

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

March 27, 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 will review the official meeting minutes and facilitator's summary from the March 20 meeting at the next TMT meeting.

Chum Operation – Lisa Wright, Corps, provided an update on current conditions and forecasts for the remainder of the chum operation. Bonneville Dam inflows are currently 140 kcfs, while the 10-day forecast shows a high of 160 kcfs on March 30 and a low of 130-140 kcfs by the end of the 10-day forecast.

Today there is rain throughout the entire basin, with some snow in higher elevations, 2,000 feet and above in the western Cascades and above 3,000 feet in the eastern portion. The Central portion of the Basin is expected to be dry towards the end of the 10-day period. Precipitation is well below average for the 10-day period, with the 5-day reflecting today's rain event. Regarding the current water supply forecast at The Dalles, the April through August runoff volume is 80% of normal, and is expected to remain low compared to recent years.

Charles Morrill, WA, expressed appreciation that there has been enough water to maintain protection levels for chum, noting that there is adequate water in the Ives/Pierce area. WDFW, NOAA, and the AAs will continue to watch water supply and forecasts; at this point no issues are expected while maintaining protection levels through the final 2 weeks of the chum operation.

Spill Priority List – Alexis Mills, Corps, reported that the Corps received feedback from FPAC regarding the initial draft of the spring Spill Priority List (SPL). She emphasized that the Corps is always open to simplifying the SPL for Salmon Managers to make informed decisions about prioritizing spill on the system during lack of load conditions. A revised version of the SPL (posted to the TMT website) has been reformatted to remove all rows where lack of load spill would not occur (including projects for which FOP spill is 125% TDG gas cap 24/7), including Bonneville where lack of load spill is limited to 150 kcfs, or spring spill level. Footnotes have been added to the SPL document to clarify these revisions.

The Corps requested that Salmon Managers review the new format and provide recommendations on the order as soon as possible. The SPL will be provided to BPA on April 3 for the start of spring spill season, however, lack of load conditions are not anticipated in the beginning of April. It is likely that projects will be operating to minimum generation and spilling the rest.

Kelsey Swieca, NOAA, reported that Salmon Managers met yesterday to discuss recommended updates to the SPL; discussion focused on the decreasing relevancy of the original SPL as many projects now spill to 125% TDG gas cap 24/7 with the new operations under the December 2023 MOU. She noted that historically, the inclusion of FOP operations has led to confusion and the reformatted SPL is a step in the right direction for increasing clarity on operational expectations. Salmon Managers will review the revised SPL at FPAC next week and will be prepared to offer their final recommendations for any

modifications at TMT next week, with the understanding that the Corps will submit the SPL to BPA for the first week of spill and that it is unlikely that it will be utilized due to current conditions.

Kelsey noted that Salmon Managers also discussed exploring the opportunities to move John Day and The Dalles (spill to 125% for 24/hours) from Level 2 to the top of Level 1. The Corps had indicated this may not be possible as it may be considered an exceedance of the water quality standards (WQS). Alexis responded that since the Washington State WQS modification in 2020, RCC interprets the WQS as the spring FOP spill. From the Corps' perspective this means the WQS is 40% at The Dalles 24/7 and 40% daytime, 125% gas cap nighttime at John Day, keeping both projects at Level 2. This is consistent with how the lack of load/SPL was implemented last year. Alexis noted that WA Ecology's WQS modification does state that the tailrace maximum TDG should be applied in accordance with the ESA consultation documents associated with spill operations in the Snake and Columbia Rivers.

In response to questions from TMT Members, Alexis provided the following clarifications:

- Level 1 spill is the spill level estimated to meet but not exceed the WQS for a particular reach or project.
- Level 1 spill at John Day and The Dalles is FOP spill.
- RCC is interpreting the WQS as outlined in the FOP.
- The SPL is in case BPA needs to spill for lack of load conditions, to spread TDG over the system to avoid high values at one project. During a higher water year, the freshet can see values up to 130% in the tailrace, usually infrequent and not for extended durations.

Thomas Starkey, WA Ecology, emphasized that 125% is the maximum criteria for WA during periods of spill, never 130%.

