

# The Dalles Dam Fishway Status Report

3/10/2018

Inspection Period: 03/4/2018-03/10/2018

## THE DALLES DAM



The Dalles Project-Fisheries  
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| The Dalles Dam                                     |                |                              |                           |
|--|----------------|------------------------------|---------------------------|
| Inspections Out of Criteria                        | Criteria Limit | Total Number of Inspections: | Comments                  |
| 0  | ≤ 0.5'         | 15                           | Temperature: 39.5 °F      |
| 0  | ≤ 0.3'         |                              | Secchi: 4.7 feet          |
| <b>NORTH FISHWAY</b>                               |                |                              |                           |
| Exit differential                                  | 0              | ≤ 0.5'                       |                           |
| Count station differential                         | 0              | ≤ 0.3'                       |                           |
| Weir crest depth                                   | 0              | 1.0' ± 0.1'                  |                           |
| Entrance differential                              | 0              | 1.0' - 2.0'                  | 1.3                       |
| Entrance weir N1                                   | 0              | depth (≥ 8')                 | 9.4                       |
| Entrance weir N2                                   | 0              | Closed                       |                           |
| PUD Intake differential                            | 0              | ≤ 0.5'                       |                           |
| <b>EAST FISHWAY Return to service March 9 2018</b> |                |                              |                           |
| Exit differential                                  | 0              | ≤ 0.5'                       |                           |
| Removable weirs 154-157                            | 0              | Per forebay                  |                           |
| Weir 158-159 differential                          | 0              | 1.0' ± 0.1'                  |                           |
| Count station differential                         | 0              | ≤ 0.3'                       |                           |
| Weir crest depth                                   | 0              | 1.0' ± 0.1'                  |                           |
| Junction pool weir JP6                             | 0              | 0.0                          |                           |
| East entrance differential                         | 0              | 1.0' - 2.0'                  | 1.5                       |
| Entrance weir E1                                   | 0              | <i>No criteria</i>           |                           |
| Entrance weir E2                                   | 0              | depth (≥ 8')                 | 11.1                      |
| Entrance weir E3                                   | 0              | depth (≥ 8')                 | 11.1                      |
| Collection channel velocity                        | 0              | 1.5 - 4 fps                  |                           |
| Transportation channel velocity                    | 0              | 1.5 - 4 fps                  |                           |
| North channel velocity                             | 0              | 1.5 - 4 fps                  |                           |
| South channel velocity                             | 0              | 1.5 - 4 fps                  |                           |
| West entrance differential                         | 0              | 1.0' - 2.0'                  | 1.2                       |
| Entrance weir W1                                   | 0              | depth (≥ 8')                 | 8.3                       |
| Entrance weir W2                                   | 0              | depth (≥ 8')                 | 8.3                       |
| Entrance weir W3                                   | 0              | <i>No criteria</i>           |                           |
| South entrance differential                        | 0              | 1.0' - 2.0'                  | 1.5                       |
| Entrance weir S1                                   | 0              | depth (≥ 8')                 | 8.3                       |
| Entrance weir S2                                   | 0              | depth (≥ 8')                 | 8.3                       |
| <b>JUVENILE PASSAGE</b>                            |                |                              |                           |
| Sluiceway operation                                | 0              | Units 1, 8, 18               |                           |
| Turbine trashrack drawdown                         | 0              | <1.5', wkly                  | range: 0.1-0.8'           |
| Spill volume/pattern                               | 0              |                              |                           |
| Turbine Unit Priority                              | 0              | per FPP                      | MU 13-16 oos 13 RTS 12/20 |
| Turbine 1% Efficiency                              | 0              | per FPP                      |                           |

## OTHER ISSUES:

### **Birds and Sea lions:**

High gull numbers near The Dalles Marina.

Hazing plan; USDA on site Apr15 - Jul30, 14 hrs/day. Boat hazing 8 hrs/day, with increase during peak spring outmigration period.

Use of lethal for controlling predation by gulls being investigated by NWD legal.

### **Operations**

North fishway in service

East fishway out of service through Mar 8 due to AWS construction delay.

### **Current Outages;**

T8 (MU15 & MU16) out for transformer failure. Transformer replacement 6/28/18.

MU17 and MU18 out for overhaul. Return 4/26/18.

MU19 and MU20 out of service due to gassing. 5/31/18.

MU9 out for annual maintenance.

Fish unit 1 and 2 and east fishladder out 12/1/17 for AWS construction. Return 3/8/18.

Navlock outage 3/3 - 3/25/18 for annual maintenance. No fish found in upstream gate pool.

### **Maintenance;**

East exit weir electrical panel FCQ7 installation completed. Demo of old FCQ7 near complete.

ROV of MU 5, 8, & 18 intake trash racks scheduled for April 3

East exit oil boom anchor installation with John Day boat. Date to be determined.

