# Fish Passage Plan (FPP) Change Request Form

**Change Form # & Title**: 19LMN002 – Add March 1 Bypass Start

**Date Submitted**: December 20, 2018

**Project**: Lower Monumental Dam

**Requester Name, Agency**: Lisa Wright – Corps RCC; Chuck Barnes – Corps LMN

**Final Action:** **APPROVED – 2/7/2019**

**FPP Section**:

Chapter 7 – Lower Monumental Dam:

* 2.3.1. Juvenile Facilities - Winter Maintenance Period
* 2.3.2. Juvenile Facilities - Fish Passage Season
* 3.2. Routine Maintenance

**Justification for Change**: Adds language for the early start of the Lower Monumental Dam juvenile bypass system in 2019.

**Proposed Change**: *[see pages below with edits to existing FPP in track changes]*

**Comments**:

**Record of Final Action**: Approved at the FPOM FPP meeting on 2/7/2019.

**2.3.1. Juvenile Facilities - Winter Maintenance (December 16–March 31\*).**

**\****In 2019, the bypass system will begin operations March 1, as described below.*

**2.3.1.1. Forebay Area and Intakes.**

Remove debris from forebay and gatewell slots.

Rake trashracks just prior to the operating season.

Measure drawdown in gatewell slots after cleaning trashracks with STSs installed.

Inspect and repair gatewell dip net as needed.

**2.3.1.2. Submersible Traveling Screens (STS) and Vertical Barrier Screens (VBS).** *In 2019, install screens by March 1 in at least the first three operational units in the priority order (****Table LMN-5****). Additional units may be screened prior to April 1 if maintenance schedules allow.*

Maintenance completed on all screens.

Inspect STSs prior to installation and operate one trial run (dogged off on deck) to ensure proper operation.

Log results of trial run.

Inspect all VBSs with underwater video camera at least once per year. Repair as needed.

**2.3.1.3. Collection Channel.**

Water-up valve capable of operating when needed.

Orifice lights are operational.

Orifices clean and valves operating correctly.

Orifice air backflush system works correctly.

**2.3.1.4. Transportation Facilities.**

Primary bypass flume switch gate maintained and in good operating condition.

Flume interior smooth with no rough edges.

Perforated plate edges smooth with no rough edges.

Wet separator and fish distribution system should be maintained and ready for operation as designed.

Brushes and screens on crowders in good condition with no holes in screens or rough edges.

Crowders maintained, tested, and operating correctly.

All valves, slide gates, and switch gates maintained and in good operating condition.

Retainer screens in place with no holes in screens or sharp wires protruding.

Barge and truck loading pipes should be free of debris, cracks, or blockages. Truck and barge loading hose couplings should have no rough edges and barge loading boom should be maintained and tested.

All sampling equipment should be maintained and in good operating condition prior to watering up the facilities. *In 2019, the bypass system will begin operations on March 1.*

Maintain juvenile PIT-tag system as required (see “*Columbia Basin PIT-tag Information System, General Gate Maintenance and Inspection, Walla Walla District*”, February 2003). Coordinate with PSMFC.

Mini- and midi-tanks maintained and in good operating condition.

**2.3.2. Juvenile Fish Passage Season (April 1\*–December 15).**

**\****In 2019, the bypass system will begin operations on March 1, as described below.*

Operate April 1\*–September 30 for juvenile fish bypass, collection, and transport (*except in 2019 when bypass operations begin March 1)*, and from October 1–December 15 for adult fallbacks. Operate according to criteria below and in the *Corps of Engineers Juvenile Fish Transportation Plan* (**Appendix B**). The transportation program may be revised in accordance with ESA Section 10 permit and the NOAA Fisheries Biological Opinion.

**2.3.2.1. Forebay Area and Intakes.**

Remove debris from forebay.

Inspect gatewell slots daily (preferably early in day shift) for debris, fish buildup, and contaminating substances (particularly oil). Clean gatewells before they become 50% covered with debris. If the volume of debris precludes the ability to keep the gatewell at least 50% clear, they should be cleaned at least once daily. If flows through an orifice or fish conditions give indications that an orifice may be partially obstructed with debris, the orifice will be closed and backflushed to remove the obstruction. If the obstruction cannot be removed, the orifice shall be closed and the alternate orifice for that gatewell slot shall be operated. If both orifices become obstructed or plugged with debris, the turbine unit will not be operated until the gatewell and orifices are cleared of debris.

