

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 17, 2024

Facilitator's Summary

Facilitation Team: Emily Stranz & Colby Mills, DS Consulting

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

Review Meeting Summaries & Minutes – TMT Members approved the official meeting minutes and facilitator's summary from the July 10 meeting.

Dworshak Operations – Jessika Solleder, Corps, reported on operations at Dworshak Dam (DWR). The project is spilling 1 kcfs, with outflows of 10.8 kcfs (starting Monday). Current forebay elevation is 1,586.5 feet.

Natural flows continue to warm up with the extended heat wave, the current temperature at Anatone is 72.3 degrees F, Orofino is 73.4 degrees F, and the Lower Granite (LWG) tailwater has increased to 68.65 degrees F. The thermal barrier in the LWG forebay has been pushed to the 20-meter range, leading to the temperature increase. Jessika noted that the 1 kcfs of spill from Dworshak on Monday is expected to help cool things down by tomorrow. Inflows at DWR are still below average, which is not expected to change anytime soon.

Looking ahead at the 10-Day weather forecast, the region continues to experience intense heat, with some cloud cover today. The heat will intensify over the weekend but will start to cool down into next week. Cooler nighttime temperatures and wind are expected to provide some thermal relief.

Today's modeling results show DWR continuing to spill through July 19, with the water sent out on Monday expected to bring the LWG forebay back down below 68 degrees F. The Corps is constantly monitoring and reevaluating the analysis and will notify the TMT of any changes. Jessika noted that the Corps does not expect a need to change operations to keep temperatures down for sockeye trapping at LWG and will make necessary adjustments if the situation changes.

Sockeye Update – Jonathan Ebel, IDFG, provided an update on sockeye (posted to the TMT website), noting that the run is winding down at Bonneville (BON) and the final hatchery PIT-tag estimate at the project should be close to 1,700. He noted that historically, few fish passing BON after today's date make it to LWG. Fish have been moving through the system, with a few passing Ice Harbor (IHR). Conversion rates have improved since last week and are looking pretty good, especially from McNary (MCN) to IHR and IHR to Lower Monumental (LMN). A decrease in the ladder temperature differentials seems to have pushed some slower fish past the dams. Average travel times between dams in the lower Snake River have increased due to some slowdowns in the river. Finally, Jonathan reported that the sockeye trap and transport operation at LWG is going well.

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

- **Hungry Horse (HGH)**: Inflows continue to recede, with 1.4 kcfs yesterday; last week inflows were 48% of average. Precipitation in the basin this month is at 51% of average. Temperatures have been high and above average, in the mid-90s last week. This will continue for another week, with possible thunderstorms later in the week. Outflows at the project are 3.2 kcfs and will hold

through next week. Midnight elevation was 3,557.8 feet (2.2 feet from full), and the project continues to draft slowly. The plan is to hold current outflows for this week while targeting the end of September 20-foot draft.

Chris noted that with the current modernization project happening, the project is limited to 2 units (only for this year) and is experiencing heating concerns with the transformer at the dam. This has limited outflows to 3.2 kcfs. Transformers are impacted by air temperature, current load, and VAR requirements. When conditions cool down, Reclamation will look to increase outflows while keeping Columbia Falls flows steady and receding.

There is a possibility the project will not hit the end of September 20-foot draft target, based on running outflows of 3.2 kcfs the rest of the year, instead hitting it in early to mid-October. Reclamation and the State of Montana have been coordinating on this, and Chris noted that the Water Management Plan (WMP) states that the draft target can be pushed back due to outflow conditions. Reclamation will be tracking this over the next couple of months and will provide updates to the TMT during Operations Review. If a decision to change operations is needed, Chris will ensure that it is brought to the TMT for discussion. Tom Lorz, Confederated Tribes of the Umatilla Indian Reservation, noted early awareness of maintenance operations like this could help prevent issues in the future.