Collection channel diffuser permanent closure start delayed until next winter outage.

East exit 155, 156, 158 weir gearboxes rehabbed and reinstalled. Electrical hookup complete.

Collection channel stuck dewatering pump removed. Repair underway.

*Long term repair items;* 154 -157 rehab/weir wheel replace, diffuser valve overhaul (rehab and decommission).

Fish related /non-fish funded items; Spillway assessment, spillway crane replace and spillgate 9. All awaiting funding.

All spillway items on Critical Infrastructure. Spillgate 9 on large cap list, projected for 2022. Charter in place for comprehensive spillway assessment.

### **Research/Construction/Contractors:**

*Fish Counters* - Normandeau video review counting through the winter.

*Pikeminnow dam angling* - Done for season with a total catch at 1776. Highest invasive walleye by-catches do date. **All non-native predators are released.**

*AWS construction* - Construction progress continues. Commissioning testing Mar 31.

*Lamprey minor mods* - Rounded entrance weir caps install completed for West, South, and North.

*Railroad track removal* - Tailrace deck rail removal approx. half completed.

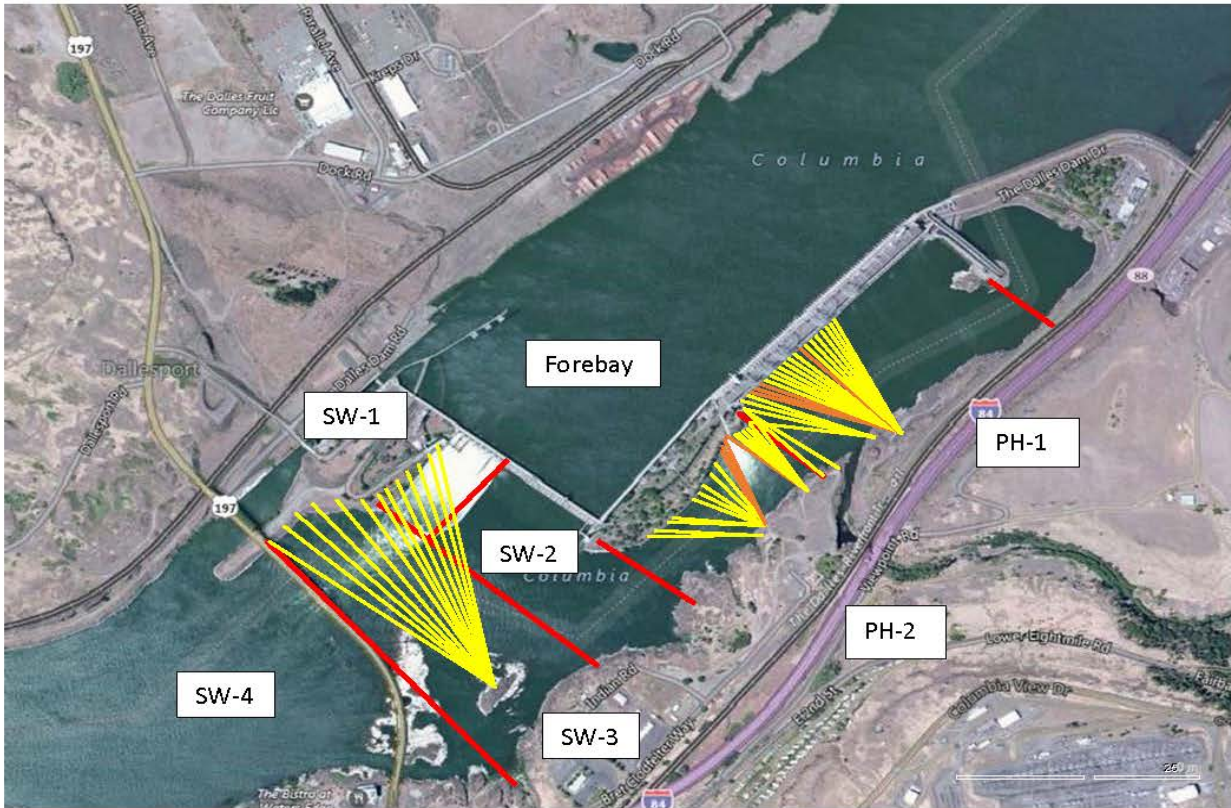
*Fish unit breaker replace.*- Work in progress. Completion Feb18, 2018. Two weeks commission testing required.

*Fish unit rehab* - Phase 1A report Jan 2018. Award 2020. Completion 2022.

