

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

COORDINATION TITLE- 15TDA04 Back up AWS

COORDINATION DATE- May 21, 2015

PROJECT- The Dalles Dam

RESPONSE DATE- June 2 is preferable and no later than June 11 (FPOM) 2015

Description of the problem The east fish ladder (TDA-E) backup AWS construction requires the entire In Water Work (IWW) period for completion of phase 1 construction activities. The east ladder is required to be dewatered starting on 1 December 2015 and remain dewatered through 26 February 2016. The east ladder will be watered up 27-29 February and return to normal FPP operation by 1 March 2016. Having the east ladder out the full IWW window creates additional impacts to being able to perform normal maintenance on the north ladder.

To avoid a dual ladder outage, TDA project and NWP recommend an early north ladder (TDA-N) outage to complete normal maintenance on the north fishway and prevent overlapping outages with the TDA-E outage and AWS construction. TDA-N has little expected work aside from routine inspection and preventative maintenance. By getting the TDA-N maintenance completed early and back in operation before 1 December, the TDA-E AWS contractor can take full advantage of the IWW while still maintaining at least one passage route at all times.

The second item NWP would like to coordinate is the need for construction activities during March 2016 near the east fishway in the parking area on the downstream side of the dam where the AWS pipe will be routed. During the typical IWW window, the excavation in the lower parking area along the alignment of the pipe will be drilled and fractured using expansive grout. The final removal of this area will continue from the downstream end working back towards the dam face. Currently, it is estimated that this will occur in ~30 foot sections to remove soil/rock, lay pipe, make attachments, and start backfill. In working these sections it is envisioned that general excavation may need to occur outside the IWW and into March. General excavation is not expected to produce significant vibration or noise. There will however be the potential that the rock did not fracture well (small protrusions of rock sticking into the excavation limits) and that minor rock removal will be required in the month of March for brief periods (2-3 days per 30 foot section). Minor removal of rock has the potential to produce vibration and noise and will be 30-50 feet from the fish ladder structure. If FPOM determines this low level of vibration is problematic, then the contractor could perform this work at night with minimal impact to the overall construction.

Work for phase 2 during the second IWW period during 2016/2017 will also require TDA-E dewatered for the entire winter maintenance period. The Corps team expects that the contractor will make additional requests for the second IWW season that will need full FPOM coordination at a later date. Until the contractor submits their plan, equipment and/or work hours, no additional FPOM coordination can occur for the second IWW at this time. The Corps team will work closely with the selected contractor to ensure fish impacts are kept to a minimum and coordinate with FPOM as appropriate.

TDA-N dewatering and bedrock cleanup near TDA-E are identified in the following sections as items 1 and 2 respectively.

Type of outage required

1. TDA-N dewatering, 16 – 30 November 2015.

2. No outage - Bedrock cleanup near TDA-E targeting early March 2016 to minimize adult steelhead and spring Chinook impacts.

Impact on facility operation

1. TDA will need to dewater TDA-N earlier than normally scheduled in the FPP.
2. No impacts to Project Operations for Fish Passage as defined in the 2015 Fish Passage Plan, pp. TDA-6.

Dates of impacts/repairs

1. 16 – 30 November 2015.
2. 10 days in early March 2016

Length of time for repairs

1. 2 weeks
2. 10 days – Three periods of three day blocks with the flexibility to start sometime early March to mid-late March per FPOM review and recommendation.

Expected impacts on fish passage:

TDA-N Dewatering

1. Adult passage – TDA-E and TDA-N average daily passage data for 16-30 November are available for years 2003-2007 and 2012 and are displayed in Table-1. Average daily passage through the north ladder is less numerous than the east ladder, however, fish that would normally find the north ladder during this time may not cue in on this area with a ladder outage and no attraction flow. Any fish that are in the area may experience some delay in passage while finding an alternate route. TDA-E will be in FPP criteria during the TDA-N outage.

