

**WSR 23-15-078**  
**PROPOSED RULES**  
**DEPARTMENT OF**  
**FISH AND WILDLIFE**

[Order 20-03—Filed July 17, 2023, 2:57 p.m.]

Original Notice.

Preproposal statement of inquiry was filed as WSR 20-13-094.

Title of Rule and Other Identifying Information: Fishway and screening rules; creating new Washington department of fish and wildlife (WDFW) chapter 220-670 WAC to implement chapter 77.57 RCW.

Hearing Location(s): On September 28, 2023, at 9:00 a.m., at Yakima Convention Center, 10 North 8th Street, Yakima, WA 98901. Detailed information about fish and wildlife commission meetings can be found at <https://wdfw.wa.gov/about/commission/meetings>.

Date of Intended Adoption: October 26, 2023.

Submit Written Comments to: Gabrielle Stilwater, P.O. Box 43200, Olympia, WA 98504-3200, email [fish-passage-rules@PublicInput.com](mailto:fish-passage-rules@PublicInput.com), fax 360-902-2946, Attn: Gabrielle Stilwater, phone 855-925-2801, project code 2051, website for comments <https://publicinput.com/fish-passage-rules>, by September 29, 2023.

Assistance for Persons with Disabilities: Contact WDFW Americans with Disabilities Act manager, phone 360-902-2349, fax 360-902-2946, Attn: Gabrielle Stilwater, TTY 360-902-2207, email [adaprogram@dfw.wa.gov](mailto:adaprogram@dfw.wa.gov), by September 15, 2023.

Purpose of the Proposal and Its Anticipated Effects, Including Any Changes in Existing Rules: WDFW is proposing a new WAC chapter implementing chapter 77.57 RCW.

In November 2018, the southern resident orca (SRO) task force published its report identifying lack of prey as a key threat to SROs. Recommendation number three of the 2018 SRO task force report endorsed agencies to apply and enforce laws that protect habitat. Specifically, the SRO task force noted that the governor should direct WDFW to develop rules to fully implement chapter 77.57 RCW. The Washington state legislature supported the SRO task force direction with the approval of the 2019 ESHB 1109 (chapter 415, Laws of 2019), which became effective on May 21, 2019. In 2019, WDFW entered into an informal comanagement agreement with Washington state treaty tribes to incorporate climate change science into policy. Additionally, the proposed rules are intended to be consistent with parallel WDFW rules for construction projects in state waters, chapter 220-660 WAC.

This proposal would create and populate new chapter 220-670 WAC that defines general passability and protection standards for new and existing fishways and water diversions. Consideration of incorporating climate change into the design of new water crossing structures is detailed within the standards as well. The proposal codifies current WDFW practices of using the agency's fish passage inventory and assessment guidance and water crossing design guidelines. These standards are the foundation for establishing compliance measures. Compliance measures detail technical assistance support and voluntary compliance steps a structure owner may follow to correct a barrier fishway or water diversion. Compliance measures also establish the effects of noncompliance when a structure owner does not agree to a WDFW compliance request.

Reasons Supporting Proposal: The proposal was developed over the course of three years with input from WDFW staff, tribal partners, additional Washington state agencies, Washington State Association of

Counties, Association of Washington Cities, nongovernmental agencies, small business economic impacts and cost-benefit analyses, and multiple staff work groups and public comment opportunities, including three public comment meetings on the preproposed draft proposal. The proposal defines important fishway and water diversion standards and WDFW administrative actions.

Although this proposal is rooted in restoring SRO populations, there are other reasons supporting this proposal. As the human population grows, land use policies that allow development in or near floodplains can lead to degradation and loss of functioning habitat necessary to support salmon and other fish species. Structures built to protect or support human development activities such as bridges, culverts, and water diversions often further impact fish habitat. In addition to effects of urbanization, transportation, agriculture, logging, mining, and other forms of land use, many rivers have been straightened, diked, and cleared of complex habitat features. Converting natural habitats into lands and rivers that support human uses often degrades the health of the habitat and the fish that depend upon it.

Fishway barriers limit fish life from accessing spawning and rearing habitat. Barriers can negatively affect streambed movement and large wood movement, prevent fish from moving up or downstream, concentrate predators, impact water temperature, and effects [affect] other natural ecological functions. In some cases, the effects associated with barriers can be as impactful as the barrier itself. Culverts are generally designed to last 50 to 100 years. Designing culverts to be resilient to future changes in stream conditions can reduce the risks of culvert failure and the creation of barriers to migrating fish. Culverts and bridges built to accommodate higher stream flows are less likely to fail and block fish, which reduces future maintenance and repair costs. Improperly designed water diversions can reduce the amount of useable fish habitat. In addition, unscreened withdrawal points can trap fish in conveyance structures that pump water from its source to its final destination, leading to injury or death.

Statutory Authority for Adoption: RCW 77.04.012, 77.12.047, 77.57.010, 77.57.030, 77.57.040, 77.57.060, 77.57.070, and 43.05.100; ESHB 1109 (chapter 415, Laws of 2019).

Statute Being Implemented: Chapter 77.57 RCW, Fishways, flow, and screening.

Rule is not necessitated by federal law, federal or state court decision.

Name of Proponent: WDFW, habitat program, fish passage division, governmental.

Name of Agency Personnel Responsible for Drafting and Implementation: Gabrielle Stilwater, 1111 Washington Street S.E., Olympia, WA 98501, 564-999-0768; Enforcement: Kelly Still, 1111 Washington Street S.E., Olympia, WA 98501, 360-902-2605.

A school district fiscal impact statement is not required under RCW 28A.305.135.

A cost-benefit analysis is not required under RCW 34.05.328. Although these proposed rules are not significant legislative rules implementing chapter 77.57 RCW, WDFW voluntarily completed a cost-benefit analysis to provide greater scrutiny of the rules' potential impact. A preliminary cost-benefit analysis can be obtained by contacting Gabrielle Stilwater, P.O. Box 43200, Olympia, WA 98504-3200, email FishPassageRules@dfw.wa.gov, fax 360-902-2946, Attn: Gabrielle Stilwa-

ter, website <https://wdfw.wa.gov/species-habitats/habitat-recovery/fish-passage/rule-making>.

Scope of exemption for rule proposal:

Is not exempt.

The proposed rule does impose more-than-minor costs on businesses.

Small Business Economic Impact Statement (SBEIS)

**Executive Summary:** WDFW is developing a proposed rule that would codify existing design standards for diversion screens and fish passage, introduce a climate-adapted design standard for water crossings, and outline procedures for supporting and achieving compliance with the regulatory requirements. This SBEIS was developed in accordance with the Regulatory Fairness Act (RFA), chapter 19.85 RCW to determine whether the rule would result in a disproportionate cost impact on small businesses.

**Background:** Governor Inslee's southern resident orca (orca) task force identified lack of prey as a major threat to recovery of the orcas within its 2018 report, and recommended that WDFW create rules describing how chapter 77.57 RCW (the fishways, flow, and screening statutes) will be implemented and enforced as one part of broader recovery efforts.<sup>1</sup> WDFW's fish passage and screening authority has existed for many decades; however, WDFW has never created a rules chapter describing implementation of the authority. This rule making seeks to fill that gap. In addition to clarifying fish passage and screening design standards, the proposed rule incorporates a requirement for new and replacement water crossing designs to account for projected changes to hydrology as a result of climate change, so that water crossing structures built today will be capable of accommodating stream conditions (and equivalently, providing fish passage) throughout their designed lifespan.

<sup>1</sup> Cascadia Consulting Group. 2018. "Southern Resident Orca Task Force: Report and Recommendations." Accessed October 20, 2022 at: [https://www.governor.wa.gov/sites/default/files/OrcaTaskForce\\_reportandrecommendations\\_11.16.18.pdf](https://www.governor.wa.gov/sites/default/files/OrcaTaskForce_reportandrecommendations_11.16.18.pdf).

Finally, although chapter 77.57 RCW establishes WDFW's authority to correct structures that are inadequate in terms of fish passage or protection, some of the compliance actions contained in the statute are not considered practical by today's standards and there needs to be a strategic approach to achieving compliance with this law.<sup>2</sup> Accordingly, the proposed rule includes a process and options for WDFW to support and achieve compliance with the proposed rule.

<sup>2</sup> Throughout this report, we refer to the dams, diversions, fish passage improvement structures, culverts, and crossings that would be subject to regulation under the proposed rule collectively as "structures."

**Summary of Proposed Rule:** The proposed rule includes three major components as follows:

- Clarifying the applicability of existing fish passage and screening standards, described in WDFW's assessment guidance document, and partially codified in the state hydraulic code rules (chapter 220-660 WAC), including screening of artificial waterways where fish life concerns exist;
- Requiring new and replacement water crossing structure (i.e., culvert and bridge) designs to consider future bankfull width and 100-year peak flows in parts of the state where they are projected to increase as a result of climate change; and
- Outlining a protocol designed to improve compliance with the existing fish passage and safety standards, effectively operation-

alizing WDFW's existing authority to identify and correct noncompliant structures.

