

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 24, 2024

Draft Facilitator's Summary

Facilitation Team: Emily Stranz & Colby Mills, DS Consulting

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

Review Meeting Summaries & Minutes – TMT Members approved the official meeting minutes from April 10, the minutes and facilitator's summary from April 17 will be reviewed at the next TMT meeting.

Dworshak Update - Willow Walker, Corps, provided an update on operations at Dworshak Dam; refill analysis is posted to the TMT website. She noted that although snow is still low, conditions are not as drastic as forecast map imaging conveys as some lower elevation SNOTEL sites have melted out and brought runoff into the reservoir (a bit ahead of normal timing). Higher elevation snowpack has more time before starting to melt. The 10-day forecast for the Clearwater Basin area shows incoming storms that are forecasted to help low to mid-elevation snow add volume straight to the reservoirs rather than seep into the ground. Precipitation in the Clearwater Basin for April is at 98% of normal; forecasted rain should bring that up to the April average.

Dworshak's most likely refill trajectory is still based on the achieved average monthly precipitation. The reservoir is likely to hit full pool by June 20 although it could be as early as May 30 with significant improvement (unlikely). Willow noted that there may be a chance that water will need to be moved through the system in May due to the earlier than normal start to runoff. The Corps will provide more details about what this could look like once May water supply forecasts have been finalized and is open to input from Salmon Managers.

Grand Coulee Flow Augmentation - Tony Norris, BPA, reported that requested flow augmentation from Grand Coulee is on track to conclude on April 28, within 5-feet of the end of April FRM elevation of 1,283.3 feet. Averages this week should be around 75 kcfs (Monday-Sunday). Absent any additional requests for next week, average flow out of Chief Joseph will be closer to project inflow, around 70 kcfs. Kelsey Swieca, NOAA, reported that Salmon Managers will not be submitting an additional request for an expanded flow out of Grand Coulee. Reclamation and the Corps noted appreciation for the collaboration and conversation on this operation.

Spill Priority List - Dan Turner, Corps, provided an update for the Spill Priority List (posted to the TMT website), noting that the Corps will be able to implement FPAC's suggestion to move John Day and The Dalles to the top of level 1, to spill to 125% for 24 hours, prior to setting Chief Joseph and Grand Coulee to the 110% TDG level. Level 2 is at 127% to spread TDG throughout the system, and Lower Granite and Lower Monumental dams have been added in at Levels 6 and 7 to be consistent with Little Goose operations (spill up to 125% TDG for 24 hours after adult trigger had been met). FPAC appreciated the coordinated efforts on the SPL this year.

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

- **Hungry Horse**: inflows have been decreasing since last week and are starting to come back up with the slight increase in temperatures; inflows yesterday were 3.7 kcfs (about 111% of average)

with outflows of 3 kcfs which are planned to increase tomorrow morning to 5.5 kcfs. Midnight elevation was 3,541.5 feet; the project filled about 1.3 feet last week and is currently 18.5 feet from full. The project is increasing outflows to conserve space before inflows come back up. The May 1 forecast will be out next week or the following.

- **Grand Coulee:** inflows yesterday were 72.8 kcfs (about 67% of average), with outflows at 78.9 kcfs. Conditions are dry above the project. Midnight elevation was 1,279.6 feet; the project is 10.4 feet from full, drafting about 2.4 feet since last week, and is operating to be no lower than 1,283.3 feet on April 30.

Eric Chow, Corps, reported on Corps of Engineers projects:

- **Libby:** midnight elevation was 2,419.2 feet, with average inflows of 7.6 kcfs, and outflows of 6 kcfs which are planned to increase to 8 kcfs on Thursday;
- **Albeni Falls:** midnight elevation at the Hope gauge was 2,054.6 feet, with average inflows of 24.5 kcfs, and outflows of 20 kcfs (18 kcfs moving forward);
- **Dworshak:** midnight elevation was 1,567.7 feet, with average inflows of 7 kcfs, and outflows of 1.6 kcfs;
- **McNary:** average forebay elevation was 339.0 feet, with average inflows of 176 kcfs, and outflows of 172 kcfs;
- **Lower Granite:** average forebay elevation was 733.6 feet, with average inflows of 73 kcfs, and outflows of 74 kcfs; and
- **Bonneville:** average forebay elevation was 72.6 feet, with average inflows of 184 kcfs, and outflows of 188 kcfs.

Eric noted that all four lower Snake River projects have been operating within MOP, with no adjustments to MOP ranges. Jay Hesse, Nez Perce Tribe, appreciated efforts to operate MOP levels within the 1-foot soft operating range.

