

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 3, 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 – Official meeting minutes and facilitator's summaries from March 20 and 27 will be reviewed at the next TMT meeting.

Chum Operation – Doug Baus, Corps, reported that RFC inflow forecasts at Bonneville Dam over the next 10-day period show a low of 131 kcfs today April 3, and a high of 195 kcfs on April 7. Recent dry conditions and warmer temperatures will shift to precipitation; the 10-day weather forecast shows 1-1.5 inches in central Idaho, with a reduction in snow levels in western WA and OR (1-2,000 feet elevation). The trend of precipitation and lower forecasted snow levels continues through day 4, tapering off drier conditions by day 5 and through the remainder of the period.

Doug summarized that forecasted precipitation is fairly localized; the 10-day QPF shows precipitation to central Idaho (lower than winter volumes), eastern Oregon, and southeast Washington, with above average values for this time of year to ease up entering the spring months. The 5-day QPF shows a similar pattern.

The chum operation will continue as coordinated to date at TMT, ending on April 10 (at 0001 hours) with the start of spring spill at Bonneville Dam.

Charles Morrill, WA, added that weather conditions have been favorable enough to meet chum protection levels throughout the operation (without needing to draw down at Grand Coulee) despite the initial poor outlook for flows. NOAA and Reclamation echoed the appreciation for the ability to protect chum while keeping Grand Coulee refilling.

Spill Priority List – Kelsey Swieca, NOAA, reported the recommendations from Salmon Managers on the Spill Priority List (SPL) to determine how lack of load spill should be distributed on the system to be most beneficial/least harmful to fish. The recommendation for Levels 1 & 2 prioritizes spill at the fish passage projects, while that for Level 3 prioritizes projects that have a higher likelihood of being able to ameliorate harmful TDG levels to fish while balancing adult passage concerns at high levels of spill. She noted the following comments:

- The SPL becomes less relevant under new operations coordinated in the 2023 MOU with many the projects at 125% spill for 24 hours/day. Salmon Managers have already coordinated clarifying modifications to the document with the Corps and changes in formatting were made.
- Salmon Managers recognize that the ability to provide recommendations most beneficial to fish for balancing spill during lack of load conditions may be at odds with the AAs legal interpretation of the water quality standards; the Salmon Managers will provide recommendations most beneficial to fish for the AAs to consider.
- Salmon Managers understand that the SPL is primarily utilized in the spring under high flow and moderate temperature conditions, and this year is projected to be a fairly low flow year.
- The SPL is a living document that can be adjusted in season as needed.

Recommendations from Salmon Managers include:

- 1) Move John Day and The Dalles from the top of Level 2 to the top of Level 1, bringing the projects to 125% 24 hours/day as needed for lack of load spill.
- 2) Reorder the first four projects (priority levels 9-12) in Level 3 to reflect: The Dalles, John Day McNary, Ice Harbor.

Dan Turner, Corps, reported that the recommendation to reorder Level 3 projects can and will be implemented. He continued that the Corps has constraints with the state WQS and is not able to move John Day and The Dalles to Level 1 as recommended. He clarified that WA Ecology's 125% TDG standard is conditional on the GBT Monitoring Plan and ESA consultation; the FOP is the document that outlines spill operations as consulted on. Per the FOP/ESA consultation, The Dalles is at 40% spill rate for the spring, and John Day has a 40% restriction for the day and 125% criteria for nighttime hours. From the Corps' perspective, these projects cannot operate to 125% TDG 24/7 in level 1 of the SPL.

Thomas Starkey, Washington Ecology, asked why 40% is a disqualifier? Dan noted the 125% TDG criteria is conditional on operating "in accordance with ESA consultation." The FOP is the document that tells the Corps how to operate in accordance with ESA consultation; the 125% TDG 24 hours/day is not applicable at projects where FOP spill is less than that. Thomas noted that the 40% shouldn't be confused with anything in the WA administrative codes, which state that spring WQS are 125% TDG. The Corps, WA Ecology, and OR DEQ will continue this discussion offline.

In response to a query regarding the 130% at Level 3, Dan reiterated that the listed 130% is only when in forced spill, at levels that cause WQS exceedances; the intention is to spread TDG across the system and avoid "hot spots". A modification to the text for clarification could be helpful. TMT Members brought up other possible modifications to the SPL, including removing and clarifying descriptor language on the levels. They will continue the conversation on SPL at the April TMT Process meeting.