**Summary of Regulatory Baseline:** Although there are a large number of privately owned fish passage structures, diversions and fish screens, and culverts and stream crossings across Washington (over 50,000 according to WDFW data),<sup>3</sup> many of these structures would not be affected by the proposed rule for the following reasons:

<sup>3</sup> The true number of structures on the landscape is unknown. WDFW's fish passage barriers inventory represents the best available data for conducting the SBEIS analysis, but it is known to be incomplete.

- Exemptions apply to structures on non-fish-bearing streams, on tribal land, obstructions that are federally owned or subject to federal laws that preempt chapter 77.57 RCW, agricultural drainage system components installed on or before May 20, 2003, and lawful diversions installed on or before June 11, 1947, in waters containing game fish exclusively.
- The design standards for fish passage and screening incorporated into the proposed rule are already required for most structures under the hydraulic code rules. Thus, any owners of structures that comply with these existing regulations (e.g., via the hydraulics project approval (HPA) permitting process) would not be affected by the proposed rule.
- WDFW already possesses the statutory authority to enforce existing fish passage and screening standards by making the necessary correction and imposing a lien on the structure owner's property (RCW 77.57.040 and 77.57.060).
- WDFW's design standards for climate-adapted culverts and stream crossings incorporated into the proposed rule are already made available to the regulated community via the culverts and climate change web tool. While not a baseline regulatory requirement, owners of culverts and stream crossings have a vested interest in ensuring these structures are resilient to the future effects of climate change. Therefore, a subset of these structures is likely to comply with the design standards in the baseline, regardless of WDFW's proposed rule.

Despite the existing baseline requirements for fish passage and screening, WDFW is aware that a subset of the regulated population is not currently complying with, or not aware of, the existing regulatory requirements. WDFW will help the regulated community understand how to voluntarily comply through education and technical assistance. WDFW's intentions are to strategically consider existing noncompliant structures and approach compliance reasonably by considering the nature of fish resources impacted by existing noncompliant structures as well as the quality and quantity of habitat to be gained. Thus, the focus of WDFW's proposed rule is on supporting and enforcing compliance across this population.

**Changes in Behavior Generated by The Proposed Rule:** Given the existing requirements and practices in developing and upgrading fish passage and screening structures in the baseline, this analysis finds that the proposed rule is most likely to affect behavior and, therefore, potentially generate costs under the following circumstances:

- *The proposed rule informs the structure owner of the design standards for fish passage and screening structures.* Although these design standards are a baseline legal requirement for most structures, even absent the proposed rule, a subset of owners may

be unaware of the requirement. The proposed rule may therefore alert owners of these requirements (and the agency actions for noncompliance), triggering compliance and associated costs. While most of these costs can be attributed to existing legal requirements (and not newly mandated by the proposed rule), they are assessed here for a comprehensive review of potential impacts.

- *WDFW identifies a noncompliant structure and makes a correction request.* Despite baseline regulatory requirements, owners may knowingly not comply, for cost or other reasons. While WDFW currently has authority to enforce compliance, it has not asserted this authority when owners have been resistant in the past. Under the proposed rule, however, WDFW reasserts its authority and process for enforcing compliance. Thus, for structures that are not in compliance and WDFW determines are priority projects, the proposed rule would affect behavior and generate costs.
- *Culvert or crossing structure would not meet climate-adapted standards.* For owners intending to replace (or build) a water crossing structure and not account for future climate change effects via WDFW's guidance, the proposed rule will require consideration of future climate impacts in the design. Under this circumstance, the rule may affect the planned design in such a way that total costs are increased. However, it is also possible that the proposed rule generates some avoided costs in the long run, as structures not adapted to future climate change are more likely to require repair and replacement.

Cost category	Diversion screening (small)	Diversion screening (large)	Dam removal	Fish passage structure	Culvert	Bridge
Permitting, design, and engineering	N/A	\$2,000 - \$4M	\$15,000 - \$4M	\$30,000 - \$400,000	\$5,000 - \$400,000	\$15,000 - \$1M
Construction	\$100 - \$10,000	\$50,000 - \$400,000	\$50,000 - \$1.5M	\$200,000 - \$1.5M	\$40,000 - \$800,000	\$50,000 - \$5M
Total	\$100 - \$10,000	\$52,000 - \$4.4M	\$65,000 - \$5.5M	\$230,000 - \$1.9M	\$45,000 - \$1.2M	\$65,000 - \$6M

**Potentially Affected Businesses:** The proposed rule regulates structures on the landscape, rather than a particular industry or sector. WDFW maintains a database of known structures. However, it is likely that many structures exist on the landscape that are currently unknown to WDFW and ownership information provided in the database is insufficient to identify potentially affected businesses.

The structures regulated by the proposed rule are owned and managed by a broad mix of federal, state, and local governments, residential landowners, as well as businesses. While businesses owning land may belong to a wide variety of industries, commercial and industrial businesses from certain industries may be more likely than others to own particular structure types due to the nature of their operations or scale of landholdings. For example, agricultural businesses are more likely to own diversions and crossings; forestry businesses are more likely to own crossings; and homeowner associations (HOAs, to the extent that they are incorporated and considered a business) may own diversions and crossings in residential landscapes. Nonetheless, this SBEIS provides information on potential costs to small businesses acknowledging that any businesses impacted by the proposed rule could theoretically belong to any industry.

**Cost of Compliance:** In situations where the proposed rule generates costs, the potential costs can range widely, mainly depending on structure type, nature of the violation, and site-specific characteristics. At the low end, a small intake pump may require an off-the-

shelf screen. At the other end of the violation spectrum, a severe fish passage violation at a water crossing could necessitate installation of a replacement structure. Because of the high degree of situational variation, our analysis concluded that the compliance costs can range from around \$100 to several million dollars. However, the structures most likely owned by small businesses are unlikely to be on a scale sufficient to generate costs at the higher end. For example, exceptionally large screens costing several million dollars to replace are most likely associated with hydropower production, which are categorically exempt from the proposed rule as federally regulated. Exhibit ES-1 contains a range of cost estimates for replacing each structure type.

**Exhibit ES-1. Conceptual Cost Ranges for Replacing Relevant**

**Structures:** It is important to note that not all violations will require full replacement of the structure. Additionally, many grant and cost-sharing opportunities exist that can potentially offset some portion of the compliance costs borne by owners, such as the fish barrier removal board, family forest fish passage program, and salmon recovery funding board. For these reasons, the costs provided in Exhibit ES-1 should be considered as contextual information rather than as compliance costs borne by owners.

**Summary Findings:** The assessment of the magnitude of costs borne by businesses and the potential for disproportionate impacts to small businesses is subject to significant data limitations and uncertainty. For any businesses that incur compliance costs, the costs may exceed the minor cost threshold, depending on the project type and specifications, as well as the industry classification of the affected business. Within any industry and for any particular project, however, the costs are expected to disproportionately impact small businesses. This is because no known relationship exists between drivers of project costs and business size, so cost per \$100 of revenue, cost per employee, or cost per labor hour will almost certainly be higher for small businesses.

As the potential exists for more-than-minor costs to be incurred by businesses as a result of the proposed rule, and because small businesses are expected to be disproportionately impacted in cases where costs are incurred, WDFW has identified several mitigation options to defray the impacts to small businesses. These include a strategic approach to technical assistance or compliance visits based on fish life concerns and the quality and quantity of potential habitat gains, and allowing the possibility for WDFW to defer compliance actions until a later date following identification of a violation. WDFW will also continue development of a robust technical assistance program for owners, additionally being able to identify relevant grant and cost-sharing opportunities as appropriate.

**CHAPTER 1 - INTRODUCTION:** This report evaluates the potential costs to businesses of compliance with a WDFW proposed rule that codifies existing design standards for diversion screens and fish passage, introduces a climate-adapted design standard for culverts and crossings, and outlines procedures for achieving voluntary and nonvoluntary compliance. This SBEIS was developed in accordance with RFA to determine whether the proposed rule would result in more-than-minor and disproportionate cost impact on small businesses. The primary sources of information for this analysis include the following:

- Information gathered through outreach to businesses providing the services required by the proposed rule, agencies with potentially

similar regulatory authority, and owners (or owner-representatives) of structures that are subject to the proposed rule;

- Geospatial data, including WDFW's Washington state fish passage GIS layer, WDFW's culverts and climate change web application, federal and tribal land ownership layers, and land use layers; and
- Targeted literature review of peer-reviewed journal articles.

**1.1 NEED FOR THE RULE:** Governor Inslee's orca task force identified lack of prey as a major threat to recovery within its 2018 report.<sup>4</sup> One set of recommendations focused on improving habitat for prey species, recommendation number three in particular, suggested that WDFW create rules describing how chapter 77.57 RCW (the fishways, flow, and screening statues) will be implemented and enforced. Subsequently, the state legislature passed ESHB 1109 on July 28, 2019, directing WDFW to initiate the rule-making process through changes to the operating budget. WDFW's fish passage and screening authority has existed for many decades; however, WDFW has never created a rules chapter describing implementation of the authority. The proposed rule seeks to fill that gap.

