

## MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 17 December 2015 FPOM meeting.

The meeting was held at the NOAA offices, Portland OR. In attendance:

Last	First	Agency	Email
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Baus, Barnes, Burgess, Johnson, Hausmann, Martinson, Petersen, Trachtenbarg, Trumbo, Warf called in.

**December birthdays include: Baus**

**HAPPY BIRTHDAY!**

**HAPPY HOLIDAYS!**

Documents may be found at: <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/>

## 1. Decisions made at this meeting

1.1. November meeting minutes approved, with edits.

1.2. Coordination/Notification forms (need concurrence/discussion)

1.2.1. 15 LWG 25 JBS Primary Outfall Construction. *More information will be provided.*

- 1.2.2. **13 LWG 17** Juvenile Fish Collection Channel Upgrade – UPDATE. *The year will be corrected.*
- 1.3. A shad passage task group was formed with Bettin as chair. Meyer, Conder, and Rerecich are members.
- 1.4. FPOM formally recommended that USACE NWP pursue lethal take as part of their strategy to diminish avian predation of salmonids.
- 1.5. FPP change forms (see details in section 5 below)
  - 1.5.1. 16TDA001 – Ladder Crowding. *Pending.*
  - 1.5.2. 15IHR008 – Low Flow Spill Patterns. Resubmitted as **16IHR001**. *Pending.*
  - 1.5.3. 16BON001 – Spill Pattern Rates Calculated to Tenths. *Approved.*
  - 1.5.4. 16BON002 – PH2 Mid-Range Operation. *Pending.*
  - 1.5.5. 16TDA002 – Trashracks. *Approved.*
  - 1.5.6. 16TDA003 – Water Temperatures. *Approved with understanding that this issue needs to be looked at in the future.*
  - 1.5.7. 16TDA004 – Entrance Criteria. *Approved.*
  - 1.5.8. 16TDA005 – Reporting. *Approved.*
  - 1.5.9. 16TDA006 – PUD-Trashraking. *Pending.*
  - 1.5.10. 16MCN001 – Figure MCN-1 Added FOGs. *Approved.*

## 2. Action Items

### 2.1. NWW Action Items

- 2.1.1. [Dec 15] LWG diversion gate update. **ACTION:** NWW will provide an update on the LWG diversion gate operation at the Jan FPOM.
- 2.1.2. [Dec 15] Wasco PUD at MCN. **ACTION:** Martinson will revamp the MOC for the next FPOM. Johnson suggested a table of dates and times of when the impacts would happen.
- 2.1.3. [Dec 15] LWG flat spill. **ACTION:** NWW will have an internal discussion and report back to FPOM.
- 2.1.4. [Dec 15] NWW FPOM Outages. **ACTION:** Setter will request the water manager attend the Jan FPOM.
- 2.1.5. [Dec 15] DWG de-gassers. **ACTION:** Setter will invite Adam Izbicki from the DWR hatchery to call into the Jan FPOM and provide more information.
- 2.1.6. [Dec 15] MCN FOGS. **ACTION:** Johnson will find out which FOGS are the most-used FOGs and report back at the January FPOM.
- 2.1.7. [Nov 15] MCN FOGS. (See change form 16MCN001). Wright updated a figure to go into the FPP that will show which FOGs are open and closed. Johnson reported that he's unsure if the three rehabbed FOGs are back at MCN, but they'll be installed during the winter outage. They plan to remove three more FOGs and place the rehabbed ones in those slots. The current locations of the three removed FOGs are slots 3, 4, and 14, and they have bulkheads in place. Gary asked which FOGs are the most-used, Johnson was unable to locate a report with that data. Johnson assumes the most northern and southern FOGs are the most-used. Fredricks would rather replace the rehabbed FOGs in the most-used locations and not the next FOGs removed. **This will be an update in January.**
- 2.1.8. [Nov 15] LGS temperature monitoring in the scroll case. Burgess said there is a thermometer in the cooling water right now. The thermometer is an alcohol thermometer and needs a visual reading. The plan is to replace it with a digital thermometer and download a temperature during inspections. The acquisition was delayed due to staffing issues but it is being tracked. It should be installed during the winter maintenance. Setter clarified that the digital thermometer would be reported during the weekly report but that more in-depth data would be available upon

request. Lorz said that the FPC was willing to archive the data for the Corps.  
**STATUS: Burgess will move forward with the current plan and look into data archiving.**

