

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

October 26, 2011

Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Meeting Minutes/Notes

The 10/5 Official Minutes and Facilitator's Notes, and 10/12 Official Minutes were reviewed. With the following two changes, they were considered final:

October 5 Official Minutes –

- Russ Kiefer, Idaho, clarified a comment he made under the Spill Priority List discussion, and offered to send specific language to Doug Baus to correct the notes.
- Dave Wills, USFWS, referred to page 6 on which he shared particular fish passage count numbers – as many of these were incorrect, he asked that the data be removed and just include a note that he reported the data.

Lower Granite Pool Bathymetry Survey Results

Doug Baus, COE, gave an overview of today's presentation of the survey results, noting that topics to be covered included the data from the surveys; information about the Settlement Agreement; and timeline for accomplishing tasks related to the Programmatic Sediment Management Plan (PSMP) and activities for addressing sediment issues at Lower Granite.

Gregg Teasdale, Walla Walla District COE Hydraulic Engineer, presented from a power point (linked to today's agenda) that included information about sediment encroachment in 2009, 2010 and 2011 at various pool elevation levels (associated with MOP) at Lower Granite; and possible alternative options for addressing these issues (aside from channel dredging) that included spur dikes, different operational methods and a sand trap upstream on the Snake River. Gregg noted that the surveys were able to confirm for the COE what they posited, that during high discharge, sediment encroachment diminishes and then dunes reform on the backside of the hydrograph. He went through the merits of each of the alternative options for addressing sediment issues.

TMT members asked questions:

- What is 'depth encroachment'? Response: the amount of sediment that encroaches on the navigation areas which diminishes the navigation depth.
- What are the COE's 'navigation channel dredge limits'? Response: This is the area in which the COE has authority to dredge (marked by a solid line on the graphs) – this area does not change. Other areas, such as closest to the port shores, fall within the authority of the Ports.

- Have you looked in to how spur dikes might impact fish habitat conditions?
Response: Yes, the USGS is doing a near-shore habitat assessment as part of the NEPA analysis, and it will include fish sampling to study impacts.
 - Suggestion: Include lamprey in the habitat assessment work. Response: Yes, this will be part of the NEPA process.
- What about downstream deposition from spur dike movement of sediment?
Response: We are not seeing an adverse impact in the short term, but longer term (e.g. 50 years) this will need to be addressed.

Richard Turner, COE Walla Walla District Project Manager for the development of the Lower Snake Programmatic Sediment Management Plan and Environmental Impact Statement (PSMP/EIS), shared information about the schedule as it currently stands:

- A draft EIS is scheduled to be published in Feb/March 2012, followed by a public comment period.
- Depending on the comments received, a final EIS is scheduled to be published in Sept 2012.
- The COE's Record of Decision (ROD) is scheduled to be completed in Dec 2012.
- Action planning would begin in early 2013 – potential actions include channel maintenance (near term) and in-water structures (long term).
- Actions described in the ROD would likely begin in the following in-water work window of Dec 2013- March 2014.
- Specific actions would be analyzed in an Environmental Assessment (EA) tiered off the Programmatic EIS. ESA consultations would happen via an EA.

TMT questions about the timeline:

- How will actions be funded? Response: This will be an O&M action. Comment: O&M funds might be constrained in future years, challenging this and other Corps projects that are intended to provide BiOp-mandated fish protection measures.
- What is the cost estimate for sediment removal? Response: The COE is working that estimate in to our process, but an estimate is not available at this time.

Robert Eskildsen, Office of Counsel at Walla Walla District COE, presented information about the Settlement Agreement provisions, particularly related to short term channel maintenance. The Agreement, he said, limits the COE's ability to do channel maintenance until the PSMP is complete, unless in the case of an 'emergency' that would allow the COE to expedite alternative procedures while doing an EA. Robert said that the COE must meet the requirements in the Agreement as well as terms of NEPA and other environmental laws (e.g. ESA) – the former two contain similar definitions of 'emergency' around issues of public safety and economic hardship, while ESA also says the event must be 'unexpected', e.g. a major flood event or volcanic eruption. In the case at Lower Granite, the COE believes the issue to have developed more gradually by way of incremental deposition of sediment over time and would not warrant taking 'emergency' action, under that definition. Dredging must follow the general procedural requirements of environmental laws, a process the COE has set up and which was described briefly by Richard Turner. In summary, Robert said there are many factors for

not moving ahead with channel maintenance this year that include current operations, environmental laws and required processes, case law and others -- and this conclusion is based on many discussions the COE has had internally and with respect to the Settlement Agreement. Parties to the Settlement include the National Wildlife Federation, Earth Justice, the COE and Lower Granite Navigation Coalition.

