POST PROJECT MONITORING

MODULE 13 - TAMMY SCHMIDT

Tammy Schmidt

WSDOT

Fish Passage Biologist
Headquarters Environmental Services Office
WSDOT

Current duties: Provide fish passage project support for NW Region. Lead WSDOT's statewide post-project monitoring program.

Background & Experience: Tammy's background is in wildlife biology, stream restoration, and veterinary technology. Tammy was a licensed veterinary technician who transferred into the world of wildlife where she ultimately settled in as a wildlife biologist specializing in Western Pond Turtles and Oregon Spotted Frogs. Tammy spent a total of 17 years at the WA Department of Fish and Wildlife as a district wildlife biologist in Region 6 working on wildlife management/species recovery and more recently as a habitat biologist in the Fish Passage Division at HQ working with private ag producers to correct barriers to fish passage. She now works in the Stream Restoration Section of the Biology Branch at WSDOT HQ.

Education: The Evergreen State College, BS in Environmental Sciences and Pierce College, Associate in Veterinary Technology

Personal interests: Tammy enjoys training and field trialing with her basset hounds.

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Tammy Schmidt

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Post Project Monitoring

The purpose of this module is to provide an **awareness** of the post-project Monitoring Program at WSDOT. We'll explore topics which make up the **framework** of the Monitoring Program. We will discuss the difference between assessing fish passage and stream performance, identify specific **design elements** that can impact fish passage, and touch on how the monitoring results can inform **future designs**.

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Post Project Monitoring

Nyctophobics
Claustrophobics
Arachnophobics
Beware!!

Tammy Schmidt, Fish Passage Biologist, HQ
June, 2020

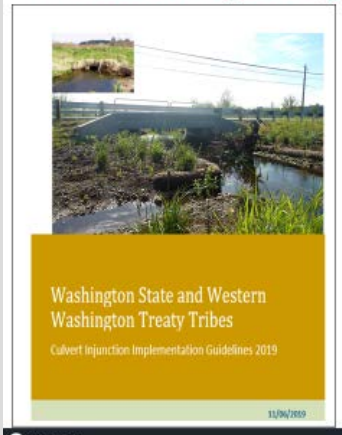
Roger Millar, Secretary of Transportation
Keith Metcalf, Deputy Secretary of Transportation

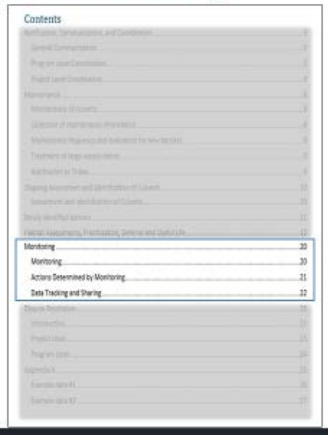
Purpose: *To provide awareness of WSDOT's post-project Monitoring Program – the requirements under the Injunction, what is monitored, and why*

- ❑ Program genesis
- ❑ Injunction requirements
- ❑ Protocol evolution
- ❑ Plan content
- ❑ What's not included
- ❑ Data results
- ❑ Project feedback

WSDOT 2

Monitoring Program History





WSDOT 3

Monitoring Intervals

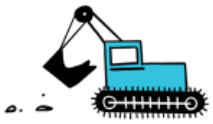
WSDOT 4

Protocol Evolution

2015 Monitoring program launched throughout the injunction area	2017 Expanded for alternative design applicability	2018 Added evaluation of design and habitat features, scour and aggradation	2019 Incorporated monitoring data and launched mobile data collection