Kelsey reiterated that Salmon Managers will have a final discussion on the revised SPL next week at FPAC and will provide their recommendations at next week's TMT meeting.

Dworshak Update – Jon Roberts, Corps, provided an update on operations at Dworshak Dam as the project prepares for spring runoff (posted to the TMT website). Walla Walla District is providing this update in addition to the monthly email updates.

Jon reported a decent snowpack in the Snake River Basin, while further south, the Clearwater Basin is low. Upstream of Dworshak Dam, the North Fork of the Clearwater is still below average in snowpack, with about 13 inches of SWE currently (typically 35 inches this time of year), and about 22-23 inches in the lower system. The Upper North Fork of the Clearwater is slightly better, but still 12 inches below normal. With the low snowpack, the project has been running minimum discharges.

The short term precipitation forecast is about average for this time of year, ranging from 0.5 inches at low elevations to 1.5 inches or more at higher elevations. The incoming moisture will help keep higher elevation snowpack from decreasing too much, and low-lying snowpack will continue to melt as runoff into the reservoir, as the soil moisture is good and the ground is saturated. Inflows into the reservoir have been higher over the last few days due to the current precipitation, and higher inflows are expected over the next 10 days (between 8,000-12,000 cfs); the reservoir has been steadily refilling as the project is at minimum discharge. The reservoir still needs about 60 feet to refill. Regarding the long-term forecasts, runoff is looking lower for this time of year (high 70-80% of average), and is not expected to improve much. Rain in the basin would help mobilize snowpack to the reservoir sooner.

Walla Walla will continue to run a refill analysis through the runoff period; the project has been fluctuating between a 90-96% refill probability by July 2. If basin conditions improve, a refill date

between May 31 and July 2 is possible with the project on minimum discharge through spring runoff. Jon noted there is still time to see how runoff will occur at the project; the plan remains to work towards refill and stay on minimum discharge unless otherwise coordinated by TMT and regional managers.

Finally, Jon noted that a second snow flight is scheduled for the first week in April to get a more updated picture of snow in the basin; an updated refill analysis will be provided to TMT next week (at the TMT meeting or later in the week depending on snow flight) prior to the monthly email update. In response to queries from TMT Members Jon noted that soil moisture was good before freezing, and that about 6 inches of precipitation would be needed throughout the month of April for improved basin conditions leading to an earlier refill date. Based on current trends and forecasts, this is improbable.

Upper Snake Flow Augmentation – Chris Runyan, Reclamation, provided an update on the Upper Snake River flow augmentation, noting no significant changes from last week. The current estimate based on March water supply forecasts is 471 kaf, which is higher than the lower target of 427 kaf, but not at the goal of 487 kaf. March precipitation so far has been about average in the Boise and Payette, and 130% of average above Palisades Dam which might result in a slight increase in water supply above Palisades in April. The unofficial April water supply forecasts will be provided next week, with another flow augmentation update in the next couple of weeks. He also noted that Reclamation started increasing flows out of American Falls today, taking flow past Milner to around 4,000 cfs. Within the next week it should be in the 6,000 cfs range depending on precipitation.

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 3, 2024, at 9:00 AM.

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

- No Summary or Minutes were available to review.

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

Wright said that we are in the last two weeks of the chum operation.

a. NWRFC – Bonneville Dam Extended Inflow Forecast

- 10 – Day Forecast
 - Current 140 kcfs
 - High 160 kcfs (March 30)
 - Drops to the 130s by the end of the 10-day period.

b. NWRFC – 10 Day Meteorological Forecasts

- Raining today (March 27) throughout entire basin.
 - Falling as snow in some of the higher elevations.
 - 2k feet and above in the Western portion of the Cascades.
 - 3 – 4k feet and above in the Eastern portion of the Cascades.
- Thursday (28) there is a little bit of rain in the far Western and Eastern parts of the Basin and drying up in the Central.
- Dries out of the bulk of the 10-Day period.
- A few showers forecasted at the end of the 10-Day period.
 - Not a lot of rain in the forecast other than today March 27.

