

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

February 5, 2025

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/2025/>. 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 from January 8; the facilitator's summary was approved pending a minor edit from Charles Morrill, WA. The summary from January 22 was also approved; official minutes will be reviewed at the next TMT meeting.

Chum Operation – Doug Baus, Corps, provided an update on the current conditions and forecasts for chum. The incubation phase (coordinated by TMT on December 18) set a minimum tailwater elevation of 11.3 feet at Bonneville Dam (BON) until midnight April 9, unless otherwise coordinated with TMT. Chum operation details are posted on the TMT website. BON at 0700 hours this morning had a tailwater elevation of 11.4 feet, with a total outflow of 122 kcfs.

The RFC inflow forecast over the next 10-days shows a low of 110 kcfs on February 5 and a high of 118 kcfs on February 6, holding there through the rest of the 10-day period. Doug highlighted below average inflow forecasts for February and March. The current Water Supply Forecast (WSF) for The Dalles (TDA) is 76 maf, or 85% of average. The official WSF will be presented at the next TMT meeting.

Tony Norris, BPA, reported that with dry conditions and inflows into Grand Coulee (GCL) dropping in February, BON is expected to run close to chum minimums to conserve water and GCL is expected to draft across the month to support those minimums or the Hanford Reach minimums (whichever controls at the time). Monitoring of stream flows and water supply remains ongoing.

Chris Runyan, Reclamation, emphasized the drying forecast, noting potentially more water that GCL may need to provide for chum incubation flows. He added that preliminary numbers are showing drum gate maintenance will not be triggered this year.

Kelsey Swieca, NOAA, reported no chum have passed BON since before the new year, as expected. Charles reported there are no recent observations on emergence from spawning in the Ives/Pierce area; some information may be available at the next meeting from the Hamilton Creek/Springs trap. He noted that the emergence and timing data from Hamilton Creek/Springs can't be used as a true index for emergence in the Ives/Pierce area due to the wide in-gravel water temperature differentials between the spawning areas.

Flood Risk Management (FRM) Shifts – Kasi Underhill, Corps, presented on the FRM shift coordination process and February estimates, her detailed presentation is posted to the TMT website. She highlighted the quick timeline for FRM coordination and the process for calculating shifts, as well as the implications of shifts on FRM and potential benefits for fish. The Corps proposed a 50% allowable shift at Dworshak (DWR) to maintain flexibility for potential runoff events and showed the estimated shift using early bird (not final) Water Supply Forecasts (WSF). A Brownlee (BRN) shift is not possible at this time because the WSF exceeded the threshold of 5.8 Maf. DWR also has a WSF threshold but is currently below it.

Questions were raised from TMT Members regarding the benefits of shifts, thresholds, and the impact on local flood risks. Kasi clarified that shifts aim to manage water levels to potentially benefit fish by increasing spring flows in the Snake River while maintaining flood risk levels. She also noted that the dated thresholds could benefit from being restudied. Finally, early refill is triggered at DWR by a mechanism called Flood Control Refill Curve (FCRC), which aims to ensure a 95% chance of refill at DWR. FCRC evaluates the expected inflows into the reservoir and minimum outflow requirements. Refill prior to April 30 can also be triggered by system refill, which can be talked about in depth at the March meeting.

Input from TMT members including NMFS, ID, and WA indicated support for the proposed Dworshak shift, emphasizing the potential benefits for spring flows in the Snake. No TMT members noted concern with the proposed shift. Kasi noted that she will present updated information at the next TMT meeting and appreciates getting input from TMT members in real-time at the meetings. Thursday afternoon this month is the latest that input can be provided before decisions are made on FRM shifts.

Operations Review – Reservoirs: Chris reported on Bureau of Reclamation projects:

- **Hungry Horse (HGH):** The project received 0.5-1 inch of precipitation last week, with another potential inch of precipitation in the 10-day forecast. The 3-day average inflow was 0.63 kcfs, with inflows at 61% of average last week. Outflows yesterday were 3.35 kcfs with a midnight elevation of 3,517.2 feet. The project drafted about 1.8 feet last week and continues to draft, with storage at 99% of average for this time of year. HGH continues operating to meet Columbia Falls minimum flows (3.5 kcfs at Columbia Falls, 0.9 kcfs directly below the dam). The new February forecast will be available soon and is expected to drop from last month.
- **GCL:** Inflows yesterday were 48.8 kcfs, with inflows at 76% of average over the last week. Outflows yesterday were 69.1 kcfs with a midnight elevation of 1,286.9 feet (3.1 feet from full). Storage is at 125% of average and GCL continues to operate to conserve water and meet BON chum incubation and Hanford Reach levels. Drum gate is unlikely to be triggered this year due to the dry conditions and will likely occur next year; current operations are effectively managing the situation.