Brian Marotz, MT, has worked to inform TMT members on the abnormal temperature readings from the transformer, and the possibility of not meeting the 20-foot draft. With concerns about discharges impacting anadromous fish restoration in the lower Columbia, efforts to achieve flat or gradually declining flows to avoid a double peak downstream will be coordinated. Brian emphasized that this is a productive time of year for fish in the river, and the importance of avoiding significant flow reduction. Efforts will prioritize river productivity over a few-foot deviation in the reservoir target.

Kelsey Swieca, NOAA, added that from NMFS' perspective, it is important to balance the anadromous and resident species needs, and to optimize flow volume for both groups of fish. Uncertainty remains on if this will be an issue moving towards September, and NMFS looks forward to continuing discussions moving forward.

- **Grand Coulee (GCL):** Inflows yesterday were 125 kcfs, the weekly average is 88% of normal. Outflows yesterday were 131 kcfs, and midnight elevation was 1,288.5 feet (1.5 feet from full). The project reached its refill target last weekend of 1,289.3 feet and is now operating to support salmon flow objectives downstream while drafting to the August 31 draft requirement of 1,277 feet. This includes draft for flow augmentation and an additional foot for the Lake Roosevelt Incremental Storage Release Program.

Eric Chow, Corps reported on Corps of Engineers projects:

- **Libby (LIB):** midnight elevation was 2,456.0 feet, with average inflows of 15.8 kcfs, and outflows of 13 kcfs.
- **Albeni Falls (ALF):** midnight elevation was 2,061.9 feet, with average inflows of 13.9 kcfs, and outflows of 14.8 kcfs; the project is operating in the summer band of 2,061.75 - 2,062.25 feet.
- **DWR:** midnight elevation was 1,586.9 feet, with average inflows of 1.2 kcfs, and outflows of 10.8 kcfs.
- **LWG:** yesterday's average forebay elevation was 733.8 feet, with inflows of 35.2 kcfs, and outflows of 34.9 kcfs.

- **MCN:** yesterday’s average forebay elevation was 339.3 feet, with inflows of 167 kcfs, and outflows of 165 kcfs.
- **BON:** yesterday’s average forebay elevation was 74.0 feet, with inflows of 177 kcfs, and outflows of 172 kcfs.

Eric noted that last Monday, July 8, Little Goose (LGS) transitioned to 0.5-foot raised MOP; all other lower Snake River projects are operating at MOP.

Leon Basdekas, Corps, provided an in-depth update for operations at LIB. Presentation slides are posted to the TMT website. Lake Koochanusa is expected to reach peak elevation of around 2,456.3 feet around July 21. The approximate flow schedule is as follows: 13 kcfs through July 25, 11 kcfs through August 7, 9 kcfs through August 31, and 8 kcfs through September. Leon noted that the Corps will adjust to real time conditions with more or less water than is currently forecast to best meet the end of September target of 2,449 feet.

Water Quality – Dan Turner, Corps, reported some exceedances of the forebay criteria (115%) last week at the IHR and John Day (JDA) forebays, due to the heat wave and a lack of wind. The Corps didn’t make any spill changes as a result, and levels have since come down. The JDA tailwater gauge indicates no data coming in currently, due to a ruptured membrane on the gauge. USGS is fixing it on Thursday, while conducting gauge maintenance, and it should be up and running tomorrow afternoon.

Fish – Kelsey, NOAA, reported pretty low numbers of yearling chinook, coho, steelhead and sockeye moving sporadically through the system. Sub-yearlings are passing LWG at 10,000/day, and as high as 120,000/day at BON last week due to a hatchery release.

For adults, the upstream Chinook run is winding down, with 73% of the 10-year average to-date at BON and 95% at LWG. Steelhead counts are increasing at BON and throughout much of the system. An estimated 743,000 sockeye have entered the system at BON (a new record), at 232% of the 10-year average. Kelsey noted that the majority of these are bound for the upper Columbia.

Power System – Tony Norris, BPA, reported that warm weather has led to significant peaks in energy use. There have been no significant events to impact operations.