c. NWRFC – 10 Day Forecast Precipitation Summary

- 10 Day Precipitation Climatology
 - Darker colors show high amounts of precipitation over the ten days.
- 10-day QPF (Percent of Climatology) -- as it relates to percent of average
 - Still well below average
- 5-day QPF (Percent of Climatology)

- Shows that the five day reflects precipitation event happening March 27 and 28 throughout the Basin.
- d. The Dalles April to August Runoff Forecast
 - Apr – Aug: 71,038 kaf
 - % of Average: 80% of Normal
 - Rankings: 64 out of 76 years.
 - Not as bad as a month ago but still expected to be low compared to recent years.
- e. Summary and Comments of Chum Operations
 - Morrill appreciates that there has been enough water to maintain the protection levels for Chum. Morrill said that as an indication of what they have been sampling at Hamilton Springs, it does reflect the temperature conditions and emergence out of Ives Pierce and there is adequate water there.
 - They have yet to see peak of chum collected out of Hamilton Springs trap.
 - Swieca agrees that there should be no concerns in keeping to the final two weeks of the Chum Operation.

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

- a. Draft 2024 Spring SPL – *Mills*
 - The previous SPL Draft was discussed at the FPAC meeting yesterday March 26.
 - Mills said that the Corps has always been open to simplifying this list to make it more digestible and easier for the Salmon Managers to make informed decisions about prioritizing spill on the system for lack of load.
 - The Corps received great feedback from Swieca yesterday after the FPAC conversations.
 - Mills tried to reflect that in the newly reformatting list.
- b. Reformatted SPL – *Mills*
 - Removed all rows at which Lack of Load spill would not occur.
 - FOP Spring Spill is already at 125% TDG Gas Cap 24/7
 - Removed Bonneville from all levels because Spill is limited to 150 kcfs which is also the FOP Spring Spill level.
 - Also added additional footnotes to explain the formatting changes.
 - Goal for TMT was to look at the new format and provide feedback.
 - Pending FPAC discussion
 - The Action Agencies (AA) can implement a new order if that is requested next week.

- Reminder: If there are no recommendations to change the order today Mills will provide the order as written to BPA for the start of Spring Spill on April 3.
 - Mills is not currently anticipating high flows that would drive Lack of Load spill conditions at the beginning of April. Instead, they are anticipating Min Gen Spill the Rest as they kick off the Spring Season.

c. FPAC – *Swieca*

- The Salmon Managers met and talked about the necessary changes and/or updates to the SPL, the main theme of their conversation centered around the decreasing relevancy of the original list with a large number of the projects already spilling at the 125% TDG Cap 24/7 with the new operations under the December 2023 MOU.
 - The Corps received this feedback and agreed to remove all the rows from the list that represented the standard FOP operations that would not materialize in any change in operations as the Salmon Managers would see it.
- Historically the inclusion of the FOP operations led to confusion amongst the Salmon Managers, and they have been looking for opportunities to clarify for a number of years. They believe that the re-formatted list is a step in the right direction in terms of increasing clarity on operational expectations as they track them.
- The Salmon Managers will take the revisions back to FPAC next week and be prepared to give their final recommendations of any modifications at TMT following. They understand that Mills will have to share the current list for first week of spill.

Swieca said that there was some discussion of exploring opportunities to move John Day and The Dalles spill to 125% TDG for 24 hours/day from Level 2 to the top of Level 1. She said that the Corps in initial discussions indicated that may not be a possibility because it would be considered an exceedance of the Water Quality Standards as described in the FOP. Swieca asked Mills if she could provide more information for the Salmon Managers as to why that may not be an option.

Mills said that since the Washington State Water Quality Standard modification in 2020, RCC has been interpreting Spring FOP Spill as the Water Quality Standard based on past conversations with Policy and Legal at the Corps. For the Corps that means that the Water Quality Standard is 40% at TDA 24/7 and it is 40% daytime and 125% TDG Cap nighttime at JDA. She said that is why they are keeping TDA and JDA in Level 2 and it is consistent with how the Corps implemented the SPL last year. Mills said that Washington Ecology's Water Quality Standard Modification does state that the tailrace maximum TDG at the dam should be applied in accordance with the ESA consultation documents associated with planned spill operations on the Snake and Columbia Rivers.