Doug Baus concluded the presentation with a look forward. In developing 2012 operations, the COE will coordinate closely with TMT and other regional stakeholders. The COE will enlist NOAA and the COMPAS model to analyze effects of various operations on fish survival, as well as run an internal analysis of operations effects on water particle travel time. He opened the discussion up for feedback from TMT members. Generally, TMT suggested they need more information to understand how they might weigh in, and asked that the COE keep them apprised of new information and operational developments in a timely manner. They will be looking for a balanced operation that allows the COE to meet its navigation safety requirements while minimizing negative impacts to the fish.

Action/Next Step: Paul Wagner, NOAA, will coordinate a Comprehensive passage (COMPASS) model presentation for TMT in the near future, to help ground the team in the capabilities of the model and how it could be used to inform this process.

Bonneville Updates

Lisa Wright, COE, provided information to TMT about work happening at Bonneville. The Bradford Island 'B branch' fish ladder was dewatered in September to allow workers to address erosion problems. She showed pictures that depicted progress on this work. Concrete pouring to shore up the foundation was nearly complete as was placement of rip rap which will be followed by two days of grouting, to be completed by 10/31. Scott Bettin, BPA, also noted that the 'A branch' was out of criteria and being fixed as well, expected to be completed within the same timeframe.

Condit Dam removal was scheduled for today at noon. To mitigate against potential impacts to Tribal fishing sites near the mouth of the White Salmon and to move sediment faster through the dam, Bonneville dam will have a special low pool operation, as coordinated through FPOM. The live coverage of the dam removal could be found on www.pacificorp.com/condit.

Chum Update

Paul Wagner, NOAA, said two chum have been observed in the spawning area to date. The FCRPS BiOp offers guidance on the start of operations to protect chum that says the first week of November and 'when significant numbers of fish are present'. TMT members discussed this and other factors that should be considered around chum operations, including the status of Grand Coulee (which is nearly full), topography shifts that may have resulted from last year's sustained high flows; water supply into the area (it was noted that there was as yet no flow coming from Hamilton Creek); and completion of fish ladder repair work at Bonneville Dam.

Action/Plan: Given all this, BPA said they would plan to begin operations for chum on Tuesday, 11/1. The COE will set the operation as was done last year to target an 11.5' tailwater elevation within a range of 11.3-11.7' feet during daylight hours

The salmon managers planned a field trip to the chum spawning area on 11/4 to assess chum numbers and available spawning habitat, and would use this data to determine whether to recommend a different operation than the one described for the start of the season.

TMT agreed that if any changes to operations were made in between TMT meetings (either due to delay in fish ladder grouting work completion or salmon manager recommendations from their field trip observations), email updates would suffice as communication out to the team. Steve Smith, Colville Tribe, suggested that any recommended changes to operations should consider the full season and impacts. TMT will revisit chum operations at TMT meetings throughout the season.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects: Grand Coulee was at elevation 1287.3'. Hungry Horse was at elevation 3548.81' and operating 1.5 kcfs outflows to meet Columbia Falls minimums. Doug Baus, COE, reported on projects. Libby was at elevation 2448.23' with 4.0 kcfs inflows and 4.0 kcfs outflows. Albeni Falls was at elevation 2053.55' with 15.3 kcfs inflows and 23.8 kcfs outflows. Dworshak was at elevation 1518.96' with 1.8 kcfs inflows and 1.6 kcfs outflows. Lower Granite outflows were 25.4 kcfs; at Priest Rapids flows were 83.1 kcfs; at McNary flows were 114.4 kcfs and at Bonneville flows were 136.7 kcfs.