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 July 24, 2024, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, July 17, 2024
Minutes: Andrea Ausmus, BPA (contractor, CorSource Technology Group)**

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

1. Review Summaries and Minutes

a. Draft Summary & Minutes for July 10

- July 10 Summary and Minutes – Approved

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

a. Current Hourly Data

- Spilling: 1 kcfs
- Total Outflows: 10.8 kcfs
 - Started on Monday
- Forebay Elevation: 1586.5 feet
 - Better than this time last year.

b. Snake and Clearwater Rivers Temperature Data

- Anatone (Snake River):
 - Temperature: 72.73°F
- Orofino (Clearwater Mainstem):
 - Temperature: 73.4°F
 - Natural flows are heating up due to the heatwave.
- Lower Granite
 - Tailwater Temperature: 68.65°F

c. Lower Granite Forebay Temperature String

- Thermal barrier is pushing down to 20 m range.
- This is why we are seeing the LWG temperatures elevating.
- The 1 kcfs of spill, released on Monday (July 15) is expected to arrive and help cool things down by tomorrow (July 18).

d. Dworshak STP Extended Inflow Forecast

- Still below average flow at DWR and we are not expecting this to change anytime soon.

e. 10-Day Regional Forecast (July 11 – July 20)

- Still experiencing the intense heat, with a little cloud cover today (July 17).
- It will intensify over the weekend considerably.
- Going into next week we will see things cool down and the minimum temperatures at night decrease so that will provide a little thermal relief.

f. Weather Forecast for Lewiston, ID

- Stay hot and then will cool down into next week.
- The wind speed will also increase and will provide thermal relief.

g. Model Results – Updated July 17, 2024

- DWR will spill through July 19.
 - They are expecting the water they sent in on Monday, July 15, to bring the temperatures back down below 68°F.
 - However, they are still battling the heat so they are still reevaluating and rerunning their analyses and will notify TMT if anything changes.

Kelsey Swieca, NOAA, asked for clarification about the estimation in the top left corner of the Model Result. She asked if the estimation says that we have full powerhouse plus three days of TDG spill after accounting for the spill included in the model projection.

Solleder said that is correct.

Jonathan Ebel, ID, said that is looked that a pretty extreme heat event with a very high nighttime temperature at Lewiston on Sunday that was shown in the forecast. He asked if she projected needing to react to that to maintain the thermocline. He said as a reminder they are trapping Sockeye at LWG so maintaining that thermocline and keeping ladder and trap temperatures cool as well. He said it is always important.

Solleder said right now they are not predicting they will need to change their operation, but they will be reevaluating consistently throughout every day, and they will make any changes as necessary to avoid that from happening.

Ebel said that he appreciates that they are watching this closely. This one is a long tough heat.

3. Sockeye Update – Jonathan Ebel, ID

- Sockeye are slowing down in terms of the increase in numbers at BON.

- Getting close to the final hatchery expansion at BON>
- 1700 PIT tag expansion.
- Note: Historically fish that pass BON after today very few of those fish make to the LWG.
- Fish are moving through the system.
 - Few fish have passed up above IHR.
 - Conversion rates are looking good in these reaches and have improved particularly in MCN>IHR and IHR>LMN relative to the latter half of last week.
 - There was a decrease in ladder differentials that seemed to push some slower fish past the dams.
- Because of some slowdowns in the Lower Snake River average travel times have increased in that stretch.
 - Average travel time between dams and the Lower Snake has increased compared to last week's update.
- Trap and Transport Operation
 - Going well.