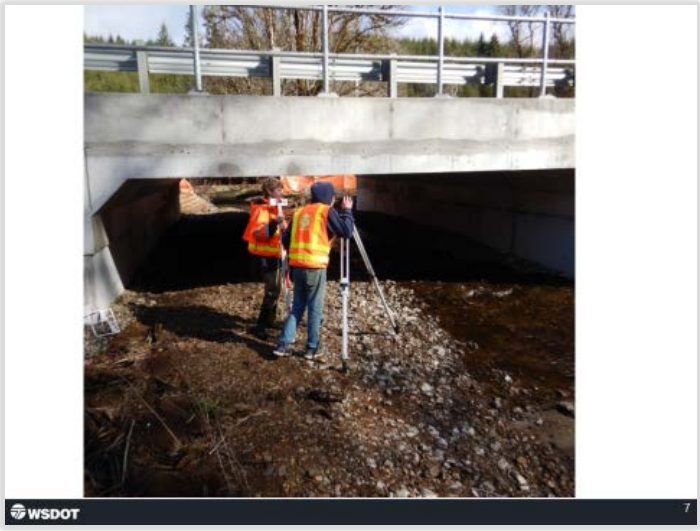
WSDOT 5

Post-Construction Inspection



- ❑Structure type
- ❑Alignment/Configuration
- ❑Structure dimensions
- ❑Streambed substrate
- ❑Streambed shape (cross section)
- ❑Streambed slope (profile)
- ❑Hydraulic and habitat features identified in the design

WSDOT 6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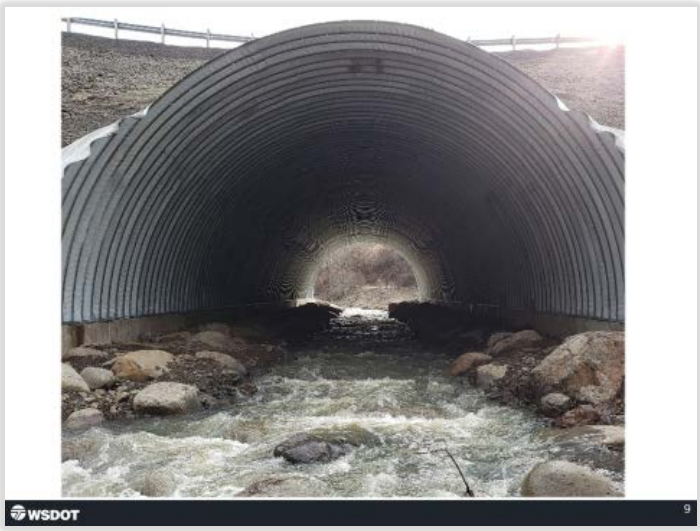
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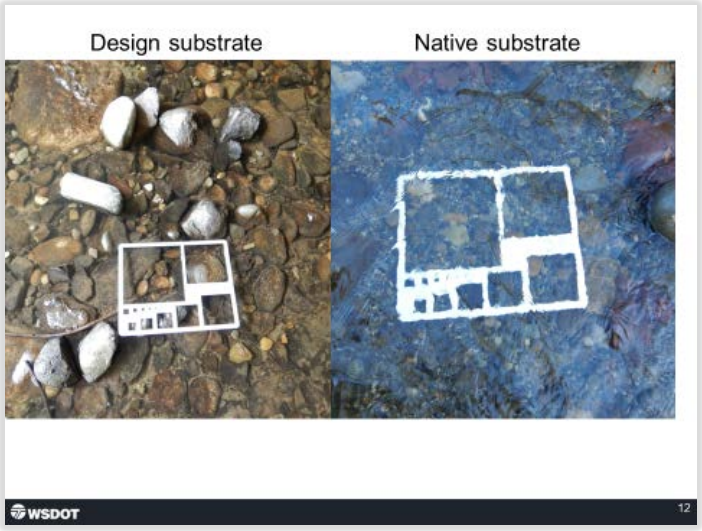
Design substrate
Native substrate
WSDOT
11


