

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

March 18, 2015

Facilitator's Summary

Facilitator, Emily Plummer; Notes, Tory Hines 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. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Review of Meeting Minutes

The March 4th Official Minutes and Facilitator's Summary were approved pending the following change to the Facilitator's Summary:

- Doug Baus, COE, corrected the language under Dworshak Operations to read "5.7 feet ***above*** the end of February flood control elevation"; the summary had originally stated that the project was 5.7 feet below the targeted flood control elevation.

Water Supply Forecast

Doug Baus, COE, provided an update on the official March water supply forecast which is posted on the TMT website. He noted the volumes for the final March forecast for Hungry Horse Dam:

- April-August: 1,916 kaf (99%); and
- May-September: 1,676 kaf (99%)

He noted that the minimum flows downstream of Hungry Horse as set by the March final forecast for April-August are as follows:

- Columbia Falls: 3,500 cfs
- Hungry Horse: 900 cfs

Doug also provided the official March forecasts for Corps projects:

- The Dalles April-August: 72 maf (82%),
- Lower Granite April-July: 15 maf (77%),
- Libby April-August: 5,683 kaf (97%), and
- Dworshak April-July: 1,815 kaf (74%)

Steve Hall, USACE-Walla Walla, reported that Dworshak end of March elevation will likely be above the current targeted flood control elevation 1,577.7ft due to recent inflow. He noted that the Corps is preparing a request for a flood control deviation to fill above 1577.7ft by March 31 in order to support April/May flows for fish. Steve reported that the first half of March was very dry with the exception of recent rainfall that melted 1 to 1.5 inches of snow pack in the basin. Dave Statler, Nez Perce, asked when the updated STP would be available. Steve stated the STP will change next week and that the risk analysis and deviation will provide more information regarding target flows. Steve noted the Corps is aiming for inflows of 8kcfs or more through the end of April; additionally, 7.5kcfs will be released on March 25th and 26th to aide a Dworshak hatchery release. Various Salmon Managers expressed appreciation to Steve and the Corps for their proactive approach. Dave Statler suggested the Corps aim for an earlier refill date as a result of the low water supply forecast.

Chum Spawning Operation

Paul Wagner, NOAA, reported on the chum operation, noting that they have continued to track temperature units and emergence is expected to be within the normal range. Tony Norris, BPA, asked if the operation was on track for a complete emergence by the end of March. Paul noted that the temperature monitoring is tracked with the floating gauge and is not representative of all of the redds, thus it is difficult to say when emergence will be complete. Paul noted that stream flows over the next 10 days look sufficient to continue the operation, however, emergence can continue past March. The need to balance flows for the Chum operation and summer flow augmentation was noted, and it was recognized that there are step down options that could be implemented if necessary.

- **Action:** TMT will revisit the Chum operation at the March 25th conference call to check in on potential end of emergence.

Spill Priority List

Doug Baus, COE-NWD, shared the draft Spill Priority List (SPL) that is to be implemented April 1 until further notice. Doug noted that the order is largely the same as last year, including the switch from bulk to uniform spill pattern coordinated for Lower Monumental in accordance with the FOP. The SPL prioritizes involuntary spill at Lower Granite dam and works downstream. Paul Wagner stated there were no recommended changes and the SPL was well received at FPAC. Lisa Wright, COE-NWD, noted the TMT recommendation last year was to implement the top down order a week earlier than April 1 for the benefit of early Snake River out-migration. Russ Kiefer, ID, noted that although it is unlikely that there will be involuntary spill in the next couple of weeks, it might be better to implement the SPL earlier, suggesting March 24, 2015 as the start date. The group generally agreed that it would be best to implement the SPL on March 24th. Lisa Wright reminded TMT that the SPL will go into effect March 24, 2015 to April 1, 2015, at which point the TDG requirements shift and the SPL will be revised to reflect the appropriate TGD levels. Erick Van Dyke, OR, noted not spilling at Ice Harbor Dam at this time is critical to ensure work is completed so that spill for fish passage can start April 3. Doug responded that the Corps agrees and this special operation to not spill at IHR, as with other special project operations that limit spill capability, will be coordinated with the projects separately and would not impact the official SPL.

Operations Review

Reservoirs: Mary Mellema, BOR, reported on Reclamation projects:

- Hungry Horse midnight elevation was 3,537.4ft, with 4.5kcfs outflow. Mary noted inflow jumped from 3,000kcfs to 19,000kcfs in 2 days due to an increase in flow. The end of March target elevation is 3,540.5ft, and refill is on track for early July.
- Grand Coulee elevation was 1,253.4ft; the project is in the process of drum gate maintenance, and is expected to finish by May 10th. The current operation range is 1,250-1,255ft, and the April 10th target elevation is 1,253ft.

Lisa Wright, COE, reported on Corps projects:

- Libby midnight elevation was 2,414.3ft, with 4kcfs outflow.
- Albeni Falls midnight elevation was 2,051.8ft, with 30.2kcfs outflow.
- Dworshak midnight elevation was 1,574.4ft, with 1.5kcfs outflow.
- Lower Granite average inflow was 46.9kcfs.