Doug Baus, Corps, reported that coordination has begun for a sturgeon pulse at Libby Dam, he advised TMT Members that an SOR will likely be presented at the May 8 TMT meeting.

Finally, Tony reported that Bonneville is currently implementing operations to complete the FTE study at the project, and anomalies in operations are likely associated with implementing the study.

Water Quality – Dan reported that a couple gauges are out; the McNary forebay gauge was out for a couple days and is starting to report data again; the spreadsheet will update tomorrow. The Dalles forebay gauge is not reporting due to a crane on the spillway that is blocking the antennae; the project is working to resolve the issue. TDG levels are below the 125% water quality standard, mainly due to spill operations at minimum generation spill the rest.

Fish – Kelsey reported that yearling Chinook are moving steadily through the system, with a recent uptick last week at Lower Granite, the passage index reaching about 140,000 before dropping back down. Index values at Bonneville have ranged from 26,000 to 52,000 over the past week. Sub-yearling Chinook and Coho had a significant bump at Lower Granite for a couple days last week. Steelhead are passing Lower Granite with index values ranging from 30,000 to 160,000 over the past week.

At Bonneville, a total of 7,672 adult spring Chinook and 1,990 adult steelhead have passed, only 58% and 76% of their respective 10-year averages: a slow start. At Lower Granite, 46 spring Chinook and 1,456 steelhead adults have passed, both roughly at 30% of their 10-year averages. Kelsey emphasized that the 10-year average values and are not the same as, or tracking, the recovery goals.

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Dave Swank, USFWS, reported a bump for juvenile lamprey at Little Goose this week, and low numbers at other projects so far.

Charles Morrill, WA, posted cumulative index passage summaries into the chat:

- https://www.fpc.org/smolt/smolt_queries/R_smoltcumulativepassindex_resultsv7.php
- https://www.fpc.org/smolt/smolt_queries/R_smoltcumulativepassindex_resultsv7.php

Power System – Tony reported that temperatures are headed to below average over the next week, with systems moving in; BPA expects to see variable energy resources pick up.

Questions or Comments from non-TMT Members: There were no questions or comments from non-TMT Members.

The next scheduled TMT meeting is on May 1, 2024, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
DRAFT OFFICIAL MINUTES
Wednesday, April 24, 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 – April 10 Minutes

- April 10 Minutes approved.
- April 17 Minutes and Summary are still pending.

2. Dworshak Update – Willow Walker, Corps-NWW

a. Dworshak (DWR) Refill Analysis

- Snowpack SNOTEL Overview
 - We are seeing more of the red and orange than last time. This is misleading because some of the lower elevation SNOTELs have melted out. We are low on snowpack, but it is not as bleak as the map makes it appear.
- AWS Plot: Snow Water Equivalent (SWE)
 - Upper N. Fork Clearwater
 - Tracking the same band as previous updates.
 - Lower N. Fork Clearwater
 - Tracking the same band as previous updates.
 - Shanghi Summit, ID (747)
 - Lower elevation SNOTEL.
 - Melted out a lot of the lower elevation snow melted off and made its way to the reservoir.
 - We are ahead of the lower elevation timing; it usually melts off toward the middle of May and we are not quite to the beginning of May and we have lost some of that lowest elevation snowpack.
 - Crater Meadows, ID (425)
 - Higher elevations are still holding on and we still have some time before they start to turn over.
 - Fairly normal for this time of year.
- 10-day Meteorological Forecast
 - In the Clearwater Basin throughout the entire 10-day, currently, it looks like we are going to have some storms hanging out over our area of interest.

- If this plays out as forecasted it will be helpful to get the low/mid elevation snow that is coming off with the rain, add volume, and help get it to the reservoirs.
- Without this rain we could lose more to the soil, from a DWR water supply perspective they are happy to see the rain in the forecast.
- Monthly Precipitation Table
 - Clearwater Basin
 - Precipitation for April: 2.83”
 - % of normal: 98%
 - With the rain in the forecast, it will get us to about an average for April.
- DWR Refill Analysis
 - 95% Trajectory Line
 - Calling for average precipitation over the next 30 days.
 - A month into updates we are still on this trajectory and did get the average precipitation for the month that we were hoping for.
 - Fill by June 20 (mostly likely refill trajectory)
 - Improved Condition Trajectory Line
 - Needs 12 inches of precipitation over the next 30 days, this is not currently in the forecast.
 - Fill by May 30 (least likely refill trajectory)
 - Note: Even with the most likely refill trajectory the shape of the runoff and water moving earlier than usual there is a chance they will need to move some amount of water through the system in the month of May.
 - Will not be in the first weeks of May as they will need time to finalize the May Water Supply Forecasts (WSF) and take a look at how the whole system is doing.
 - The Corps will have more details for TMT in the next few weeks and will be available to hear requests for moving the water.