Design substrate
Native substrate
WSDOT
12


Design substrate
Native substrate
WSDOT
13


Year 1 (Over-Winter) Inspection
WSDOT
14


WSDOT
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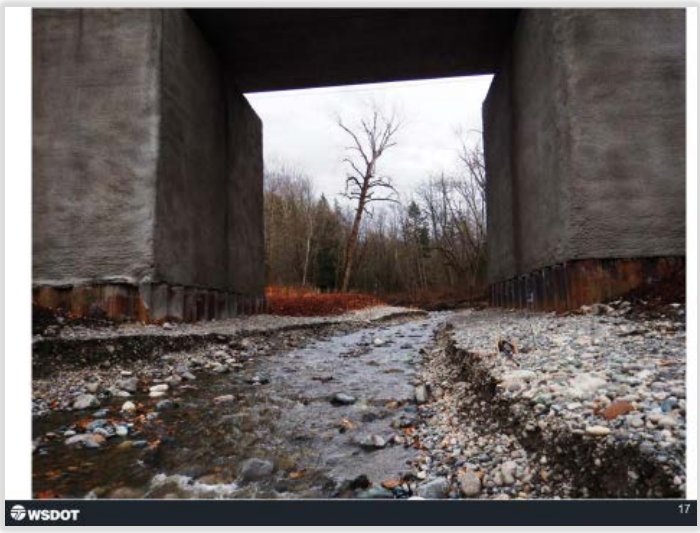
WSDOT
16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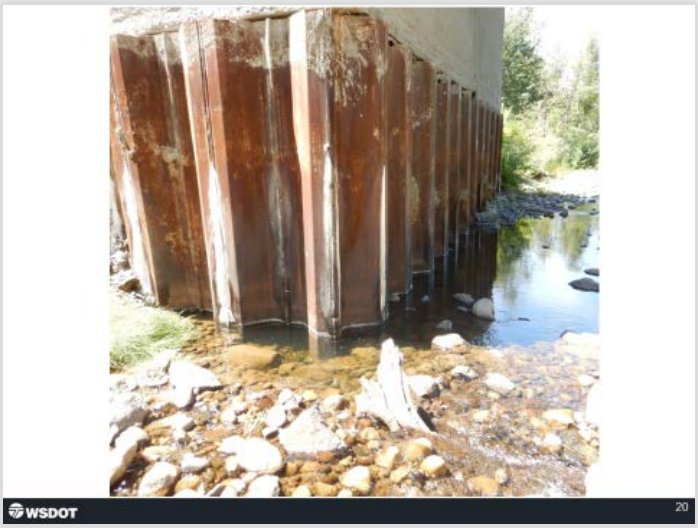
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WSDOT 21

←High Flow

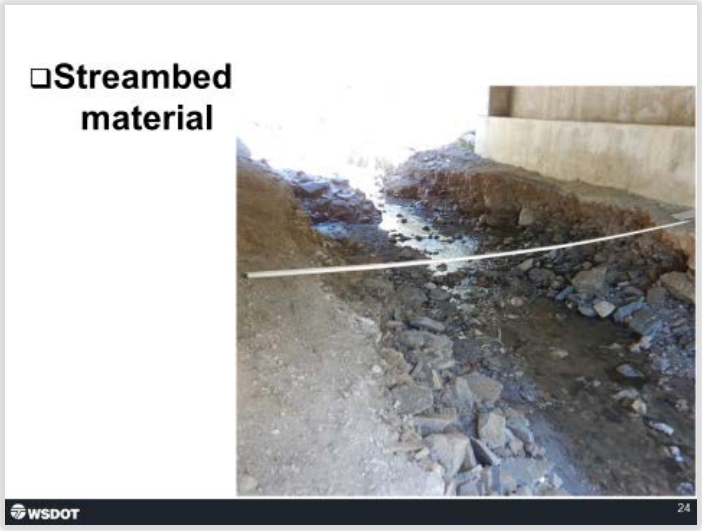
Low Flow –>

WSDOT 22

Channel Performance – all Intervals

- Streambed material
- Channel flow
- Channel shape
  - (cross section)
- Streambed slope
  - (profile)
- Channel spanning hydraulic drops
- Function of hydraulic and habitat features
- Fish passage
- Report concerns, maintenance activities, fish presence

