

**OFFICIAL MEMO of COORDINATION (MOC) FOR
NON-ROUTINE OPERATIONS & MAINTENANCE**

COORDINATION TITLE- 19LGS14 Navigation Lock Leak Repairs

COORDINATION DATE- October 30, 2019

PROJECT- Little Goose Lock and Dam

RESPONSE DATE- November 13, 2019

1. Description of problem. Repairs are needed for the Little Goose Navigation Lock to stop existing water leaks. Water is leaking through failed waterstops, concrete cracks, and concrete monolith joints into the navigation lock chamber, culverts, and galleries. Repair work will include performing approximately 125 lineal feet of surface sealing on concrete joints and cracks, and drilling and installing 137-feet of waterstop that will be filled with expanding hydrophilic urethane waterstop cylinders. The work will take place in the upper apron of the lock, upriver the tainter gate and will require cutting a channel (4" x 8" x 34') through concrete, and drilling a 6 inch diameter hole 140 ft deep within approximately 60 ft of the exit to the fishway.

In order to place the drill for the waterstop hole in the proper location, the contractor will cut a channel into the north side of the lock from the top to the bottom that measures 4-inch deep by 8-inch wide by 34-feet long. Multiple vertical cuts will be made in the wall then the interspacing concrete will be chiseled out to create the channel. All concrete chunks will be collected and removed.

After the channel is cut, a hole will be drilled at the bottom of the cut, down through the concrete and possibly bedrock, approximately 140-feet deep and 6-inches in diameter. Drill casing will be used, allowing for all drill fines to be collected as they exit the casing at the top of the lock. Once drilling is complete hydrophilic polyurethane plugs will be inserted into the hole. The channel cutting is expected to take three days with an additional three days for drilling, and one half day for drilling and fastening the plate over the channel. The remainder of the time will be used to lay down the sealant and install the waterstop plugs

The project will also include placing approximately 125 lineal feet of sealing caulk on the joint of the lock sidewall-floor intersection. After the work is completed the channel will be covered with a steel plate.

The work area is typically covered with approximately 20 feet of water. At this time it is not known if the contractor will use divers to do the work inwater or if they will have the equipment to block off and unwatering the area by releasing the water into the lock chamber.

Recurring maintenance and periodic repairs requires that the lock chamber be dewatered for access. The time frame for completing maintenance and repairs is restricted to the annual lock outage during March. Additionally the leaks are degrading the electrical utilities in the locks galleries. Failure to complete the project will result in the continued degradation of the lock, as dam maintenance personnel will not be able to repair problems in the lock chamber, and electrical utilities in the galleries will continue to degrade due to impacts from water.

2. Type of outage required None.

3. Dates of impacts/repairs. March 7 to March 28, 2020, about seven days of which will involve concrete cutting and drilling work.

4. Length of time for repairs. 3 weeks.

5. Impact on fish facility operation None.

6. Impact on project operations None.

7. Analysis of potential impacts to fish. Include:

- a. 10-year average passage of adults and juveniles of each affected listed species during dates of impact:

Only steelhead have been documented consistently passing Little Goose dam during the month of March. Data on fish passage is not collected every year during March, so a ten year average is not available. Data was taken in 2016 and indicated that, on average, 68 steelhead passed through the Little Goose Fish Ladder per day for a total of 2,047 steelhead for the month of March. There was a high of 145 fish on March 11th, and a low of 27 on March 18th. Passage was fairly even with occasional daily spikes from the beginning to the end of the month.

- b. Statement about the current year's run (e.g., higher or lower than 10-year average).

The 2020 forecasts for Columbia River fish runs have not yet been released. 2019 steelhead returns were significantly below the 10-year average.

- c. Estimated exposure of impact to adults and/or juveniles, as appropriate, by species (number or percentage of 10-year average that occurs during dates of impact).

Based on 2016 fish counts, about 1,500 steelhead, or 1.6% of total year passage will pass the dam during the proposed work and fewer will likely be impacted during the approximate week needed for concrete and drilling.

- d. Final judgment on scale of expected impacts (negligible, minor, significant) on:

- i. Downstream migrants. Negligible. There could be a minor discountable increase in turbidity as uncaptured fines from the cutting move through the lock and downstream.
- ii. Upstream migrants. Minor delays in passage during concrete cutting and drilling are possible.
- iii. Lamprey. Negligible.

2. Comments from agencies.

3. Final coordination results.

4. After Action update.

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

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Project: Little Goose Lock Water Stop and Leak Repair

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