

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

COORDINATION TITLE- 13 LWG 17 Lower Granite Juvenile Fish Collection
Channel Upgrades

COORDINATION DATE- initially September 10, 2013;recoordinate November 14,
2013

PROJECT- Lower Granite

RESPONSE DATE- November 14 FPOM meeting

Description of the problem

Construction activities associated with the Lower Granite fish bypass system upgrade will require extensive onsite efforts over an approximate 36 to 86 month construction schedule. While many of the construction activities can occur during normal project operations, some activities may require alteration of normal project operations. The time necessary for completion of construction activities will be directly correlated with the construction methods employed. The existing collection channel within the powerhouse will require extensive concrete mining to expand the channel from 6 ft. to 9.5 ft. and the potential replacement of 10" orifices with 14" orifices. The construction method for concrete mining has yet to be determined but the USACE is approximating 6-10 months to complete the task which likely translates into three un-watered work windows (15 December to 24 March). On the other end of the spectrum for construction schedules, a single un-watered work window of 1 August to 24 March is anticipated to allow for construction activities without interruption and benefit the collection mining process. All potentially anticipated construction scenarios have various pros and cons on project operations, fish passage, and overall project costs.

The USACE's Fish Passage Plan (2013) calls for the collection channel to be operated from 25 March to 31 October for juvenile passage and collection and 1 November to 15 December for adult fallback passage. Spill operations typically begin 3 April and end 31 August. The proposed extended un-watered work window would alter the normal operations of the collection channel and as a result limit the available passage routes to the spillway and turbines during the month of August. Available passage route for September to December would be via the turbines. The Corps proposes that the RSW operate from 1 September to 15 December to allow alternate passage routes for juvenile and adult salmonids. The RSW would operate under the following scenario:

1. Operate the RSW 12 hours per day (6am to 6pm) from 1 September to 15 December.

Operating the RSW during the extended un-watered work window would require discharge through the RSW of 6.8 kcfs. During low to average river flow years, minimum generation requirements through the turbines may result in a lack of water to operate the RSW and maintain minimum operating pool. In that case, the RSW would

need to be closed and flows would be routed through the turbines while maintain minimum operating pool levels.

Table 1. – Average inflows and turbine discharge at Lower Granite Dam, 2006 to 2012. Inflow and powerhouse discharge are reported as kcfs.

Month	Inflow (kcfs)	Powerhouse (kcfs)
August	31.05	13.20
September	24.77	23.95
October	21.07	20.60
November	21.73	20.70
December	24.03	23.65

Type of outage required

The removal of ESBS’s and the closure of the collection channel from 1 August 2015 to 24 March 2016. Open the RSW for fish passage from 1 September to 15 December.

Impact on facility operation

The impact to facility is the early closure of the collection channel and the de-watering of the Juvenile Fish Facility in August 2015 instead of normal December closure.

Dates of impacts/repairs

1 August 2015 to 24 March 2016

Length of time for repairs

The construction of the Juvenile Bypass System is anticipated to begin in the fall of 2014 with completion in the spring of 2016. The extended un-watered work window is expected to occur from 1 August 2015 to 24 March 2016.

Expected impacts on fish passage

The closure of the collection channel may impact juvenile salmonids passage and transportation (Table 2) and adult fallbacks (Table 3) and require their passage through the spillway, RSW or turbines. Fish that are entrained in the gatewells will need to be dipped out and transported to the boat ramp for release downstream of the dam. After the initial dipping effort, project personnel will monitor the gatewells for signs of fish problems during the extended work window. This will require additional staff time for both JFF staff and Smolt Monitoring staff.

Table 2. – Juvenile salmonid collection and transportation at Lower Granite Dam Juvenile Fish Facility, 2006 to 2012. Data collected by USACE.

Year	Collected			Trucked			Barged		
	Aug	Sept	Oct	Aug	Sept	Oct	Aug	Sept	Oct

2006	1,841	2,107	4,219	613	2,071	4,067	1,425	0	0
2007	2,056	1,124	10,407	553	721	6,281	1,432	0	0
2008	21,047	9,220	8,731	6,032	4,560	6,007	16,033	0	0
2009	3,044	2,002	2,115	1,012	1,246	1,334	1,957	0	0
2010	8,907	8,436	11,436	3,071	5,523	8,000	5,637	0	0
2011	6,498	14,307	5,721	1,692	10,577	3,206	6,330	0	0
2012	8,121	6,443	12,255	2,040	3,774	9,068	5,875	0	0

Adult fish passage under low tailrace flow conditions will need to be monitored for any delay associated with adverse tailrace conditions. If necessary, unit operation or spill distribution and timing will be adaptively managed as appropriate, within the constraints of water availability, to improve adult fish passage conditions. RSW operation is expected to aid fish falling back with a safe passage route.

Table 3. – Adult salmonid fallback at Lower Granite Dam, 2006 to 2012. Data collected by USACE personnel as adult salmonids cross the JFF separator.

Year	August	September	October
2006	51	335	630
2007	67	270	846
2008	275	798	2,253
2009	247	3,462	2,940
2010	477	1,202	1,919
2011	179	1,547	2,787
2012	81	752	2,090

Comments from agencies

Final results

-----Original Message-----

From: Bill Hevlin - NOAA Federal [<mailto:bill.hevlin@noaa.gov>]
 Sent: Wednesday, November 13, 2013 10:22 AM
 To: Mackey, Tammy M NWP; Fielding, Scott D NWW
 Cc: Ritchie Graves - NOAA Federal; Bill Hevlin - NOAA Federal
 Subject: [EXTERNAL] Re: FW: Updated MOC for LGR extended unwatered work window (UNCLASSIFIED)

Tammy and Scott,
 Thank you for coordinating with NOAA Fisheries on the construction and in-water work schedule for the Lower Granite juvenile bypass collection channel improvements, which are recommended in the NMFS FCRPS Biological Opinion. NOAA supports the Corps' proposal to de-water and close the powerhouse juvenile collection channel from August 1, 2015 to March 24, 2016. We understand that this one long closure of the collection channel will allow completion, thereby avoiding two collection season operations with a partially completed channel - which would entail a higher risk to fish passage - and three winter in water work windows, increasing the cost of the project.

NOAA supports the Corps' proposal for alternative fish passage routes during the collection channel shut down. We understand that during the initial closure period, August 1 - 31, 2015, the Corps will maintain the usual 18 kcfs summer spill volume for juvenile passage and adult fallback, unless there is not enough river flow to provide minimal powerhouse operation and avoid adult passage problems. During the September 1 to December 15, 2015, outage period, the Corps will operate the RSW, 6.8 kcfs, daily, 6 am to 6 pm for fish passage, as long as minimal powerhouse operation can be maintained and no problems are noted with adult passage.

NOAA Fisheries requests that these alternative operations be entered in the Fish Passage Plan once FPOM has reached agreement. If you have any questions in regard to NOAA's comments on this coordination please feel free to contact me.

Bill Hevlin
NOAA Fisheries

Discussed at November 14 FPOM meeting and approved by participants.