<sup>4</sup> Cascadia Consulting Group. 2018. "Southern Resident Orca Task Force: Report and Recommendations." Accessed October 20, 2022 at: [https://www.governor.wa.gov/sites/default/files/OrcaTaskForce\\_reportandrecommendations\\_11.16.18.pdf](https://www.governor.wa.gov/sites/default/files/OrcaTaskForce_reportandrecommendations_11.16.18.pdf).

In addition, WDFW intends to incorporate new standards for developing climate-adapted water crossings. WDFW has invested in research to understand how streams in Washington are likely to change as a result of climate change.<sup>5</sup> The new standards seek to act upon this knowledge to ensure that culverts and other water crossing structures built today will accommodate stream conditions throughout their designed lifespan. The climate-adapted design standard codified in the proposed rule is also in alignment with a cooperative management agreement between WDFW and tribes established in 2019.

<sup>5</sup> Wilhere, G., et al. 2017. "Incorporating climate change into culvert design in Washington State, USA." Ecological Engineering. <http://dx.doi.org/10.1016/j.ecoleng.2017.04.009>.

Finally, although chapter 77.57 RCW establishes WDFW's authority to correct structures that are inadequate in terms of fish passage or screening, imposing a correction (and potentially a lien on property) through compulsory process is not WDFW's preferred approach. The proposed rule lays out a process for WDFW to work with the regulated community to bring relevant structures into compliance before utilizing the full range of their authority.

To summarize, WDFW's objectives for this rule making include:

1. Creating a new WAC chapter describing implementation of chapter 77.57 RCW to improve fish passage and safety throughout the state;
2. Incorporating a new climate-adapted standard for culverts and other water crossing structures to ensure that they remain functional throughout their designed lifespan; and
3. Outlining a process intended to enhance compliance with the fish passage and screening standards.

**1.2 REQUIREMENTS FOR DEVELOPING AN SBEIS:** Chapter 19.85 RCW requires that the relevant agency prepare an SBEIS if the proposed rule "will impose more than minor costs on businesses in an industry."<sup>6</sup> "Minor cost" is defined in RCW 19.85.020 as a cost per business that is less than 0.3 percent of annual revenue or income, or \$100, whichever is greater, or one percent of annual payroll.<sup>7</sup> The guidelines for preparing an SBEIS are included in RCW 19.85.040.<sup>8</sup> This analysis also utilizes the more specific guidance and resources provided by Washington state's office

for regulatory innovation and assistance (ORIA).<sup>9</sup> Per the SBEIS *Frequently Asked Questions* guidance, agencies are required to consider "costs imposed on businesses and costs associated with compliance with the proposed rules."<sup>10</sup> Agencies are not required under chapter 19.85 RCW to consider indirect costs not associated with compliance with the rule.

6 RCW 19.85.030 Agency Rules – Small Business economic impact statement reduction of costs imposed by rule. Accessed November 3, 2022 at: <https://app.leg.wa.gov/RCW/default.aspx?cite=19.85.030>.

7 RCW 19.85.020 Definitions. Accessed November 3, 2022 at: <https://app.leg.wa.gov/rcw/default.aspx?cite=19.85.020>.

8 RCW 19.85.040 Small business economic impact statement—Purpose—Contents. Accessed November 3, 2022 at: <https://app.leg.wa.gov/RCW/default.aspx?cite=19.85.040>.

9 ORIA. 2021. Regulatory Fairness Act Support. Accessed November 3, 2022 at: [https://www.oria.wa.gov/site/alias\\_\\_oria/934/regulatory-fairness-act-support.aspx](https://www.oria.wa.gov/site/alias__oria/934/regulatory-fairness-act-support.aspx).

10 WA Attorney General Office. 2021. Small Business Economic Impact Statements – Frequently Asked Questions. Accessed November 3, 2022 at: [https://www.oria.wa.gov/Portals/\\_oria/VersionedDocuments/RFA/Regulatory\\_Fairness\\_Act/DRAFT\\_SBEIS\\_FAQ.pdf](https://www.oria.wa.gov/Portals/_oria/VersionedDocuments/RFA/Regulatory_Fairness_Act/DRAFT_SBEIS_FAQ.pdf).

**1.3 SUMMARY OF THE PROPOSED RULE:** WDFW is proposing a new WAC chapter to describe implementation of the fish, flow, and screening authority (chapter 77.57 RCW). One aspect of the rule is to clarify the applicability of existing standards, ensuring that they are applied at all existing and new fishways and diversions governed by chapter 77.57 RCW. The proposed rule achieves this goal by carefully defining "fishway" and "watercourse" (and equivalently, "river" and "stream"). In addition, the proposed rule requires new and replacement water crossing designs to consider future projected bankfull width and 100-year peak flows. Climate change impacts stream width and flows heterogeneously throughout Washington, so the consideration of future change should be specific to the project site. Finally, the rule defines a process for WDFW to encourage and enforce compliance among owners. In this section, we summarize how the proposed rule differs from the baseline requirements in Washington regulating fish passage and screening, design of fishways and water diversions, and enforcement (i.e., the "incremental effects" of the proposed rule).

**1.3.1 FISH PASSAGE AND SCREENING STANDARDS:** The proposed rule does not introduce any new or different standards for fish passage or diversion screening. The existing standards for compliant structures are currently described in the WDFW Fish Passage Inventory, Assessment, and Prioritization Manual and also partially codified in the state hydraulic code rules (chapter 220-660 WAC). The existing hydraulic code rules only apply to new hydraulic projects that "use, divert, obstruct, or change the natural flow or bed of any salt or fresh waters of the state."<sup>11</sup> The hydraulic code was designed to protect fish life in the face of construction projects. It also included standards about fish passage and protection for many years but does not apply to structures not actively being built, replaced, or rehabilitated. This leaves out a subset of structures which fall under WDFW's Fishway, Flow, and Screening statutory authority (chapter 77.57 RCW) but are not subject to the hydraulic code.

<sup>11</sup> WAC 220-660-010. Hydraulic Code Rules—Purpose. Accessed November 11, 2022 at: <https://app.leg.wa.gov/WAC/default.aspx?cite=220-660-010>.

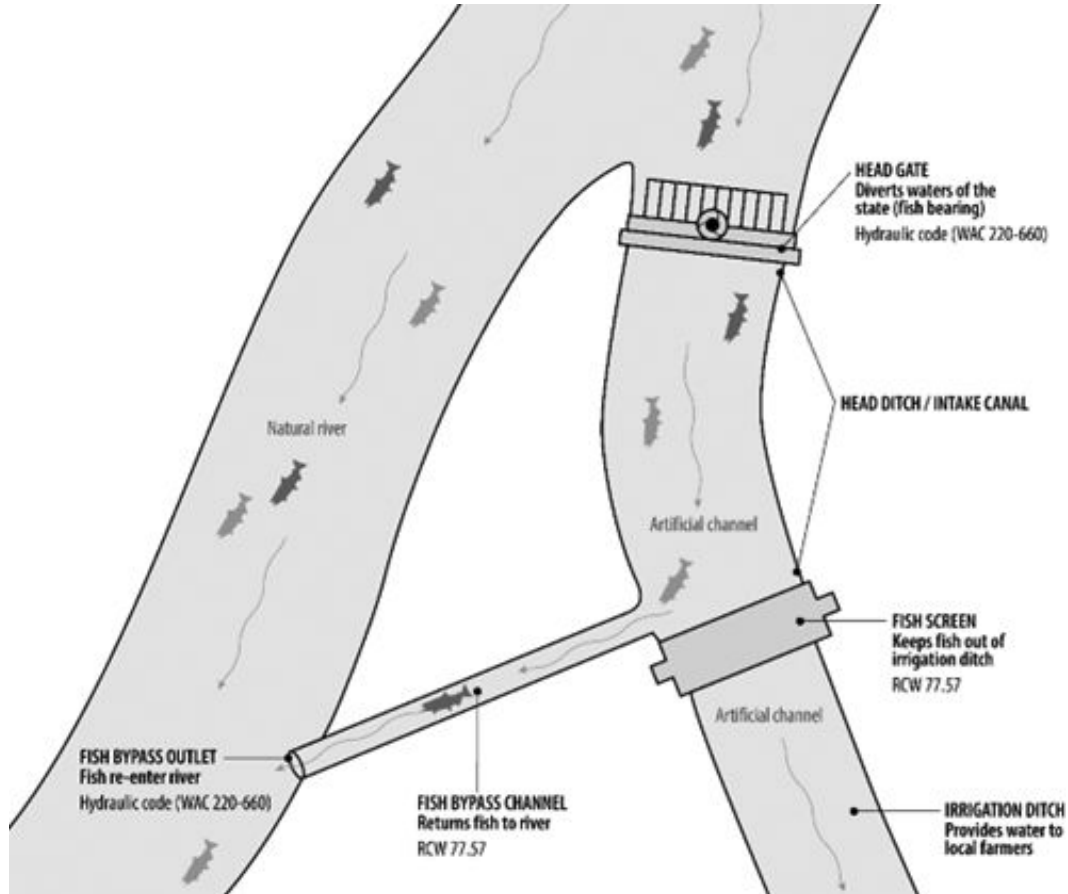
The proposed rule clarifies that the existing standards apply to the full set of structures subject to chapter 77.57 RCW by: (1) Defining "fishway" to include both fish passage improvement structures (e.g., fish ladders) and all structures that span over, through, or under a watercourse; and (2) defining "watercourse," "river," or "stream" to include all surface-water-connected wetlands that provide or maintain habitat that supports fish life.

