

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION TITLE – 19BON55 PH2 OWS & Head Cover Pump Installation

COORDINATION DATE – 06 September 2019

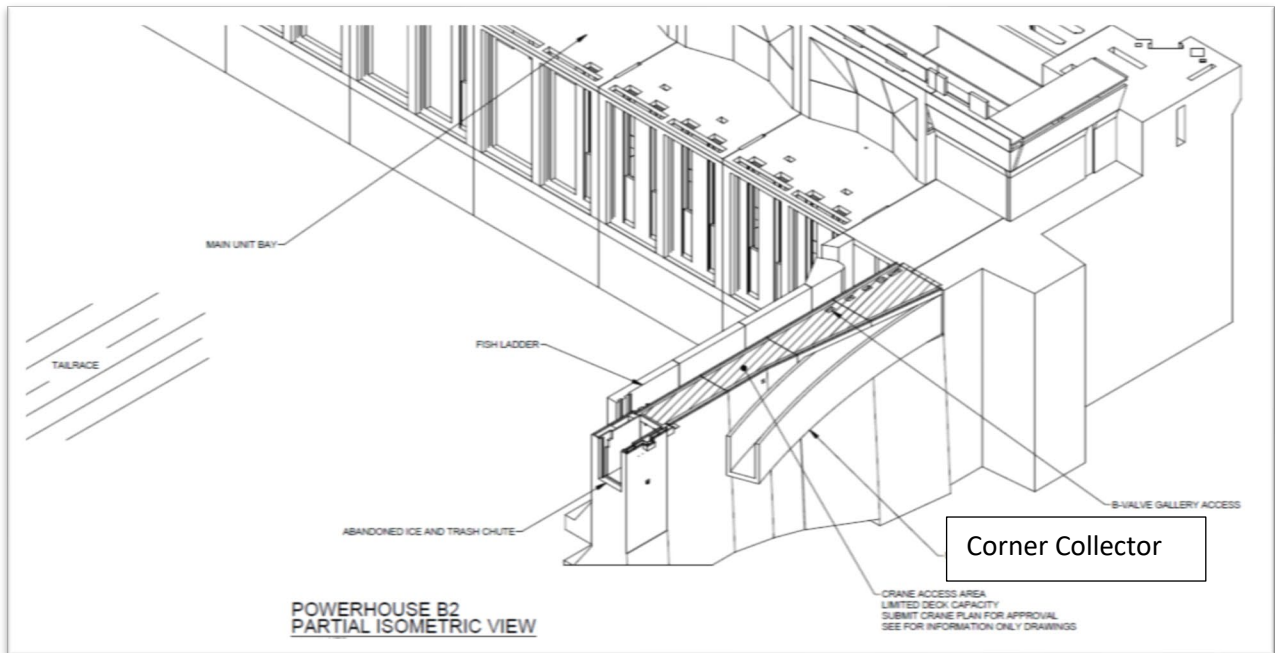
PROJECT – Bonneville Lock and Dam

RESPONSE DATE – September FPOM or 20 September.