WSDOT 23


❑Streambed material
WSDOT
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WSDOT
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WSDOT
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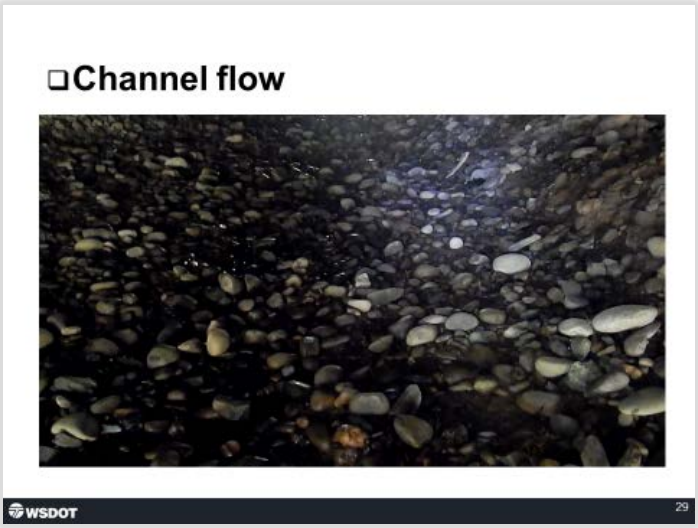
culvert or
coffin?
WSDOT
27


Utilize
available
space!!!!
WSDOT
28


Channel flow
WSDOT
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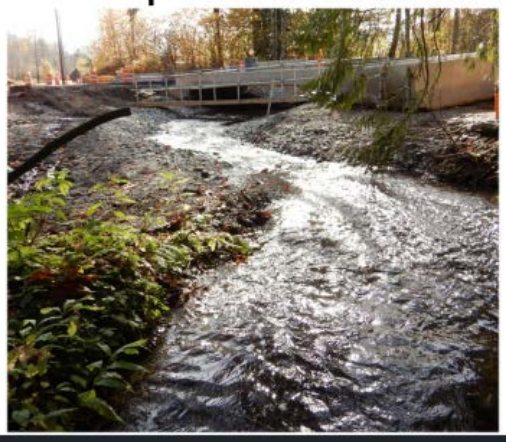
WSDOT 30

❑Channel shape



WSDOT 31

WSDOT 32


WSDOT
33


WSDOT
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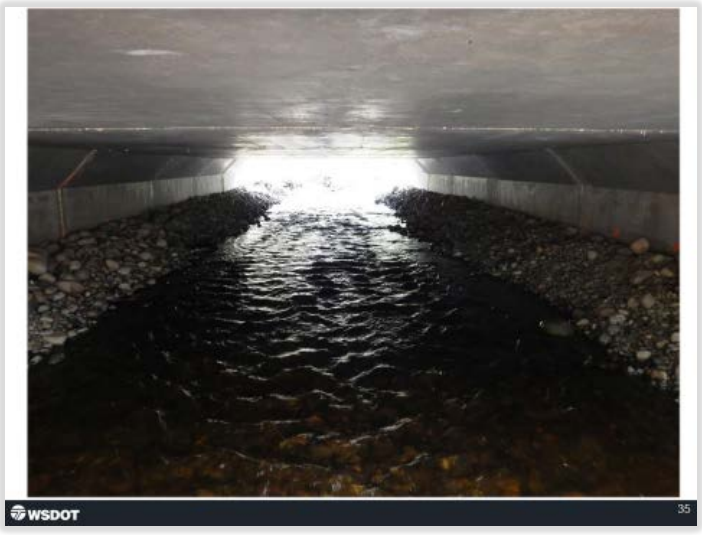
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WSDOT
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WSDOT
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WSDOT
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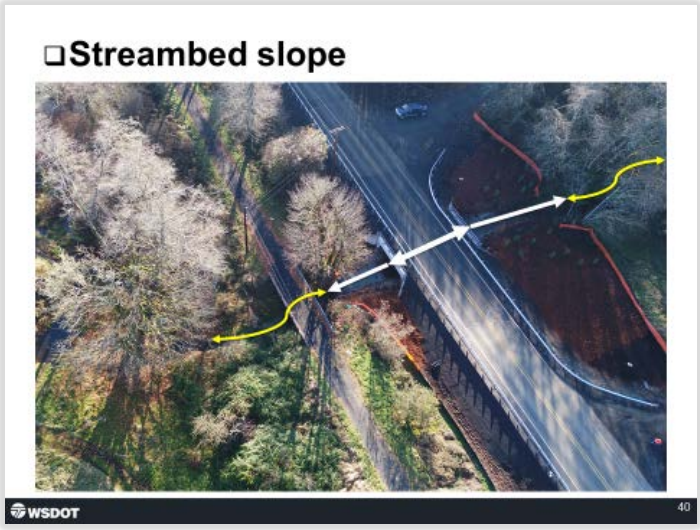
❑Streambed slope
WSDOT
40