- Bonneville average inflow was 149.4kcfs

Dave Statler asked when the Corps expects to see a bump up at Dworshak with the STP's minimum flow in place. Joe Skalicky, USFWS, stated the 2 day increase in flow for the hatchery release is on March 25-March 26 and the outflow will likely increase from 1,500cfs to 7500cfs. Russ Kiefer noted that Steve Hall will determine the necessary flood control deviation and devise a new STP next week to better reflect the latest forecast. Russ continued that rather than suggest operations, it is prudent to get current data and come up with a tentative plan at FPAC.

Fish: Paul Wagner, NOAA, reported on fish. He noted that 270 adult spring Chinook have passed Bonneville. Lower Granite opened the adult ladder and saw a bump in steelhead numbers, 780 in one day. For juveniles sub-yearling Chinook, around 1,000/day are passing Bonneville which is standard for this time of year.

Water Quality: Tina Lundell, COE, reported on water quality, noting that Chief Joseph is experiencing database issues; however, they are working to fix it. She continued that spill season is gearing up with Lower Monumental, Lower Granite and Camas forebay gauges all currently operating. The remaining forebay gauges should be operating within a week. She noted that there was involuntary spill at McNary for most of March due to a turbine outage, spill at Chief Joseph on March 11- 13th due to maintenance, and spill at Little Goose on March 12th also due to maintenance. She continued that the spill season will start on April 3rd.

Power System: Tony Norris, BPA noted that there is nothing to report.

The next TMT meeting will be a conference call meeting on March 25th at 9:00am.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM—OFFICIAL MINUTES

March 18, 2015
Minutes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Emily Plummer, DS Consulting. Representatives of the Nez Perce Tribe, BPA, NOAA, COE, BOR, Idaho, USFWS, Washington, Oregon, Montana, CRITFC/Umatilla Tribe, and others participated. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review Meeting Minutes—March 4

Baus made a change to the facilitator's summary under Dworshak Operations Update to indicate that Dworshak ended February at 5.7 ft *above* the end of February flood control elevation (previously the notes said *below*). The version currently posted on the TMT web page is correct. There were no comments on either the facilitator's summary or the official minutes today so both were deemed final.

3. Water Supply Forecast Update

Mary Mellema, BOR, and Lisa Wright, COE, gave updates on the NWRFC, BOR and Corps March final water supply forecasts for individual basins. More information on these forecasts is linked to today's agenda on the TMT website.

- Hungry Horse (April-August) – 1916 KAF, 99% of average
 - (May-September) – 1676 KAF, 99% of average
 - Minimum flows at Columbia Falls – 3500 CFS; Hungry Horse – 900 CFS. These flows are based on the March forecast for April-August.
- The Dalles (April-August) –72 MAF, 82% of average
- Lower Granite (April-July) – 15 MAF, 77% of average
- Libby (April-August) – 5683 KAF, 97% of average
- Dworshak (April-July) – 1815 KAF, 74% of average

Steve Hall, COE, gave an update on Dworshak operations in light of the water supply forecast. Because strong inflows could continue according to the latest ESP traces, the end of March flood control target elevation, currently 1577.7 ft, is expected to rise above 1577.7 ft in a few more days. The COE is pursuing another flood control deviation request that would allow Dworshak reservoir to fill above the March 31 flood control elevation of 1577.7 feet. The first half of March has been extremely dry except for inflows over the weekend due to recent rain, which melted approximately 1 to 1-½ inches of snow/water content throughout the basin. Anticipating that April-July runoff

volume will drop from the current level, the COE made another flood control deviation request to support augmentation flows in April and May. Charles Morrill, Washington, thanked the COE for its diligence in planning ahead for fish.

Next week on March 25-26, Dworshak will provide two days 7.5 kcfs outflows to aid the migration of 1.5 million smolts released by the Dworshak National Fish Hatchery. Dave Statler, Nez Perce Tribe, asked whether the STP traces posted to the TMT site are up to date, given that flows on some days are shown as greater than 7.5 kcfs. The STP will probably change next week to reflect current conditions, Hall replied. The goal is for Dworshak to supply at least 8 kcfs flows through April. Russ Kiefer, Idaho, thanked the COE for taking proactive steps to preserve water for fish in light of declining snowpack.

Statler commented that early refill at Dworshak might be a good future strategy in low water years because it would allow the project to pass inflows and take full advantage of the freshet. Hall said it's likely that inflows peaked this weekend. The COE is working on striking an earlier balance between refill and flood control.

4. Chum Spawning Update

Paul Wagner, NOAA, said chum emergence is occurring and the current minimum tailwater is 13.0 feet. Tony Norris, BPA, asked whether emergence is likely to be complete by the end of March. Wagner said the gage that measures accumulation of temperature units is not representative of temperatures throughout the whole chum spawning area, so it's difficult to say. Norris proposed that TMT have a conference call next week to check in on the water supply issue, and Wagner said NOAA will have a streamflow forecast by then. Joe Skalicky, USFWS, suggested that people consider a consensus definition of emergence, such as 50% by a given date.