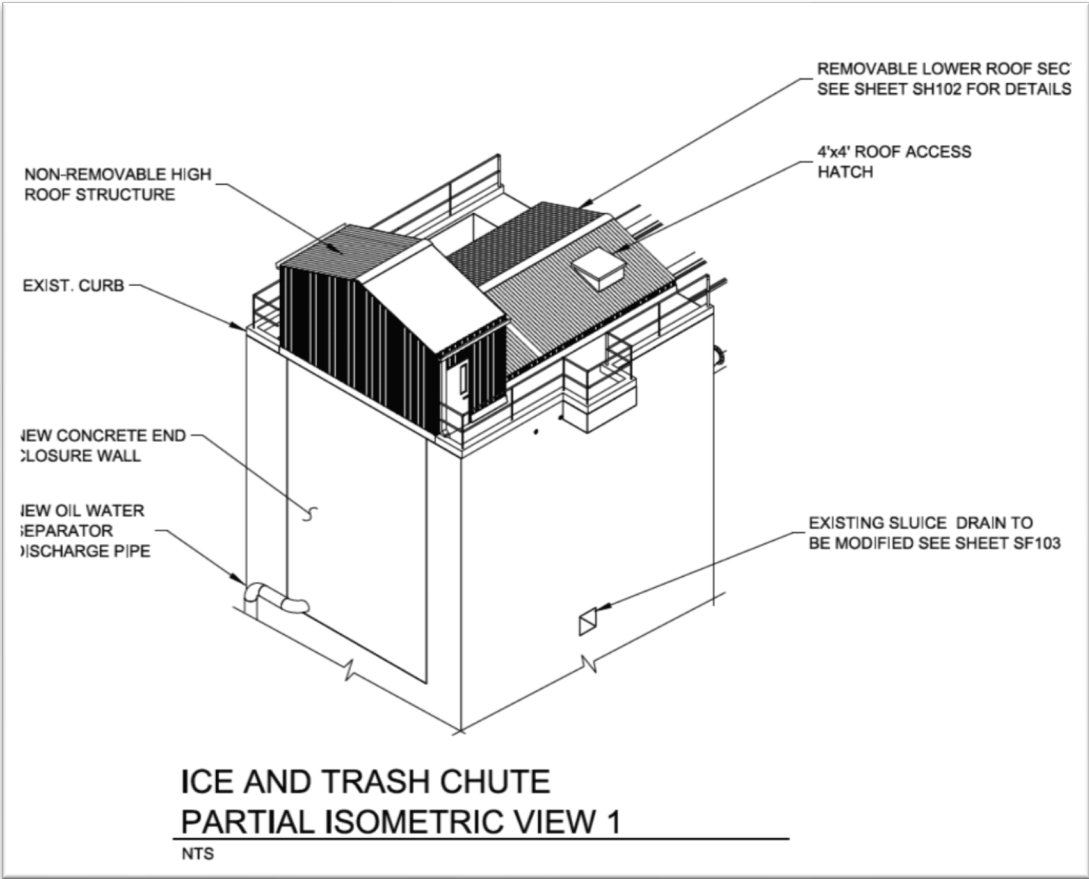
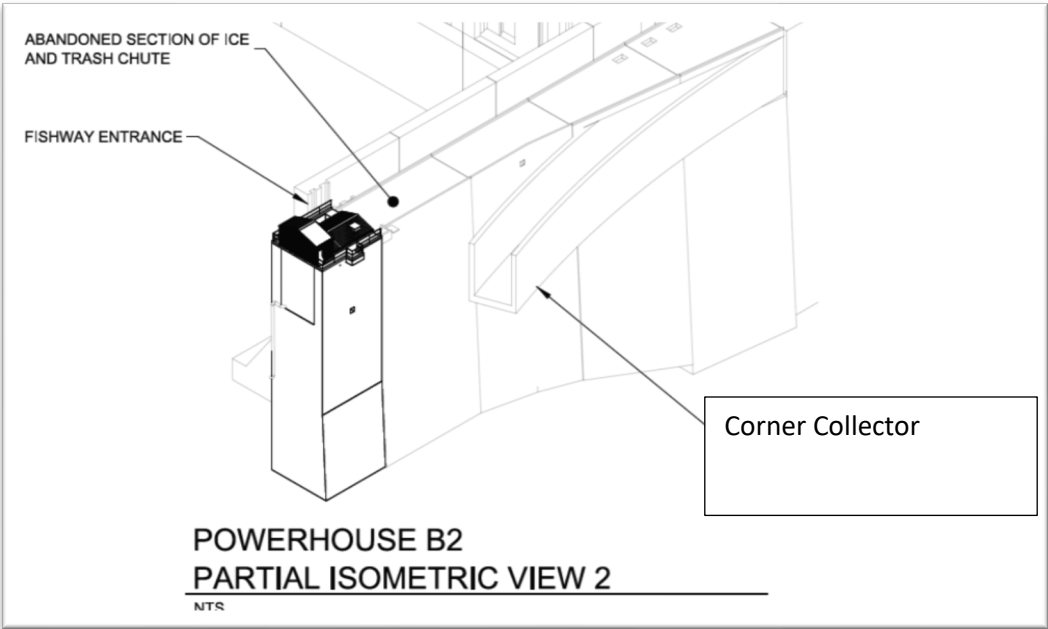
Description of the problem:

The U.S. Army Corps of Engineers, Portland District proposes to upgrade and modify the oil and water separator (OWS) and head cover pumps at Bonneville Dam, Powerhouse 2 (PH2). These modifications will help to assure compliance with the requirements of a future National Pollutant Discharge Elimination System permit. The work includes the installation of two new oil water separators in the abandoned ice and trash chute at Bonneville Dam Powerhouse 2, installation of piping to the new oil water separators from the head cover pumps for all generating turbines including the fish units on the north end of Bonneville Powerhouse 2, modifications to the existing oil water separator, and incidental related work.

B2 Current Layout



New OWS Housing



Type of outage required –Work will be within 50’ of the fish ladder. Unit outages will occur during the winter and a ladder entrance closure will occur this winter for a dive.

Impact on facility operation (FPP deviations)

Construction of the new downstream OWS system will require coordination of FPP section 2.1.3. Research, non-routine maintenance, fish-related activities, and construction will not be conducted within 100' of any fishway entrance or exit, within 50' of any other part of the adult fishway, or directly in, above, or adjacent to any fishway, unless coordinated with FPOM or FFDRWG by the Project, District Operations and/or Planning or Construction office. Alternate actions will be considered by District and Project biologists in conjunction with the Regional fish agencies on a case-by-case basis.

Additionally, modifications to unit priority will be required for tying main units into the new piping and the installation of a new discharge pipe intermittently during the months of January through March.

Impact on unit priority

PH2 will remain the priority powerhouse. Bradford Island fishway will be out of service for winter maintenance during the IWWP. During unit outages, the FPP guidelines on using the next available unit will be followed.

Impact on forebay/tailwater operation

The work is not expected to impact forebay or tailwater operations.

Impact on spill

Forced spill could occur during the month of January when dive work is scheduled if units are not available.

Dates of impacts/repairs:

Proposed Work Windows

07 October 2019 through 30 November 2019: Night Operations from the hours of 1700 to 0600.

01 December 2019 to 29 February 2020: Day/Night Operations, unrestricted work hours.

01-28 March 2020: Night Operations from the hours of 1730 to 0600.

During the above identified work windows, the Contractor has no restrictions to noise and vibration impacts to fish or fish structures caused by heavy construction or diving. Outside the IWWP in the months of October and November, the Contractor may use heavy equipment but only at night from 5pm to 6am; in the month of March the Contractor may use heavy equipment and dive but only at night from 7:30pm to 6am.

Work activities outside the IWWP identified and the night time durations stated above, within 50' proximity to the ladder structures shall be limited to light construction (hand tools), material movements, electrical conduit installation, lighting installation, mechanical pipe installation, welding, painting, and other activities that will not produce loud noises or vibration loading to the ladder structure.