If a visible accumulation of contaminating substances (e.g., oil) is detected in a gatewell and cannot be removed within 24 hours, the gatewell orifices shall be closed immediately and the turbine unit shut down within one hour until the material has been removed and any problems corrected. A preferred method for removing oil from the water surface is to install lipophilic socks, booms, or pads capable of encapsulating the material, and tie off with a rope for later disposal. Action should be taken as soon as possible to remove oil from the gatewell so the orifice can be reopened to allow fish to exit the gatewell. Orifices shall not be closed for longer than 48 hours.

Log gatewell drawdown differentials in bulkhead slots at least once a week.

Remove debris from forebay and trashracks as necessary to maintain less than 1' of additional drawdown in gate slots (relative to drawdown with a clean screen). Additional raking may be required when heavy debris loads are present in the river. Coordinate turbine unit outages with other project work activities, if possible, to minimize turbine unit outages during the spring.

Coordinate cleaning efforts with personnel operating juvenile collection facilities.

Dip bulkhead gatewell slots to remove fish prior to installing bulkhead for dewatering bulkhead slot.

**2.3.2.2. STS, VBS, and Head Gates**. *In 2019, install screens by March 1 in at least the first three operational units in the priority order (****Table LMN-5****). Additional units may be screened prior to April 1 if maintenance schedules allow.*

Operate STSs in cycle mode when average fork length of sub-yearling Chinook or sockeye is greater than 120 mm.

Operate STSs in continuous-run mode when average fork length of sub-yearling Chinook salmon or sockeye is less than 120 mm or if fish condition deteriorates.

Inspect each installed STS by underwater video camera once per month. Spot check VBSs at the same time.

Record STS amp readings daily.

If an STS is damaged or fails during the juvenile fish passage season, follow procedures defined in **section 3.2.2**. In no case should a turbine unit be operated with a missing or a known non-operating or damaged STS.

Up to half of the STSs may be pulled after October 1 for maintenance as long as unscreened turbine units are not operated.

Make a formal determination at the end of the season as to the adequacy of STS mesh and any replacement needs.

Inspect at least two VBSs in two different turbine units between spring and summer. Both turbine units should have been operated frequently in the spring. If a debris accumulation is noted, inspect other VBSs and clean debris as necessary.

Turbine units are to be operated with *raised* head gates when STSs are installed (April 1\* through December 15, *except in 2019 when bypass operations begin March 1*) to improve fish guidance efficiency (FGE), except as provided in **section 4.3**.

If extreme cold weather is forecasted (< 20°F for ≥ 24 hours) between Thanksgiving and December 15, STSs may be removed. The project will first request special permission from CENWW-OD-T. CENWW-OD-T will inform NOAA Fisheries and FPOM of the action. NOAA’s National Weather Service forecast for Lower Monumental Dam is available at: [forecast.weather.gov/MapClick.php?lat=46.56353885200048&lon=-118.53924714099969](http://forecast.weather.gov/MapClick.php?lat=46.56353885200048&lon=-118.53924714099969)

**2.3.2.3. Collection Channel.**

Ensure orifices are clean and operable. Operate at least one orifice per gatewell slot (preferably the north orifice). If the project is operating within MOP, additional orifices may be operated to maintain a full collection channel. If orifices must be closed to repair any part of the facility, monitor the gatewells for fish condition and behavior hourly (unit is operating) or at least every two hours (unit is not operating). See **section 3.2.2.3** to determine if the turbine unit must be shut down and if fish must be dipped from the gatewell(s).

Ensure that orifice lights are functional and operating in open orifices. Orifice lights and area lights may be turned off the evening before the channel is dewatered at the end of the season to encourage fish to exit the channel volitionally (dewatering occurs December 16 or later). Area lights can be turned on briefly for personnel access if necessary.

Replace all burned out orifice lights within 24 hours of notification. Orifice lights shall remain lighted 24 hours/day.

Orifice jets must hit no closer than 3’ from the back wall with the collection channel full.

Orifice valves must be either fully open or fully closed.

Backflush orifices at least once per day and more frequently if required. During periods of high debris volumes and fish numbers, April 1\* through July 31 (*except in 2019 when bypass operations begin March 1*), orifices should be inspected and backflushed once per 8-hour shift or more frequently as determined by the project biologist, to keep orifices clean.

Water-up valve capable of operating when needed.

3. Fish Facilities Maintenance

**3.2. Maintenance – Juvenile Fish Facilities.**

**3.2.1. Scheduled Maintenance.** Scheduled maintenance of juvenile facilities is conducted throughout the year. Long-term maintenance or modifications that require facilities to be out of service for extended periods of time are conducted during the winter maintenance period (December 16–March 31). *[NOTE: in 2019, bypass operations will begin March 1, as described in* ***sections 2.3.1 and 2.3.2****]* During the fish passage season parts of the facilities are maintained on a daily, weekly, or longer interval to keep them in proper operating condition.