3. Grand Coulee Flow Augmentation – *Kelsey Swieca, NOAA; Tony Norris, BPA; Chris Runyan, BOR*

a. Grand Coulee (GCL) Update - *Norris*

- On track to complete the operation on April 28. Within the 5-foot draft of the end of April FRM elevation of 1283.3 feet.
 - Mon – Sun Averages for this week: 75 kcfs
- Absent a request out of Chief Joseph next week.
 - Average expected flow: 70 kcfs
 - Closer to inflow.

b. Path Forward - *Swieca*

- Salmon Managers (SM) will not be putting in additional requests for an expanded flow release out of GCL.

Runyan said that he appreciated that people thought about a bookend with the 5 feet below and it helped make decision on next steps. He said he appreciates people's collaboration on this operation. He said that he hopes that it did help out and we will see what the rest of the runoff brings.

Julie Ammann, Corps, said that she appreciated the conversation.

4. **Spill Priority List** – *Dan Turner, Corps, NWD*

a. Draft Spill Priority List

- The Corps will be able to implement the suggestions from FPAC.
 - John Day and The Dalles will move to the top of Level 1 to spill to 125% TDG for 24 hours/day, prior to spilling at CHJ and GCL to the 110% TDG.
- Priority Levels 6 and 7; Lower Granite and Lower Monumental were added in to be consistent with the Little Goose operation.
 - The footnote states that those would spill up to 125%/24 hours per day after that adult trigger had been met. If that occurs, that would be during the operation when spill changes due to adult passage issues.
- Added in a Level 2 to 127% TDG.
 - It seemed to make sense on spreading the TDG throughout the system in Level 2 and is consistent with previous approaches where they would have smaller steps on the way up.

Swieca, FPAC chair, told Turner thank you for coordination this year. She said that she thinks they have made some substantial improvements in the interpretability of the table, and she hopes that they can continue to do so over the next couple of years, but she thinks that they made good ground this year. She said thank you for the coordination.

5. **Operations Review**

a. Reservoirs

Reclamation (April 24, 2024) – Chris Runyan

- Hungry Horse Dam
 - Inflows: 3.7 kcfs
 - Decreasing from last week, they are starting to come back up with a little warmer temperature.
 - Note: for the last week inflows have been about 111% of average.
 - Outflows: 3.0 kcfs
 - Planned to increase to 5.5 kcfs Thursday, April 25.
 - Midnight elevation: 3541.5 feet
 - Filled from last week: 1.3 ft.

- Feet from full: 18.5 feet
- Increasing outflows to conserve some space before inflows come back up and refilling begins.
- Note: Next week Reclamation will be generating their May 1 forecast, it may be done next week or the following.
- Grand Coulee Dam (at Lake Roosevelt)
 - Inflows: 72.8 kcfs
 - Weekly average: 67% of average
 - Dry above GCL and it is showing with the inflows.
 - Outflows: 78.9 kcfs
 - Midnight elevation: 1279.6 feet
 - Feet from full: 10.4 feet.
 - Drafted: ~2.4 feet
 - In general, GCL is operating to be no lower than 5' below 1283.3 feet on April 30.

Corps – Eric Chow

- Libby Dam (*April 23, 2024*)
 - Midnight elevation: 2419.2 feet
 - Average Inflows: 7.6 kcfs
 - Average Outflows: 6.0 kcfs
 - Planned increase to 8 kcfs on April 25, 2024
- Albeni Falls (*Hope Gage*)
 - Midnight elevation: 2054.6 feet
 - Average Inflows: 24.5 kcfs
 - Average Outflows: 20.0 kcfs
 - 18 kcfs going forward
- Dworshak Dam
 - Midnight elevation: 1567.7 feet
 - Average Inflows: 7.0 kcfs
 - Average Outflows: 1.6 kcfs
- McNary Dam
 - Average Forebay: 339.0 feet
 - Average Inflows: 176 kcfs
 - Average Outflows: 172 kcfs

- Lower Granite Dam
 - Average Forebay: 733.6 feet
 - Average Inflows: 73 kcfs
 - Average Outflows: 74 kcfs
- Bonneville Dam
 - Average Forebay: 72.6 feet
 - Average Inflows: 184 kcfs
 - Average Outflows: 188 kcfs
- MOP Update
 - All four Lower Snake have been operating in MOP and there has been no adjustment to MOP ranges.

Jay Hesse, Nez Perce, said that he wanted to express appreciation for how the MOP ranges are being implemented, staying within MOP but also within the 1-foot soft constraint operating range. He said that he appreciates the efforts to do that.