Tom Lorz, Umatilla, asked for clarification Level 1 does not include JDA or TDA but Level 2 does.

Mills said that was correct, Level 1 at JDA and TDA is FOP spill, which is the Water Quality Standard.

Lorz said that he was trying to figure Level 1 spill, is it to keep things under 120% TDG.

Mills Level 1 is the spill level estimated to meet but not exceed the Water Quality Standard.

Swieca asked if RCC is interpreting the Water Quality Standard to be as the spill operations specified in the FOP.

Mills said that is correct.

Lorz said he needs to think that information through and will talk about this in FPAC and get back to them.

Stranz said that this one is a thinker, it is one that everybody has to come around on.

Mills said it is confusing and that she appreciates the effort to make it simpler.

Erick Van Dyke, OR, said thanks for the list. He said that he wanted to make sure that he was hearing things correctly. He said that what he was hearing was that the Water Quality Agency is recommending for the standard and those will be the levels that this list is talking to you for Level 1.

Mills said yes, Level 1 is whatever the Water Quality Standard is for that particular Reach or Project.

Van Dyke asked about the FOP, Section 4.1 Bullet #3, he said that it speaks to Lack of Load. He asked if that what TMT was talking about at the moment.

Mills said yes.

Brian Marotz, MT, said that he is seeing TDG percentages in the high range. He asked for some comfort. He asked why 130% TDG even for a short period of time does not cause more damage than we are hoping for.

Mills said that the 130% TDG threshold in Level 3 does not have any relationship to the impact of that level of TDG on fish. She said that the SPL is to distribute TDG system-wide when BPA needs to spill specifically for Lack of Load conditions. During a higher water year, a freshet can see values up to 130% TDG in the tailrace but it is usually not for extended durations.

Marotz said that he understands spreading that amount around. He said especially, the best thing that comforts him is knowing how deep the river is at points downstream so fish can compensate if they are 3 meters deep or so.

Thomas Starkey, Ecology, added for clarification that he did not think that 130% TDG is a criteria in Washington codes at all. He said that it is a 125% TDG maximum criteria during periods of spill but 130% TDG is not.

Van Dyke said he has not seen anywhere that we are at 130% TDG, he asked Marotz if that was hypothetical for something that might occur later or if it is something that Marotz saw in the record or recent times.

Stranz said that she thought that that he is speaking to Level 3.

Van Dyke said that makes sense and thank you for clarifying.

Jonathan Ebel, ID, said as a Salmon Managers they are not asking for 130% TDG, this is a situation where, when there is maintenance or uncontrolled/involuntary spill at really high flows, that is when the Water Quality Standards no longer apply, or they are not applicable to the situation. This is one of those. We are not asking for this, but this is a situation that can occur, but not often.

Swieca said that she will take the SPL to FPAC for their final discussion next week and will provide the final recommendations at TMT on Wednesday, April 3.

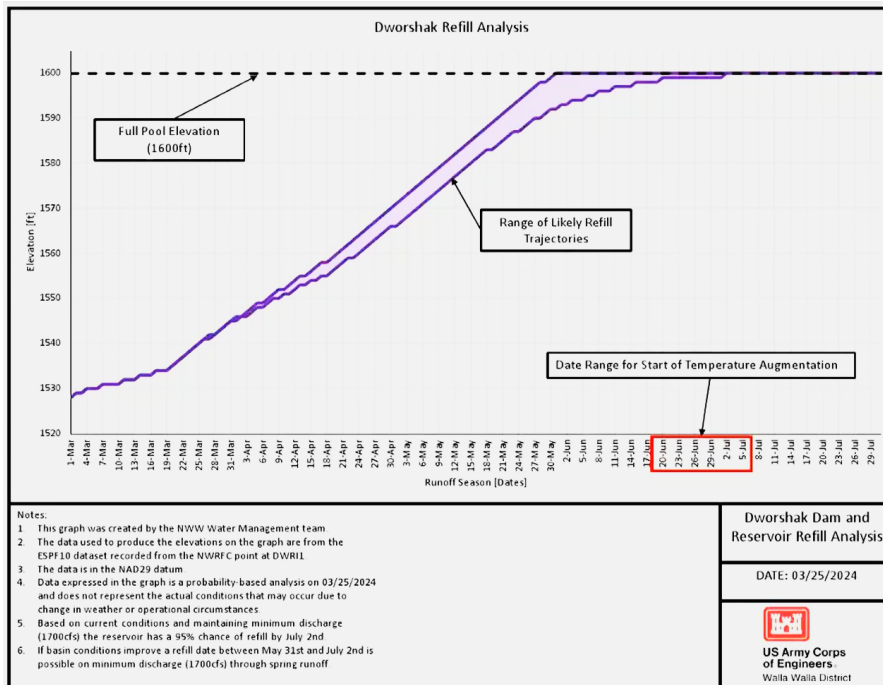
4. Dworshak Update – *Jonathan Roberts, Corps*