The main implication of this clarification is that all aspects of water diversions that incorporate an artificial waterway will be sub-



ject to the fish passage and screening standards (e.g., the fish screen and fish bypass channel in Exhibit 1-1). Most other structures on the landscape are already subject to the standards included in the proposed rule through the state hydraulic code, except where hydraulic code authority does not apply, such as wholly artificial waterways.

**WATER DIVERSION DESIGN INCORPORATING AN ARTIFICIAL WATERWAY**



**1.3.2 CLIMATE-ADAPTED CULVERTS AND CROSSINGS REQUIREMENT:** The proposed rule requires new and replacement water crossing designs to consider future climate conditions. As mentioned, existing design standards for water crossing structures are codified in chapter 220-660 WAC. The existing code requires bridge designs capable of passing 100-year flood flows and accounting for expected lateral stream migration. For culverts, the existing code requires a stream simulation design with the bed width determined by any WDFW-approved design methodology or with an approved alternative plan on a case-by-case basis.

The proposed rule requires consideration of projected future bankfull width and 100-year peak flow. Projected changes to bankfull width and peak flows can be obtained using the culverts and climate change web application located on the WDFW website,<sup>12</sup> or any comparable method. For a user-provided point on the landscape (i.e., a culvert or crossing site), the tool calculates the upstream watershed and outputs an expected percentage change to bankfull width and 100-year peak flows based on hydrologic analysis of 10 climate model projections.<sup>13 14</sup> Importantly, climate impacts vary across the state. Some areas are expected to experience large increases to bankfull width and peak flow, while others are expected to experience decreases. If the

tool projects anything less than a five percent increase, no further consideration of climate is required. For sites expected to experience greater than five percent increases to bankfull width or peak flow, the projected values for those parameters should be considered as inputs into the overall design process.

<sup>12</sup> The tool can be accessed at: <https://wdfw.wa.gov/species-habitats/habitat-recovery/fish-passage/climate-change>.

<sup>13</sup> Wilhere, G., et al. 2017. "Incorporating Climate Change into the Design of Water Crossing Structures – Final Project Report." Washington Department of Fish and Wildlife.

<sup>14</sup> Wilhere, G. et al. 2017. "Incorporating climate change into culvert design in Washington State, USA." Ecological Engineering.

Culverts and crossings installed prior to the adoption of the proposed rule will not be subject to the climate adaptation requirement, as long as they are functioning as originally intended, and meet the existing fish passage requirements.

Additionally, outreach to professional firms performing the design and engineering of culverts and bridges generally indicated some degree of baseline consideration for future climate impacts. Some firms reported already using the culverts and climate change tool, while others applied some rule of thumb, such as the Washington state department of transportation (WSDOT) standard of increasing current bankfull width by 20 percent and adding two feet. Such rules of thumb may meet the climate-adapted standard in the proposed rule for some, but not all cases. The baseline for this requirement, therefore, is project specific.

**1.3.3 COMPLIANCE PROCEDURES:** The fishways, flow, and screening statute (chapter 77.57 RCW) grants WDFW the authority to enforce compliance with fish passage and screening standards by requiring correction. This can involve WDFW taking possession of a diversion device and closing it until properly equipped, removing an obstruction, or installing a fishway at the owner's expense.

The proposed rule seeks to enhance the rate of compliance with existing fish passage standards through three main avenues: (1) By raising awareness for the issue through the rule-making process itself, (2) by providing technical assistance and directing owners toward grant and other cost-sharing opportunities, and (3) by exercising legal authority in extreme cases when other voluntary compliance measures fail. If in such an extreme case WDFW exercises authority to impose a fish passage or screening correction, any costs incurred by WDFW to bring a site into compliance with the fish passage and screening standards would then constitute the value of a lien on the structure or the property on which it is located, with some exceptions. By creating voluntary compliance and technical assistance avenues, the rule seeks to minimize the likelihood of incidents where WDFW would have no choice but to resort to the existing statutory remedies.

The specific enforcement protocols are similar to those in the hydraulic code compliance program, essentially outlining a series of protocols for WDFW to operationalize the authority granted in chapter 77.57 RCW to ensure compliance with fish passage standards. The compliance and enforcement provisions included in the proposed rule are as follows:

- A technical assistance visit, requested by either the owner or WDFW. If the technical assistance visit identifies inadequate fish passage or protection, WDFW will develop a voluntary correction request or mandatory notice to comply, depending on the circumstances.
- A compliance inspection site visit may be conducted if WDFW becomes aware of a noncompliant structure, considering the nature

of the fish resources impacted by the existing noncompliant structure as well as the quality and quantity of habitat to be gained. WDFW may issue a correction request or a notice to comply at a compliance inspection site visit.

- In either a technical assistance visit or a compliance inspection visit, WDFW will only issue a mandatory notice to comply without first issuing a correction request if there is a history of similar violations by the owner of the diversion or structure, or a probability of causing more-than-minor harm to fish life.
- Failure to respond to the correction request triggers WDFW to issue a notice to comply.
- Failure to comply with the notice to comply can result in criminal enforcement actions, such as an action to classify noncompliant structure as a public nuisance, resulting in injunctive action, or misdemeanor charges under chapter 77.57 RCW.
- As a final resort, WDFW can impose the correction as permitted in the existing statutory remedies. In some cases, WDFW may place a lien on the structure or the owner's property to recoup the cost.

**1.4 CONCEPTUAL MODELS OF RULE IMPACTS:** As described in the previous section, the standards for fish passage contained in the proposed rule are not new. Therefore, structures on the landscape may already comply, and thus be unaffected by the proposed rule. We developed conceptual models to more precisely identify situations in which the proposed rule would generate changes in behavior that generate costs. We present separate conceptual models for: (1) Dams, diversions, and fish passage improvement structures; and (2) culverts and crossings, as these structures have an additional climate-adapted design requirement in addition to the existing fish passage standards.

**1.4.1 DAMS, DIVERSIONS, AND FISH PASSAGE IMPROVEMENT STRUCTURES:** Exhibit 1-2 considers how the proposed rule would affect any particular dam, diversion, or fish passage structure that exists on the landscape. Generally, the logic of the model flows from the fact that the proposed rule does not impose new standards for fish passage and screening beyond what is already partially codified in the hydraulic code and described in WDFW's assessment guidance document.

First, exempt structures are not affected. Second, it is possible that an owner would plan to achieve compliance with the existing standard regardless of whether the proposed rule is adopted or not. Third, some structures are already in compliance, and others will not be prioritized by WDFW for correction.

Accordingly, the rule is most likely to generate costs for owners of dams, diversions, and fish passage improvement structures under the following circumstances:

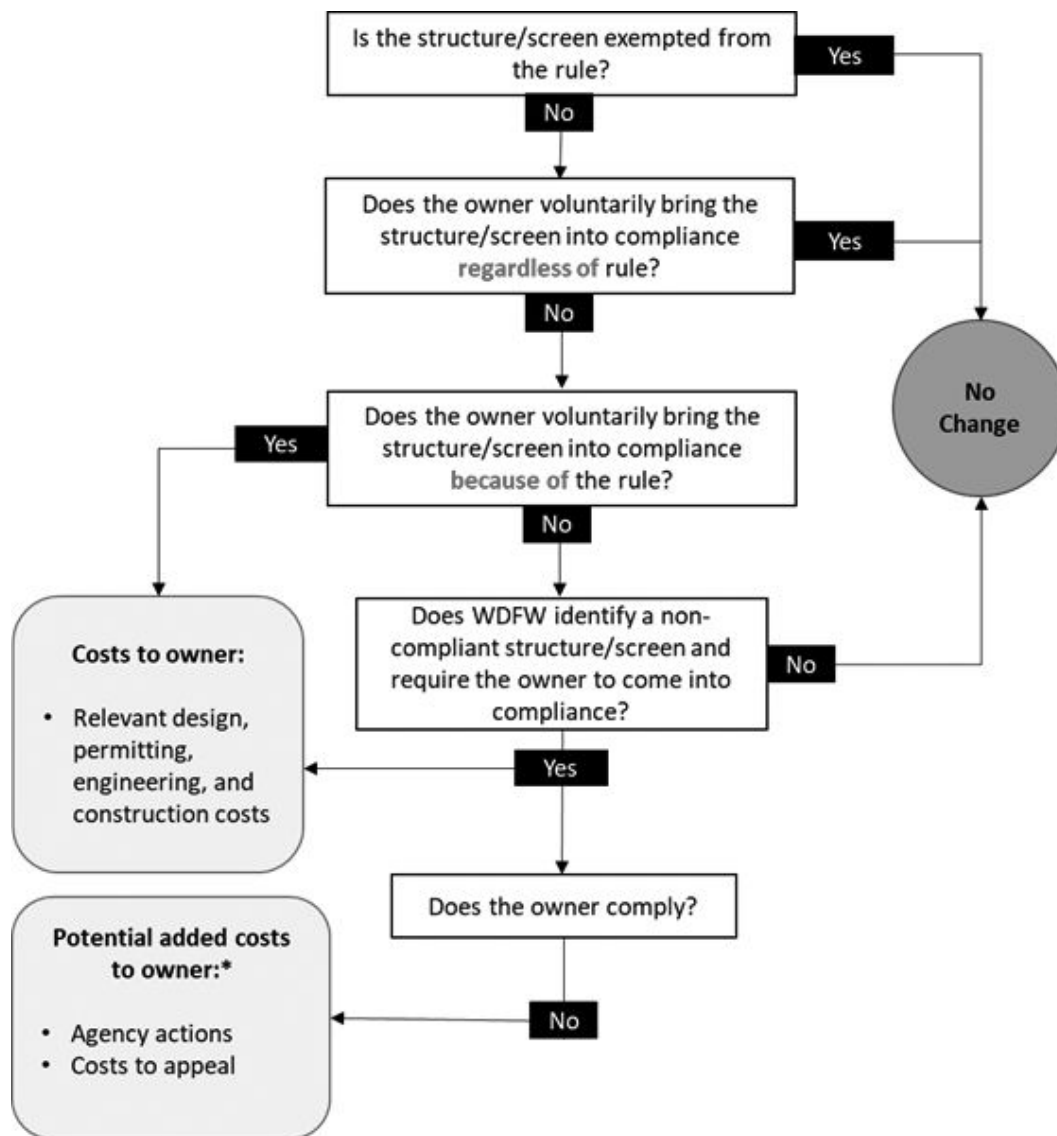
- *New information that triggers action on the part of owners to bring a structure into compliance.* The proposed rule could raise awareness regarding the requirement for owners to provide adequate fish passage and screening, including at sites that do not fall under HPA authority (e.g., artificial waterways). Costs incurred to comply would be triggered by the new rule in this case because owners would not be bearing the costs but for adoption of the rule. These costs, which include all aspects of bringing the noncompliant structure into compliance (e.g., permitting, design, construction) may be borne by the owner in whole or in part (if offset by grant or cost share opportunities).
- *Noncompliant structures subject to WDFW inspection.* As reinforced in the proposed rule, WDFW has authority to visit streams across

Washington state to identify noncompliant structures and enforce compliance. Upon completion of the rule, WDFW will prioritize sites for inspection and target compliance where needed. Costs to bring these noncompliant structures into compliance (e.g., permitting, design, construction) will ultimately be borne in whole or in part by the owners. Beyond the compliance costs, owners may bear additional costs if they refuse to comply. Potential costs of noncompliance include any costs associated with enforcement actions initiated by WDFW and/or any costs associated with appealing WDFW actions. While costs of noncompliance are not part of the analysis required for the RFA,<sup>15</sup> they are mentioned here to provide a complete picture of the compliance and rule enforcement process given that a focus of the proposed rule is to clarify WDFW's existing authority to address noncompliance through enforcement.

<sup>15</sup> RCW 19.85.040 – Small business economic impact statement—Purpose—Contents: "It [the SBEIS] shall analyze the costs of compliance for businesses required to comply with the proposed rule adopted pursuant to RCW 34.05.320, including costs of equipment, supplies, labor, professional services, and increased administrative costs."

The conceptual model reveals two main conclusions. First, only a portion of the noncompliant dams, diversions, and fish passage improvement structures on the landscape will experience added costs as a result of the proposed rule. Second, the costs associated with the proposed rule include all aspects of bringing a noncompliant structure into compliance (e.g., permitting, design, construction). As described in Section 2.2, the nature and magnitude of these costs will be site specific, depending on the structure type and nature of the violation, among other things.

**CONCEPTUAL MODEL OF RULE IMPLEMENTATION PROCESS FOR DIVERSION SCREENS, DAMS, AND FISH PASSAGE STRUCTURES**



\*While costs of noncompliance are not part of the analysis required for the RFA, they are mentioned here to provide a complete picture of the compliance and rule enforcement process given that a focus of the proposed rule is to clarify WDFW's existing authority to address noncompliance through enforcement.

**1.4.2 CULVERTS AND CROSSINGS:** The proposed rule affects water crossings similarly to dams, diversions, and fish passage improvement structures in terms of fish passage requirements (i.e., those already codified in the hydraulic code and WDFW assessment guidance). Therefore, the two circumstances identified in the previous section apply to water crossings as well. However, the climate-adapted standard introduces additional factors that complicate the conceptual model (Exhibit 1-3), leading to one additional circumstance where the proposed rule is most likely to generate costs to owners.

Two details from the proposed rule are relevant. First, water crossings installed prior to adoption of the proposed rule are not subject to the climate-adapted requirement as long as they are compliant in terms of fish passage and are within their designed lifespan. Second, only culverts and crossings located in areas where bankfull width or 100-year peak flows are expected to increase by at least five

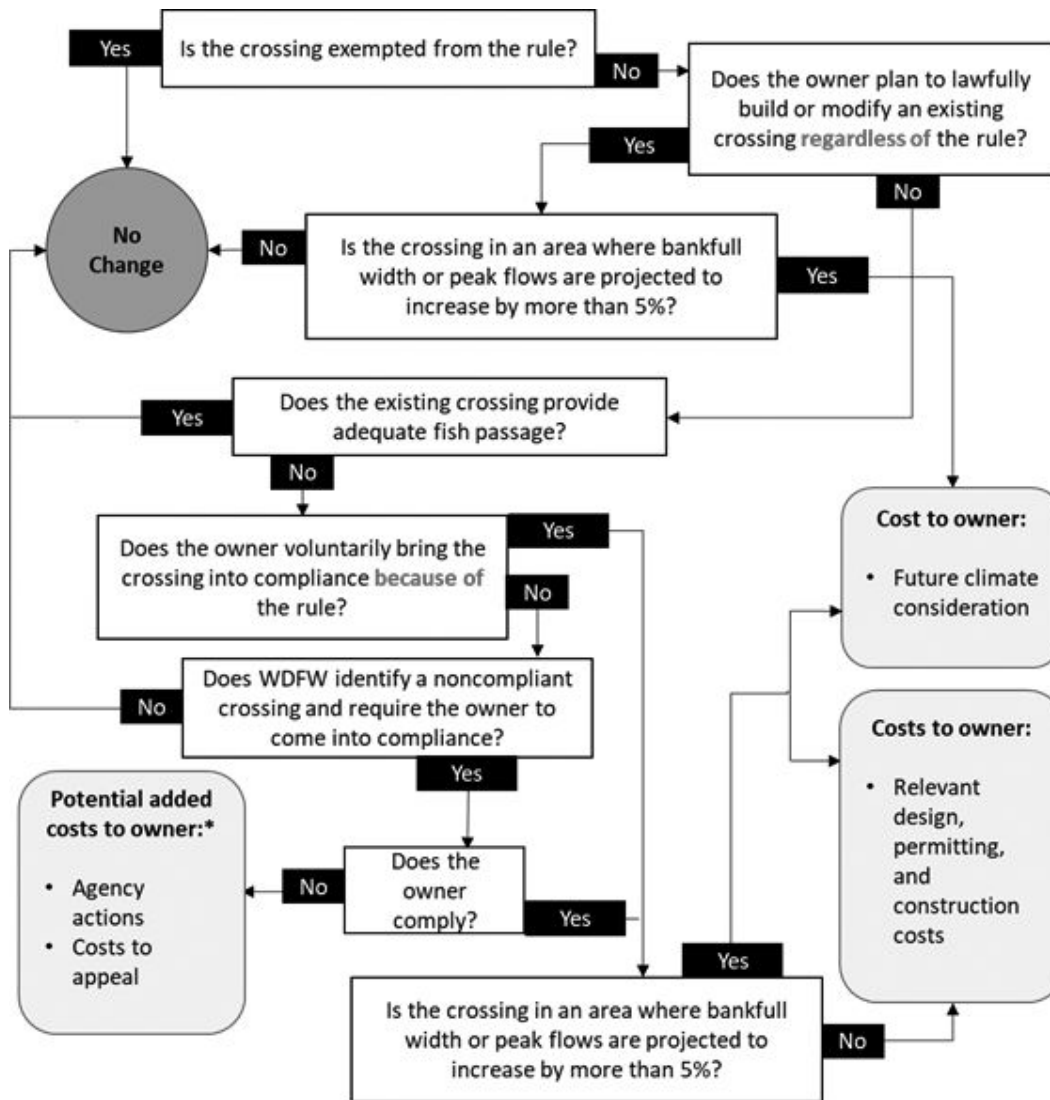
percent are required to consider incorporating climate projections into the design process.