Fish – Paul Wagner, NOAA, reported on fish. Adult counts at Bonneville were in the 100's/day for Fall Chinook for a season total of about 400,000; 83,000 season total for jacks (well above the 10-year average); 366,000 season total for steelhead; and 24,700 season total for lamprey. At Lower Granite, less than 100/day adult Chinook were being observed, with a season total of 24,500; the season total for jacks at Lower Granite was 19,000 – again a very big number. 48 total adult lamprey were observed at Lower Granite. Juvenile counts were all but complete; smolt monitoring ends on 10/31. Subyearling Chinook counts at Lower Granite were less than 200/day, and less than 100/day at Little Goose.

Water quality – Nothing to report.

Power system – Nothing to report.

Next Meeting, 11/2 Conference Call

Agenda items include:

- Bonneville Operations
- Water Management Plan Update

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

October 26, 2011

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the Nez Perce Tribe, BPA, COE, NOAA, Montana, USFWS, Idaho, BOR and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review Meeting Minutes for October 5 and 12

October 5 minutes: Regarding the spill priority list, Russ Kiefer, Idaho, said it's more beneficial to spill in the lower Columbia this time of year than in the lower Snake because fish in the Snake are likely to overwinter somewhere, while fish in the Columbia might make it to the estuary and ocean. He will supply language to that effect. Dave Wills, USFWS, suggested deleting a paragraph of fish counts that were not accurate. The COE will make these changes and repost the notes to the TMT page.

October 12 minutes: There were no comments on these notes today so they can be considered final.

3. Lower Granite Pool Bathymetry Survey Results

Gregg Teasdale, COE Walla Walla senior hydraulic engineer, gave a presentation on the Programmatic Sediment Management Plan (PSMP) to address navigation problems at Lower Granite due to sediment buildup in the navigation channel at the confluence of the Snake and Clearwater rivers. Teasdale said he gave a similar presentation to navigators in the area last week. He showed TMT bathymetry slides that show the growing encroachment since 2009 at three pool surface elevations: 733 feet (MOP), 734 feet (MOP+1) and 735 feet (MOP+2). The ports of Lewiston and Clarkston each have responsibility for dredging small areas close to shore; historically they piggyback onto COE contracts for dredging in the main channel. Currently, even at 735 feet or MOP+2, sedimentation is causing significant impairment to navigation at both ports.

At MOP (733-734 feet), the maximum encroachment into the channel for the port of Lewiston is 4.7 feet and the average depth of encroachment is 1.4 feet. For the port of Clarkston, the maximum encroachment at MOP is 6.7 feet and the average depth of encroachment is 3 feet. An average encroachment depth of 3 feet means that, at 14 feet of navigational depth, barges would be plowing through 3 feet of sediment.

There was discussion of areas that the COE is authorized to dredge, indicated by red outlines on the slides. The authorized channel dimension is 255 feet wide but widens to 455 feet in the Clearwater turning basin so barges can swing around in front of the docks, Teasdale explained.

Alternative 1: spur dikes. Teasdale showed TMT slides of what might be done to control and move sediment through the confluence by building spur dikes that speed up water velocities and move sediment past navigation areas. Another issue at Lower Granite is the need to maintain flood capacity at the Lewiston levee. In light of this concern, it is possible that half-height structures will move the sediment as effectively as full height structures.

Teasdale also showed bathymetry done on May 26, 2011, during peak discharges of 21 kcfs from Lower Granite. This slide is unusual in that all other bathymetry studies were done when flows were down and maximum sedimentation had occurred. This image shows less sediment encroaching into the navigation channel during peak discharge. It indicates the dunes that form in front of the port of Clarkston are washed out during high discharges. About 80% of the sediment in the confluence comes from the Snake River, and 60% of that comes from the Clearwater River. Bathymetry studies indicate that high flows help keep the navigation channel free of sediment, Teasdale said. There will be low flow years, but sediment transport studies indicate that, over time, spur dikes will reduce the need for dredging. A velocity of 8 feet per second for a discharge rate of 211 kcfs is fast enough to move coarse sand and keep it moving. Modeling shows the spur dikes would move Snake River flows closer to the river banks at velocities that reduce deposition of sediment.