- 2.1.9. [Nov 15] DWR hatchery de-gassers. Setter said that there was a dissolved gas spreadsheet that showed that at 116 TDG in the river the hatchery facility was at 110 TDG. If the river is 103 TDG, the hatchery is at 100. Bettin asked what the hatchery is at when the river's at 120. Setter said that wasn't tested. She said that information is third-hand from the hatchery. They put in a second row of degassers but the testing was limited to conditions present in the river.
- 2.2. NWP Action Items.
  - 2.2.1. [Dec 15]BON FGE. Lorz will schedule a meeting room for the 12 January B2FGE FFDRWG.
  - 2.2.2. [Dec 15]BON WA Shore Weir 38 Bleed-off valve. **ACTION: Hausmann will find the purpose of the Weir 38 bleed-off valve and report back.**
  - 2.2.3. [Dec 15]Unit priority for PH1 when the main unit breaker is OOS. **ACTION: FPOM members will go out to BON and observe hydraulics during PH1 operation.**

### 3. Updates

#### 3.1. NWW Updates.

##### 3.1.1. Upcoming maintenance/construction/research activities.

3.1.1.1. FPOM OUTAGES schedule available on the web site. Setter said the only thing she changed was the Unit 1 outage at Lower Granite. The contract was pushed out until Jan of next year and they wouldn't start until March. The contractor is the same as LGS. They're doing better than at LGS and feel comfortable with the current schedule. LMN is still on target to go out in January. Dworshak Unit 3 overhaul is still set.  
**ACTION: Setter will request the water manager attend the Jan FPOM.**

3.1.1.1.1. The one month earlier shutdown for the primary outfall at LWG is still planned for November, the MOC is out for comment and they would like to get it into the plans and specs now. Flat spill would need to be discussed to occur during the work. Conder was concerned about juvenile passage. Setter said there weren't very many during that time of year and that a turbine operation that late in the season wasn't an issue. Trumbo asked if unit operations could be changed if the contractor had issues with the hydraulics. Trachtenbarg will check to see if flat spill is an option, if a barge would be allowed in the tailrace if spill is occurring. The project needs to be contacted to see what the contractor will allow. **ACTION: NWW will have an internal discussion and report back to FPOM.**

3.1.2. Wasco crane failure update. Martinson reported that Klickitat and Wasco PUD had a major crane failure that dropped a ~20 ton load ~1.5 ft and did damage. They estimated a three month delay, with an actual delay of anywhere from 2 to 5 months, which would push into the fish passage season. They were planning to do the work at night, but there's significant sockeye passage at night and so it would impact fish passage. The work would require 4 to 5 adjustments, of less than 15 minutes each, that would disrupt flow to the entrance. Fredricks had sent questions, his main concern is to determine the exact effects on the ladder system. The main ladder and entrances are different systems and he would like more clarity; he'd like the

coordination form to be rewritten with more information. Lorz said that time of year would also be important. Johnson said the water coming down the ladder won't be affected; the auxiliary water would impact from diffuser #12 all the way to the pool. The amount of flow lost will depend on the switch/swap. He believes there will still be some attraction since the system is in bypass right now and the ladder is in criteria. When they do a switch there might be a short drop in differential. As they lower the turbine and increase the bypass there will be an impact but he doesn't know how much. Fredricks said it sounds like the impact won't be very much. Johnson said the data provided was worst-case and that a more realistic impact could be provided.