A possible interim measure to conserve water would be dropping the Bonneville tailwater elevation to 12 ft, Norris said. Current information suggests that might not be a problem. Statler asked whether it would be possible to do redd surveys as the water recedes in order to establish the impact of releasing water to meet flood control elevation targets. Chum redds are difficult to identify even when they're fresh, Scott Bettin, BPA, replied. Skalicky said this would be a good year to examine the impacts of recent changes TMT made in the chum operation. TMT will discuss chum again in a March 25 conference call.

5. Spill Priority List

The draft spill priority list posted to today's agenda will be in effect on April 1, Baus said. The list allocates involuntary spill to projects on the basis of priorities established at TMT, and is essentially the same as last year's list, allocating excess spill to Lower Granite first and moving downstream.

The switch from bulk to uniform spill pattern at Lower Monumental are now steps 3 and 4, in accordance with the FOP, Lisa Wright, COE, pointed out. That modification was added to the spill priority list in-season last year to be consistent with the FOP and had support at TMT, so the COE implemented it proactively this year.

As FPAC chair, Wagner initially approved implementation of the spill priority list attached to the TMT agenda as of April 1, when state water quality waivers kick in. Then TMT discussed whether to switch spill priorities to top-down order (LWG to BON) a week early in case of an early juvenile out-migration, which was the TMT recommendation last year. The BON corner collector opened on March 10 for kelt passage and is already available, Bettin noted. He reminded everyone it's imperative to avoid spill at Ice Harbor while construction is underway. We probably won't see the typical inflow pulses (and resulting involuntary spill) we've come to expect because snow at low and middle elevations has already melted, Morrill said. TMT agreed it would be prudent to switch spill priority order on March 24, prior to the waivers going into effect on April 1.

6. Operations Review

a. Reservoirs. Hungry Horse inflows recently rose to 19 kcfs from about 3 kcfs within two days. That's probably the highest inflow ever recorded in March, Mary Mellema said. Current elevation is 3537.4 ft with releases of 2.5 kcfs. Anticipating high inflows, the BOR will increase discharges to 4.5 kcfs over the next few days. The target elevation for the end of March is 3540.5 ft. Statler asked if refill is predicted to be early; Mellema said no, the volume forecast was 99% of average.

Grand Coulee is at 1253.4 ft elevation, with drum gate maintenance underway and a required operating range of 1250-1255 ft elevation until drum gate maintenance concludes on May 10. The April 10 elevation target is 1253 ft.

Albeni Falls is at elevation 2051.8 ft with releases of 30.2 kcfs. Libby is at elevation 2414.3 ft, discharging 4 kcfs. Lower Granite average outflows are 46.9 kcfs. Bonneville average outflows are at 194.4 kcfs.

Dworshak is at elevation 1574.4 ft with average discharges of 1.5 kcfs. Discharges will need to increase to 7.5 kcfs on March 25-26 for the Dworshak hatchery release. In light of the uncertainty regarding Dworshak outflows, Statler suggested a post-release fish operation that avoids a quick reduction back to minimum discharges. TMT added Dworshak operations to the agenda for next week's conference call to discuss the chum operation.

b. Fish. Wagner reported that 270 adult spring Chinook have been counted at Bonneville. When the Lower Granite adult ladder opened, approximately 780 steelhead began passing per day, an unusually high rate for this time of year. Approximately 1,000 subyearling Chinook per day are arriving at Bonneville, which is not unusual.

c. Water Quality. Tina Lundell, acting COE water quality team lead, gave a summary of spill conditions over the past two weeks. Other than database reporting issues at Chief Joseph, the COE district offices are almost ready for spill season. By this week or next, all forebay gages will be in operation (the tailwater gages operate year-round). McNary spilled for most of March due to lack of turbine, and Chief Joseph spilled on March 11-13 due to maintenance issues. Little Goose also had spill related to maintenance issues on March 12. It was clarified that Camas-Washougal gage is no longer used as to manage TDG compliance, although its TDG readings are still reported on the COE water quality monitoring website.

7. Next TMT Meeting

There will be a conference call on March 25 to discuss chum spawning and Dworshak operations.

Name	Affiliation
Dave Statler	Nez Perce
Scott Bettin	BPA
Paul Wagner	NOAA
Lisa Wright	COE
Doug Baus	COE
Arun Mylvahanan	BPA
Tony Norris	BPA
Mary Mellema	BOR
Russ Kiefer	Idaho
Laura Hamilton	COE
Tina Lundell	COE
Tory Hines	DSC
Robin Gumpert	DSC
Joe Skalicky	USFWS
Charles Morrill	Washington

Phone:

Erick Van Dyke	Oregon
Jim Litchfield	Montana
Tom Lorz	CRITFC/Umatilla
Karl Kanbergs	COE
Steve Hall	COE
Dave Benner	FPC
Greg Lawson	Thompson Reuters