❑Channel spanning hydraulic drops
WSDOT
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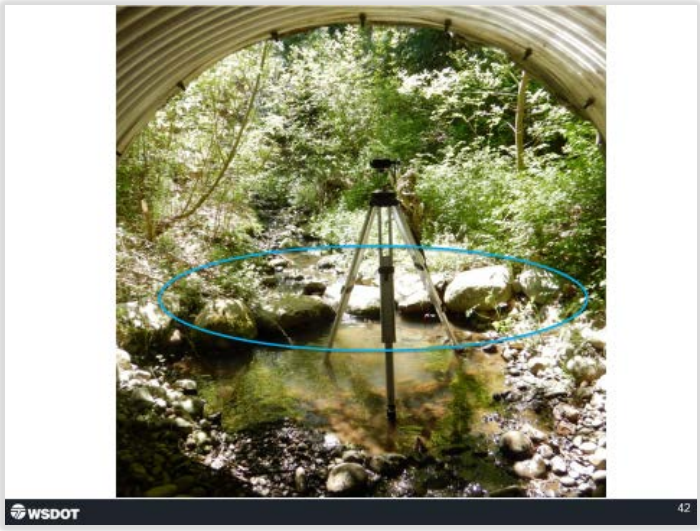
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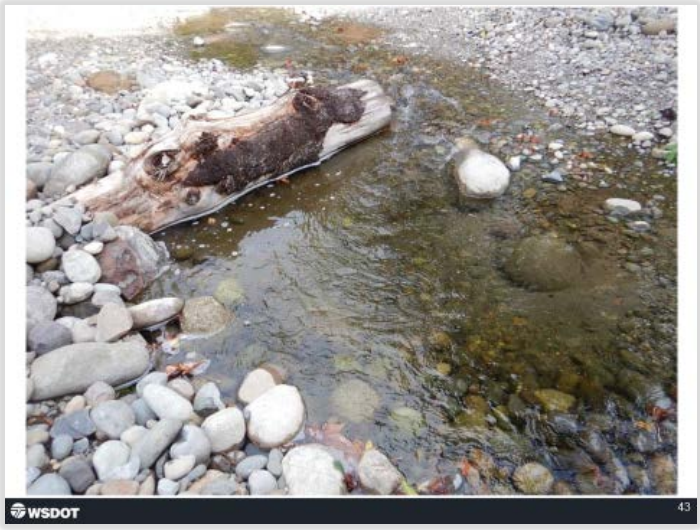
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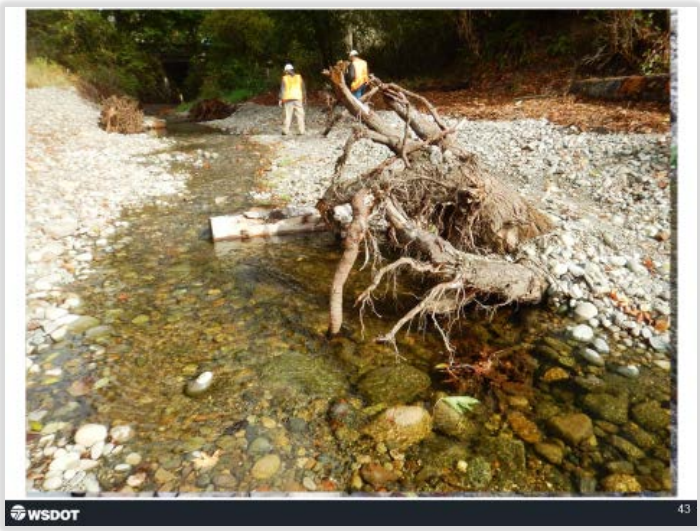
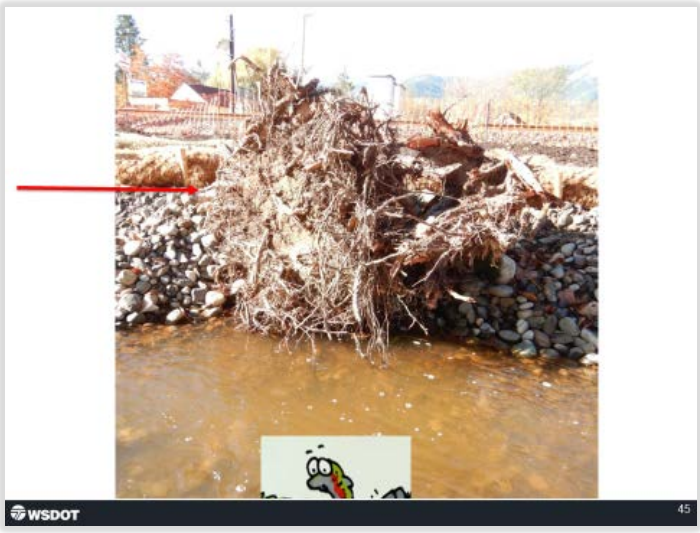