***ACTION: Martinson will revamp the MOC for the next FPOM. Johnson suggested a table of dates and times of when the impacts would happen.***

- 3.1.3.** LWG diversion gate update. Conder would like an update at the next FPOM. Fish are being diverted through a trap and Conder would like to know why the gate is not being opened and details on its operation. Setter said the operation has evolved over time. The gate was rehabbed two years ago but that it takes 200 hand cranks to open it, which is archaic. ***ACTION: NWW will provide an update on the LWG diversion gate operation at the Jan FPOM.***

### 3.2. NWP Updates

- 3.2.1.** Upcoming maintenance/construction/research activities. Includes already coordinated MOCs.
- 3.2.1.1.** NWP winter maintenance schedules (available online) Mackey directed folks to the website.
  - 3.2.1.2.** 15BON02 T11 and T12 outages. T11 came back on 4 Dec. T12 nothing has changed.
  - 3.2.1.3.** 15BON06 CI fish valve repair. Both valves are back in service as of 25 Nov. Bettin thanked the BON crews for completing the work efficiently.
    - 3.2.1.3.1.** Lorz asked if the forebay issue would happen again [WA ladder running with no flow to UMT], Hausmann said that it was due to unusual circumstances, and that the Weir 68 bleed-off valve seemed to be designed for this operation. Forebay was able to be raised one foot and the resultant increase in ladder flow was compensated by using the bleed-off valve. Hausmann was concerned how the valve would impact fish if used during fish passage season. Fredricks would like to know what the intent of the valve originally was, and have something in the FPP to describe it for future operations. He would like to know its limitations, etc. and have it looked at by the hydraulic engineers. It's use could then be summarized in an FPP change form. ***ACTION: Hausmann will find the purpose of the Weir 38 bleed-off valve and report back.***
    - 3.2.1.4.** 15BON87 PH1 main unit breaker replacement. Still need to discuss PH1 unit priority. Still on schedule for April 15 deadline, contractor will work 24-7 if need be. Fredricks suggested discussing with L. Ebner and testing three unit priority options. ***ACTION: FPOM members will go out to BON and observe hydraulics during PHI operation.***
- 3.2.2.** CI subsidence. Hausmann had no new updates. Lorz asked if the asphalt was peeled back. Hausmann said yes in some locations that were suspect, but the locations ended up being intact. He believed this project had been separated out from the greater spillway work. People don't believe the water is coming from the forebay and the

ground-penetrating radar didn't provide any useful information. Engineers are determining a path forward with regards to safety. Warf reported the PIT tag room hasn't shifted any further.

- 3.2.3. JDA-N AWS testing. Grosvenor said the contractor is on-site doing diagnostic testing. Results should be back in the next couple weeks. He hasn't heard anything one way or the other yet. Pumps 3 and 4 are the ones down. 4 through 6 were operating during the season. Pump 4 shaft is the one with issues. All are supposed to be in running order by May 2016.

3.3. Research/FFDRWG updates. [www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/NWP%20Research/Research.html](http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/NWP%20Research/Research.html)

- 3.3.1. B2FGE 90% DDR is out for review. 23 Dec is deadline for comments. Meeting is scheduled for 12 January. Lorz said he could schedule a meeting room.

3.4. RCC update.

- 3.4.1. Wright said that the TMT website could be reformatted sometime in January. The same information will be there, but will be reorganized differently. Efforts are underway for both the TMT and FPOM websites to move away from being operated under USACE oversight for flexibility. The new website will be public and so some data may not be available via the site. Wright will send out an email once the new website is official.

- 3.4.1.1. Lorz asked if research reports were going to be posted online. Mackey said she would post them if they were sent to her. She needs them organized by Fryer or other NWW staff in the way they should be posted. Wright said that once the website got moved to a non-Corps website there would be more flexibility to post reports. Folks should contact Sean Tackley for AFEP reports.

**Table 1. RCC flow forecast**

Project	Previous day average (kcfs)	5 day forecast average (kcfs)	10 day forecast average (kcfs)	Projected Peak
LWG	25.9	27	24	28 (20 Dec)
MCN	132.3	125	121	---
BON	158.6	141	135	---

- 3.5. Pinniped Update. Zorich said that for November there was an average of 23 sea lions per day and a max of 41. There was one in the forebay that the states hadn't trapped. SLEDs are installed at PH2 at BON. Lorz asked if the sea lions have moved out, Zorich said no. Conder asked if modified observation protocol would be used this year, Zorich said yes. Hazing begins 1 March, efforts would be implemented at Tower Island.