- **ACTION:** The Corps will reorder the first 4 projects in Level 3 per the Salmon Managers recommendation.
- **ACTION:** The SPL will be added to the next TMT Process Meeting on April 17.
- **ACTION:** Prior to the Process meeting, the Corps and BPA will discuss revisions with their policy teams.
- **ACTION:** The Corps, WA Ecology, and OR DEQ will also touch base on the SPL and the WQ agency reps will be included in the Process Meeting.
- **ACTION:** TMT Members will revisit WQS and FOP language.

Dworshak Update – Willow Walker, Corps, provided an update on operations at Dworshak Dam. Snowpack in Southern Idaho and the upper Snake River is normal to above normal, the middle Snake is normal, and Northern Idaho at the Clearwater is in the 60% range of normal snowpack; overall still well below average. Willow noted that last year had more mid-low elevation snowpack.

Looking at the 10-day forecast, there is some precipitation for most of Clearwater basin (over 2 inches) and temperatures are forecasted at above freezing in most areas. Walla Walla expects to see a mid-level runoff event (normal for this time of year), which will bring water into the reservoir. Temperatures will cool then potentially warm at end of the 10-day.

The revised refill outlook graphic has incorporated past feedback from TMT Members for clarification. The most likely refill date is July 4, running at minimum discharge through the spring. If conditions were to improve (6 inches in April) refill could occur earlier in June, which would result in a better start for

temperature augmentation, although this is not probable. Willow clarified that the standard goal for refill is typically around June 20, however it is more commonly at the end of June/beginning of July and depends on when it is safe to refill. Willow confirmed that second snow flight is scheduled for next week, weather permitting.

Jay Hesse, Nez Perce Tribe, noted that keeping Dworshak at minimum discharge through the entire spring period will mean that two major parts of the Snake River basin, the upper Snake, and the North Fork Clearwater, will have minimal contributions to the spring freshet. This is a result of low snowpack and reservoir management.

In response to a query about releases at Dworshak to support hatchery releases, Jay noted that the first release occurred this week without flow augmentation due to a limited water supply. The second release from the Clearwater Anadromous Fish Hatchery and Dworshak Hatchery is scheduled for April 11. There will not likely be a flow augmentation boost at that time; conditions will be monitored to determine if augmentation from Dworshak may be necessary to assist fish leaving the system. The Corps Walla Walla needs at least 2 days' notice to coordinate, so will need to know by Monday April 8. ID and Nez Perce Tribe will monitor the situation and let TMT know by COB Friday, April 5, if a TMT meeting is needed Monday morning to formally request Dworshak flows for hatchery releases.

Other Updates – Tony Norris, BPA, reported that when spill started this morning there was an accidental exceedance of MOP at Ice Harbor between roughly 6-7:30 am. The exceedance was temporary and is now under control.

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 April 10, 2024, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, April 3, 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 – March 20 (March 27 Pending)

- Charles Morrill, WA, had clarification on Summary there is a difference in the water temperatures between Hamilton Springs and the Ives-Pierce complex. Trapping from Hamilton Springs is only an indicator and not an accurate representation of water temperatures between Hamilton Springs and the surrounding areas. He will send the edits to Colby Mills and TMT will approve both March 20 and 27 notes next week.

2. Chum Operations – Doug Baus, Corps; Chris Runyan, BOR; Charles Morrill, Washington; and Kelsey Swieca, NOAA Fisheries

a. NWRFC – Bonneville Dam Extended Inflow Forecast

- 10 – Day Forecast
 - Low 131 kcfs (April 3)
 - High 195 kcfs (April 7)

b. NWRFC – 10 Day Meteorological Forecasts

- Expecting a change from nice weather.
- Day 1 - 4:
 - Starting to get precipitation in measurable amounts.
 - Central Idaho: 1 – 1.5 inch of precipitation
 - Forecasted snow level reduction in W. Washington and W. Oregon to 1 – 2k foot elevation.
- Day 5:
 - Trend begins to change; precipitation begins to taper off.
- Days 6 – 10:
 - Less precipitation for the remainder of the period

c. NWRFC – 10 Day Forecast Precipitation Summary

- 10-day QPF (Percent of Climatology) -- as it relates to percent of average
 - Precipitation is localized to central Idaho, eastern Oregon, and southeastern Washington.
 - Even though these values look good, they do taper off as depart from the winter months and move into spring.

- Volumes are relatively lower than experienced over the winter.
- Central Idaho: $\frac{3}{4}$ inch of precipitation over the 10-day period.
- 5-day QPF (Percent of Climatology)
 - Same pattern evident in the 10-day
 - Some above average precipitation in central Idaho, eastern Oregon, and southeastern Washington
- d. Summary and Comments of Chum Operations
 - **Note:** Chum Operations end April 10 with start of Spring Spill at Bonneville Dam.