*Transformer replacement* - Install start May 2018.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam



Red lines = avian zones

Yellow lines = current wires

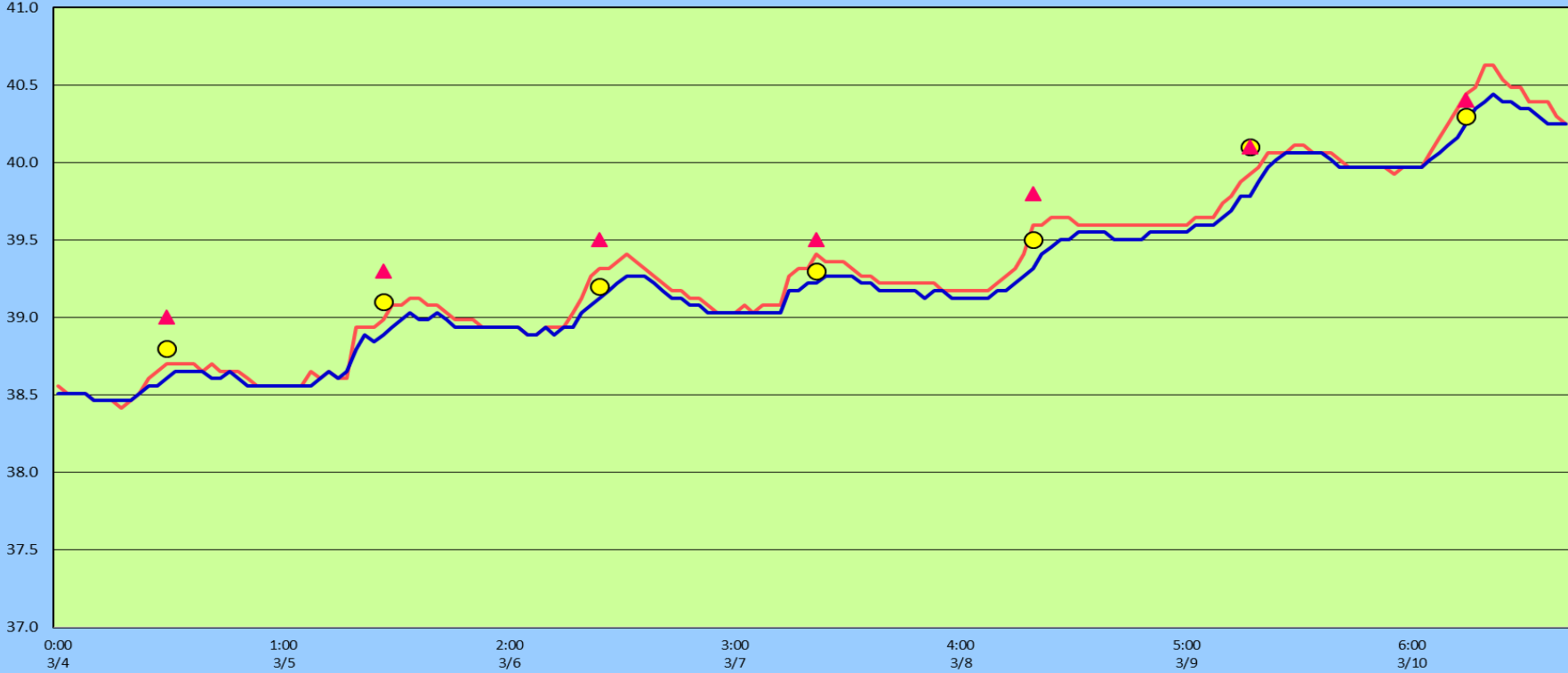
Orange lines = down or missing wires

| 2018 Piscivorous Bird Counts |          |       |      |                             |    |           |    |              |    |       |    |         |    |       |    |                     |       |    |
|------------------------------|----------|-------|------|-----------------------------|----|-----------|----|--------------|----|-------|----|---------|----|-------|----|---------------------|-------|----|
| Date                         | Observer | AM/PM | Zone | F=foraging, NF=non-foraging |    |           |    |              |    |       |    |         |    |       |    | Total birds in zone | Notes |    |
|                              |          |       |      | Gull                        |    | Cormorant |    | Caspian tern |    | Grebe |    | Pelican |    | Other |    |                     |       |    |
|                              |          |       |      | F                           | NF | F         | NF | F            | NF | F     | NF | F       | NF | F     | NF |                     |       |    |
| 3/4                          | JED      | PM    | FB   | 4                           | 0  | 1         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 5     |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 1  | 0                   | 1     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 1                   | 0     | 1  |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW3  | 1                           | 0  | 8         | 20 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 29 |
|                              |          |       | SW4  | 0                           | 11 | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 11                  |       |    |
| 3/5                          | JWR      | AM    | FB   | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW3  | 0                           | 0  | 0         | 31 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 31 |
|                              |          |       | SW4  | 0                           | 6  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 6                   |       |    |
| 3/6                          | JWR      | PM    | FB   | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW3  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW4  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   |       |    |
| 3/7                          | JED      | AM    | FB   | 0                           | 1  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 1     |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW3  | 0                           | 0  | 0         | 21 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 21 |
|                              |          |       | SW4  | 0                           | 88 | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 88                  |       |    |
| 3/8                          | CEA      | PM    | FB   | 1                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 2     | 0  | 3                   |       |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW3  | 0                           | 0  | 0         | 13 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 13 |
|                              |          |       | SW4  | 0                           | 20 | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 20                  |       |    |
| 3/9                          | CEA      | AM    | FB   | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | PH1  | 0                           | 0  | 0         | 1  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 1     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 0  |
|                              |          |       | SW2  | 0                           | 0  | 1         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 1  |
|                              |          |       | SW3  | 0                           | 0  | 0         | 10 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 10 |
|                              |          |       | SW4  | 0                           | 30 | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 30                  |       |    |
| 3/10                         | CEA      | PM    | FB   | 3                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 1     | 0  | 4                   |       |    |
|                              |          |       | PH1  | 1                           | 0  | 1         | 2  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 4     |    |