Alexis Mills, Corps, reported on Corps projects:

- **Libby (LIB):** Midnight elevation was 2,410.5 feet, with inflows of 1.3 kcfs; the project is on minimum outflows of 4 kcfs which are expected to remain for the time being. The WSF has dried up from last month, February's end of month elevation is expected to be higher than the current forebay level.
- **Albeni Falls (ALF):** Midnight elevation was 2,051.8 feet, with inflows of 9 kcfs and outflows of 10 kcfs. Lake Pend Oreille is in the winter operating band between 2,051-2,052 feet.
- **DWR:** the project is well below FRM elevation at 1,523.6 feet, with inflows of 2 kcfs and outflows at a minimum of 1.7 kcfs (expected through February).
- **Lower Granite (LWG):** Midnight elevation was 734.4 feet with the project passing inflows as usual at 26 kcfs; this is expected to hold in the mid-high 20s through the 10-day forecast.
- **McNary (MCN):** Midnight elevation was 338.9 feet, with inflows of 92 kcfs and outflows of 86 kcfs.
- **BON:** Midnight elevation was 73.5 feet, with inflows of 118 kcfs and outflows of 118 kcfs. The project tailwater is averaging near the minimum of 11.5 feet and is expected to remain there through the 10-day forecast.

Water Quality: Alexis reported that projects throughout the system are right about 100% TDG; there has been no forced spill yet in February.

Fish: Kelsey reported that a couple of adult steelhead have been passing each day over BON the past couple of weeks. Dave Swank, USFWS, provided a summary of adult lamprey passage at BON for 2024, including final corrected Lamprey Passage Structure (LPS) counts and BON escapement. Approximately 22,000 adult lamprey passed BON observed via daytime window counts (24% of total passage); the total estimated passage including nighttime window and LPS (42%) counts was over 91,000. Additionally, 14% of the total passage was from translocation counts, with over 10,000 fish collected by CRITFC in their translocation program. Dave noted that the new Bradford Island B Branch LPS trap was particularly successful in its first year.

Power System: Tony reported cold temperatures in the region, and BPA continues to meet load. There are no concerns at this time.

Questions or Comments from Non-TMT Members – Erin Cooper, FPC, noted that she would appreciate continued presentations on the FRM shifts at TMT.

**The next scheduled TMT meeting will be in-person on February 19, 2025, at 9:00 AM.
A DS Consulting Process Meeting will follow the business meeting.**

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, February 5, 2025
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 Summary and Minutes

a. January 8 Summary and Minutes, January 22 Summary (Minutes Pending)

- January 8 Summary and Minutes
 - Last paragraph of the summary, starting with "Kelsey Swieca, NOAA", Charles Morrill, WA, requested to remove the words "in the run" at the end of the second to last sentence of that paragraph.
 - Pending this edit the January 8 documents were approved.
- January 22 Facilitator Summary
 - No edits for the January 22 Facilitator Summary, approved.

2. Chum Operations - Tony Norris, BPA; Chris Runyan, BOR; Kelsey Swieca, NOAA; Charles Morrill, WA; Doug Baus, Corps-NWD

- TMT Coordinated Chum Incubation at the December 18 meeting
- Incubation Start Date: December 19 @ 1:00 pm
- Incubation End Date: April 9 @ midnight
- Spring Spill @ BON: April 10

a. Bonneville Dam (BON) – Hourly Data – *Baus*

- Tailwater Elevation (Hour 7): 11.4 feet
- Outflow: 122 kcfs

b. NWRFC – BON Inflow Forecast (10 day) - *Baus*

- BON Inflow Forecasted:
 - Low: 110 kcfs (Feb 5)
 - High: 118 kcfs (Feb 6)
 - Inflow will hold around 118 kcfs for the rest of the ten-day period

c. NWRFC – BON Inflow Forecast (45 - 120 day) - *Baus*

- For the rest of month of February there is a below average forecast.
 - Black line is well below 50% climatology (green line).
- February BON Inflow Forecasted:
 - Low: 108 kcfs
 - High: 126 kcfs
 - Average: 150 - 176 kcfs
- March BON Inflow Forecasted:
 - Low: 119 kcfs
 - High: 135 kcfs
 - Average 158 – 202 kcfs

d. The Dalles (TDA) Official Water Supply Forecast

- April – August
 - 76 maf
 - 85% of average
 - Official Water Supply will be available at next TMT meeting, final forecast is available COB February 5.