Table 1 - TDA-E and TDA-N November average daily passage, 2003-2007 and 2012

Date	All Chinook		All Steelhead		All Coho		Total Fish		% Project Passage	
	TDA-E	TDA-N	TDA-E	TDA-N	TDA-E	TDA-N	TDA-E	TDA-N	TDA-E	TDA-N
16-Nov	39	7	207	13	5	1	252	21	92	8
17-Nov	34	13	163	39	9	4	206	56	79	21
18-Nov	30	4	149	8	16	3	195	15	93	7
19-Nov	27	5	140	11	9	4	176	20	90	10
20-Nov	23	4	139	7	7	2	170	13	93	7
21-Nov	23	6	108	5	4	0	135	11	93	7
22-Nov	16	7	106	7	4	1	126	15	89	11
23-Nov	19	2	101	4	2	0	121	6	96	4
24-Nov	16	3	68	7	3	1	86	11	89	11
25-Nov	14	4	77	6	5	1	96	11	90	10
26-Nov	15	2	64	8	3	1	82	11	89	11
27-Nov	10	1	50	5	4	-1	64	6	91	9
28-Nov	9	2	42	3	1	0	52	4	92	8
29-Nov	6	2	28	4	0	0	35	6	86	14
30-Nov	8	3	26	5	1	0	35	8	81	19

Bull Trout. Impacts to Bull Trout are expected to be similar to other upstream migrating salmonids. Very few Bull Trout have been counted at TDA in the last 10 years. “WDFW and COE provided a list of anecdotal sightings/captures of bull trout in the mainstem Columbia River. From 2000 through 2012 there were eleven bull trout reported. Three were downstream of Bonneville Dam, with two at the mouth of Hamilton Creek (CRM 143) and one in 2005 at the Bonneville Dam Smolt Monitoring Facility (CRM 144). Upstream of the dam, one bull trout was

found at Cascade Locks (CRM 149), two at Drano Lake (CRM 162), two at the mouth of the Klickitat River (CRM 180.5), one in 2002 at the John Day Dam Smolt Monitoring Facility (CRM 215), and one sighting at Dog Creek Falls by a reputable WDFW creel sampler who observed 18-24" cuts or dollies working old redds below the splash pool over the course of two weeks. "

Juvenile salmonids – Summer spill operations will conclude on 31 August. TDA does not have a juvenile bypass facility so it is anticipated that juvenile passage will not be impacted by an early TDA-N dewatering.

Lamprey – This work will occur outside the normal adult lamprey migration season, however, adult lamprey may be present. USACE counts of daily passage at TDA-N in November from 2003-2007 and 2012 recorded zero lamprey passing over the entire period. The presence of adults is not likely to be different than the normal IWW period which starts two weeks later than the early start date. Larval and juvenile lamprey may migrate during this time but will not be affected by the early outage of TDA-N.

Bedrock cleanup near TDA-E

2. Adult Steelhead – Passage of steelhead during March of 2003-2007 and 2012 was similar at TDA-E with variability in daily passage though the month and averaged less than 100 fish per day (Table 2).

Table 2 - TDA-E March daily passage and averages for all steelhead, 2003-2007 and 2012

Date	2003	2004	2005	2006	2007	2012	Average
1-Mar	16	0	15	2	19	13	11
2-Mar	67	1	12	7	28	14	22
3-Mar	25	8	22	8	31	16	18
4-Mar	99	12	33	11	31	21	35
5-Mar	105	124	16	9	25	27	51
6-Mar	65	40	9	7	20	17	26
7-Mar	82	32	14	0	20	34	30
8-Mar	50	83	27	20	27	25	39
9-Mar	112	120	35	23	38	16	57
10-Mar	74	130	27	25	25	19	50
11-Mar	71	121	33	23	32	10	48
12-Mar	33	74	17	16	43	19	34
13-Mar	56	85	28	18	45	18	42
14-Mar	32	60	28	20	43	26	35
15-Mar	27	60	25	22	38	23	33
16-Mar	55	56	27	4	22	21	31
17-Mar	39	22	28	23	40	32	31
18-Mar	57	26	17	16	38	26	30
19-Mar	23	38	19	19	44	29	29
20-Mar	24	29	14	21	34	27	25
21-Mar	23	41	20	25	36	27	29
22-Mar	33	30	11	25	37	32	28
23-Mar	46	40	26	25	49	35	37
24-Mar	44	53	25	17	51	31	37
25-Mar	100	39	16	24	44	33	43
26-Mar	93	67	14	19	68	39	50
27-Mar	76	0	22	38	97	30	44
28-Mar	60	0	16	47	110	41	46
29-Mar	45	38	31	59	123	33	55
30-Mar	55	30	28	54	220	33	70
31-Mar	34	0	11	57	153	34	48

Daily project passage (TDA-E and TDA-N) of steelhead for March and April in 2007 showed a trend in passage building toward the end of March and into April. The 2007 trend suggests the potential to have significant increases in daily passage near the end of March. (Figure 1)