Kate von Reis Baron, Chelan PUD, asked if the chum operation ends on the first hour of April 10, or does it continue through the day of April 10.

Baus said that it is a two part; there is the physical ending, and the procedural ending. As far as on paper, the operation ends on April 10 at 0001 hours. Baus noted that the physical reality of water in spite of what it says on paper when there are high flows the tailwater operation, in general, will start to increase. It is not because they have ended the operation, it is overall increased project outflows.

- Morrill noted that we have been fortunate with the way that the weather has played out. We have not had to draw Grand Coulee (GCL) down, GCL is still at a very significant elevation compared to where we thought we would be three months ago. He said that we have been able to meet the chum protection levels both during the spawning and the incubation periods despite a gloomy outlook for spring/summer flows. It has been appreciated.
- Swieca echoed Morrill's comments about the ability to support the chum protection measures this year and NOAA is looking forward to moving forward out of the chum operations and into the Spring Spill operations.
- Runyan said that as we all know that earlier in the year it was looking pretty dry. He said that it was very fortunate that inflows stayed up high and GCL is in a good position right now for the water supply that they have. He said that it could have gone the other way, we have had to make hard decisions, we did not have to do that this year. Runyan said we will see what next year brings but he is happy that this year played out very well.

3. Spill Priority List – Kelsey Swieca, NOAA Fisheries, and Alexis Mills, Corps

- a. 2024 Spring SPL – Swieca
 - The Salmon Managers were tasked with providing recommendations for how the Spill Priority List (SPL) and lack of load spill through the system should be distributed to be either most beneficial for fish or in some cases the least harmful for fish.
 - The Salmon Managers provided some overarching comments:
 1. This list has become less relevant under the new operations coordinated in the 2023 MOU – with a lot of the projects at 125% TDG spill for 24 hours. The Salmon Managers have already coordinated a number of modifications

- with the Corps to increase the clarity of this list under those new operations and the Salmon Managers are grateful that those recommendations were taken into account so that there is increased transparency to the list.
2. The Salmon Managers want to recognize that some of their ability to provide recommendations for what would be most beneficial for fish for balancing and distributing spill during lack of load conditions may be at odds with the Action Agencies (AA) legal interpretation of the Water Quality Standards (WQS). The Salmon Managers do recognize that, but they will provide those recommendations that they believe would be most beneficial for fish.
 3. This is projected to be a low flow year and as far as the Salmon Managers understand and have heard from the AA the Lack of Load conditions primarily occur in the Spring when flows are high, and temperatures are moderate. We do not expect a lot of that this year, so we do not expect that this SPL will be used very often.
- Levels 1 and 2
 - Salmon Managers were focused on prioritizing spill at fish passage projects.
 - Recommendations:
 - John Day (JDA) and The Dalles (TDA) be moved from the top of Level 2 to the top of Level 1, bringing those projects to 125% TDG for 24 hours.
 - Level 3
 - Salmon Managers focus was on prioritizing projects that had a higher likelihood of being able to ameliorate harmful, high TDG to fish.
 - As well as, from NMFS perspective, balancing some adult passage concerns at high levels of spill in Level 3, particularly Ice Harbor.
 - Recommendations:
 - Reordering of the first four projects in Level 3 to TDA (9), JDA (10), MCN (11), IHR (12).

Dan Turner, Corps, said as Swieca alluded to the Corps has some constraints with the WQS and they are not going to be able to move JDA and TDA to Level 1 at the recommended 125% TDG for 24/7. He said that he thought that TMT talked about this last week, but he was not around but if there were still more questions, he is more than willing to answer them or go through the logic again.

Stranz recommended that Turner go through the logic one more time as it is always helpful to provide the why.

Turner said that Ecology's 125% TDG Standard is conditional. There are two things, one is the GBT Monitoring Plan and that has been talked about but there is another condition for 125% TDG. Turner read it for clarity. *"In addition to complying with the requirements of this chapter, the tailrace maximum TDG criteria at hydropower dams shall be applied in accordance with Endangered Species Act consultation documents associated with spill operations on the Snake and Columbia rivers, including operations for fish passage. The Endangered Species Act consultation documents are those by which dams may legally operate during the time that the adjusted criteria in (f)(ii)(B) of this*

subsection are in use.” He said that is the condition order to spill up to 125% TDG otherwise it is 115% forebay/120% TDG that is in play. The FOP is the document that outlines the operation to spill in accordance with ESA consultation. For instance, at TDA it is a 40% spill rate for the Spring and JDA has a 40% restriction for part of the day but that means if we are above that 40% spill rate the 125% criteria is no longer applicable. It cannot go into Level 1 at 125% 24/7.