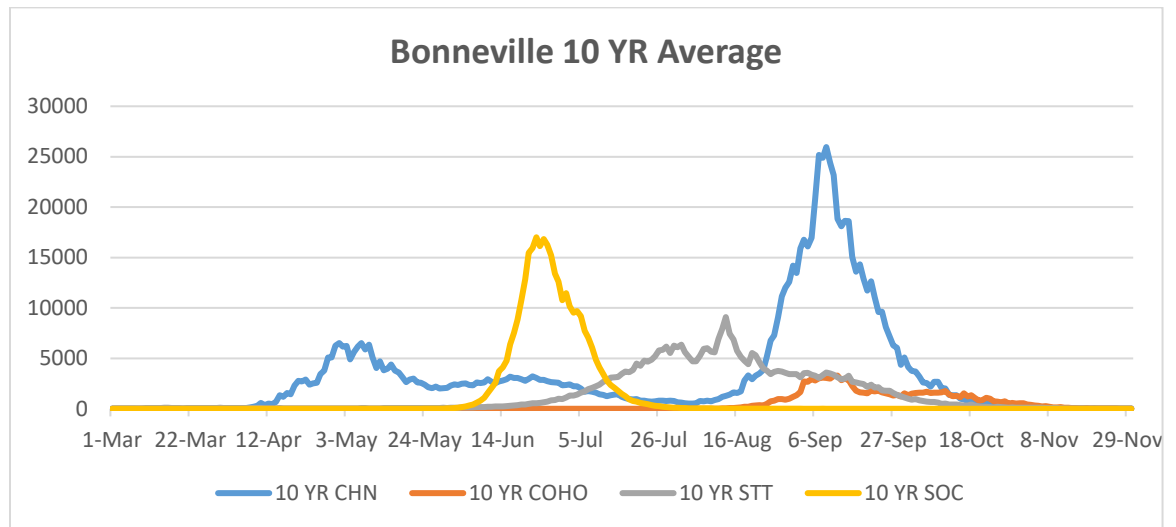
Proposed Unit outages schedule

Tie in Unit #18-#14 to New OWS Piping, MU18-14 OOS – 26 February through 03 March.

Tie in Unit #11-#13 to New OWS Piping, MU 11-13 OOS – 04 March through 12 March.
Install River Discharge Piping – 01 through 10 January (MU 11-12 OOS, potentially additional units).

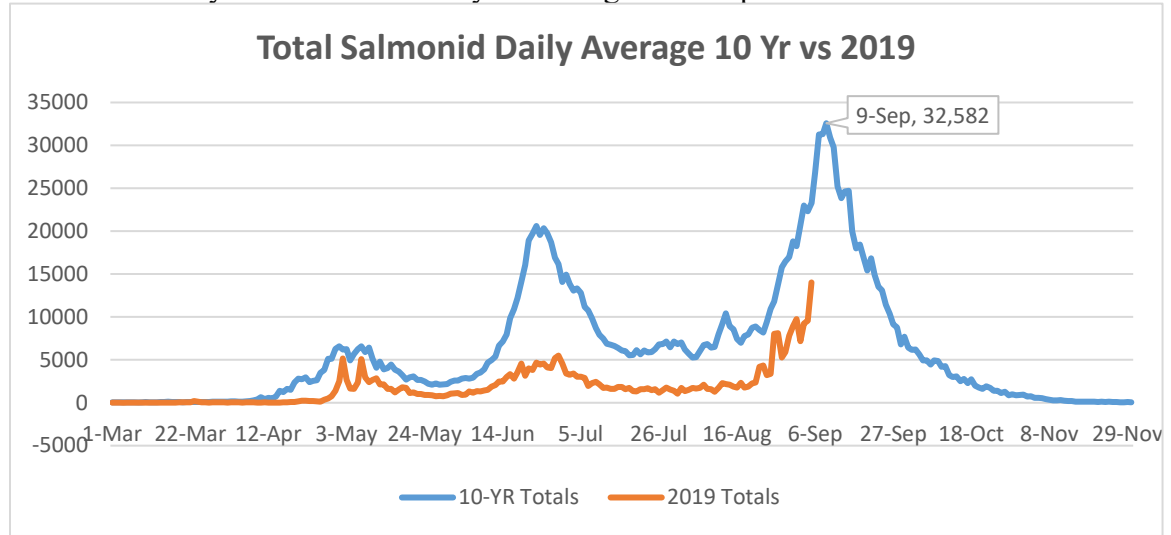
Analysis of potential impacts to fish

1. 10-year average passage by run during the period of impact for adults and juvenile listed species, as appropriate for the proposed action and time of year.