4. Operations Review

a. Reservoirs

Reclamation – Chris Runyan

- Hungry Horse Dam
 - Inflows (July 16): 1.4 kcfs
 - Continued to recede.
 - Last week: 48% of average
 - Base flows are coming down to low levels.
 - Basin has received below average levels of precipitation.
 - July Precipitation: 51% of average
 - High temperatures: mid-90°
 - Per average + 15°
 - Potential thunderstorms and high heat are in the forecast.
 - Outflows: 3.2 kcfs
 - Plan to hold it through next week.
 - Midnight elevation: 3557.8 feet
 - Feet from Full: 2.2 feet
 - Continue to slowly draft

- Upcoming Operations: Hold current outflow for this week, while also targeting the End of September 20-foot Draft.
- Modernization Project/Issues
 - Limited to 2 Units
 - Experiencing heating concerns with the transformer at the dam.
 - Limited to the 3.2 kcfs outflow.
 - Transformers are impacted from air temperature, current load, and VAR requirements.
 - When conditions cool down, they will look for opportunities to increase outflow while also keeping Columbia Falls flows steady and receding.
- September Target Estimate
 - When running conservative estimate of running 3.2 kcfs out, it is showing HGH may be 2-3 feet above the 20-foot draft target by the end of September.
 - It is still early at 2.5 months out.
 - The estimates show that HGH would hit the 20-foot by early- to mid-October.
 - Runyan has been speaking with Brian Marotz and Matt Boyer about this already, but he wanted to flag TMT as well.
 - In the Water Management Plan, it mentions the possibility of HGH not hitting the draft right at the end of September, it can at times be moved into October due to conditions.
 - Will keep track and update people as conditions change.

Brian Marotz, MT, said that he called a number of his colleagues in TMT to explain how they were looking at this with the abnormal temperature readings coming from the transformer, having to reduce the discharge to avoid that through 3.2 kcfs. He said that Runyan, Boyer, and he had discussed how it looked. He said this, as Runyan mention, is way ahead of the game because we have a few months to catch up, but it was looking as though we may not reach that 20-foot draft. Marotz said that he wanted people to be aware of that because we are also concerned with the discharges for anadromous fish restoration in the Lower Columbia. He said that he was looking at it from both a HGH and LIB perspective, we have a similar situation where what we are trying to achieve is flat or gradually declining clows after the Spring freshet that would coincide with the target that we are trying to achieve 20 foot down at HGH and 10 foot down at LIB by the end of September. Between the two projects there is more water at LIB and in order to avoid a double peak because we are feathering refill, we were getting close to refill at LIB, they thought it would be best for the river and downstream concerns to basically take the amount of water that would be coming in plus the amount that is in storage and flatten that out during the entire time to keep the rivers downstream, in the Flathead and Kootenay, level. This is important, especially at the flow level that we are at that we do not bounce the rivers around because this is the most biologically productive time of the year and that is when they are producing the maximum amount of insect food base for the fishery. So, it is important that we not have a sudden flow reduction and we have always

tried to have a gradual decline in flow after the Spring freshet so that we protect the maximum amount of wetted perimeter and ripple habitat for insect production. That water then continues downstream to help with the anadromous fish flow augmentation and there is more water in the Kootenay than there is in the Flathead so even though we are a little above, as the projections show, the 20-foot target here we will be putting out more water from the Kootenay by flattening that flow over that period of time, so the discharge coincides with that sag in flows in the Lower Columbia. Marotz said that he was explaining this to a number of people to say that they are paying attention, things could still change in the next couple of months, but this is the optimal condition for right here where we prioritize the river over the reservoir. If there is slop in the system like a forecasting error or unforeseen precipitation it is better to keep the river that is more sensitive, flat, and put a little of that error margin into fluctuation in the reservoirs and that will be how we do things all the time because we prioritize river productivity over a few foot deviation and a target in the reservoir.

Tom Lorz, CRITFC, said that he appreciated the update. He asked if this is a modernization turbine program, if this a one-year operation or if this is something that we will see and have to be thinking about for the next couple of years.

Runyan said that this should be just for this year. They are getting the work done. He said that the modernization project does continue, but the number of years that we will only be having two of four units available is only this year. So, if we can get through this Summer, we will be doing good.

Lorz said that it sounds good. He said that it is one of the things that if we knew ahead of time, we were going to have this problem we could have done something different, but hopefully we will not have to deal with it again anytime soon.