Thomas Starkey, Ecology, asked if Turner could walk him through why 40% spill is a disqualifier.

Turner said there is the condition in Ecology’s Standard “*In accordance with Endangered Species Act consultation documents*” and the FOP is how the Corps interprets and specify how to spill in accordance with the consultation documents. He said their reading of the Standard is if they are not spilling in accordance with the FOP they are not spilling in accordance with the ESA. Turner said that is the reading of the condition.

Starkey said that he thinks that the FOP being the ESA consultation document makes sense to him; however the 40% spill should not be confused with anything in WADOE administrative codes regarding the disqualification of the 125% if 40% is relative if it is a flood frequency, then that disqualifies. The gas caps are not applicable if it is above a 7q10 flow, if it is anything below a 7q10 flow there is certainly nothing in the administrative codes that would disqualify the 125%.

Jonathan Ebel, ID, asked Turner how he reconciles this when Lack of Load is considered involuntary and involuntary spill in the WQS do not apply to turbine capacity or maintenance-related spill. He asked why this does not apply to Lack of Load in this scenario.

Turner said that it does apply and that he was just referring to Level 1. Level 1 is the level where they spill up to but not exceed WQS. By Level 2, spill is above WQS. Just in Level 1 is the only time they are just considering meeting the WQS but not exceeding WQS. By the time you are in Level 2 you are in exceedance, and you are trying to manage TDG throughout the system during Lack of Load.

Ebel said that he thinks that he and Turner are going to talk past each other because the WQS is still biologically safe level 125% as being applied at all the other projects other than JDA, TDA and BON (because of a deferred maintenance cap). Ebel said that he does understand that Level 1 going back has usually been maximum FOP spill but just because that is true it does not mean that is the way that we always need to do it moving forward.

Jay Hesse, Nez Perce, said that it seems to him that TMT is making progress on reformatting the SPL table so that it is less confusing. There is still some work to do. He said that the descriptor under Level 1, that associates Level 1 with the WQS, seems to be a self-imposed definition for the category and not tied to any of the regulatory documents. He asked if that was correct and if so, it seems that we can get around a lot of the handwringing in reference to “which documents” just by deleting that definition out of Level 1. He said that he does not think that it is tied to anything regulatory. He asked if that is a possibility to help move us forward.

Turner said that is an interesting idea. He said that it has been their long-standing policy that Level 1 is the WQS. It is how the list has been used for decades. Turner said that it would be a change of what they have done, and he would want to go through the implications of that very carefully. He asked if anyone from BPA was available that could comment. He also said that there could be some considerations about what Level 1 means for BPA and Lack of Load.

Tony Norris, BPA, said that the whole idea of the SPL is that when they have Lack of Load conditions, they need to reduce generation and spill. It was a manner of giving Salmon Managers an opportunity to decide how that spill, or where that spill could be distributed within the WQS so the guidance that BPA get from the Corps is followed religiously by the operators when we experience Lack of Load conditions. He said that BPA manages Lack of Load spill within the water quality standard when they can; when they cannot, then there are other measures that they have to take related to Renewables Integration as well with Oversupply Management. Norris said again that guidance comes from the Corps and BPA follows it.

Turner asked if that explains why Level 1 has been defined as the WQS. He said to switch that definition he said that it would be weird to intentionally go over the WQS at some projects, while not spilling at the WQS at all of the projects.

Hesse said that he thinks that this is an aspect to consider and if it is just a self-imposed definition it seems to be restricting the Salmon Managers' recommendations that are at the heart of WQS at a general level. If we are trying to do the best thing for fish, we are getting hung up on a definition that is also generally applied to do the best thing for fish. Hesse said that it seems that the SPL table does not need to be constrained by that.

Stranz asked if Turner and others think that this a conversation they could take back internally and consider whether or not the AA are willing to think about the Salmon Managers' suggestion.

Turner said that they can keep the conversation going. They will take it back and talk to Policy and get with BPA and see if they can redefine what Level 1 means.

➤ **The Corps will take the Salmon Managers' suggestion back and talk with Policy and BPA to see if they can redefine what Level 1 means.**

Swieca responded as FPAC chair. She said that she thinks that the Salmon Managers are interested in diving in and continuing to improve the SPL table, the clarity associated with it, and understanding the justification behind some of the constraints. She said that she thinks that would be a conversation that would be primed for a TMT Process Meeting. The Salmon Managers have every intention of requesting that because she thinks that the Salmon Managers could use a little clarity and that would be the best venue for those conversations to occur.