For water crossings, the rule is most likely to generate costs to owners in the following circumstance (in addition to those identified in the prior section):

- *An owner would plan to replace (or build) a culvert or crossing regardless of the rule but would not consider future climate change in the design of the structure but for the rule. While compliance with the fish passage standards would be achieved through the existing HPA program in this case, the incremental cost of designing for future climate would be attributable to the rule in cases where the owner was not planning to do so already. In practice, many owners decide (or are advised) to consider future conditions even absent the proposed rule, so this is expected to be a small category of structures.*

This conceptual model reveals that only a portion of the noncompliant water crossings on the landscape will generate costs as a result of the proposed rule. This is because some structures are exempt, some are already compliant, and some noncompliant structures would have been replaced to the standards included in the proposed rule even in its absence, or will not be prioritized by WDFW for correction. Second, the costs associated with the proposed rule for this category of structures includes all aspects of bringing a noncompliant structure into compliance (e.g., permitting, design, construction). As described in Section 2.2, the nature and magnitude of these costs is site specific, depending on the structure type and nature of the violation, among other things.

**CONCEPTUAL MODEL OF RULE IMPLEMENTATION PROCESS FOR WATER CROSSING STRUCTURES**



\*While costs of noncompliance are not part of the analysis required for the RFA, they are mentioned here to provide a complete picture of the compliance and rule enforcement process given that a focus of the proposed rule is to clarify WDFW's existing authority to address noncompliance through enforcement.

**CHAPTER 2 - SMALL BUSINESS IMPACTS:** This chapter evaluates the potential economic impacts of the proposed rule on small businesses in Washington state. As outlined in the RFA and in accordance with other guidance and best practices, this SBEIS addresses the following questions.<sup>16 17 18</sup>

16 RCW 19.85.040 Small business economic impact statement—Purpose—Contents. Accessed October 13, 2022 at: <https://app.leg.wa.gov/RCW/default.aspx?cite=19.85.040>.  
 17 ORIA. 2021. Regulatory Fairness Act Support. Accessed October 13, 2022 at: [https://www.oria.wa.gov/site/alias\\_oria/934/regulatory-fairness-act-support.aspx](https://www.oria.wa.gov/site/alias_oria/934/regulatory-fairness-act-support.aspx).  
 18 WA Attorney General Office. 2021. Small Business Economic Impact Statements – Frequently Asked Questions. Accessed October 13, 2022 at: [https://www.oria.wa.gov/Portals/\\_oria/VersionedDocuments/RFA/Regulatory\\_Fairness\\_Act/DRAFT\\_SBEIS\\_FAQ.pdf](https://www.oria.wa.gov/Portals/_oria/VersionedDocuments/RFA/Regulatory_Fairness_Act/DRAFT_SBEIS_FAQ.pdf).

- What are the industries and universe of businesses that may incur costs as a result of this rule?
- What are the likely costs of the rule to those businesses?
- Are the costs resulting from the rule anticipated to be more than minor?
- Will the rule disproportionately affect small businesses?

- What steps has the agency taken to reduce the costs of the rule on small businesses?
- How has the agency involved small businesses in the development of the rule?
- How many jobs may be created or lost as a result of compliance with the rule?

The sections that follow address each of these questions.

**2.1 POTENTIALLY AFFECTED SMALL BUSINESSES:** As the proposed rule is directed toward regulating structures on the landscape, it does not target a particular sector or industry. However, the rule could potentially affect individual businesses that own a noncompliant structure, or a property on which a noncompliant structure is located, subject to the following three circumstances identified in Section 1.4: (1) New information from the rule prompts the owner to comply, (2) WDFW identifies the noncompliant structure and requests a correction, or (3) the owner was modifying (or building) a water crossing and not considering future climate conditions in the design.

The best available information regarding the universe of structures potentially subject to the rule is contained in WDFW's geodatabase of known fish passage barriers (henceforth, the "inventory").<sup>19</sup> However, there are several issues with using the inventory to identify particular small businesses that would be impacted. First, the compliance status of barriers in the Inventory is unknown. Second, it is impractical to identify the specific businesses or relevant economic sectors that own structures. The inventory identifies which structures are privately owned, and in some cases the name of the owner, but it does not indicate whether the owner is a business or provide any information about the industry. Finally, the inventory is updated on an ongoing basis as barrier inventorying efforts progress. Therefore, the full extent of relevant structures on the landscape is unknown.

<sup>19</sup> WDFW Open Data. Fish Passage Barriers Inventory. Accessed September 2022 at: <https://data-wdfw.opendata.arcgis.com/documents/wdfw::fish-passage-barriers-inventory-zipped-file-geodatabase/about>.

Given the nature of the proposed rule and the data limitations that exist, we take a conservative approach to identifying potentially affected businesses. We acknowledge that aside from the exemptions noted below, any business that owns property in Washington with a diversion, obstruction, or crossing on a fish bearing stream could incur costs as a result of the proposed rule, and such businesses could theoretically belong to any industry. At the same time, businesses within a few industries may be more likely to own certain types of structures based on the nature of their operations and/or the size of their landholdings.

**2.1.1 NONEXEMPT STRUCTURES IN THE INVENTORY:** The inventory identifies five types of structures potentially subject to the rule as follows:<sup>20</sup>

<sup>20</sup> Within the inventory, fish passage improvement structures are categorized as "fishways." However, the definition of fishways in the proposed rule includes fish passage improvement structures, culverts, and non-culvert crossings (see Section 1.3.1). To minimize confusion, we generally adopt the language used in the Inventory for this section, except that we use "fish passage improvement structures" in place of "fishways."

- Dams;
- Diversions;
- Fish passage improvement structures;
- Culverts;
- Nonculvert crossings (e.g., bridges, conduits, fords).

There are a total of 50,367 structures in these categories within the inventory (Exhibit 2-1). However, the rule incorporates specific exemptions that reduce the number of structures subject to the rule,



either because they fall outside of WDFW authority, or because they are grandfathered in. The following categories of structures are exempt from all provisions of the proposed rule:

- Those on nonfish bearing lakes, streams, or rivers;
- Those on federal or tribal-owned land;
- Obstructions that are federally owned or subject to federal laws that preempt chapter 77.57 RCW;
- Agricultural drainage system components installed on or before May 20, 2003;<sup>21</sup> and
- Lawful diversions installed on or before June 11, 1947, in waters containing game fish only.<sup>22</sup>

<sup>21</sup> These structures are identified as "Other" in the inventory, which we excluded from this analysis due to the varied types of structures contained within that category.

<sup>22</sup> Date of installation is not provided in the inventory. However, outreach to stakeholders indicated that the majority of agricultural diversions were installed prior to this date.

Of the relevant structures in the inventory, one or more exemption applies to 15,653 (31 percent) structures. Of the 34,714 remaining structures, 15,682 (45 percent) are privately owned. Exhibit 2-2 demonstrates the spatial distribution of known nonexempt and privately owned structures throughout the state. Of these, a substantial portion (67 percent) are culverts, 17.5 percent are other types of crossings, eight percent are dams, six percent are diversions, and about one percent are fish passage improvement structures.<sup>23</sup>

<sup>23</sup> The structure categories are not mutually exclusive. For example, a dam may be associated with a diversion, a fish passage structure, or both.

The inventory provides useful information, but it should not be considered a complete assessment of the situation that exists on the landscape. It provides sufficient data to perform coarse analysis based on structure location and owner type, but it is known to be incomplete. Washington state department of ecology, for example, has identified 49,430 points of water surface diversion, compared to the 1,550 diversions contained in the inventory.<sup>24</sup> It is unknown, however, what portion of the points identified by ecology represent active points of diversion that require screening, what portion would be exempt from the proposed rule, and what portion is privately owned. Therefore, we maintain that the inventory represents the best available information for performing SBEIS analysis but note that it likely underestimates the scale of the problem for diversions in particular.

<sup>24</sup> Email communication with WDFW staff on December 19, 2020.