e. BPA Update – *Norris*

- With dry conditions and inflow into GCL dropping in February, BPA expects to run to the chum minimum to conserve water.
- Expect GCL draft to support the chum minimum or the Hanford Reach minimum, whichever controls at the time.
- BPA will keep a watch on streamflows and water supply moving forward.

f. Reclamation Update – *Runyan*

- Runyan echoed the drying forecast and the potential for more water that GCL would need provide to meet chum incubation flows.
- Preliminary numbers for GCL are showing that drum gate maintenance will most likely not be triggered for this year. That water would not be coming out to draft.

g. NOAA Chum Update – *Swieca*

- As expected, no chum have passed BON since the new year.

h. Egress out of Hamilton Creek: Washington Update – *Morrill*

- Washington does not have any observation, or information, on emergence out of the Ives Pierce area.
- Trap with samples that monitors emergence and immigration from Hamilton Creek Springs
 - The trap will be in the process of setup the first of next week.
 - When TMT meets next Morrill may or may not have data, but the trap will be operating and being checked.
 - Trap will be checked 3-4 days/week until they break a preliminary number and then they will try to operate the trap 4-5 days/week.
 - When this becomes available Morrill will be able to share it.
- Reminder: Although we get emergence and timing out of Hamilton Springs it cannot be used as a true index for the Ives Pierce spawning area. There are wide differentials within the gravel pockets where the fish can spawn.

3. Flood Risk Management Shifts – Doug Baus, Corps-NWD; Kasi Underhill, Corps-NWD; Tony Norris, BPA; Chris Runyan, BOR; and Kelsey Swieca, NOAA Fisheries

a. FRM Shifts - *Baus*

- There were questions last month regarding the shift procedure.

b. Shift Procedures and February Estimates - *Underhill*

- Underhill provided the presentation because she had heard that there was some confusion and a desire for additional coordination with the shifts. She said that she wanted to make a commitment to be available for TMT for shift coordination whenever there is a month that would have a shift.
- POC/Team Information
 - USACE Northwest Division Hydrologic Engineering Team
 - Creates FRM guidance and coordinates shift with fellow agencies.
 - Kasi Underhill
 - 503-808-3950; Kasi.A.Underhill@usace.army.mil
- February Timeline
 - Coordination is done on a tight timeline.
 - The Hydrologic Engineering team receives their final Water Supply Forecasts (both Canadian and US) by COB Wednesday, February 5.
 - Final data on FRM is available on Thursday, February 6.
 - Calculations are done for QA on Thursday, February 6.
 - FRM Data is due Friday morning, February 7, posted on the website.

- The team tries to get an idea from Idaho Power (IPC) and Walla Walla District on whether they would entertain a shift.
 - The team looks for opportunities to shift as early as possible.
 - Sometimes the Water Supply Forecast (WSF) is not available right away so they will use Early Birds to inform the coordination and decisions.
 - Then the team has a meeting with BOR to see if they would accept any shifts.
 - Sometimes there will be one large meeting.
- Look for opportunities for shift
 - ESP models for benefits
 - Last month there was some difference between the ESP traces and modeling differences showing benefits at Brownlee (BRN).
- Shift Calculation
 - Amount of storage that can be shifted is limited by a max allowable shift which is dependent on WSF.
 - All FRM has to return to the unshifted 30 April FRM.
 - Barring early refill.
 - If there is a shift at Dworshak (DWR) and there was a refill on 15 April, we would not be able to get back to the 30 April FRM.
 - Shift not allowed over a certain WSF threshold.
 - We bumped up against this for BRN this month.
 - Latest WSF went below the 5.8 maf at BRN, but they are not going to look at going to a shift. It has been floating around 5.9 to 5.75 maf. Too high for comfort for FRM and it is at the threshold and so they would not entertain a BRN shift.
 - We are below the threshold at DWR (3 maf).
- Earlybird Shift Plots
 - The Corps is proposing:
 - No shift at BRN
 - 50% of allowable shift at DWR
 - These are based on early bird, not final numbers.
 - This is not currently showing a change in operations.
 - Walla Walla has let them know that current conditions do not show getting into the 50% shifted range but it allows for flexibility at DWR in case there are changing conditions.
 - If TMT did not like the 50% shifted range, no shift and/or 25% shifts were also available.