Stranz said that was noted for the April process meeting. She asked that Turner and others at the AA if they could have their internal conversations ahead of the process meeting.

Scott Bettin, BPA, seconded the request to retreat to talk and come back to talk at the next TMT or TMT process meeting.

➤ **Add Agenda item to TMT Process Meeting.**

Julie Ammann, Corps, said that she wanted to remind TMT that we continue to have the SPL discussion every year however she wanted to make note that the spill operations have changed pretty dramatically over the last ten years. The operations that we had in place before were not necessarily operating the FOP spill up to the State Standard like it is now and so we had some different lines that we were working under. Ammann said that she thinks that Hesse's comment about restricting their recommendation is not necessarily a fair statement because she thinks that the current spill operations and the WQS are quite different than they used to be when the SPL was first created and so therefore this tool is maybe not as useful as it used to be from that perspective. She said that they can take some of the comments back and talk about it more in the future.

Stranz said that this why this seems like such a great opportunity to revisit it and dive deep because of all the changes.

Starkey wanted to address Turner's, Hesse's, and Swieca's comments. He also is concerned about self-defined exceedances of the criteria. He said that the 125% in Level 2 from Ecology's interpretation, they are within meeting the WQS and Ecology is in support of reshuffling the SPL table. He said that the Lack of Load is not an exemption of that criteria nor are high flows beyond the generation capacity that occurred below the 7q10 flood frequency.

Ammann said that she thinks that the Corps and Ecology need to have a conversation because when the WQ standards were revised a few years ago the Corps was doing 125% TDG Operation for 16 hours a day and had 8 hours a day of Performance Standard Spill. She that was why that upper limit of tying it to the ESA consultation was placed in there because as the Corps understood it, it was not 125% TDG 24/7. Ammann said that she thinks that Ecology and the Corps need to have some offline conversations and she hopes that they can have those conversations before April 16.

➤ **The Corps and Ecology will have offline conversations to clarify the 125% TDG 24/7.**

Erick Van Dyke, OR, said that Hesse's point and question got to where he was trying to get but the conversation had gotten quite a bit further at this point. He asked if the SPL will be continued be talked about level by level or will TMT put this aside for now and have an offline conversation about it.

Stranz said TMT could do either or both. She said that there needs to be some offline conversation between the Corps and Ecology and some internal AA conversation. She said and then we are going to put this on the top of the Agenda for the April 16 TMT Process Meeting, given the Salmon Managers recommendations. If Van Dyke would like to expand on any of those, he is more than welcome to right now.

Van Dyke said that he would like to point out that this is a Spring SPL according to the dates. The modifications and the orders that have been set aside by the States provide opportunity to meet without exceeding 125% TDG. The 110% seems to imply that those modifications are not necessarily applicable at Level 1 and that the only time it is, is when we get to Level 2. He said that he does not know about anyplace in in any of the orders that identify with 130% TDG so some of the details need to be worked out. Van Dyke said that is how he characterize it at this point. He asked if the Level 3 130% makes

sense given there is no record given there is no reference in the WQS for TDG management.

Stranz said that she felt that Alexis Mills touched on that last time.

Turner said this is for when they are in forced spill. They are acknowledging that they are spilling levels that are causing exceedances of the WQS and it is a tool that they use to try to spread the TDG across the system so there is not a hotspot of TDG at one project going above 130% while another project is at 125%. It is meant to spread that TDG across system so there is not a higher TDG at one project then all the other projects.

Stranz said this is something that TMT can talk about at the process meeting. Whether the Salmon Managers and AA would like to continue taking that approach.

Morrill said he appreciates the discussion that TMT is having. Particularly from the standpoint of Ecology sharing that the WQS is 125% TDG to benefit fish. Morrill said that he thinks that the discussion that we have ahead of us is, is the SPL really essential? He said that he understands the concept of distributing spill as explained when there is Lack of Load or extremely high flows. Morrill said that he thinks that this is an open door to addressing the needs for fish and the desire from Salmon Managers to be as close to the 125% throughout the Spring spill season. He said that he appreciates the discussion and the opportunity to take another look at it.

Ammann said she thinks that Ecology did not write their standard to necessarily be 125% all the time, they wrote their Standard that it is up to 125% for spilling to the ESA Coordinated Operations. She said that they will talk to Starkey and make sure that they are on the same page, but she wanted to add some caveats to the statement that it is 125% no matter what.