|                              |          |       | PH2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | SW1  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | SW2  | 0                           | 0  | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     |    |
|                              |          |       | SW3  | 3                           | 0  | 0         | 11 | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 0  | 0                   | 0     | 14 |
|                              |          |       | SW4  | 5                           | 30 | 0         | 0  | 0            | 0  | 0     | 0  | 0       | 0  | 0     | 35 |                     |       |    |

Key: BAEA = Bald Eagle; GBHE = Great Blue Heron; COME = Common Merganser

# The Dalles Dam Adult Fish Ladder River/Water Temperatures

North Count Station    North Entrance    Current USGS Daily Average    USGS Daily Average (2007-2017)



|      |         | USGS: |              |
|------|---------|-------|--------------|
|      | Secchi: |       | Temperatures |
| 3/4  | 5.0     | Sun   | 38.8         |
| 3/5  | 4.5     | Mon   | 39.1         |
| 3/6  | 4.0     | Tue   | 39.2         |
| 3/7  | 4.5     | Wed   | 39.3         |
| 3/8  | 5.0     | Thurs | 39.5         |
| 3/9  | 5.0     | Fri   | 40.1         |
| 3/10 | 5.0     | Sat   | 40.3         |
|      | 4.7     | AVG   | 39.5         |

**The Dalles Dam Daily Readings and Averages for  
Temperatures, Secchi, Entrances, and Spill**

= Out of criteria

| Date:       | North Ladder   |            |               | East Ladder |             |             |             |               |            |            |                |              |            |            |
|-------------|----------------|------------|---------------|-------------|-------------|-------------|-------------|---------------|------------|------------|----------------|--------------|------------|------------|
|             | North Entrance |            | East Entrance |             |             |             |             | West Entrance |            |            | South Entrance |              |            |            |
|             | Differential   | N1 Depth   | Differential  | E1 Depth    | E2 Depth    | E3 Depth    | JP 6        | Differential  | W1 Depth   | W2 Depth   | W3 Depth       | Differential | S1 Depth   | S2 Depth   |
| 3/4         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.3            | 9.4        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/5         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.3            | 9.4        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/6         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.2            | 9.4        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/7         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.3            | 9.4        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/8         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.3            | 9.4        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/9         |                |            |               |             |             |             |             |               |            |            |                |              |            |            |
|             | 1.4            | 9.3        |               |             |             |             |             |               |            |            |                |              |            |            |
| 3/10        | SCADA          |            | 1.5           | 10.7        | 10.9        | 10.9        | 12.5        | 1.2           | 8.1        | 8.1        |                | 1.6          | 8.1        | 8.1        |
|             |                |            | 1.5           | 11.1        | 11.2        | 11.2        | 12.8        | 1.2           | 8.4        | 8.4        |                | 1.5          | 8.3        | 8.3        |
|             | 1.3            | 9.2        | 1.6           | 11.1        | 11.2        | 11.2        | 12.8        | 1.1           | 8.5        | 8.5        |                | 1.5          | 8.4        | 8.4        |
|             | 1.3            | 9.3        | 1.5           | 10.8        | 11.0        | 10.9        | 12.6        | 1.2           | 8.2        | 8.2        |                | 1.5          | 8.2        | 8.2        |
| <b>AVG:</b> | <b>1.3</b>     | <b>9.4</b> | <b>1.5</b>    | <b>10.9</b> | <b>11.1</b> | <b>11.1</b> | <b>12.7</b> | <b>1.2</b>    | <b>8.3</b> | <b>8.3</b> |                | <b>1.5</b>   | <b>8.3</b> | <b>8.3</b> |

*Fishways are inspected twice daily plus one SCADA inspection.*



Rebar forming for concrete encapsulation upstream of 10' valve room.