Swieca said that from NMFS' perspective it is important to them for a while to balance the anadromous' and resident species' needs and to optimize the flow volume for both of those groups of fishes. She said that she thinks it seems like there is still considerable uncertainty as to whether or not this may end up being an issue. She said that NFMS is happy to continue these discussions and she hopes that TMT will continue to get updates on this as we move closer to the end of September period. She said that NMFS does appreciate this conversation and they are looking for ways to balance both resident and anadromous needs and they look forward to continued updates on this. Hopefully things work out where it will not even be an issue for consideration, but they will standby and see.

Stranz asked Runyan about providing future updates to TMT. She asked if that would work okay for him and what cadence should TMT expect.

Runyan said that TMT does Operations Review every two weeks, he said that he can do that. He said Marotz and himself will stay in touch. If we get to where we need to make a decision and TMT all comes to agreement that we need to find a balance point or adaptively manage it and do something about that to record it, then we can bring that on to agenda. Until then he said that he will give an update every two weeks and let everyone know how HGH is doing.

- Grand Coulee Dam
 - Inflow (July 16): 125 kcfs
 - Last week: 88% of average
 - Relates to Water Supply Forecast, it has been there most of this Spring.
 - Outflows: 131 kcfs
 - Midnight elevation: 1288.5 feet
 - Feet from Full: 1.5 feet
 - Reached refill target: 1289.5 feet
 - Reached target last weekend.
 - Current Operation: Operating to support Salmon Flow Objectives downstream, while also drafting to the August 31 Draft requirement.
 - August 31 Draft Requirement: 1277 feet
 - Includes: 12-foot draft for flow augmentation & additional 1-foot for Lake Roosevelt incremental release storage program.

Corps – Eric Chow

- Libby Dam (Lake Koocanusa)
 - Midnight elevation: 2456.0 feet
 - Avg. Inflows (July 16): 15.8 kcfs
 - Avg. Outflows: 13 kcfs
- Albeni Falls (Lake Pend Oreille)
 - Midnight elevation: 2061.9 feet
 - Avg. Inflows: 13.9 kcfs
 - Avg. Outflows: 14.8 kcfs
 - Operating in Summer Band: 2061.75 – 2062.25 feet
- Dworshak Dam
 - Midnight elevation: 1586.9 feet
 - Avg. Inflows: 1.2 kcfs
 - Avg. Outflows: 10.8 kcfs
- Lower Granite Dam
 - Avg. Forebay elevation: 733.8 feet
 - Avg. Inflows: 35.2 kcfs
 - Avg. Outflows: 34.9 kcfs
- McNary Dam
 - Avg. Forebay elevation: 339.3 feet

- Avg. Inflows: 167.0 kcfs
- Avg. Outflows: 165.0 kcfs
- Bonneville Dam
 - Avg. Forebay elevation: 74.0 feet
 - Avg. Inflows: 177.0 kcfs
 - Avg. Outflows: 172.0 kcfs
- MOP Operation
 - Little Goose transitioned to a half-foot raised MOP on July 8, 2024.
 - All other Lower Snake Projects are currently operating within MOP.

b. Libby Update – *Leon Basdekas, Corps*

- Changing Forecasts
 - This Spring had a lot of changing forecasts.
 - After LIB came off the Sturgeon Pulse, LIB had a low over all Water Supply Forecast.
 - June 7
 - Set flow at 8 kcfs (steady to declining flows).
 - Later in June (June 26)
 - Started to see increases in the ESP forecast.
 - Bumped flows to 9 kcfs.
 - July 3 – 10
 - Flows continued to persist.
 - Bumped flows to 11 kcfs (July 3).
 - Bumped flows to 13 kcfs (July 10).
 - Thought they would have to hold this for a week.
 - July 12
 - Contacted RFC and they increased their volume forecast for Libby by 150 kaf for the April to August time period.
 - 150 kaf volume is about equivalent to 3.3 ft elevation in Lake Koocanusa.
 - Considerable jump in forecast but it made sense from what was being seen in flows. The flows were persistently higher than forecasts. They were not seeing the responses coming from the gauges upstream of LIB in Canada.
 - Not trusting the forecasts, the Corps became more conservative refilling LIB.
- ESPs and Actual Inflows