- The 50% shift was shown instead of the Full shift because it was showing with a full shift, and the water was there the amount of draft for 30 April was too extreme for comfort in the modeling.

Tom Iverson, Yakama Nation, said that Underhill had introduced this with the Corps trying to get benefits from the shifts. He said that it was not clear to him what the benefits were for, if they were for hydropower generation, flexibility, or for fish benefits. He said that it was not clear since you end up at the same spot on April 30. He said that it is not clear on where the benefit lies in doing these shifts.

Underhill said that the entire concept of the shift is that we are shifting the FRM space around in the system. She said that we do that so that if the conditions were there, if we do get the water at DWR, for example, it allows DWR to be a little higher in the pool. If we do get early refill, they are pushing a bunch of water out from April 15 to April 30. However, if we get early refill instead, it allows the reservoir to be higher in the pool when we start refill. The benefit is that you have a little more water for temperature augmentation later. The reason they can do this is because GCL becomes a little deeper, they are moving that space around. Everything that Underhill would be presenting to TMT for options for shifts would be kind of the same level of flood risk, it is the same concept, it does not impact the flood risk. It is just hopefully moving the space around so that in case conditions change it could be a little higher in the pool at DWR.

Iverson said he thought that addressed his question, what he heard is what the Corps is doing is trying to manipulate the system to have the most water in the Snake River in the early season, to ensure that we have as much water in the Snake River for the fish season as possible.

Underhill yes, while maintaining the same amount of flood risk.

Iverson asked if that was why BRN is included in these shifts.

Underhill said yes, but not for this month because we are over that WSF threshold, or close enough that the HE Team would not be comfortable shifting space here.

Jonathan Ebel, ID, said going back the thresholds, he asked where the thresholds come from, for what purpose is there a 5.8 maf at BRN.

Underhill said that they come from a 1999 document, the last thing that she could find was in their SOP for FRM. She said that in her opinion this probably needs to be restudied because things have changed, and things should get restudied occasionally. She said that the theory behind the thresholds is that if they are saying that shifts should maintain current levels of flood risk and we get too high, both for system and local flood risk, and we think that there is a possibility that we would be impacting that FRM for system and local we could end up in a situation where there is not enough space at those reservoirs to be able to control for a flood. She said that she thought that with the discussion this year it is worth a restudy.

Ebel said that he supports the restudy and a lot at TMT think that FRM could be updated basin wide to acknowledge changing conditions. He thanked Underhill and said that it is kind of confusing to him because when we think about BRN, it is local, it is operated differently, and the shift has a number of uses to benefit fish or operational flexibility for

IPC and it seems like local flood control goes out into the Hells Canyon and the focus is on Lewiston or backing up into Weiser. He said that was great, he will take a look into that as well. Ebel asked if they take into account in the flood control though processes, that DWR is down in the 1520s.

Underhill, said yes, right now DWR is off the graph right now. She said right now, we are showing that if conditions do not change, the shift would have no impact. However, they are hoping they will provide flexibility in case conditions change. She said that it is still early in the season and allowing the flexibility to be there in case the conditions change. If they wait too long to grant that shift it can be difficult for GCL to pivot and change its operations, not necessarily the case right now but she said that they would look to BOR if next month we said we do not want a shift in FRM this month because it would not show any change in actual operations at DWR, then next month we could have that discussion about if it were too late to do the shift for DWR, or can GCL could pivot and get the extra feet out. It could probably happen, but she would need to ask.

Ebel said he was asking for a broader flood control system flood control thought processes in the context for his question. He said having the shift at DWR, with our goals, because we have to return to the April 30 FRM, drafting the second half of April would probably have a notable benefit to Snake River fish. He said in this case when you do the shift at DWR the Corps is getting the flexibility to capture for example a rain on snow event without having to put that water out in March. He asked if that was one such scenario.

Underhill said yes, or like an early temperature rise. It is to stay above the line and capture some of that just in case.