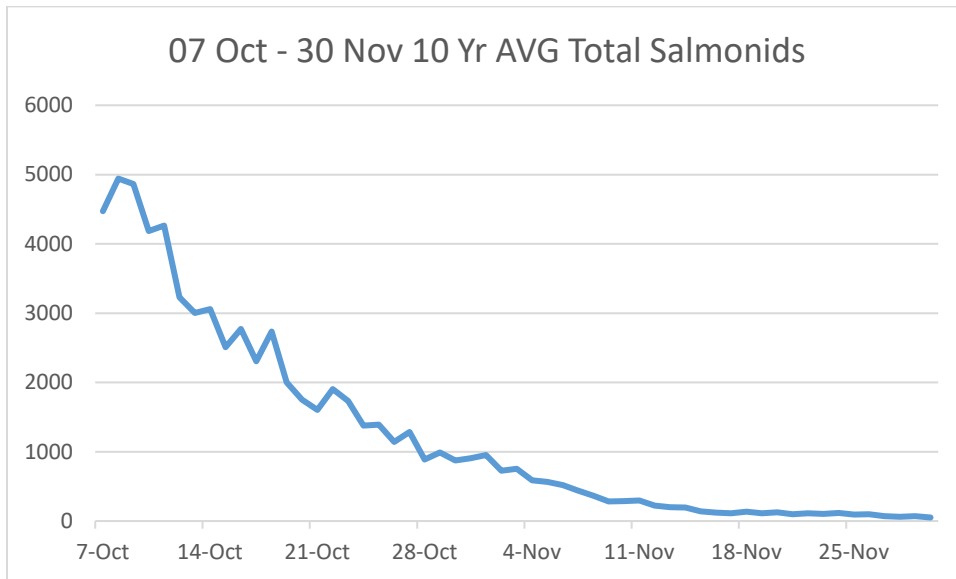
- a.
- b. The majority of out-migrating juveniles pass the project during spring and summer spill 10 April through 31 August. The construction of the new downstream OWS system is thought to have minimal effects on juveniles.

2. Statement about the current year's run (e.g., higher or lower than 10-year average).
 - a. We are currently well below the 10-year average for all species of salmonids.

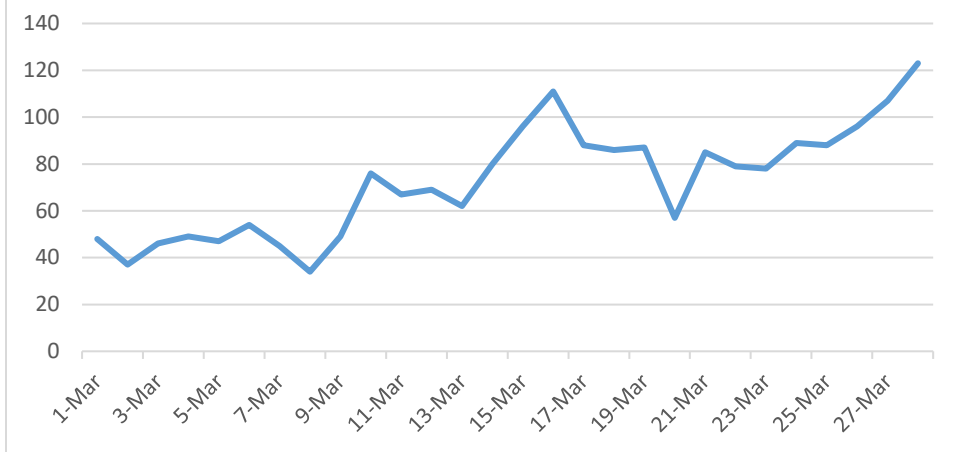


3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action).

*These figures account for daily passage at both Bradford Island and Washington Shore. The proposed work will only occur during nighttime hours, 1700-0600 for October & November and 1730-0600 in March at PH2. Estimated impact will be far less.