- 3.6. Lamprey updates. Zorich said they're at the 90% plans and specs level for the BON WA shore LPS, which would go in during the next in-water work period in the upper ladder and will tie in to the current system. Bettin asked about future LFS work and required unit outages. Zorich referred him to Tackley. Setter asked about lamprey counts. Zorich said the counts presented at AFEP were just LPSs. Setter said that she gives slides for counts at dams, and a negative number at BON gives a bad impression and she doesn't believe the numbers are accurate. She would like accurate figures in the near future and would like to work with Zorich on what an accurate number would be.

- 3.6.1. Discussion turned to shad. Bettin asked if a change in flows would keep shad out of the ladders and asked about ultrasound usage to occlude shad. Setter wondered if we'd have any special ops next year to deal with shad. Conder wondered by at LMN why one ladder has shad and one doesn't, there may be a clue there. Concern is that if you don't let shad pass they could congregate below the route and delay salmon.

Cordie asked if there was a real issue with shad, Setter said there was an issue with LWG traps this year. Bettin asked what the path forward is. Setter said research would be necessary before a decision could be made. Conder suggested asking Ed Meyer. Fredricks said shad passage was a function of the flow hydraulics and that shad don't go through orifices well or plunging flow. Conder suggested having only orifice flow along one route and another flow for salmon in another route. Bettin said changing weir velocity would be easy. Fredricks would like to have hydraulic engineer look at the issue before a change was implemented. Setter said they had to change the operation of the gate at LWR which impacts sockeye passage. Conder said dead shad affects differentials at the count stations, especially at LMN. **A shad passage task group will be started with Bettin as the chair. Meyer, Conder, Rerecich as members.** Setter said it's a long-term question and nothing will likely be implemented for 2016.

**3.7. Avian.** Zorich said there are 10 lines down at JDA that need to be replaced, and during replacement it's important to make sure they can be more easily replaced next time. An AFEF presentation looking at PIT tags showed that JDA was a hotspot, TDA wasn't looked at. Cordie is interested in changes at TDA. Setter said a NWW avian bio would be more heavily involved in the future. Fredricks said there's an inland group that deals with habitat concerns. There's concern that an avian effort one place would impact other locations. Fredricks said FPOM isn't the forum for this issue.

**3.7.1. TDA Gulls.** Cordie said that they're looking at trying to get NWP to include lethal take in the avian contract. Setter said that NWW had USDA include their own BA in the contract. Setter said that the process may take a while. Fredricks asked Trachtenbarg about the inland avian meeting in January and whether that may be a forum for the current issues. This dialogue will be added to that agenda. Mackey said the USACE approach is that the project will run it up through chain of command and they will bring it to the district. Fredricks asked if this was already discussed. Mackey said they are working on forming a coalition first and then pursuing action. **FPOM formally recommends that USACE NWP pursue lethal take.** Morrill said ODFW could support this recommendation. Lorz said that part of the performance standard was predicated on avian abatement at TDA. Cordie said TDA will try to improve avian hazing with boat hazing for 1 to 1.5 months, the rest of the time shore-only.

**3.7.2.** JDA avian lines have moved to CRFM.

**3.8.** BPA updates. Nothing to report.

#### **4. Coordination/Notification forms (need concurrence/discussion)**

**4.1.** 15 LWG 025 JBS Primary Outfall Construction. *More information will be provided.*

**4.2.** 13 LWG 17 Juvenile Fish Collection Channel Upgrade – UPDATE. *The year will be corrected.*

#### **5. Fish Passage Plan:** The Draft 2016 FPP and Change Forms are online at: <http://www.nwd-wc.usace.army.mil/tmt/documents/fpp/>.

