Washington State Dept. of Transportation Fish Passage Program

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WSDOT Fish Passage Delivery Office

The Challenge:

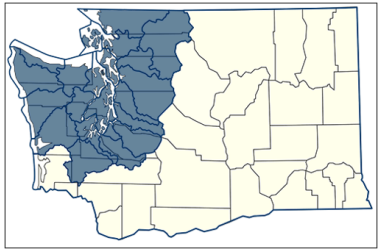
WSDOT is responsible for more than 7000 miles of the highway system.

There are more than 4,000 documented fish-bearing stream crossings.

WSDOT recognizes:

- Culvert designs of the past can delay or block fish access to quality spawning and rearing habitat.
  - Designed for water diversion, not fish.
  - Some not designed with flooding in mind.
  - Changes in watershed usage.
- Culverts and fishways can fail over time and become fish barriers.

The Permanent Injunction



State of Washington: *WSDOT, WDNR, WDFW, Parks*

Case area culverts: *Salmon & Steelhead potential, WRIAs 1-23*

2013 List Significant Gain Barriers (>200m)

- Open 90% blocked habitat by 2030
- Open remaining 10% deferred habitat at the end of the structure's useful life or as part of another project

2013 List Limited Gain Barriers (<200m)

- Correct at the end of the structure's useful life or as part of another project

Newly Identified Barriers - those identified after the 2013 List was developed

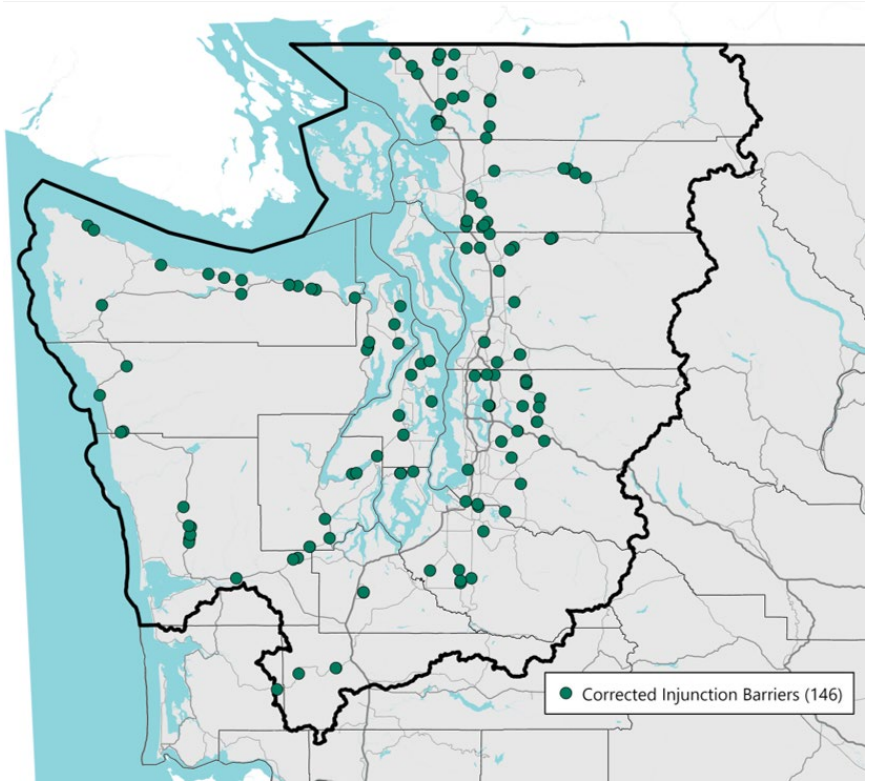
- Correct within a reasonable "period of time".