- To illustrate, flows based on the June 26 Forecast were significantly and persistently higher than what LIB was seeing in the forecast.
 - July 9 Period.
 - Forecast was still significantly lower than what was realized in actual inflows.
 - Now that RFC has adjusted their forecast, they are decreasing a bit faster than what LIB is seeing but it is manageable.
 - Libby Dam Probability Chart
 - Illustrates the weird year.
 - The triple peak in LIB inflows made it challenging to manage refill this year and maintain the steady decrease in outflows as desired.
 - Recession
 - LIB is seeing a strong signal of recession, so they are expecting it to keep going down close to as planned.
 - Refill and Summer Plan
 - Peak Elevation: ~2456.3 feet (July 21)
 - Flow Schedule:
 - 13 kcfs July 25
 - 11 kcfs August 7
 - 9 kcfs August 31
 - ~8 kcfs September 30
 - September Bull Trout Minimum: 6 kcfs
 - LIB will adjust to real-time conditions to best meet end of September target.
 - End of September: 2449.0 feet
- c. Water Quality – *Dan Turner, Corps*

- TDG
 - Last week there were some exceedances of the forebay criteria of 115% TDG in IHR and JDA forebays.
 - Due to hot temperature high pressure system and lack of wind. These have come back down.
 - Did not make any spill changes based on the exceedances instead they waited for the meteorology to pass.
- JDA Tailwater Gauge
 - Black Dot indicating no data
 - Ruptured membrane yesterday (July 16) on that gauge.

- USGS is going to replace on Thursday (July 18). The Corps will also be flushing that pipe at its normally scheduled maintenance. These will occur simultaneously.
- Gauge should be back by Thursday afternoon.

d. Fish

Salmon – Kelsey Swieca, NOAA

- Juveniles
 - Yearling Chinook, Coho, Steelhead, Sockeye
 - Low numbers sporadically moving through the system.
 - Subyearling Chinook (past week)
 - Lower Granite: ~10K per day
 - Bonneville: ~120K – 19K
 - Hatchery release provided the higher number.
- Adult Salmon Counts
 - Chinook
 - Upstream Chinook run is winding down
 - Bonneville 73% YTD of 10-year average
 - Lower Granite 95% YTD of 10-year average
 - Steelhead
 - Steelhead counts are increasing at Bonneville and much of the system.
 - Sockeye
 - Bonneville ~743K fish
 - New Record
 - 231% of the 10-year average.
 - Vast majority of sockeye are bound for Upper Columbia

e. Power System – *Tony Norris, BPA*

- It has been warm, and we are looking forward to cooler weather.
- There were some significant peaks in use of energy, but the lights have stayed on, and no significant events have impacted operations.

5. Set agenda for next meeting – July 24, 2024

- a. Dworshak Update
- b. Snake River Sockeye Update

Today’s Attendees:

Agency	TMT Representative(s)
NOAA Fisheries	Trevor Conder, Kelsey Swieca
Oregon	Erick Van Dyke
Washington	
Kootenai Tribe	
Colville Tribe	
Umatilla Tribe	Tom Lorz (CRITFC)
Yakama Nation	Keely Murdoch
Bureau of Reclamation	Chris Runyan
Army Corps of Engineers	Doug Baus (host), Lisa Wright
US Fish & Wildlife Service	
Idaho	Jonathan Ebel
Montana	Brian Marotz
Spokane Tribe	
Nez Perce Tribe	
Warm Springs Tribe	
Confederated Salish and Kootenai Tribes	
BPA	Tony Norris

Other Attendees (non-TMT members):

COE – Leon Basdekas, Jessika Solleder, Dan Turner, Alexis Mills, Eric Chow, Tiffany Dixon

BPA – Tammy Mackey

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Clearing Up – K.C. Mehaffey

Douglas Co. PUD – Andrew Gingerich