**5.1.** Pending FPP Change Forms.

**5.1.1.** 16TDA001 – Ladder Crowding. Pending Task Group recommendation. **Pending final draft preparation.**

**5.1.2.** 15IHR008 – Low Flow Spill Patterns. Revised based on ERDC trip and will be resubmitted as **16IHR001**. Wright said spill bays can be closed like a tainter gate, which provides more flexibility. Setter said a daily number would be better, and that a time of day needs to be considered. Bettin said that there's only one operator and so it needs to be realistic. Wright will come up with something and post it. **Pending.**

- 5.1.3. 15LMN004 – Low Flow Spill Patterns. Revised based on ERDC trip and will be resubmitted as **16LMN001**.
- 5.1.4. 16LWG001 – Low Flow Spill Patterns. Revised based on ERDC trip.
- 5.2. New FPP Change Forms.
  - 5.2.1. 16BON001 – Spill Pattern Rates Calculated to Tenths. **Approved**.
  - 5.2.2. 16BON002 – PH2 Mid-Range Operation. **Pending**.
  - 5.2.3. 16TDA002 – Trashracks. **Approved**.
  - 5.2.4. 16TDA003 – Water Temperatures. Fredricks asked if this was just for the station service unit, or if all penstocks don't have temperature recordings. Cordie said all penstocks are lacking temperature recorders. Fredricks said penstocks are important for comparing tailwater temps (which penstocks served as a surrogate for) with temperatures taken elsewhere. Fredricks suggested a river-wide plan for temperature records, at all projects. Conder said an auto-upload would be ideal. Fredricks said east and west entrances at TDA have different temperatures. Lorz said the temperature issue will be addressed by SCT. If SCT doesn't fix the issue, Lorz volunteers to head a task group. Fredricks said in the short-term a solution is needed. **Approved with understanding that this issue needs to be looked at in the future.**
  - 5.2.5. 16TDA004 – Entrance Criteria. **Approved**.
  - 5.2.6. 16TDA005 – Reporting. **Approved**.
  - 5.2.7. 16TDA006 – PUD-Trashraking. **Pending with revision that includes the timing for raking.**
  - 5.2.8. 16MCN001 – Figure MCN-1 Added FOGs. **Approved**.
- 5.3. Potential FPP change forms.
  - 5.3.1. Digital governor testing.
  - 5.3.2. B2 Turbine blade angle. Fredricks said there will be one. It will be a soft constraint. There is a strong recommendation from COE-ERDC staff that the lower 1% is adverse for fish passage. Fredricks and Meyer will produce a report (distributed October 13). *This is now a change form.* **Update:** Fredricks added verbiage to include information collected on recent ERDC trip and from the report by Weiland et al. Wright said the language is already present in the form.
  - 5.3.3. Appendix B – Transport. Revise truck transport minimums if supported by data analysis to determine likely effects, including frequency and duration. Wagner will request NOAA Montlake to look at the data.

## 6. Task Group Updates.

- 6.1. New Task Groups.
  - 6.1.1. BON minimum spill to maintain good B2CC egress. (Fredricks and Lorz). Team members include: Bettin, Ebner, Hausmann, Mackey, Rerecich, Wright. Report from Laurie, waiting for ERDC information
  - 6.1.2. Load Shaping Guidelines (Bettin). Team members include: Fredricks, Mackey, Wright. Bettin is still figuring out if he is allowed to edit Appendix C (last modified in 1995). FPOM believes this will be delayed until next year.
- 6.2. Active Task Groups.
  - 6.2.1. Adult counting. (Wertheimer/Zorich and Moody) <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Fish%20Counting/>
    - 6.2.1.1. TDA count window mods Zorich would like to test more lighting conditions in 2016.
    - 6.2.1.2. Normandeau Associates has been selected as the fish count contractor.

**6.2.2.** Condition monitoring. (Lorz, Conder). <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Condition%20Monitoring/>

**6.2.2.1.** Team members include: Benner, Bettin, Chockley, Fredricks, Mackey, Morrill, Setter.

**6.2.2.2. This group met after the December FPOM meeting.**

**6.2.3.** TDA adult flows. (Cordie) <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20TDA%20split%20flows/>

**6.2.3.1.** Team members include: Bettin, Cordie, Fredricks, Lorz, Mackey, Rerecich, Skalicky, Wertheimer.

**6.2.3.2. UPDATE:** The task group met after the November FPOM meeting. Fredricks submitted a Change Request Form to the FPP on behalf of the task group. Change Form: 16TDA001 – Adult Ladder Crowding.