Morrill said that he was not saying that it was 125% the whole time, he was saying for the Spring Operation was what the Ecology waiver was for, not 125% all the time.

Ammann agreed that it was only during the spring, but it is also tied to spill levels in the FOP. She said but there were caveats to it.

Morrill said that a discussing those caveats is a good thing in his opinion.

Stranz said to get all of that in front of people's eyes between now and April 16 so that everybody is familiar with what the WQS, FOP, and ESA documents all say. She said and then TMT can then dive a little deeper into that.

➤ **Revisit Water Quality Standards, FOP, and ESA documents.**

Van Dyke said that he wanted to point out that Oregon's rules actually use the words 'meet but not exceed'. He said that the 'up to' content is something that people commonly refer to, but the Standard says to meet but not to exceed.

Stranz said that there are a number of action items, she said that it would be a good idea to revisit what the Standards say so that it is top of your mind. She asked if there is anything else in other information sharing or preparation that TMT can identify right now for the next time that we reconvene on the 16th.

Swieca spoke as the FPAC chair. She said that there are a number of smaller changes that the Salmon Managers are interested in exploring. She said that she does not think that they should be the main topic of the conversation at the process meeting, but she will send those smaller considerations to Stranz by email for distribution to the process meeting so that everybody has those in the back of their mind.

Turner said that the changes in the order of Level 3 is something that the Corps can do right away. He said that they have no problem with that. He said that the way that he heard it the order of Level 3 would be TDA, JDA, MCN, IHR, LWG, LMN, LGS, CHJ, GCL.

➤ **The Corps will implement the Level 3 change as requested by the Salmon Managers. Changing the order from IHR, MCN, JDA, TDA, LWG, LMN, LGS, CHJ, GCL to TDA, JDA, MCN, IHR, LWG, LMN, LGS, CHJ, GCL.**

Swieca said that was correct.

Ebel asked if the Corps sees any issues with that order, do they see any foresee any problems that may arise. He asked if they have any input on that recommendation other than they can implement it,

Turner said that he does not foresee any issues with it. He said that it is something that the Corps rely on the Salmon Managers to help figure out the order that is most beneficial for fish. He said that it is something that the Corps is happy to implement.

David Gruen, Oregon DEQ, as the Columbia River Coordinator said that he appreciates the discussion. He said that he would like to be part of the offline discussion between the Corps and Ecology to understand more about how we are interpreting the WQS because he respectfully points out that on the lower Columbia River the Oregon Standards apply as well, it is not just Ecology on parts of the river. Additionally, he would like to follow up about the Level 3 and the way that it is described in the text, “Spill level estimated to meet but not exceed daily TDG thresholds” and the listing of the 130% TDG. He said as Van Dyke pointed out he is not aware of anything in Oregon Standards that would allow for TDG up 130%. Gruen said that maybe this is a language modification that is needed, and he is not raising an issue with the whole structure of it. He said that there is nothing in Oregon Standards that would allow for spill for up to 130% on a daily basis, so something is not right there so maybe it can be worked offline to find some agreeable language.

Norris said that he thought that the 130% is noted and Level is not about the Standard, but it is about trying not to exceed 130% TDG, to spread the gas around the system.

Gruen said that he hears that and that is why he thinks that some clarification in some alteration of the text in the Level 3 column that says that the “spill level is estimated ...” that there is a disconnect there. He said that we should just talk about the language because there is nothing in the Oregon Standards that allow for spill up to 130%, that is above the TDG modification order as it is written.

Stranz said it is not every day that get this many great minds thinking about a document and how to make it as clear as possible and then also thinking about the strategy and the implications behind the action. She said that this is a wonderful opportunity. She restated that TMT would take a deeper dive on the document on April 16.

Ebel said that Gruen brought up the issue of what happens when you have a level where you are not exceeding the WQS and staying within them versus the situations when you are in Level 2 and 3 where the WQS flows or situations are set up no longer apply. Mixing those may be causing that confusion. Ebel said that he wanted to add a point to the earlier conversation.