State Requirements

RCW 77.57.030 – Fishways required in dams, obstructions

- Requires the removal of fish barriers caused by obstructions such as road culverts

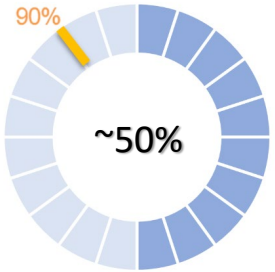
Completed Projects



June 2024

WSDOT's Injunction Progress With Existing Funding and What it Takes to get to 90% Habitat Restored

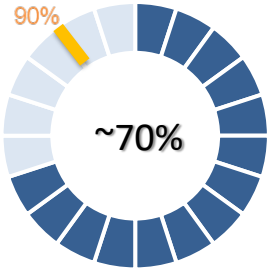
June 2024



146 Barriers*

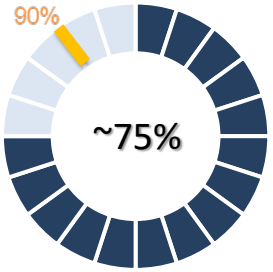
Total potential habitat opened with corrected barriers

Currently under contract



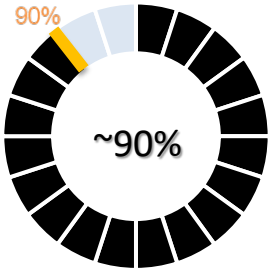
Total ~155 Barriers*

Under contract with remaining existing funds



Additional ~ 45 Barriers*

Total potential habitat opened once all barriers in construction are complete



Additional ~180 Barriers*

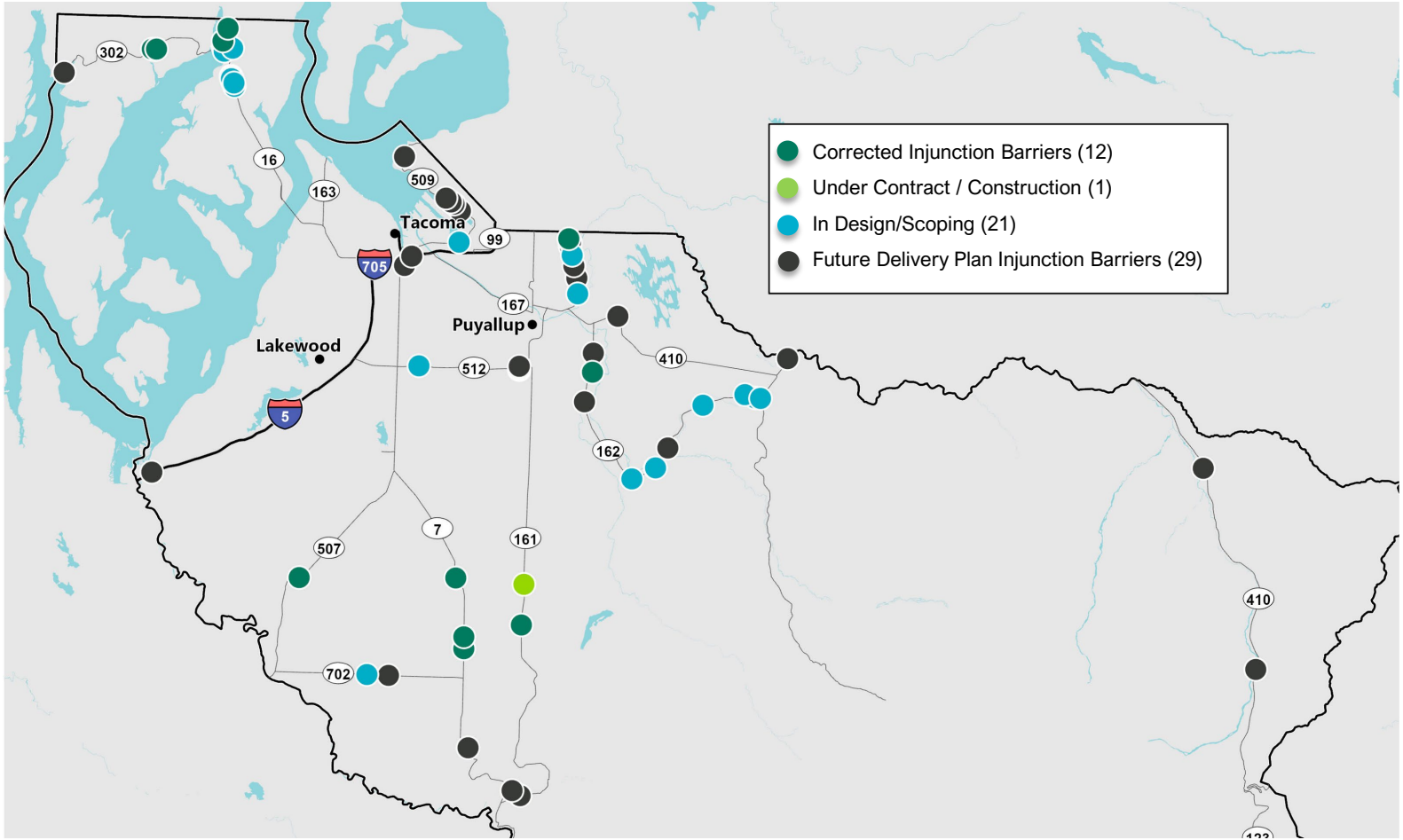
Additional Funding Needed for Remaining Barriers