NUMBER OF EXEMPT, NONEXEMPT, AND NONEXEMPT PRIVATELY OWNED STRUCTURES IN THE WDFW INVENTORY

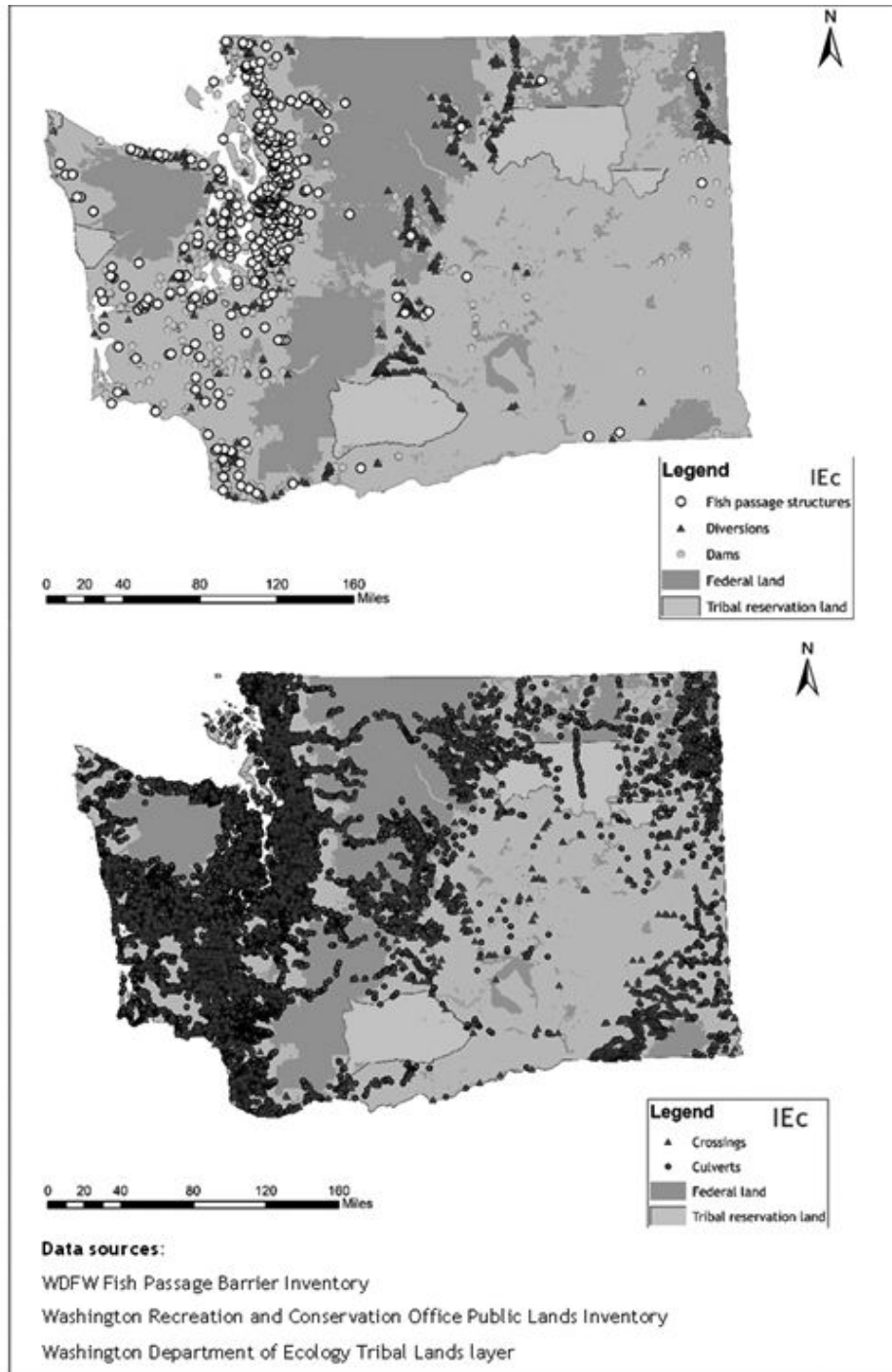
	DAMS	DIVERSIONS <sup>1</sup>	FISH PASSAGE STRUCTURES	CULVERTS	CROSSINGS	TOTAL
Total	2,046	1,550	944	38,818	7,009	50,367
Exempt	429	450	274	12,718	1,782	15,653
Nonexempt	1,617	1,100	670	26,100	5,227	34,714
Nonexempt, Privately Owned	1,258	939	187	10,548	2,750	15,682

**Note:** The true number of nonexempt, privately owned structures on the landscape is unknown and may be much higher. However, only a portion would be impacted by the proposed rule.  
 1. As noted in the text, ecology estimates the total number of diversions may be several orders of magnitude higher. However, data is insufficient to confirm applicability of screening requirements, and to identify exemptions or ownership type.

Regardless of the true number of privately owned, nonexempt structures on the landscape, only a portion are expected to be both impacted by the rule and owned by a business (i.e., those that are the focus of this SBEIS). Considering the estimates in the inventory, a subset of the approximately 16,000 relevant structures are owned by

residential property owners that are not businesses. Additionally, a subset of the structures that are owned by businesses likely already comply with the design standards incorporated into the proposed rule or would comply with existing regulations in the future and would therefore not experience additional costs resulting from the proposed rule. However, both the universe of structures and the portion that would experience added costs due to the proposed rule are uncertain.

**SPATIAL DISTRIBUTION OF NONEXEMPT PRIVATELY OWNED STRUCTURES IN THE INVENTORY**



**2.1.2 IDENTIFICATION OF POTENTIALLY AFFECTED BUSINESSES:** As noted, businesses that may be impacted by the proposed rule can potentially belong to any industry that exists in Washington. For example, some individual businesses owning relevant structures that were mentioned during interviews include a shopping mall, a football field, an Amazon facility, hunting clubs, gas stations, and general contractors. Accordingly, this SBEIS provides contextual industry-scale information about the businesses that could potentially be affected by the proposed rule (Exhibit 2-3). This information should not be interpreted as identifying the universe of businesses that may or are likely to be affected by the rule. In fact, most businesses in these industries are unlikely to be affected by the rule making. However, given the uncertainty regarding the specific universe of entities that will experience costs of the rule, this analysis errs on the side of transparency to ensure due consideration of the full scope of potentially affected small businesses.

Exhibit 2-3 includes information relevant to the SBEIS analysis. First, it identifies the total number of businesses in Washington belonging to each industry, and the proportion considered "small." In addition, it provides the industry-wide average annual payroll and revenues, which are used to calculate the minor cost threshold. For an SBEIS, the threshold is used to determine whether the compliance costs of a proposed rule are considered "more than minor." As defined in RCW 19.85.020, the minor cost threshold is the greatest of \$100, one percent of annual payroll, or three-tenths of one percent of annual revenues.<sup>25</sup>

<sup>25</sup> RCW 19.85.020 Definitions. Accessed November 3, 2022 at: <https://app.leg.wa.gov/rcw/default.aspx?cite=19.85.020>.

Depending on the industry, the likelihood that any business impacted by the proposed rule would be considered small varies. Within some industries, such as gasoline stations North American Industry Classification System (NAICS Code 447), a very large proportion (99 percent) are considered small. In other industries, such as general merchandise stores (NAICS Code 452), a much lower proportion are considered small (55 percent).

There is also wide variation across industries in the minor cost threshold. It ranges from as low as \$423 for private households employing workers such as cooks or house cleaners (NAICS Code 814), up to nearly \$1 million (\$915,976) for hospitals (NAICS Code 622).

**NUMBER OF BUSINESSES, AVERAGE ANNUAL REVENUES, AND MINOR COST THRESHOLD FOR WASHINGTON STATE INDUSTRIES**

INDUSTRY (NAICS CODE) <sup>1</sup>	INDUSTRY DESCRIPTION	TOTAL NUMBER OF BUSINESSES <sup>2</sup>	PROPORTION CONSIDERED SMALL <sup>3</sup>	AVERAGE ANNUAL PAYROLL	AVERAGE ANNUAL REVENUE	MINOR COST THRESHOLD (USD) <sup>4</sup>
111	Crop Production	4,694	0.96	439,622	1,169,522	4,444
112	Animal Production and Aquaculture	779	0.97	358,501	703,769	3,681
113	Forestry and Logging	429	0.97	509,462	1,775,799	5,327
114	Fishing; Hunting and Trapping	209	0.97	546,119	828,952	5,461
115	Support Activities for Agriculture and Forestry	787	0.89	1,227,640	723,635	12,500
211	Oil and Gas Extraction	UNKNOWN	UNKNOWN	UNKNOWN	1,996,053	5,988
212	Mining (except Oil and Gas)	116	0.88	1,140,014	3,445,405	12,825
213	Support Activities for Mining	28	UNKNOWN	UNKNOWN	3,756,579	11,270
221	Utilities	595	0.90	3,620,713	20,219,438	60,658
236	Construction of Buildings	9,405	0.98	399,571	1,380,768	4,142
237	Heavy and Civil Engineering Construction	1,186	0.91	1,574,035	6,727,295	20,182