Alternatives 2 and 3: operational changes and sediment trapping. The PSMP is also looking at operational methods to move sediment out of the confluence, such as a specific range of flows during drawdown. Another possibility is a sediment trap on the Snake River upstream of the Lewiston levee. The main drawback to building a sediment trap would be the need to remove about a million cubic yards of sediment every few years.

Kim Johnson, COE, asked whether the model for spur dikes includes areas downriver where there might be increased deposition. If the COE can approximate the hydraulic parameters that are known to move sediment and construct them as needed, there's a good chance these structures will move sediment through the system, Teasdale replied. The PSMP has a 50-year planning horizon; eventually a backwater effect will create navigation and flood risk problems. The COE is investigating the long term aspects of this.

Rick Kruger, Oregon, said in-depth analysis of the potential effects of spur dikes on fish habitat needs to be part of the EIS. It would be a critical concern if the dikes create habitat conditions that encourage predation. On the other hand,

they could create good rearing habitat; this needs to be determined. Teasdale replied that a USGS assessment of near-shore habitat areas is part of the EIS, including fish sampling and habitat evaluation. Dave Statler, Nez Perce Tribe, requested that lamprey needs be included in the habitat assessment. Slow-moving areas would encourage lamprey burrowing and rearing, while repeated dredging of these areas could destroy rearing habitat.

NEPA process: Richard Turner, PSMP project manager, said the the draft EIS is on track to be released for public comment in February or March 2012, with plans for a final EIS in September 2012 and a ROD in December 2012. Actions the COE undertakes would depend on the outcome of NEPA review, with channel maintenance as a likely first step. Paul Wagner said any BiOp review NOAA undertakes would be concurrent with the EIS process. Any needed changes at Lower Granite that come out of the NEPA review would become part of the O&M budget, which is funded through general COE appropriations.

Settlement agreement: Robert Eskildsen, COE, gave a presentation on the 2005 settlement agreement, which limits the COE's ability to dredge on the lower Snake River until the PSMP is complete. The National Wildlife Federation was the primary plaintiff in this suit. The settlement gives exceptions for emergency dredging, with an emergency defined as "unacceptable hazard to human life, navigation, significant loss of property, or risk of severe economic hardship." This is similar to the NEPA definition of an emergency, but the ESA also requires that the event be unexpected. Flood events would qualify as emergencies under the ESA, but gradual accumulation of sediment in the lower Snake would not justify an emergency declaration. Statler asked why gradual accumulation would not qualify; Carter said the COE has based its decision on case law findings that define an emergency.

The settlement also authorizes site-specific dredging as needed to maintain the navigation channel. However, that provision requires general environmental compliance first, i.e. completion of the PSMP.

Next steps: The COE will be looking for feedback from TMT on this issue for the next several months, Baus said. The COE is just beginning the process of working with stakeholders, including TMT. Statler asked the COE to look at viable options that mimic natural river functions. Wagner said COMPASS modeling can be used to look at effects on fish travel time at various MOP elevations. He will schedule a presentation on COMPASS for TMT.

4. Update on Bonneville Operations

Lisa Wright, COE, gave an update on activities currently underway at Bonneville, including B-branch ladder repair work at Bradford Island and a special operation for Condit Dam removal on the White Salmon River at noon today. She showed slides of the damage discovered at the fish ladder and work that is being done to repair it. Concrete has been poured into the eroded areas

between sections 25 and 26, and riprap is being placed in the area. Work is expected to end on October 31. Scott Bettin, BPA, noted that further erosion found in the spillway tailrace will limit flows to the 1st powerhouse, which could affect water availability during the chum operation.

The Condit Dam operation began at 8 am today in response to a request from CRITFC to maintain a Bonneville elevation of 71.5-73 feet through Friday, October 28. The Bradford Island B-Branch repair could cause difficulty staying within a foot of the operating range, Bettin cautioned. Wright said the Condit Dam operation has been coordinated with FPOM in relation to the chum operation, which will probably begin on November 1.