*Includes Significant Gain, Limited Gain and Newly Identified Barriers. Habitat percentages only reflect Significant Gain 2013 List Barriers that count toward the 90%.

October 2024

WSDOT Injunction Barriers – Pierce County

February 2025



Design to Construction

Identified fish barriers go through extensive design processes prior construction.

This includes but is not limited to:

- Permitting
- Right-of-way
- Design
- Estimating
- Documentation
- Procurement
- And more….

* Civil (design), Hydraulic, Structural/Bridge, Geotechnical, Construction (constructability, maintenance, lifecycle cost considerations), Traffic (MOT), Utility

** NEPA/SEPA, Biologists (wetlands, fish, Endangered Species Act), Environmental Permitting, Archaeologists (cultural resources), Hazardous Materials, Stream Restoration, Landscape Architects

Construction to Monitoring

Barrier Construction

- Construction meetings
  - On-site pre-construction
  - Habitat feature inspection
- Post Construction
  - Begin Plant Establishment
  - Enter Monitoring Program

Monitoring Parameters

- Structure & Streambed (meet original design, changes)
- Streambed, et al.
- Complexity/Habitat features
- Bankfull event (since last inspection)
- Barrier issues: Subsurface flow, Entrainment, Hydraulic drops
- Risks to long-term performance
- Photos for permanent record
- Cycle: Over-winter; 5-year (typ.); annual (if needed).

Monitoring Actions

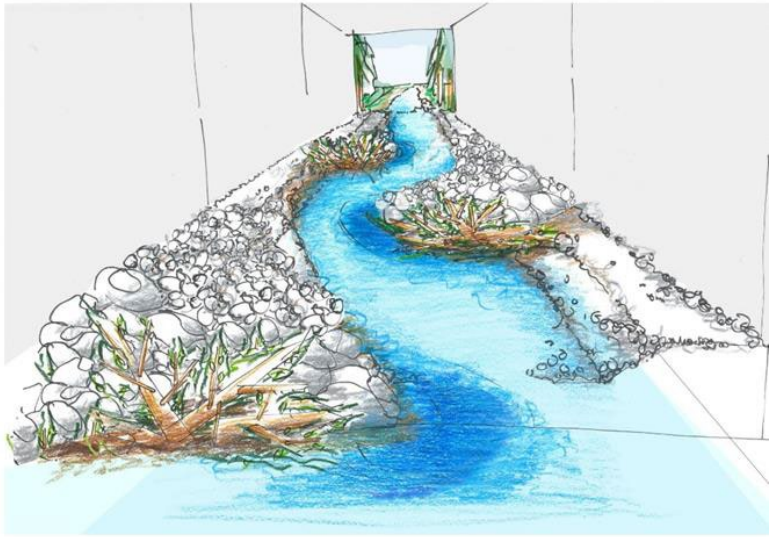
The responses to the monitoring parameters determine the course of action taken by the state (case-by-case basis):