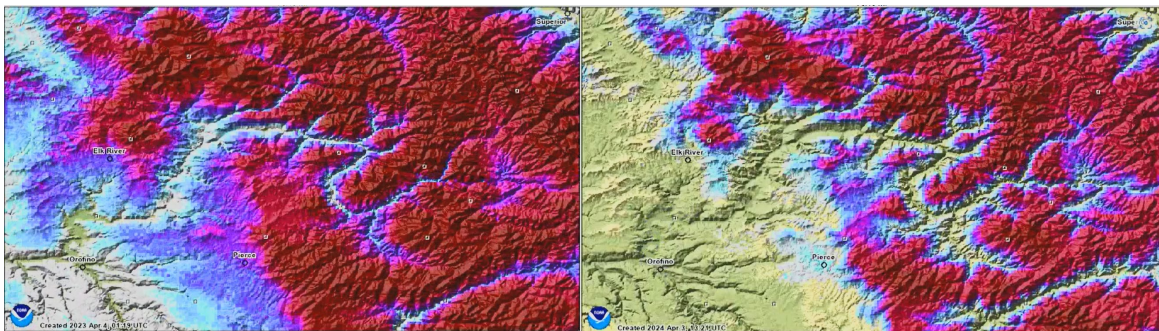
Stranz gave an overview of the tasks and expectations of TMT for the Action Items and the upcoming April 16 process meeting.

- Add David Gruen to the meetings between the Corps and Ecology
- Loop Starkey and Gruen into the April 16 TMT Process Meeting.

4. Dworshak Update – Willow Walker, Corps

a. Dworshak (DWR) Refill Analysis

- Snowpack (percent of normal)
 - S. Idaho and Upper Snake River: Normal to Above Normal
 - Middle Snake River: Roughly Normal
 - N. Idaho (Clearwater): 60% range of Snowpack
 - Some places are doing okay but DWR is still quite low.
 - DWR was setting record lows for a while, they are off the record low setting, but they are still well below average.
- Snow Water Equivalent (SWE) Forecast Comparison 2023 versus 2024



- Looking at a SWE plot the red value in the left (April 4, 2023) would be a higher value in inches than it is in the one in the right (April 3, 2024).
- NRFC 10-day Forecast
 - Precipitation is forecasted.
 - Most of Clearwater Basin: ~2.5 inches
 - Total for the 10-day with most of the rain coming in the next few days with a drier end of the ten day.

- Temperatures
 - Above freezing at many of the points within the Clearwater Basin.
 - Expecting a midlevel runoff event – not unusual for this time of year and they plan to catch as much as possible.
 - There will be a cool down with an potential warm up at the end of the 10-day but it is difficult to predict at this point.
- Refill Potential
 - 95% refill trajectory: July 4
 - If conditions improve DWR could refill earlier into June which could mean that they would be in a better position for when the start of temperature augmentation occurs.
 - Traces includes the 10-day RFC forecast.
 - 95% trace expects to have a full 4 inches for the month of April – currently on track for this with the 2.5 inches in the next 10 days.

Van Dyke asked if standard refill date for DWR is for the end of June or July 4.

Walker said that they try to fill it as soon as it is safe to do so. She said essentially as soon as the snowpack allows. Typically, they would love to do that around June 20, because they have seen temperature augmentation need to start as early as that. Walker said that it is more common that it fills closer to the end of June or the beginning of July.

Hesse said thanked Walker for the presentation and that he liked the Snowpack graphics. He gave a comment to TMT that this refill analysis keeps DWR discharge at minimum discharge throughout the entire Spring Period. He said in that approach we are essentially taking the N. Fork Clearwater contributions to Spring freshet Spring Flow Augmentation out of the equation. Hesse said similarly in the S. Idaho, Upper Snake aspects while we are at or above average snowpack there, there will be a significant amount of retention of water through the reservoir complexes including Idaho Powers to capture and reshape that water into the summer months. He said that the two major parts of the Snake Basin will have minimal contributions to the Spring freshet both the Upper Snake and the N. Fork Clearwater. That is a symptom of low snowpack and reservoir management. Hesse said that he would highlight that in terms of the future conditions we will see for low flows through the Lower Snake and Lower Columbia.

Stranz thanked Hesse for the added awareness.

Morrill asked if Willow got her next snow flight in.

Walker said that she had forgot to update on that but when Jon Roberts spoke last week, he thought the snow flight would occur this week. That flight was not able to happen with NRCS they have now scheduled for next week. Walker said that they are hopeful with the weather conditions they will be able to do it then and get a clear line of sight. If that is the case Walker will provide an update at that point.

5. MOP Exceedance - Norris

Norris shared that spill started this morning. He said that can be rough. Flow

measurements are not as accurate until the pools become stable with those new conditions.

There was an exceedance of MOP for 1.5 hours at IHR from just before 6:00 am to sometime before 7:30 am this morning. They were able to get that under control with some confusing outflow readings, but all is back in order.