5. Chum Update

The chum operation typically begins the first week in November when a significant number of fish are seen in the area per the BiOp, Wagner said. To date 2 fish have been seen. Grand Coulee is nearly full at 1287 feet in preparation for the chum operation, John Roache said. There are concerns about the chum operation this year because it's possible that sustained high flows for 6 weeks this spring could have changed the topography of the area. An elevation of 11.5 feet is desirable sooner rather than later so conditions can be monitored to see if adjustments are needed, Wagner said.

Another factor to consider is the Hamilton Creek, typically a big water contributor, is not flowing now, Bettin added. The chum operation is scheduled to begin November 1, Tony Norris said, but that could be delayed by the need to accommodate work on the fish ladder.

Wagner will do a field check on October 28 to monitor spawning conditions for chum. Unless a change is requested, the COE is planning the same operation as last year: a minimum tailwater of 11.3 feet and a range of 11.3-11.7 feet from 6:30 am to 5 pm. These are hard constraints. Baus asked whether the COE should expect a formal chum request from Salmon Managers at next week's TMT meeting. Wagner said that load factoring might be sufficient this year as it has been in past years. This will depend on fish numbers and precipitation. The chum operation will be adjusted as warranted, Norris said.

Steve Smith, Colville Tribe, asked that any request from NOAA for a higher tailwater elevation this year include plans for not only spawning but the subsequent egg and fry production period; Wagner agreed. TMT will revisit the chum operation in a conference call November 2.

6. Operations Review

Reservoirs. Hungry Horse is at elevation 3548.81 feet, discharging flat flows of 1.5 kcfs and meeting Columbia Falls minimums. Inflows continue to be

high. Grand Coulee is at elevation 1287.3 feet, 2-3 feet from full. Libby is at elevation 2448.23 feet, with inflows of 4 kcfs and releases of 4 kcfs. Albeni Falls is at elevation 2053.55 feet, with inflows of 19.3 kcfs and releases of 23.8 kcfs. Dworshak is at elevation 1518.96 feet, with inflows of 1.8 kcfs and releases of 1.6 kcfs.

Lower Granite discharges are 25.4 kcfs. McNary discharges are 114.4 kcfs. Bonneville discharges are 136.7 kcfs.

Fish. Adults: Close to 500 fall chinook adults are passing Bonneville daily. The fall chinook jack return of 83,000 is even bigger than last year and way ahead of the 10 year average, Wagner reported. Fall chinook passage at Lower Granite is 24,500 fish, which is good but doesn't match last year's record of 40,000 fish. The steelhead count of 176,000 is close to the 10 year average. The lamprey count of 48 at Lower Granite is below the 10 year average but better than last year.

Juveniles: Passage is nearly done and smolt monitoring ends on October 31. At Lower Granite Dam, 100-200 smolts are passing per day; Little Goose, with no spill, is passing about half that number.

Water quality. There was nothing to report today.

Power. There was nothing to report today.

7. Next Meeting

The next TMT meeting will be a conference call on November 2 to discuss chum operations. TMT will meet next in person on November 9, followed by conference calls as needed on November 16, 23 and 30.

Name	Affiliation
Doug Baus	COE
Tom Lorz	CRITFC
Paul Wagner	NOAA
David Wills	USFWS
Rick Kruger	Oregon
Lisa Wright	COE
John Roache	BOR
Tony Norris	BPA
Jim Litchfield	Montana
Scott Bettin	BPA
Laura Hamilton	COE
Steve Hall	COE Walla Walla
Gregg Teasdale	COE Walla Walla
Richard Turner	COE Walla Walla

Eric Braun	COE
Karl Kanbergs	COE
Bill Proctor	COE
Gail Lear	COE
Kim Johnson	COE

Phone:

Russ Kiefer	Idaho
Dave Statler	Nez Perce
Steve Smith	Colville
John Hart	EWEB
Ruth Burris	PGE
Margaret Filardo	FPC
Dave Benner	FPC
Russ George	WMC
Shane Scott	PPC
Richelle Beck	Grant PUD
Barry Espenson	CBB
David George	Port of Lewiston
Robert Eskildsen	COE