WSDOT
43


WSDOT
43


WSDOT
44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WSDOT
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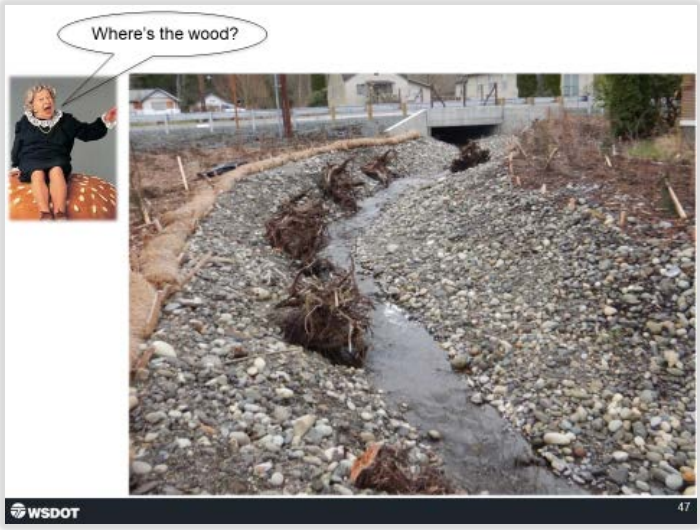
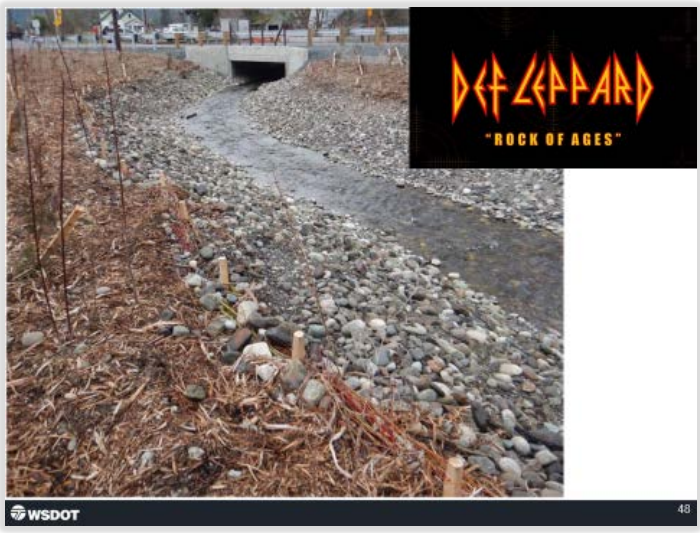
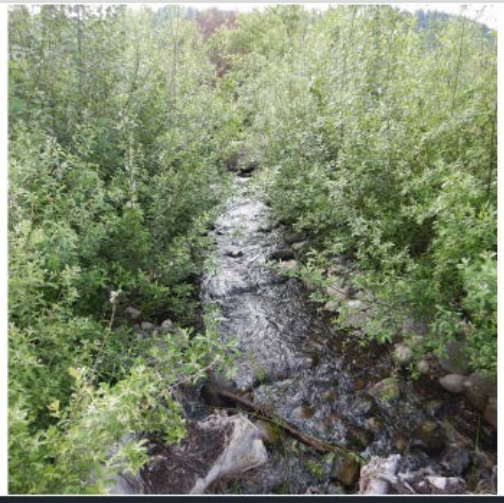