Tom Lorz, Umatilla, asked what triggers or does not trigger early refill. He said that seems like it could, like Ebel said, if you do not do early refill, that could be additional water in the first part of March or if it does trigger early refill that could allow for maybe more water towards the end of May. He asked what is the mechanism for what triggers early refill.

Underhill said that if it would be helpful, she could put together a presentation at the next TMT meeting she presents at in March. She said that the math can be a little fun. In the Water Control Manual for DWR that walks through this step. She said basically what the math is trying to do is ensure a 95% chance of refill at DWR. There are two things going on here; the 95% chance of refill where they are looking at what flow Walla Walla thinks will come in the reservoir; and what the minimum flow out is required to be. It is like doing a mass balance, if we do not start refilling on this day, we do not have a 95% chance of refill. There is also the concept of system refill. There is Initial Control Flow (ICF) that is looked at for the system and that is based on a chart. Underhill said that they look at what their flow that they are going to control the system to is and when they are going to exceed that flow; the date at which that happens. If the hydrograph looks like it just shifted forward, if it is coming off really quickly, they want to be responsive and get that water. She said that there is a system refill date and then there is a more local refill date that is guided by a Flood Control Refill Curve (FCRC). She said that she has some presentations that she could give on those two concepts. She said that she was also available to be contacted individually.

| *from Erin Cooper to everyone: 9:37 AM*

| *I'd be interested in more info on this topic!*

Morrill said that he appreciated the presentation. He asked if the ability to use the FRM shift really depends on the water supplies for that year.

Underhill said that was correct, it depends on the WSF and also operationally what the reservoirs can accept.

Morrill said that was what he thought. He said that Ebel had noted that DWR is at 1520' right now, so we are below the FRM, but increasingly FRM, if we get the additional water that means we can store it and possibly use it for fish benefits.

Underhill said that was correct. She added that when she say operationally what the reservoirs can accept, there is a draft rate limit at GCL, there are all kinds of maintenance issues, and some other things that can get in the way of shift being able to happen.

Morrill said that it was helpful to him, and he felt for his colleagues. He said that they are obviously interested in diving in and fully understanding this. He said that this is a major step forward with her presentation.

Erick Van Dyke, OR, said his question came up when she was answering Ebel and Lorz' questions. First, he wanted to orient himself to her graph. He stated that this is not what the current elevations at either of the projects is, the slide is based on a ceiling of how much water could be stored at these times in these reservoirs.

Underhill said yes. She said that she thought ceiling is a great word for it. They call it the upper rule curve. It is the highest elevation that the reservoirs could possibly be at. She said that it may be helpful in future months if she put the actual elevation on the plots.

Stranz said that there was a chat that there interest for more from Underhill on this topic.

Underhill said that she will try to continue to be available and repeat this during drawdown. She said that if she can plan on doing this at the beginning of the months; January, February, March and April (which can be a little too late to do a shift, but she will still present for TMT).

- Shift Information
 - Upon looking at the information available Underhill felt that it could be changed for better readability. If she makes changes they will also be rolled out at TMT.
 - Where to locate shift information:
www.nwd-wc.ucase.army.mil/report/colsum/
 - If the pdf is two pages long there is a shift active.
- How to Read This Table (DWR)
 - Underhill provided callouts in presentations slides to describe the language of the table.

- The reason the system and local at DWR is important is because the concept of shift at DWR is that you can shift up to the local FRM. To have an allowable shift the local has to be less than the system.
- How to Read This Table (BRN)
 - Need to reevaluate what is left over – DWR gets precedence over shift. If DWR ate up all the available shift at that was available at GCL no shift would be left over for BRN.
 - There was an error – last month there was a 50% shift, but it is showing double what it should be. They will be correcting that for this month.
 - If there are any questions about the tables, contact Underhill.

Stranz said a while back Underhill had talked about the shift that she was proposing. She asked if in case TMT members had any perspective to share with her what does the timeline look like and what would be the best process.

Underhill said that she would love any feedback during this meeting if at all possible. She said that their final calculations are on Thursday afternoon and that is when they are processing everything. If TMT had any absolutely yes, absolutely not, or something Thursday noon would be a good deadline. She said that she would definitely love to hear perspectives or desires from everyone at this time. She reiterated that their plan going forward is to do the 50% shift, just to have the flexibility for DWR but if there are people who are opposed to that she wanted to know.