6. Other

Bettin asked if there will be a release of water for the DWR hatchery release this year.

Hesse said that they have already had one release of juveniles and it was deemed that they had insufficient water supply so that release occurred without flow augmentation boost. The second release from the Clearwater Fish Hatchery and Dworshak Hatchery is scheduled for April 11 and at this point it is not likely that there will be a flow augmentation boost. They are monitoring conditions real-time and if things look really dicey for those fish getting out of the N. Fork Clearwater egress that would result from a high Clearwater mainstem flow. They could come back and potentially request a release of water next week.

Bettin asked for the request no later than Monday if he is going to make that.

Hesse said yes.

Ebel said that they were informed that it would need to be through TMT because of the impact to probability of refill.

Bettin said that we could have a special TMT meeting, but he was curious how we want to factor that in.

Hesse said that they are trying to manage without that request but at the same time monitoring the conditions that would get the fish hung up. Adjustments have been made for the Dworshak release, those fish from the first release were not released through the typical discharge pipes but manually pumped out of the raceways and over the bank into the mainstem Clearwater, avoiding some of the low flow in the N. Fork. That is extra effort by the hatchery staff but probably the best thing for the fish. That option does not exist for the Clearwater anadromous releases so they are still having to balance release approaches and conditions but he thinks that he and Ebel heard Bettin's request to have that discussion on Monday if conditions look dicey.

Swieca said she heard from Walker yesterday that in addition to Bettin's request for BPA to be informed if there is a request for a release by Monday. She said that Walker's crew needs at least two-day notice to change those flows out of DWR as well. She wanted to make sure that both Hesse and Ebel are aware of the two-day lead time for flow fluctuations out of DWR.

Walker said assuming fish releases were on April 11 and depending on how high the flow requests were for it would take them some time to ramp up to those flows. This is where the "at least two days" came from. If we are saying we could get that update by Monday that would be good timing with the last she heard the release could happen. A two-day lead time would be wonderful.

Ebel said Hesse and he would coordinate with hatcheries. He said that the releases would likely be the night of April 11, starting in the evening and moving through the night. He wanted TMT to be aware of that. He said that the situation in which they might request water, it is a balancing act between how much water is needed to have an effect of moving fish out of the N. Fork, which is really potentially a function of the flow in the Clearwater in the Mainstem at Orofino. The other connection is the flow at Orofino is what is going to determine in part within certain bands the ramp rate that can be used for this operation. They will need to wrap their heads around that. He asked for understanding that the situation where it is difficult for the fish to leave the N. Fork is where the flows in the mainstem Clearwater are high at which point the ramp rate could potentially also be higher than what you would calculate right now, according to the WMP. He said that he needs to look back at that and take that into consideration.

Stranz asked if we all should pencil in a meeting for Monday.

Ebel said he would not pencil one in; he does not see any huge changes. He asked to let them watch the flows and it could potentially be a fairly short discussion on Monday if such a request is required.

Stranz asked if Hesse or Ebel would let TMT know by close of business on Friday if we will need a meeting on Monday.

7. **Public Comments: None**
8. **Set agenda for next meeting – April 10, 2024**
 - a. Official Water Supply Forecast
 - b. Dworshak Update
 - c. Operations Review

Today’s Attendees:

Agency	TMT Representative(s)
NOAA Fisheries	Kelsey Swieca
Oregon	Erick Van Dyke
Washington	Charles Morrill
Kootenai Tribe	
Colville Tribe	Dennis Moore
Umatilla Tribe	Tom Lorz (CRITFC)
Yakama Nation	
Bonneville Power Administration	Tony Norris, Scott Bettin, Ben Hausmann
US Fish & Wildlife Service	Dave Swank
Idaho	Jonathan Ebel
Montana	Brian Marotz
Spokane Tribe	
Nez Perce Tribe	Jay Hesse
Warm Springs Tribe	
Bureau of Reclamation	Chris Runyan
Army Corps of Engineers	Doug Baus, Julie Ammann, Lisa Wright, Aaron Marshall

Other Attendees (non-TMT members):

COE – Dan Turner, Alexis Mills, Chris Peery, Willow Walker, Tom Conning (Public Affairs)

Washington Ecology – Thomas Starkey

Oregon DEQ – David Gruen

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Energy Keepers – Eve James

Columbia Basin Bulletin – Mike O’Bryant

Chelan PUD – Kate von Reis Baron, Jay Fintz

Snohomish PUD – Mike Shapley, Jesse Pruess

Avista Utilities – Ryan Ericksen, Mike Dillon