

# THE DALLES SPILLWAY GATES 1-9 MAJOR MAINTENANCE AND PHASE 1A

Phase 1A Criteria and Constraints  
Presented at FFDRWG on 4/2/2026



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# OVERVIEW

## OBJECTIVE

The project team will produce a combined Major Maintenance (MMR) and Phase 1A (PH1A) Report to analyze various alternatives. The primary goal is to identify the most cost-effective and long-term solution for restoring the function of the structure. This report will provide the basis for district-level decisions on the project's scope, sequence, and budget, while also identifying any risks for future implementation.

**Constraints** are the real-world limitations that are imposed on the project and design. Constraints must be kept in mind when designing, evaluating, and constructing the recommended alternative.

- In-water work window
- Fish passage spill volumes (FPP)
- Run-of-the-river spill volumes

**Criteria** are guidelines for the project and design that define its success. The project and design must adhere to these items to be considered successful.

- Lifecycle Cost
- Operability
- Reliability
- Constructability
- Impacts to operations
- Safety
- Environmental

# CONSTRAINTS

## In-Water Work Window (IWWW):

- Primary Window: Dec 1 – end of Feb
- Any work beyond these dates requires a variance from FPOM, which is unlikely to be granted during peak migration periods.

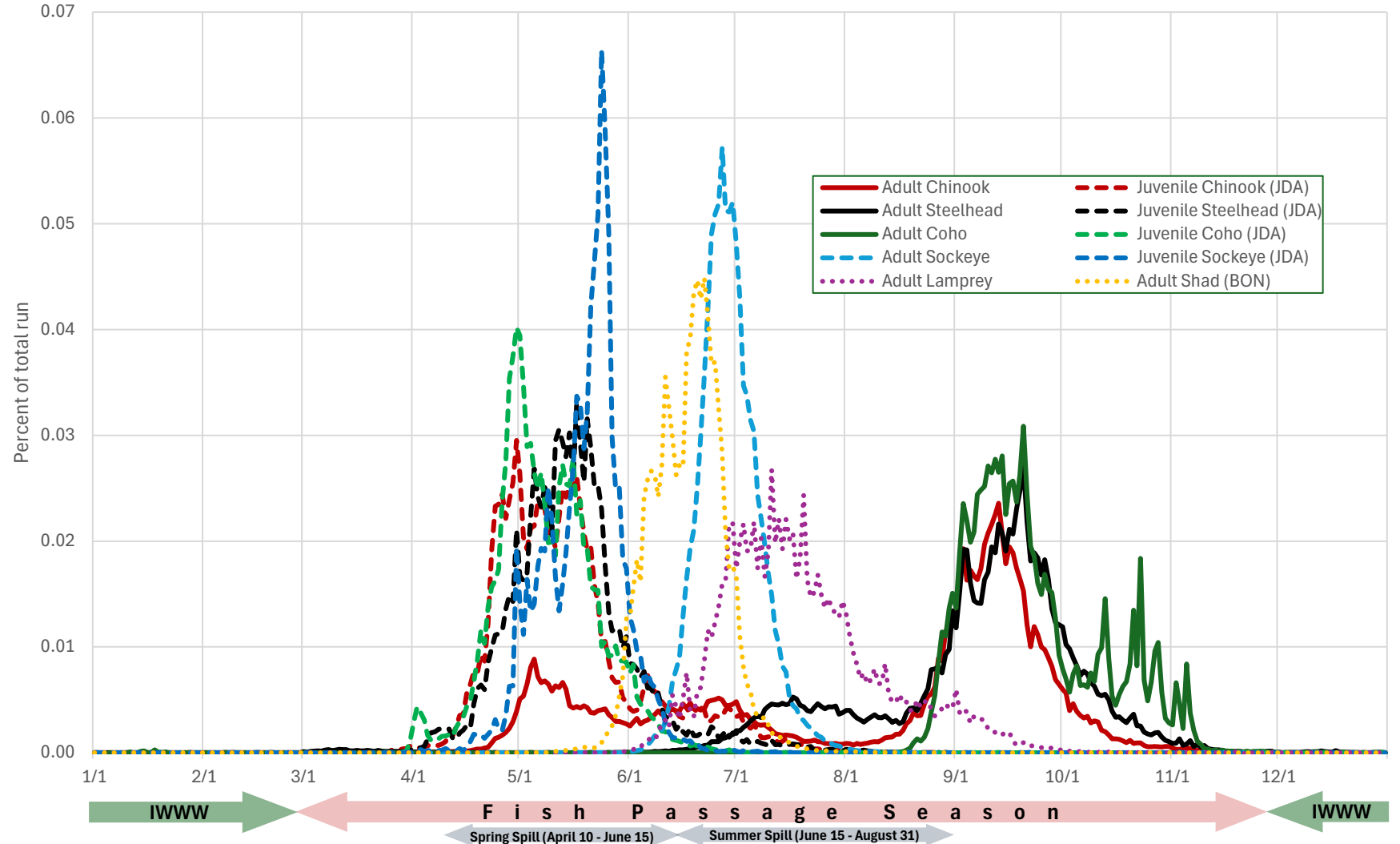
## Fish Passage Spill Volumes:

This project cannot diminish the capacity of The Dalles Dam spillway to pass FPP/FOP spill volumes.