Runyan said that he wanted to mention a few things that he had noticed. He said with this shift, it is a 1:1 shift, which means that if DWR is able to utilize the shift there would be potentially that much more water out of DWR during the mid to late April period, which may benefit downstream juveniles moving through the system at that time. He said that was the primary reason why this operation is even in the WMP. He said that he knows there was quite a bit of miscommunication last meeting, but he thought that TMT are all getting on the same page. He noted that same amount of volume could be potentially less coming out of GCL although that potential volume shifted between the two are the same, the proportion of the volume when compared to the total flow in each of the reaches in the Snake compared to below GCL are going to be different. In general, the increased volume out of DWR could increase flow in the Snake greater than the reduction of flow out of GCL. Reclamation is looking to Fish Managers (FM) to give a biological perspective on which one is more beneficial. The WMP is written to encourage the Action Agencies to accept the shifts that could increase flows on the Snake River but from TMT, last meeting, he is not sure that is clear anymore. Runyan mentioned a few caveats with GCL. Number one, if GCL stays high this year, then that shifted amount may impact our volume and then we will know that volume because we know what the volume amount of DWR is so we can know that volume. Number two; is in the event that GCL is drafted below the April 15, for other demands such as chum or Hanford Reach, there may be no impact to GCL from this shift. From BOR's perspective there is not really a downside to accepting it, only a potential upside to DWR. Runyan said that those are two potential scenarios, no one know which will happen, but we do know that for DWR it could increase flows in April, or it may help DWR adapt to a drying forecast and allow for a higher probability of refill. He said that it all comes down to it being a fish

operation, to benefit fish. It will come down to the FM perspective on if the benefit that you may get with DWR and Lower Snake migrants during that time would outweigh the potential impact at GCL. He said that was what Reclamation is looking for.

| *from Charles Morrill to everyone: 9:51 AM*

| *Thanks Chris, I found your summary very helpful ...*

Kelsey Swieca, NOAA, thanked Runyan and especially Underhill for showing TMT the data and things that have probably confused a number for some period of time. She said that Runyan was correct that in the WMP, from NMFS' perspective, the language, which is very clear about what the intent of these shifts are and that is to increase, or have the potential to increase, spring flows in the Snake River. She said from NMFS' perspective that is the intent of this operation and that would be the motivating factor behind any recommendation that we provide. She said that it is really good to understand what the impact on GCL may or may not be. She thanked Runyan for summarizing those. She said that she was happy to offer NMFS' perspective but she saw that there were hands popping up and so she would hold off in case there are additional questions before they offer that.

Stranz asked if there were any more clarifying questions.

Van Dyke asked some context questions to get a better feel for the detail of how Water Management fits here. He said that this is a shift of water to store it somewhere. He asked Runyan if the process changes how the lines are drawn for all the periods that we have not arrived at yet, that are still in the forecast. He asked how the unexpected weather events and water supply fit into that detail. He said that there was a lot of "depend" that were described and implied by others that we understand happen but knowing what we get when we make the shift is what the FM are trying to put their heads around. He asked Runyan to describe if it would be different on how the lines would be drawn using the rule curves when we make a shift or if it is steeper or shallower slopes that we would anticipate.

Runyan said that they would adjust based on how the forecast changes, which it will change, we all know that. He said last month we had a different forecast; the shift was different this month, the same thing, it is going to adapt. But this is what we know right now. Based on current conditions today this is what the shift would look like. He asked if that answered Van Dyke's question.

Van Dyke said that he thought so. He said that there is a lot of uncertainty still. He said that we are looking at the ceiling here for a rule curve. He said that it would be helpful to know the details of if the upper rule curve can change, and why it changes, in order for the FM to get their heads wrapped around what they think they can recognize or not.

Runyan said that one thing he would like to try to explain the uncertainty is the RFC has 45 traces of potentials of conditions that we may see. They are missing one, which is this year. We do not know what or how it is going to play out. So, we have a range, this is our best guess. He agreed that the uncertainty is there and certainly in February it is higher than it will be later, but it is the educated decisions we all have to make on balancing the system without the perfect information.

Underhill said that she thought it was beautifully put. She said that not only can the forecast change. She said that it will change today, they are getting the officials, and they will set these rule curves for this month. She said it will definitely change for next month. She said that the timing of the runoff will change the refill timing. She said that she would say that more often than not there is early refill at DWR before April 30. At least that is what she has seen in modeling so the timing of the runoff can change, the weather, and how much water we actually get can change.