Where's the wood?
WSDOT
47


DEF LEPPARD
"ROCK OF AGES"
WSDOT
48

Not included in Monitoring Plan

- Limited access fencing
- Landscape/plant establishment

WSDOT 49



WSDOT 50

WSDOT 51

Not included in Monitoring Plan

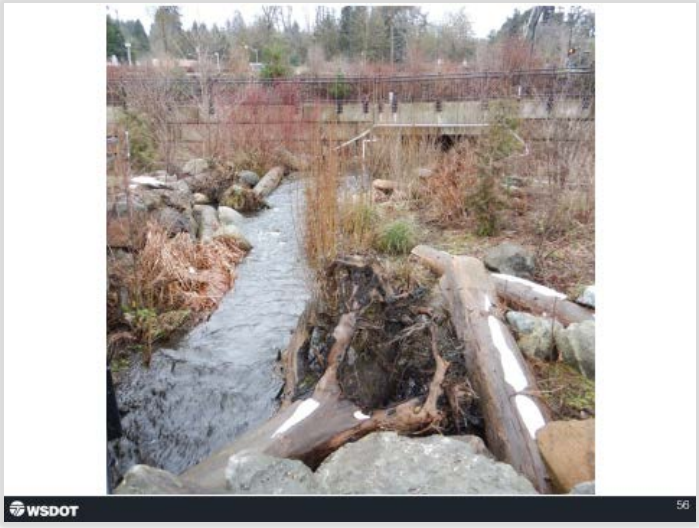
- Site specific hydraulic analyses
- Wildlife passage