a. Dworshak (DWR) Refill Analysis

Provide an update as DWR gets ready to start spring runoff and the refill of the reservoir. Look at the operations into the summer. Will provide monthly updates. With Fish Hatcheries releasing fish it is a good time to start the updates.

- Snowpack
 - Better snowpack in the South
 - Clearwater has been struggling upstream of DWR.
 - Lower N. Fork of Clearwater setting record minimums.
 - Difference: -13 inches of SWE
 - Typical: ~35 inches of SWE
 - Current: 22/23 inches of SWE
 - Upper N. Fork of Clearwater
 - Current: ~26 inches of SWE
 - Typical: ~38 inches of SWE
 - Difference: -12 inches of SWE
 - Low on Water
 - DWR has been running on minimum discharges.
- Short Term Forecast
 - Average precipitation for this time of year.
 - ~0.5 inch at lower elevations.
 - ~1.5 inch at higher elevations.
 - Good for the basin:
 - Help snowpack to stay level.
 - Lower-level snowpack will melt off and reenergize the snowpack keeping it from saturating into the ground and instead runoff into the reservoir.

- DWR Inflow and Elevation
 - Reflected in the inflows, they have been on the higher side of inflows for the past few days.
 - Higher inflows over the next ten days.
 - Inflows: 8 – 12 kcfs
 - Reservoir has been filling.
 - Elevation: 1540 ft.
 - To Refill: 60 ft.
 - DWR will continue to capture as much water as possible.
- RFC Long Term Forecast
 - Current volume forecasts are within the high 70s and low 80s % Average Runoff for the time period.
 - Lower runoff for this time of year and it is not expected to improve.
 - Ideally more rain comes to the Basin.
- Dworshak Refill Analysis



- Fluctuating between 90 – 96% chance of refill before July 2.
- Runoff projections for the reservoir and on minimum discharge.
 - Note 5: Based on minimum discharge through July 2 – Sometimes, based on recent years sometimes flow augmentation is needed to offset the river’s temperatures sooner in the year.
 - Note 6: If basin conditions improve DWR may refill sooner.

- Models this morning showed a 94% chance of refill by July 2.
- Current Plan
 - Continue minimum discharge, unless DWR hears input or strong discussion from TMT and Regional Managers regarding potentially additional water from DWR to assist the hatcheries and releasing flow.
 - The Clearwater is running a little higher so as of right now DWR is working to refill.
 - DWR is close on even without using water for hatcheries refilling the project.
 - Second Snow Flight is scheduled for April 2. Willow Walker will be flying the Basin to get a more accurate picture of the basin and where the snow is.
Roberts said that he would be willing to provide another update next week at TMT or provide an update via email whichever the members prefer.

Morrill thanked Roberts for the updated and said that he hopes things stay stable for now. He asked Roberts what the soil moisture prior to it setting and freezing. He asked if it was well below average on soil moisture before the ground setup and froze.

Roberts said that we are doing well on soil moisture, and that is one thing that is playing our favor. He said that we should see a higher percentage of runoff of the snowpack.