Stranz asked if there was anyone from DWR that would like to add.

Willow Walker, Corps, said that she was on and happy to answer any specific questions. She said that the BOR and Underhill have both done a good job explaining from a system perspective.

Stranz circled back to Swieca to provide perspective.

Swieca said she would like to caveat this by saying that this is NMFS' perspective under the amount of uncertainty that we all understand is in the system. She said that from NMFS' perspective they are supportive of a DWR shift, as had been presented by Underhill in the figure of 50% shift for the reasons that have been discussed at today's meeting, including the potential to have some additional water in the springtime in the Snake River.

Ebel said that with DWR, we consider both parts of the Snake, considering them as different is important, but with DWR he would support the shift. He said that he thought that it is reasonable to have this as high as possible. Basically, to defend or capture an odd runoff event to end up higher. He said that he thought it to be more likely in that part of the system to occur so he will take the shift. He said would be curious as to what a 100% would look like, but the 50% is reasonable to him.

| *from Charles Morrill to everyone: 9:58 AM*

| *are we polling for perspectives from TMT members ?*

Stranz responded that she is not polling, she was just asking because Underhill had mentioned that if there is input that TMT would like to provide so she was creating that space.

Morrill said that he would interject and say that Washington certainly supports the move. It has the potential for providing additional outflow from DWR for fish needs. He said yes that Washington appreciates the opportunity to look at this as a potential operation.

Stranz asked if TMT had additional comments or concerns.

Ebel said more broadly, the discussion this year on this is, and Runyan had started to get there, because GCL is very high and the FRM elevation at GCL is at the top. He said that this is what is spurring this conversation because that is what sets up the scenario where there could be tradeoffs for fish at different parts of the system, which in an average year for the Columbia side of the system is not usually the case. He said moving forward he really appreciates this discussion and thinks that it will yield some clarifications on the conditions or it started the discussion and we will look at some clarifications on the conditions in which these shifts happen and how to do them so that they maximize

benefits of fish. He said that he is just kind of acknowledging that it seems to be a rare situation where this type of thing would be questioned.

Stranz thanked Underhill and said that TMT looks forward to having her at the next couple of TMT meetings.

➤ Underhill will move forward with the recommended 50% Shift.

Underhill said that someone had a question of what it would look like with 100%. It would be 228 kaf with an elevation somewhere between 68 and 70 feet.

4. Operations Review

a. Reservoirs

Reclamation – Chris Runyan

- Hungry Horse Dam
 - Last Week Conditions: Received 0.5 – 1” of precipitation.
 - Future Conditions: Ten-day is showing another 1” potentially.
 - Inflows (3-day average): 0.63 kcfs
 - Inflows (week): 60% of average
 - Outflows (January 7): 3.35 kcfs
 - Midnight elevation: 3517.2 feet
 - Drafted: 1.8 feet since last week.
 - Storage: 99% of average for this time of year
 - Operations: Continues to operate Columbia Falls
 - Columbia Falls (2/4): 3.6 kcfs
 - Minimum (Revised): 3.5 kcfs
 - Below the Dam (S. Fork): 0.9 kcfs
 - BOR is working on an update forecast today and tomorrow there will be a new February forecast. This will adjust the minimum flows targets by a little. Runyan anticipates the forecast will drop from the prior month.
- Grand Coulee Dam
 - Inflows (2/4): 48.8 kcfs
 - Inflows (week): 76% of average
 - Outflows: 69.1 kcfs
 - Midnight elevation: 1286.9 feet
 - Feet from Full: 3.1 feet
 - Stayed flat across the week

- Lake Roosevelt Storage: 125% of Average
- Operations: Conserve water and to meet chum elevation levels below BON and Hanford Reach.
- Drum gate is unlikely at this point, still awaiting final FRM elevations. The expected elevations do not trigger drum gate this year. Drum gate triggers are meant to not do drum gate in a dry year, we are in a dry year.
 - If it is deferred, we will be in a drum gate year for 2026.