01-28 March 10 Yr AVG Total Salmonids



| Date | Daily Total Salmonids | 10 YR AVG | % Affected |
|-------|-----------------------|-----------|------------|
| 10/7 | 4470 | 1720079 | 0.260% |
| 10/8 | 4942 | 1720079 | 0.287% |
| 10/9 | 4863 | 1720079 | 0.283% |
| 10/10 | 4187 | 1720079 | 0.243% |
| 10/11 | 4262 | 1720079 | 0.248% |
| 10/12 | 3231 | 1720079 | 0.188% |
| 10/13 | 3001 | 1720079 | 0.174% |
| 10/14 | 3057 | 1720079 | 0.178% |
| 10/15 | 2507 | 1720079 | 0.146% |
| 10/16 | 2773 | 1720079 | 0.161% |
| 10/17 | 2307 | 1720079 | 0.134% |
| 10/18 | 2736 | 1720079 | 0.159% |
| 10/19 | 2003 | 1720079 | 0.116% |
| 10/20 | 1751 | 1720079 | 0.102% |
| 10/21 | 1604 | 1720079 | 0.093% |
| 10/22 | 1903 | 1720079 | 0.111% |
| 10/23 | 1734 | 1720079 | 0.101% |
| 10/24 | 1379 | 1720079 | 0.080% |

| | | | |
|-------|------|---------|--------|
| 10/25 | 1392 | 1720079 | 0.081% |
| 10/26 | 1142 | 1720079 | 0.066% |
| 10/27 | 1283 | 1720079 | 0.075% |
| 10/28 | 890 | 1720079 | 0.052% |
| 10/29 | 991 | 1720079 | 0.058% |
| 10/30 | 874 | 1720079 | 0.051% |
| 10/31 | 908 | 1720079 | 0.053% |
| 11/1 | 952 | 1720079 | 0.055% |
| 11/2 | 726 | 1720079 | 0.042% |
| 11/3 | 753 | 1720079 | 0.044% |
| 11/4 | 588 | 1720079 | 0.034% |
| 11/5 | 565 | 1720079 | 0.033% |
| 11/6 | 520 | 1720079 | 0.030% |
| 11/7 | 440 | 1720079 | 0.026% |
| 11/8 | 364 | 1720079 | 0.021% |
| 11/9 | 285 | 1720079 | 0.017% |
| 11/10 | 287 | 1720079 | 0.017% |
| 11/11 | 298 | 1720079 | 0.017% |
| 11/12 | 222 | 1720079 | 0.013% |
| 11/13 | 202 | 1720079 | 0.012% |
| 11/14 | 194 | 1720079 | 0.011% |
| 11/15 | 138 | 1720079 | 0.008% |
| 11/16 | 123 | 1720079 | 0.007% |
| 11/17 | 113 | 1720079 | 0.007% |
| 11/18 | 137 | 1720079 | 0.008% |
| 11/19 | 114 | 1720079 | 0.007% |
| 11/20 | 125 | 1720079 | 0.007% |
| 11/21 | 96 | 1720079 | 0.006% |
| 11/22 | 114 | 1720079 | 0.007% |
| 11/23 | 103 | 1720079 | 0.006% |
| 11/24 | 115 | 1720079 | 0.007% |
| 11/25 | 94 | 1720079 | 0.005% |

| | | | |
|-------|-----|---------|--------|
| 11/26 | 97 | 1720079 | 0.006% |
| 11/27 | 69 | 1720079 | 0.004% |
| 11/28 | 60 | 1720079 | 0.003% |
| 11/29 | 71 | 1720079 | 0.004% |
| 11/30 | 51 | 1720079 | 0.003% |
| 3/1 | 48 | 1720079 | 0.003% |
| 3/2 | 37 | 1720079 | 0.002% |
| 3/3 | 46 | 1720079 | 0.003% |
| 3/4 | 49 | 1720079 | 0.003% |
| 3/5 | 47 | 1720079 | 0.003% |
| 3/6 | 54 | 1720079 | 0.003% |
| 3/7 | 45 | 1720079 | 0.003% |
| 3/8 | 34 | 1720079 | 0.002% |
| 3/9 | 49 | 1720079 | 0.003% |
| 3/10 | 76 | 1720079 | 0.004% |
| 3/11 | 67 | 1720079 | 0.004% |
| 3/12 | 69 | 1720079 | 0.004% |
| 3/13 | 62 | 1720079 | 0.004% |
| 3/14 | 80 | 1720079 | 0.005% |
| 3/15 | 96 | 1720079 | 0.006% |
| 3/16 | 111 | 1720079 | 0.006% |
| 3/17 | 88 | 1720079 | 0.005% |
| 3/18 | 86 | 1720079 | 0.005% |
| 3/19 | 87 | 1720079 | 0.005% |
| 3/20 | 57 | 1720079 | 0.003% |
| 3/21 | 85 | 1720079 | 0.005% |
| 3/22 | 79 | 1720079 | 0.005% |
| 3/23 | 78 | 1720079 | 0.005% |
| 3/24 | 89 | 1720079 | 0.005% |
| 3/25 | 88 | 1720079 | 0.005% |
| 3/26 | 96 | 1720079 | 0.006% |
| 3/27 | 107 | 1720079 | 0.006% |