WSDOT 52

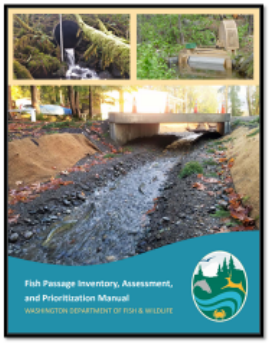
WSDOT 53

I-90 North Fork Issaquah Creek

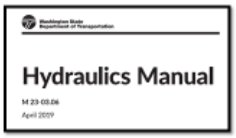
WSDOT 54

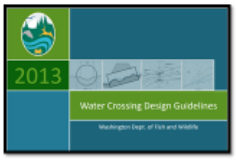


❑Is the project fish passable



❑Does the project meet the guidance standards under which it was designed





WSDOT 57

Actions Determined by Monitoring

- ❑No Action Needed
- ❑Increased Monitoring
- ❑Repair
- ❑Modify
- ❑Replace

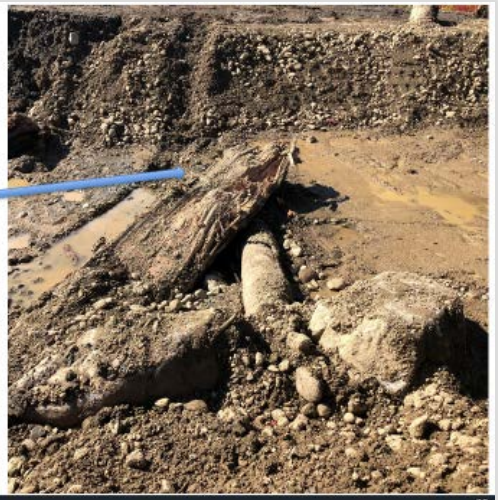
WSDOT 58

Results Feedback Loop

WSDOT 59

New Construction Techniques

Install bed in12" Lifts



WSDOT 60


New Design Features
Boulder Cluster
Meander Bar
WSDOT
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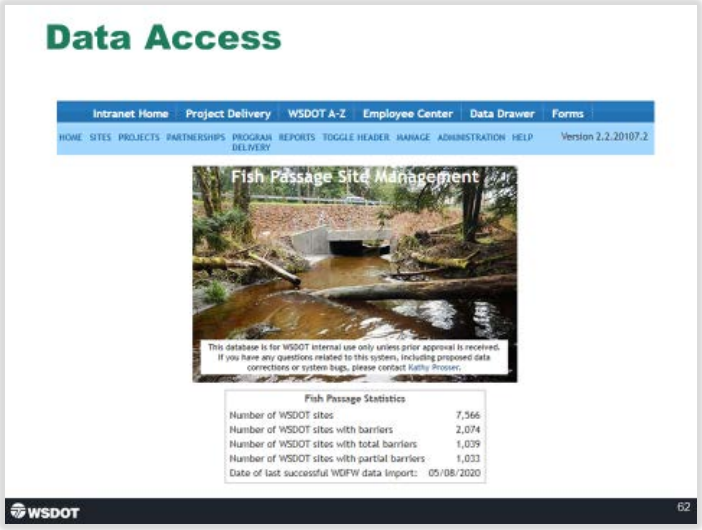
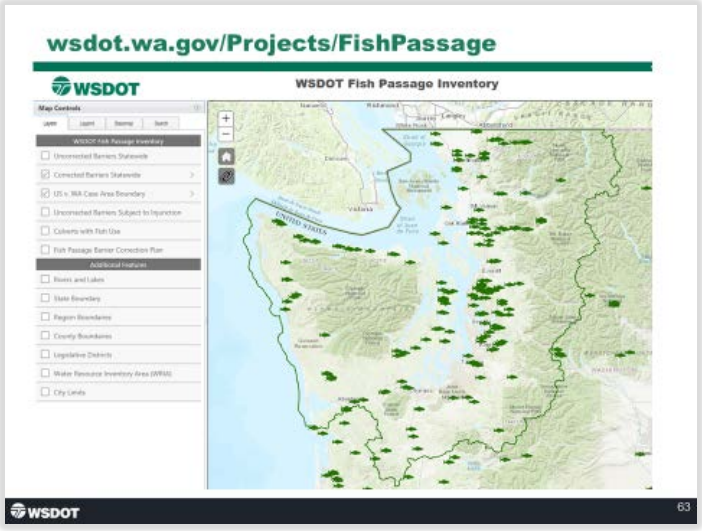

Data Access
Intranet Home
Project Delivery
WSDOT A-Z
Employee Center
Data Drawer
Forms
HOME SITES PROJECTS PARTNERSHIPS PROGRAM DELIVERY REPORTS TOGGLE HEADER MANAGE ADMINISTRATION HELP
Version 2.2.20107.2
Fish Passage Site Management
This database is for WSDOT internal use only unless prior approval is received. If you have any questions related to this system, including proposed data corrections or system bugs, please contact Kathy Prosser.
Fish Passage Statistics
Number of WSDOT sites 7,566
Number of WSDOT sites with barriers 2,074
Number of WSDOT sites with total barriers 1,039
Number of WSDOT sites with partial barriers 1,033
Date of last successful WDFW data import: 05/08/2020
WSDOT
62


wsdot.wa.gov/Projects/FishPassage
WSDOT
WSDOT Fish Passage Inventory
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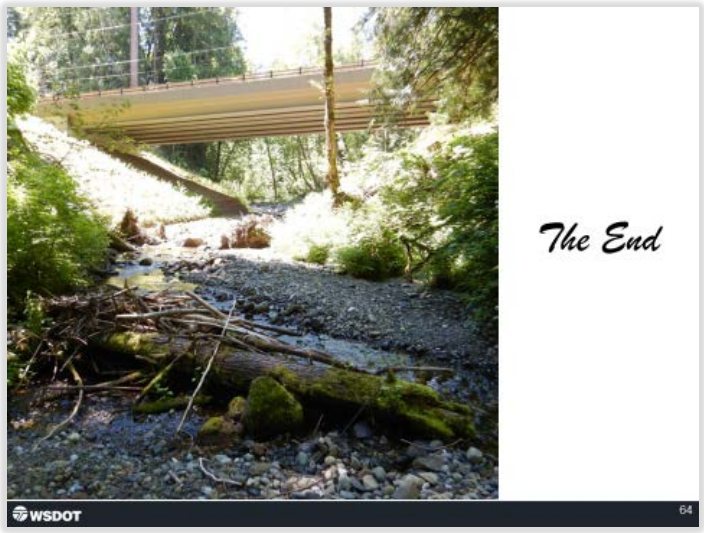
The End
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