Corps – Alexis Mills, Corps

- Libby Dam (Lake Koocanusa)
 - Midnight Elevation: 2410.5 feet
 - Inflows (2/4): 1.3 kcfs
 - Minimum Outflows: 4 kcfs
 - Operations: Expect to remain at minimum for the foreseeable future.
 - WSF dried up from the previous month. February end of month elevation will be higher than current elevation and inflows are expected to remain low for February.
- Albeni Falls (Lake Pend Oreille)
 - Midnight Elevation: 2051.8 feet
 - Inflows: 9 kcfs
 - Outflows: 10 kcfs
 - Operations: Lake Pend Oreille is in winter operating band (2051 – 2052'), generally passing inflows.
- Dworshak Dam
 - Midnight Elevation: 1523.6 feet
 - Well below the FRM elevation
 - Inflows: 2 kcfs
 - Minimum Outflows: 1.7 kcfs
 - Operations: Expecting to hold minimums through February.
- Lower Granite Dam
 - Midnight Elevation: 734.4 feet
 - Inflows: 26 kcfs
 - Outflows: 26 kcfs
 - Operations: Generally passing inflows, expecting to hold in the mid to high-20s through the ten-day forecast.
- McNary Dam
 - Midnight Elevation: 338.9 feet

- Inflows: 92 kcfs
- Average Outflows (2/4): 86 kcfs
- Bonneville Dam
 - Midnight Elevation: 73.5 feet
 - Inflows: 118 kcfs
 - Outflows: 118 kcfs
 - Avg. Tailwater Elevation: ~11.5 feet
 - Operations: Expect to stay at minimums for the ten-day forecast.

b. Water Quality – *Mills*

- TDG
 - Right around 100% everywhere
 - No forced spill in February

c. Fish

Salmon – Kelsey Swieca, NOAA

- Adult Salmon Counts
 - Bonneville (Lower Columbia):
 - Steelhead
 - Couple passing each day over the last couple of weeks

Lamprey – Dave Swank, USFWS

- Lamprey Passage
 - Not much happening
- 2024 Lamprey Passage @ BON
 - USFWS has the final corrected Lamprey Passage Structures (LPS) counts and summary for BON escapement from the Corps.
 - 2024 Passage of Adult Lamprey (Basic FPC)
 - Adult (daytime window count): 22K
 - Only represented 24% of passage
 - Total Estimated Passage: >91K
 - Includes Daytime Window, Nighttime Window, and LPS
 - Window Count (day/night): 44%
 - LPS: 42%
 - Translocation Counts: 14%

- Jump of fish collected by CRITFC with their translocation program.
- Over 10K of these fish came from the new Bradford Island LPS trap.
- Resounding success, first year collected a large number of fish.

d. Power System – *Tony Norris, BPA*

- Cold temps in the region.
- Continue to meet load.
- Nothing to be concerned about at this time.

5. Set agenda for next meeting – February 19, 2025 (In-Person Vancouver)

Meeting Location

Vancouver Water Resources Education Center, 4600 SE Columbia Way, Vancouver, WA 98661

- a. Official Water Supply Forecast
- b. Chum Operations

Today's Attendees:

Agency	TMT Representative(s)
NOAA Fisheries	Kelsey Swieca
Oregon	Erick Van Dyke
Washington	Charles Morrill
Kootenai Tribe	
Confederated Tribes of Colville Reservation	Dennis Moore
Umatilla Tribe (CRITFC)	Tom Lorz, Pete McHugh
Yakama Nation	Keely Murdoch, Tom Iverson
Bureau of Reclamation	Chris Runyan
Army Corps of Engineers	Doug Baus (Chair), Aaron Marshall, Lisa Wright
US Fish & Wildlife Service	Dave Swank
Idaho	Jonathan Ebel
Montana	
Spokane Tribe	
Nez Perce Tribe	Jay Hesse
Warm Springs Tribe	
Confederated Salish and Kootenai Tribes	Tom McDonald
Bonneville Power Administration	Tony Norris, Ben Hausmann

Other Attendees (non-TMT members):

COE – Alexis Mills, Tom Conning, Kasi Underhill, Catherine Dudgeon, Eric Chow, Michelle Yuen, Willow Walker

BOR – Eric Rothwell

BPA – Tammy Mackey, Jaden Boehme

Washington Ecology – Thomas Starkey

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

EKI – Eve James

Grant PUD – Peter Graf

FPC – Erin Cooper

Clearing Up – K.C. Mehaffey

NPCC – Kate Self

Columbia Basin Bulletin – Mike O'Bryant

CHPM – Lance Beyer

Avista – Patrick Maher, Mike Dillon