- No Action Needed (standard inspection frequency)
- Additional Monitoring (increased frequency)

Additional actions:

- Repair (by WSDOT personnel)
- Modification (by WSDOT or by contract)
- Replacement (by contract)

Learning Lessons and Evolving Stream Designs



Lessons learned, monitoring results, and innovation have changed stream design over time.

Standard Plans for Buried Structures up to 30’ spans

WSDOT Std. Plan E-20.10 – Buried Structure Split Box

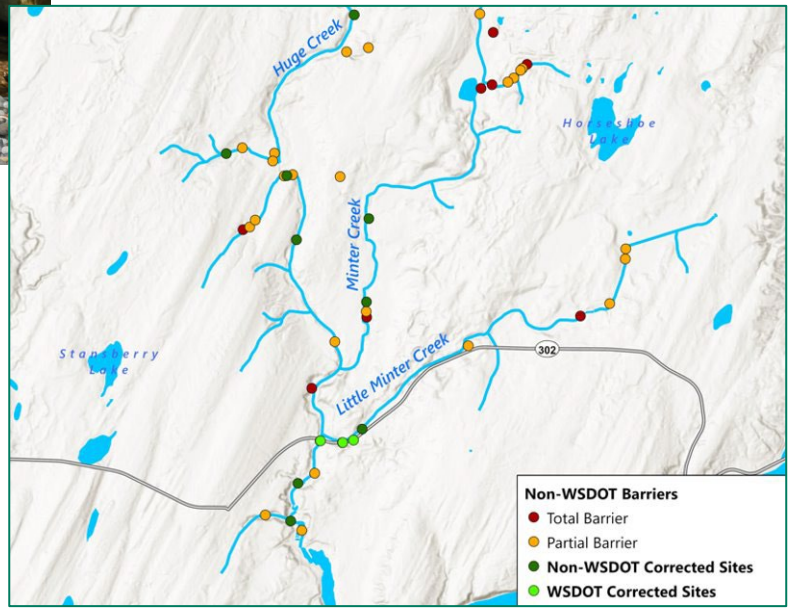
For more Std. Plans, see the WSDOT Webpage: https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/standard-plans

Innovations in Structure Type

SR 203 – Loutsis Creek

Minter Creek, SR 302

December 2020



Pussyfoot Creek, SR 164

Before

After (Oct 2021)

Purdy Creek, SR 16

Before

After

During

Salmon upstream!

Contact Information

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Resources:

WSDOT Fish Passage Information Page: https://wsdot.wa.gov/construction-planning/protecting-environment/fish-passage

WSDOT Fish Guidance: https://wsdot.wa.gov/engineering-standards/environmental-guidance/fish

WSDOT Fish Passage Inventory interactive map:
https://wsdot.maps.arcgis.com/apps/webappviewer/index.html?id=c2850f301118480fbb576f1ccfda7f47

WSDOT Fish Passage Flickr Page: https://www.flickr.com/photos/wsdot/collections/72157720114579917/

WSDOT Fish Passage Video:

- Restoring Fish Passage: https://youtu.be/1oFZ1VSzMjA?si=Y1zMKUILLYOSVaP8
- Designing Fish Passage Projects: https://youtu.be/u7HT6oMqAco?si=rHlTPjR9r_BO97Ip
- Up-Close look at Minter Creek (2020): https://youtu.be/W8HLPmu8WhE?si=GTo2dHNVy7ppvkx_
- Siebert and Bagley Creeks: https://youtu.be/2BsyZLctMn4?si=med3Wluz33ZoAj1p

Questions?