## Run-of-the-river Spill Volumes:

This project cannot diminish the capacity of The Dalles spillway to pass involuntary spill.

10-year (2016-2025) average run timing for key anadromous fish species at The Dalles Dam



Columbia River DART, Columbia Basin Research, University of Washington. (2026). Adult Passage Counts Graphics & Text. Available from



# CRITERIA

## Identified so far:

### 1. Lifecycle Cost

- Alternatives that minimize long-term upkeep and reduce unplanned maintenance costs over the life of the project are preferred.
- Alternatives that do not minimize long-term upkeep and reduce unplanned maintenance costs over the life of the project are not preferred.

### 2. Operability

- Alternatives that increase the capacity of The Dalles Dam spillway to pass FPP/FOP spill volumes are preferred.
- Alternatives that decrease the capacity of The Dalles Dam spillway to pass FPP/FOP spill volumes are not preferred.

### 3. Reliability

- Alternatives with greater likelihood of functioning as required without failure, even in varied temperature and damp/wet conditions are preferred.
- Alternatives with lesser likelihood of functioning as required without failure, even in varied temperature and damp/wet conditions are not preferred.

### 4. Constructability

- Alternatives that are easier to construct (using standard parts and including a clear plan for temporary power) are preferred.
- Alternatives that are more difficult to construct are not preferred.

### 5. Impacts to operations

- Alternatives that have acceptable impacts on the facility and daily operations of The Dalles Dam are preferred.
- Alternatives that have unacceptable impacts on the facility and daily operations of The Dalles Dam are not preferred.

### 6. Safety

- Alternatives that improve the safety of operators and maintenance personnel who will work with the equipment are preferred.
- Alternatives that diminish the safety of operators and maintenance personnel who will work with the equipment are not preferred.

### 7. Environmental

- Alternatives that avoid or minimize negative impacts on the surrounding environment are preferred.
- Alternatives that do not avoid or minimize negative impacts on the surrounding environment are not preferred.

## Additional suggestions from FFDRWG (4/2/26):

- **Consider adding criteria specific to Bay 9 to convey the importance of that bay. (Morrill)**
  - “Repairing Bay 9 is the highest priority for NOAA to preserve the integrity of the wall and allow adjacent spill (bays 10-12) to enter the thalweg instead of spilling over the shelf as we are currently doing when flows exceed 1-8 capacity.” (Conder)



# NEXT STEP: IDENTIFY ALTERNATIVES FOR ANALYSIS

## Identified so far:

- A. No Action: Run the spillway gates and all associated components and systems to failure (no longer economical to repair).
- B. Repair and rehabilitate the spillway gates and all associated components and systems.
  - Structural: In place modification of existing gates to strengthen them to current standards and repainting of gates.
  - Mechanical: Replace wire ropes and respond to any load changes that arise from structural modifications.
  - Electrical: Replace power (4160V feeders to DQ1, DQ1 switchgear and transformer), spillway gate controls and instrumentation.
- C. Partial replacement, repair, and rehabilitation of the spillway gates and all associated components and systems.
  - Structural: Design and fabrication of at least one new gate and in place modification of existing gates to strengthen them to current standards and repainting of gates. Evaluate Fiberglass-Reinforced Plastic (FRP) for replacement gate.
  - Mechanical: Replace wire ropes and first in/first out (FIFO) component upgrades to respond to any load changes that arise from structural modifications.
  - Electrical: Replace power (4160V feeders to DQ1, DQ1 switchgear and transformer), spillway gate controls and instrumentation.
- D. Complete replacement of the spillway gates and all associated components and systems.
  - Structural: Design and fabrication of nine new gates. Evaluate Fiberglass-Reinforced Plastic (FRP) for all replacement gates.
  - Mechanical: Design and fabrication of nine new gates and all associated components and systems.
  - Electrical: Replace power (4160V feeders to DQ1, DQ1 switchgear and transformer), spillway gate controls and instrumentation.

## Additional suggestions from FFDRWG (4/2/26):

Prioritize Bay 9!!! (Ensure the PDT reviews Laurie Ebner's memo on The Dalles spillway from 2025 and incorporates it as appropriate to support an expedited return to full service for bay 9)

# QUESTIONS, COMMENTS, WORDS OF WISDOM?



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