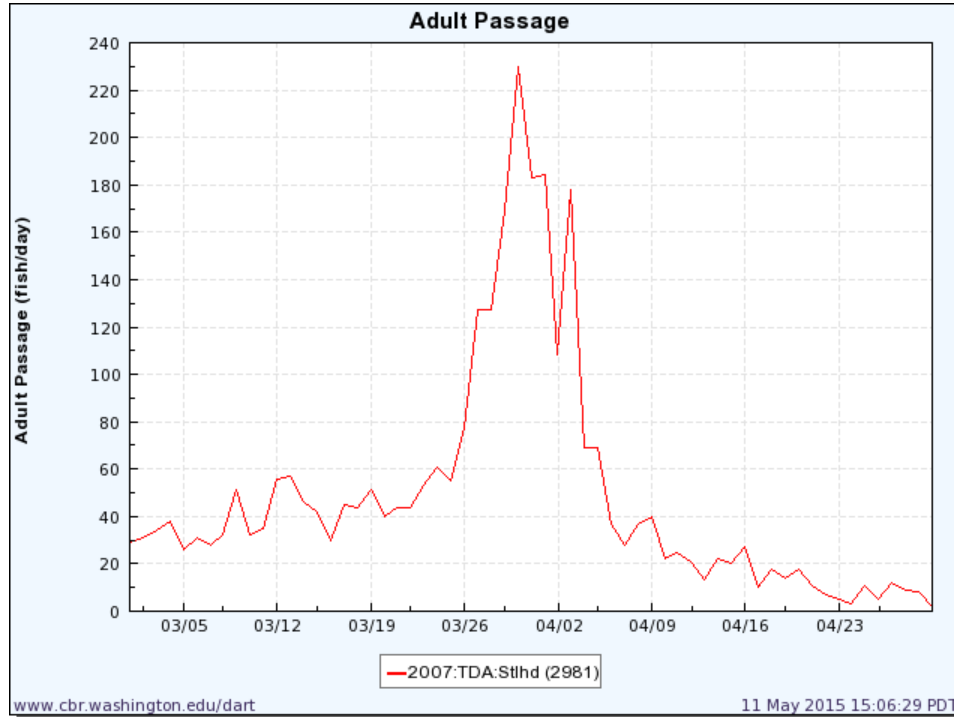


Fig. 1 – 2007 Adult steelhead passage at TDA.

Columbia River DART, Columbia Basin Research, University of Washington. (2015). Adult Passage Graphics & Text. Available from http://www.cbr.washington.edu/dart/query/adult_graph_text

Adult Spring Chinook - Recent Spring Chinook passage data for the month of March at TDA is from 2003-2007 and 2012. From 2004-2007 and 2012 spring Chinook numbers passing TDA-E are similar and typically less than 20 fish per day. During March 2003, triple digit numbers of adult Chinook occurred by 3/14 and continued through the month when over 1000 chinook per day was recorded on 3/30 (Table 3).

Table 3 - TDA-E March daily passage and averages for all chinook, 2003-2007 and 2012

Date	2003	2004	2005	2006	2007	2012	Average
1-Mar	0	0	1	0	0	0	0
2-Mar	5	1	0	0	0	0	1
3-Mar	0	0	0	0	1	0	0
4-Mar	5	0	1	0	0	0	1
5-Mar	7	1	1	0	1	0	2
6-Mar	16	0	0	0	0	0	3
7-Mar	16	0	0	0	0	0	3
8-Mar	9	1	0	0	0	0	2
9-Mar	25	0	0	0	2	1	5
10-Mar	18	8	1	0	1	1	5
11-Mar	20	7	1	0	0	1	5
12-Mar	30	7	0	0	1	1	7
13-Mar	20	4	2	0	1	0	5
14-Mar	168	7	2	0	1	1	30
15-Mar	95	15	2	0	0	1	19
16-Mar	451	10	2	0	0	1	77
17-Mar	172	0	5	0	1	0	30
18-Mar	174	10	1	0	2	1	31
19-Mar	263	17	1	0	2	2	48
20-Mar	258	18	1	0	1	1	47
21-Mar	202	3	1	0	0	2	35
22-Mar	339	7	2	0	0	1	58
23-Mar	183	14	1	0	1	1	33
24-Mar	111	14	2	2	2	0	22
25-Mar	782	12	3	0	4	0	134
26-Mar	320	16	2	0	1	0	57
27-Mar	35	0	1	1	3	0	7
28-Mar	45	0	1	0	3	0	8
29-Mar	457	19	3	2	2	1	81
30-Mar	1033	12	3	1	13	0	177
31-Mar	813	0	3	3	5	0	137

