and Runyan yesterday about the issues and was brought up to speed. He said that USFWS is fine with Marotz' suggestion of "banking" and going with Columbia Falls minimum after September 30. He said that it is a relatively small amount of water so the impacts on anadromous flow augmentation at this point would be very small.

Van Dyke said that we have been talking about this one for a bit. He said given the terminology for banking water one thing that stands out that might be helpful information is some understanding of carryover in the basins and what that has been and whether we anticipate that this year would be carrying over more water than we have been used to.

Runyan said HGH's end of Sept based on a forecast. This year's forecast was extremely dry so the draft for flow augmentation was a lot deeper than it can, it goes from 10 – 20 feet. This was the 20-foot year. He said that we ended up where we thought that we would end up, we would like to be perfect at 20 feet. The question now is where we will end up this Winter if we stay dry. Runyan reminded Van Dyke that we are 65% of average in flows right now, we could easily draft another 20 feet before April 1 based on meeting Columbia Falls minimums. If it gets wet – we will go from there with FRM but if it is another dry year we will just allow it to refill and not have an FRM requirement.

Van Dyke said he was not sure it really touches on how metric plays into this understanding of Water Management and only because part of what Runyan described was the forecasting component and how that plays into what we do in a year. He said that he feels like the carryover component actually recognizes how much water was available during the water year and what remains in the reservoirs each year. He wondered if that

would be helpful here or not but in terms of just understanding the process it might be useful for us.

Marotz said that if your discharge remained the same between now and when you reentered the refill curve, you would start 1 – 3 feet higher you are going to end up, because of the larger volume in the top wedge of the reservoir, maybe ~2 – 4 feet less draft at the end if you have the same discharge between now and April 1. But then that gives you the opportunity to reconfigure if your inflow forecasts show that it is not going to be a dry year to use that water otherwise. If it will be a dry year it opens opportunities and keeps options open for maintaining river flows at or above the instream flow requirements downstream.

Van Dyke said that helped describe and confirm what he was thinking in his head about how a metric that is applied to an actual amount regardless of the water supply and whether the forecasting missed or not. It provides detailed information on how that water is managed and what we should expect.

- Grand Coulee Dam
 - Inflows (August 28): 70 kcfs
 - Weekly average: 81% of average
 - Outflows: 91.9 kcfs
 - Midnight elevation: 1278.6 feet
 - Feet from Full: 11.4 feet
 - Operations: To meet downstream flow objectives and August 31 Draft Requirement.
 - August 31 Draft: 1277 feet
 - Flow Augmentation: 12 feet
 - Lake Roosevelt ISP: 1 foot

Corps – Aaron Marshall

- Libby Dam (Lake Koocanusa)
 - Avg. Inflows: 6.9 kcfs
 - Avg. Outflows: 8 kcfs
 - Current elevation: 2453.6 feet
 - Operation: Over the next month or so, LIB will be operating to draft down to end of September Target.
 - September Target: 2449 feet
- Albeni Falls (Lake Pend Oreille)
 - Avg. Inflows: 7.8 kcfs
 - Avg. Outflows: 7.8 kcfs
 - Midnight elevation: 2061.9 feet

- Operation: Albeni will hold Lake Pend Oreille within the summer range through late September.
 - Dworshak Dam
 - Avg. Inflows: 300 cfs
 - Avg. Outflows: 9.2 kcfs
 - Forebay elevation: 1539.7 feet
 - Lower Granite Dam
 - Avg. Inflows: 23 kcfs
 - Avg. Outflows: 24.9 kcfs
 - Avg. Forebay elevation: 733.5 feet
 - Operations: Still operating in MOP range 733 – 734 feet through August 31. As of September 1, it will return to normal operating range.
 - McNary Dam
 - Avg. Inflows: 88 kcfs
 - Avg. Outflows: ~118 kcfs
 - Avg. Forebay elevation: 338.6 feet
 - Around the 3 foot operating range.
 - Bonneville Dam
 - Avg. Inflows: 109 kcfs
 - Avg. Outflows: 103 kcfs
 - Avg. Forebay elevation: 75.0 feet
- b. Water Quality – *Dan Turner, Corps*
- TDG
 - TDG are all below applicable criteria.
- c. Fish

Salmon – Kelsey Swieca, NOAA

- Juveniles
 - Subyearling Chinook (averaging)
 - Continues to be relatively low
 - LWG: >500 over past week
 - BON, MCN, LGS: >100 per day
 - Exception of last day of index counts at BON.
- Adult Salmon Counts

- Fall Chinook and Steelhead
 - Bonneville (entering the System)
 - Steadily increasing
 - Fall Chinook appears earlier than normal based on ten-year average but will have to wait to see how the remainder of the season plays out to see what the totality of the run looks like.
 - ICH (entering the Snake River System)
 - Fall Chinook: 278% of 10-year YTD average
 - Fall Chinook Jacks: 338% of 10-year YTD average
 - Steelhead: 93% of 10-year YTD average

Lamprey – Dave Swank, USFWS

- Adult Lamprey
 - Approaching end of Adult Pacific Lamprey run.
 - Still running below 10-year average.
 - Daytime ladder counts: 54%
 - Suspect that when the season is over and nighttime ladder counts, LPS, and translocation trapping counts are added the number may not be quite as low.
 - Swank will be doing a deeper dive once all the data becomes available and will present this to TMT.

d. Power System – *Ben Hausmann, BPA*

- No update to report.

6. Set agenda for next meeting – September 11, 2024

a. Operations Review

Today’s Attendees:

| Agency | TMT Representative(s) |
|---|--|
| NOAA Fisheries | Kelsey Swieca, Trevor Conder |
| Oregon | Erick Van Dyke |
| Washington | |
| Kootenai Tribe | |
| Colville Tribe | |
| Umatilla Tribe | |
| Yakama Nation | Keely Murdoch, Tom Iverson |
| Bureau of Reclamation | Chris Runyan |
| Army Corps of Engineers | Doug Baus (Chair), Julie Ammann, Lisa Wright, Aaron Marshall |
| US Fish & Wildlife Service | Dave Swank |
| Idaho | Jonathan Ebel |
| Montana | Brian Marotz |
| Spokane Tribe | |
| Nez Perce Tribe | Jay Hesse |
| Warm Springs Tribe | |
| Confederated Salish and Kootenai Tribes | |
| BPA | Tony Norris, Ben Hausmann |

Other Attendees (non-TMT members):

COE – Dan Turner, Tiffany Dixon, Jessika Solleder, Catherine Dudgeon, Chris Peery

BOR – Eric Rothwell

BPA – Carolina Andes

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Clearing Up – K.C. Mehaffey

NPCC – Kate Self