| | | | |
|------|-----|---------|--------|
| 3/28 | 123 | 1720079 | 0.007% |
|------|-----|---------|--------|

4. Type of impact by species and age class (increased delay, exposure to predation, exposure to a route of higher injury/mortality rate, exposure to higher TDG, etc.).
 - a. The proposed work that occurs outside the IWW period will be at night; minimal impacts are anticipated. For work during the months of December, January, and February, PH2 will be the priority powerhouse as the Bradford Island fishway will be out of service for winter maintenance this year 2019/20.

Summary statement - expected impacts on:

Downstream migrants

The construction of the new downstream OWS system will occur outside the spring and summer spill season when the majority of out-migrating juvenile passage occurs. Impacts are thought to be minimal.

Upstream migrants (including Bull Trout)

The construction of the new downstream OWS system will occur during nighttime hours outside the IWW period. Minimal upstream passage occurs during the IWW period, months of December through February. Impacts due to changes in unit priority (PH2 unit outages required for tie in to new OWS piping and installation of discharge piping) could have impacts if PH1 units are forced to run out of priority or spill is forced.

Lamprey

All construction activities are occurring outside the majority of lamprey migration. Impacts to lamprey are thought to be minimal.

Comments from agencies – from the September 2019 FPOM minutes:

6.16. 19BON56 MOC PH2 OWS Install – Hausmann explained that this project has been in planning for several years and had been shelved for a few months. Once the PDT reconvened, the team had mistakenly thought FPOM coordination had taken place which it had not. Heavy construction is planned for night shift and light construction during the day. Lorz was not pleased that this issue appeared to fall through the cracks and was found by Conder doing an inspection. Lorz and Conder have an issue with the amount of unknown vibration for the light construction. Bettin pointed out that during the TDA AWS construction, the excavator although loud was not picked up as high decibels or vibration in the ladder. Air noise is not as a big of an issue as vibration. The light construction work will start at the powerhouse. Electrical conduit for lighting will be run inside the chute and put small anchors will be installed in the ceiling for the conduit. Lorz asked which side of the ceiling. Brandl said it is mostly in the middle. Conder asked why this wasn't done when the ladder was out of service. Mackey said the answer is because it was not coordinated ahead of time like it should have been. The unit outages in March will likely be a problem. Brandl will try to move them into February. Bettin asked why all four units have to be out at the same time. Brandl was not sure

and will look into it. **Light construction – FPOM concurred.** Conder has an issue with the 1700 start time with night work. The Table 5 BON will be used for the hours. **Night work using BON Table 5– FPOM concurred.** Bettin asked about the ITS and it will be open. **Winter maintenance – FPOM concurred.** Unit outages need to be moved into February. If the unit outages can't be moved, the issue will come back to FPOM. If work in March is necessary, it will come back to FPOM.

Final coordination results - 19BON56 MOC PH2 OWS Install – FPOM concurred with the night work using the FPP BON Table 5 times. FPOM concurred with the work during the IWWP. Brandl will try to move the unit outages to February. If additional work in March is required, an MOC will come back to FPOM.

After Action update – The unit outages were not required. The night and dive work were completed as proposed. Additional cleanup work was coordinated under 20BON07 MOC OWS Cleaning and Valve Work.

Please email or call with questions or concerns.

Thank you,

Erin

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