The levels of noise or vibration from the activity in March is unknown and if it will be detected by fish passing the TDA-E. Given the trends in passage over recent years, it is possible that both steelhead and Chinook could experience some delay if elevated levels of vibration or noise were detectable by fish. Steelhead passage is much more uniform through March on average, therefore, more difficult to predict and target a 10 day period to minimize potential impacts. Considering daily passage in March 2007, with larger numbers recorded by the end of the month, it may be preferable to target the early part of March to minimize risk.

Trends in Chinook passage suggest low numbers will be present during the month, however, large numbers are possible with early arrival as recorded in 2003. The trends suggest targeting the early part of March would be preferable to minimize risk during the 10 day period of work that may impact fish.

Juvenile salmonids – Spring Spill operations begin April 10. Juvenile passage through the spillway or ITS will not be impacted by the work in the downstream parking area near TDA-E.

Lamprey - This work will occur outside the normal adult lamprey migration season. USACE counts of daily passage at TDA-E in March from 2003-2007 and 2012 recorded zero lamprey passing over the entire period. Larval and juvenile lamprey may migrate during this time but will not be affected by the work near TDA-E.

Comments from agencies

NOAA Fisheries - -----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]

Sent: Tuesday, May 26, 2015 2:22 PM

To: Mackey, Tammy M NWP

Cc: Trevor Conder - NOAA Federal; Cordie, Robert P NWP; Lorz, Tom; Rerecich, Jonathan G NWP

Subject: [EXTERNAL] Re: FPOM: Official Coordination - TDA MOCs 15TDA04 and 15TDA05

Tammy, After a quick review I really don't see a serious issue with either 15TDA04 or 15TDA05. Also, I think the authors did a good job laying out the issues in both. I agree with Fenton's recommendations for ITS operation in 15TDA05. I would be more concerned with downstream steelhead passage late in the IWW period than anything else, so we should probably talk about that. An early start to the N. Ladder outage in 15TDA04 would have minimal impact. I would like to have a little more detail on the rock cleanup work in 15TDA04. I'm assuming a periodic use of a jack hammer to remove the "protrusions"?? Perhaps we could talk about the timing of this work a bit (space it out, bunch it up, do it at night, a little attraction spill at the N. Ladder, etc.) but overall I suspect the impact to fish passage would be small in early March. More on June 2. Gary

Final results –

FPOM met on 2 June to discuss this MOC.

1. 15TDA04 Back-up AWS – concurrence given for the work as described in the MOC.

- 1.1.** Coordinate November TDA-N winter maintenance period. Rerecich explained the need to coordinate the TDA-N winter maintenance outage early. Cordie said the winter maintenance work will not include dewatering below tailwater but the entrance will be inspected via ROV. If there is a problem with the grating, plans for maintenance will be coordinated with FPOM.
- 1.2.** Coordinate impacts of debris removal in March. Duyck explained the debris removal. Rock would be fractured with expanding grout. The rubble would need to be removed and any protrusions that failed to fracture would need to be broken up and removed. Duyck has a drawing detailing the work area. Nearly the entire pipe

alignment and work area is within 50' of the fishway. The work could be completed at night if needed. There would be about a week between the three day blocks. **Fredricks preferred night work and had no concerns with debris removal. Lorz agreed and was willing to give an hour before dark as the start time.** Duyck asked if earlier or later March would be preferred. Lorz said earlier is preferred. Fredricks said the last week of March could be an issue due to the spring Chinook passage. Conder said the DART 10-year averages tend to be about 30 fish per day in March until the last week, when it shoots up to about 90 fish per day. If the work runs later, then this will need to come back to FPOM, however, if the work is at night then it shouldn't be a problem. Cordie said TDA would prefer the night work as well since it would be less of a disruption for project personnel.

1.3. Duyck brought up the second season for the AWS. He noted we do not have a plan from the contractor yet but he expects there will be a need to coordinate activities outside the IWW. Cordie asked if the expected winter maintenance period will be similar to the 2015-16 Winter work window. Duyck said he isn't sure but it may be a better option to flip the outages for the 2016-17 winter work window. FPOM didn't anticipate too many issues with that at this time.

Please email or call with questions or concerns.
Thank you,

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