Jonathan Ebel, ID, asked when FPIP will be meeting to discuss what probably will not be a sturgeon pulse.

Swieca said that she believes that they have already begun meeting and they are scheduled to present to TMT. She said that she thinks that they are already on the calendar.

Baus said it was his intention to add that to the Libby update. He said that it was his understanding that the FPIP, as Swieca noted, has been underway. He said that he wanted to remind TMT to please plan on participating at the May 8 TMT meeting that is when we plan on talking about and coordinating the Sturgeon Pulse SOR. He said, contrary to Ebel's comment, it is his tentative understanding that will be a sturgeon pulse and water supply is sufficient. He said that he thought 4.8 maf was the inflection point and we currently have a forecast of 5 maf.

Ebel told Baus thank you, and that he was glad he is making a poor assumption. He said that was good.

- Bonneville Dam - *Norris*
 - Norris noted for BON operations they are currently implementing the operations to complete the FGE study.
They are given specific instructions on how to operate BON to accomplish that study so if you see any anomalies they are directly related with implementing that study.

b. Water Quality – Daniel Turner, Corps

- Gage Outages
 - MCN Forebay
 - Was out for a couple days and should be back and starting to report back data.
 - The spreadsheet should be updated tomorrow with the value.

- TDA Forebay
 - There is a crane on the spillway blocking the antenna.
 - The project is aware, and they are working to resolve the issue.
- TDG Tracking
 - TDGs are below the 125% Water Quality Standard.
 - This is mainly due to spill operations of minimum generation – spill the rest.

c. Fish

Salmon – Swieca, NOAA

- Juveniles Index Estimates
 - Yearling Chinook are steadily moving through the system with a recent uptick about this time last week at LWG.
 - Lower Granite
 - Yearling Chinook:
 - April 18: 140,000 counted.
 - Dropped back down in subsequent days.
 - Subyearling Chinook and Coho
 - Experienced a pretty significant bump a couple of days late last week.
 - Steelhead:
 - Minimum Index: ~30,000 counted.
 - Maximum Index: ~160,000 counted.
 - Bonneville
 - Yearling Chinook (*last 7 days*)
 - Minimum Index: 26,000 counted.
 - Maximum Index: 52,000 counted.
- Adults
 - Bonneville (YTD)
 - Spring Chinook: 7,672 counted.
 - ~58% of ten-year YTD average
 - Steelhead: 1,990 counted.
 - ~76% of ten-year YTD average.
 - Slow start for this year.
 - Lower Granite (YTD)
 - Spring Chinook: 46 counted.
 - ~30% of ten-year YTD average

- Steelhead: 1456 counted.
 - ~30% of ten-year YTD average.

Lamprey – Swank, USFWS

- Adults
 - Not much is happening in terms of adults.
 - Juveniles
 - Little Goose
 - Little bump
 - Small numbers at the other projects so far.
- * Swieca added that when she provides the 10-year averages they are just that, they are 10-year average, and they are not in line with recovery goals. They are simply the 10-year averages.

Cumulative Passage – Morrill, WA

- Morrill said that he posted the Cumulative Passage Index in the chat function so people can take a quick look at where we are to past run-year timings observed.

| from Charles Morrill to everyone: 9:30 AM

| https://www.fpc.org/smolt/smolt_queries/R_smoltcumulativepassindex_resultsv7.php
| https://www.fpc.org/smolt/smolt_queries/R_smoltcumulativepassindex_resultsv7.php

d. Power System – Tony Norris, BPA

- Temperatures are headed to below average over this next week and there are some systems coming in, so they are expecting to see some variable energy resources pick up.

6. Public Comments:

7. Set agenda for next meeting – May 1, 2024

- a. DWR update

Today's Attendees:

Agency	TMT Representative(s)
NOAA Fisheries	Kelsey Swieca
Oregon	Erick Van Dyke
Washington	Charles Morrill
Kootenai Tribe	
Colville Tribe	
Umatilla Tribe	Tom Lorz (CRITFC)
Yakama Nation	Keely Murdoch
Bonneville Power Administration	Tony Norris, Scott Bettin
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 (Chair), Julie Ammann, Lisa Wright

Other Attendees (non-TMT members):

Colville Tribe – Dennis Moore

COE – Dan Turner, Alexis Mills, Willow Walker, Eric Chow

Oregon DEQ – Dave Gruen

Washington Ecology – Thomas Starkey

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Energy Keepers – Eve James

Avista Utilities – Patrick Maher

Chelan PUD – Melissa Lesser

Northwest Power and Conservation Council – Kate Self