Swieca said thank you and that she would like to follow up on his request to notify you if TMT would like another update. She said that she thinks that would be helpful if Roberts could provide another update next week particularly if it incorporates some of the second snow flight information. She also added that Jay Hesse from Nes Perce was not able to be here today and was not able to be at FPAC yesterday. She said that she would like for Hesse to provide some input on their take on this situation. She said that it would be great for Roberts to provide that update next week.

Roberts said that he would be happy to. He said that they are looking to fly the Basin Monday, Tuesday, or Wednesday, depending which day they fly the Basin they may not have that incorporated into their analysis by TMT, but they can probably make sure that it is available by the end of the week or for the following week.

Van Dyke said that he appreciated the presentation, and he may not have been listening closely enough to follow the analysis as drawn on the screen. He asked if the lower line is the current trajectory for operations if things do not change.

Roberts said that the bottom line signifies the 95% refill probability. It is showing when we would refill the reservoir on a 95% chance, which would take us to July 2. If our conditions improve in the Basin, the lines above that or the shaded area above that is the other possible ranges of how fast we could fill the reservoir. If conditions improve, we could refill the reservoir as soon as May 30, the first week of June, which would put us in a better situation to start the summer off in case there is a hot summer. As of right now the trajectory is July 2, the bottom line.

Van Dyke asked what the top line signifies. He wanted to understand what Roberts is trying to quantify so that Van Dyke can understand what Roberts is looking for. He asked if the top line is based on 50% probability.

Roberts said that line is based on any additional improvement to the reservoir. It is if we had ~10 - 15% improvement to Basin right now you would see the top line. Roberts said that they can clarify the notes for next week.

Van Dyke said that for him the verbal clarification was enough.

Ebel asked how much of a change from average precipitation conditions for the next month would that situation need to be. He asked if that would be that it would rain and snow for a month.

Roberts said what they would want to see is currently the expected precipitation is between 0.5 – 1.5 inches, they would need to see it be closer to 3.5 – 4.0 inches, we would need to see 6.0 inches of precipitation across the whole month of April to fall in the Basin. On average 1.5 – 2.0 inches of precipitation every ten days for the Basin conditions to improve.

Ebel said that is improbable.

Roberts said based on current trends right now in the longer-range forecasts that is correct, it is improbable at the moment. To maintain status quo, we need to maintain ~3.5 inches in Basin.

Van Dyke asked if that equates to the 10% statement Roberts made.

Roberts answered yes.

5. Upper Snake Flow Augmentation Update – Chris Runyan, BOR

- Current Estimate (based on March Water Supply Forecasts)
 - 471 kaf
 - Higher than lower target of 427 kaf.
 - Not at goal of 487 kaf.
- March Precipitation
 - Boise and Payette: Average
 - Above Palisades Dam: 130% of Average
 - See a slight increase above Palisades Dam for April which is good.
- April Water Supply Forecast
 - Comes out next week.
 - Will do another Flow Augmentation Update in the next couple of weeks.

Ebel asked if Runyan has a projected upper flow out American Falls and Milner for moving water right now because they are looking full.

Runyan said that they have started increase out of American Falls today (March 27), and he said that will take flow past Milner Creek to ~4 kcfs. Within the next week or so it will probably be up in the 6 kcfs range. Right now he is not seeing 10 kcfs past Milner, it is possible if we get wet.

6. Public Comments:

7. Set agenda for next meeting – April 3, 2024

- a. Water Supply Forecast
- b. Dworshak Update
- c. Spill Priority List

Wright clarified that the Water Supply Forecasts may not be ready by the TMT meeting but they will be by the end of day on April 3rd.

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	Scott Bettin, Ben Hausmann
US Fish & Wildlife Service	Dave Swank
Idaho	Jonathan Ebel
Montana	Brian Marotz
Spokane Tribe	
Nez Perce Tribe	
Warm Springs Tribe	
Bureau of Reclamation	Chris Runyan
Army Corps of Engineers	Lisa Wright, Aaron Marshall

Other Attendees (non-TMT members):

COE – Alexis Mills, Jonathan Roberts

Washington Ecology – Thomas Starkey

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Northwest Power and Conservation Council – Kate Self

Clearing Up – K.C. Mehaffey