INDUSTRY (NAICS CODE) <sup>1</sup>	INDUSTRY DESCRIPTION	TOTAL NUMBER OF BUSINESSES <sup>2</sup>	PROPORTION CONSIDERED SMALL <sup>3</sup>	AVERAGE ANNUAL PAYROLL	AVERAGE ANNUAL REVENUE	MINOR COST THRESHOLD (USD) <sup>4</sup>
238	Specialty Trade Contractors	16,306	0.97	508,232	1,068,808	5,084
311	Food Manufacturing	1,036	0.83	1,941,809	11,625,030	34,875
312	Beverage and Tobacco Product Manufacturing	829	0.96	532,644	2,060,783	6,182
313	Textile Mills	24	UNKNOWN	871,836	3,090,002	9,270
314	Textile Product Mills	137	0.96	657,358	963,465	6,574
315	Apparel Manufacturing	88	0.94	767,197	364,822	7,672
316	Leather and Allied Product Manufacturing	30	UNKNOWN	347,578	1,541,679	4,625
321	Wood Product Manufacturing	374	0.82	1,966,381	13,778,702	41,336
322	Paper Manufacturing	101	0.58	6,277,660	51,656,357	154,969
323	Printing and Related Support Activities	504	0.96	516,478	738,110	5,165
324	Petroleum and Coal Products Manufacturing	34	UNKNOWN	11,478,774	211,324,337	633,973
325	Chemical Manufacturing	351	0.91	1,717,059	9,061,750	27,185
326	Plastics and Rubber Products Manufacturing	208	UNKNOWN	2,084,421	10,251,484	30,754
327	Nonmetallic Mineral Product Manufacturing	306	0.83	1,864,570	6,271,891	24,146
331	Primary Metal Manufacturing	91	0.78	3,902,358	16,157,609	48,473
332	Fabricated Metal Product Manufacturing	1,076	0.91	1,025,313	4,218,991	12,657
333	Machinery Manufacturing	496	0.88	2,008,224	6,464,372	20,370
334	Computer and Electronic Product Manufacturing	405	0.82	4,590,449	15,368,835	47,837
335	Electrical Equipment; Appliance; and Component Manufacturing	155	0.92	2,746,337	10,772,296	32,317
336	Transportation Equipment Manufacturing	499	0.73	21,977,392	58,252,915	219,774
337	Furniture and Related Product Manufacturing	363	0.93	786,514	1,928,426	7,865
339	Miscellaneous Manufacturing	780	0.95	984,194	2,058,454	9,870
423	Merchant Wholesalers; Durable Goods	6,146	0.96	972,460	7,630,534	22,892
424	Merchant Wholesalers; Nondurable Goods	3,597	0.95	886,061	9,929,810	29,789
425	Wholesale Electronic Markets and Agents and Brokers	3,783	0.99	552,115	2,096,183	6,289
441	Motor Vehicle and Parts Dealers	2,329	0.90	1,019,470	7,767,559	23,303
442	Furniture and Home Furnishings Stores	840	0.97	466,570	1,759,330	5,278
443	Electronics and Appliance Stores	946	0.95	647,593	3,521,033	10,563
444	Building Material and Garden Equipment and Supplies Dealers	1,531	0.92	862,894	4,222,240	13,188
445	Food and Beverage Stores	2,883	0.85	865,435	4,530,545	13,592
446	Health and Personal Care Stores	1,688	0.99	431,227	3,243,206	9,730
447	Gasoline Stations	1,758	0.99	216,641	5,562,917	16,689
448	Clothing and Clothing Accessories Stores	2,005	0.97	245,754	818,862	4,272
451	Sporting Goods; Hobby; Musical Instrument; and Book Stores	1,268	0.97	307,000	1,269,975	4,155
452	General Merchandise Stores	692	0.55	3,662,019	19,750,293	183,683
453	Miscellaneous Store Retailers	2,995	0.98	250,449	1,156,840	3,471
454	Nonstore Retailers	897	0.96	16,205,591	1,945,471	162,056
481	Air Transportation	132	0.89	10,138,945	1,664,360	118,540
482	Rail Transportation	UNKNOWN	UNKNOWN	UNKNOWN	11,040,076	33,120
483	Water Transportation	70	0.76	4,468,656	3,675,900	44,687

INDUSTRY (NAICS CODE) <sup>1</sup>	INDUSTRY DESCRIPTION	TOTAL NUMBER OF BUSINESSES <sup>2</sup>	PROPORTION CONSIDERED SMALL <sup>3</sup>	AVERAGE ANNUAL PAYROLL	AVERAGE ANNUAL REVENUE	MINOR COST THRESHOLD (USD) <sup>4</sup>
484	Truck Transportation	2,471	0.96	529,431	961,799	5,539
485	Transit and Ground Passenger Transportation	321	0.79	3,942,817	425,244	39,428
486	Pipeline Transportation	UNKNOWN	UNKNOWN	3,863,173	8,485,313	57,948
487	Scenic and Sightseeing Transportation	93	UNKNOWN	179,981	298,070	1,800
488	Support Activities for Transportation	1,308	0.92	1,490,053	3,456,933	14,901
491	Postal Service	556	0.87	1,429,088	1,366,764	14,291
492	Couriers and Messengers	528	0.87	1,579,236	1,260,781	20,300
493	Warehousing and Storage	352	0.84	2,515,217	3,511,665	37,189
511	Publishing Industries (except Internet)	1,999	0.96	10,493,716	3,509,376	106,531
512	Motion Picture and Sound Recording Industries	477	0.95	341,202	584,475	3,835
515	Broadcasting (except Internet)	166	0.89	1,356,561	13,991,370	41,974
517	Telecommunications	876	0.93	3,231,416	14,391,650	72,451
518	Data Processing; Hosting; and Related Services	854	0.94	3,093,580	4,897,141	31,579
519	Other Information Services	1,080	0.95	7,584,633	3,455,841	91,127
521	Monetary Authorities-Central Bank	UNKNOWN	UNKNOWN	UNKNOWN	10,619,926	31,860
522	Credit Intermediation and Related Activities	3,671	0.97	1,299,289	12,547,552	39,961
523	Securities; Commodity Contracts; and Other Financial Investments and Related Activities	2,577	0.99	887,653	3,699,369	13,872
524	Insurance Carriers and Related Activities	3,625	0.97	1,010,890	2,439,165	11,871
525	Funds; Trusts; and Other Financial Vehicles	79	UNKNOWN	UNKNOWN	1,743,641	5,231
531	Real Estate	7,792	0.98	383,778	944,906	4,418
532	Rental and Leasing Services	1,019	0.97	483,241	2,609,092	8,218
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	50	UNKNOWN	451,905	2,757,528	8,273
541	Professional; Scientific; and Technical Services	28,284	0.98	823,090	1,287,629	8,393
551	Management of Companies and Enterprises	734	0.82	7,463,110	1,207,340	86,101
561	Administrative and Support Services	12,441	0.96	623,642	1,470,903	6,499
562	Waste Management and Remediation Services	705	0.91	1,957,675	5,663,318	22,296
611	Educational Services	4,164	0.87	3,777,796	363,526	37,778
621	Ambulatory Health Care Services	11,584	0.95	936,062	1,204,416	10,852
622	Hospitals	205	0.41	53,901,534	158,541,672	915,976
623	Nursing and Residential Care Facilities	2,670	0.85	933,842	3,361,833	10,085
624	Social Assistance	46,342	0.99	85,169	495,281	1,486
711	Performing Arts; Spectator Sports; and Related Industries	773	0.95	778,973	154,766	7,814
712	Museums; Historical Sites; and Similar Institutions	269	0.91	799,191	437,989	7,992
713	Amusement; Gambling; and Recreation Industries	2,284	0.91	582,224	390,715	5,822
721	Accommodation	1,684	0.92	463,273	469,106	4,904
722	Food Services and Drinking Places	16,093	0.96	296,082	854,026	3,514
811	Repair and Maintenance	4,627	0.99	283,254	494,163	2,985

INDUSTRY (NAICS CODE) <sup>1</sup>	INDUSTRY DESCRIPTION	TOTAL NUMBER OF BUSINESSES <sup>2</sup>	PROPORTION CONSIDERED SMALL <sup>3</sup>	AVERAGE ANNUAL PAYROLL	AVERAGE ANNUAL REVENUE	MINOR COST THRESHOLD (USD) <sup>4</sup>
812	Personal and Laundry Services	5,301	0.99	167,239	171,042	1,848
813	Religious; Grantmaking; Civic; Professional; and Similar Organizations	3,793	0.97	451,782	580,613	4,675
814	Private Households	6,363	UNKNOWN	42,277	116,576	423

**Notes:**

1. Type of business as identified by three-digit NAICS code.
  2. Some entities represented in these broad industry categories may be public or quasi-public.
  3. In some cases, this value may underestimate the percentage of businesses considered small. For the SBEIS, chapter 19.85 RCW defines small businesses as those with 50 or fewer employees. Washington state employment security department's labor market and economic data reports statewide counts of businesses with 49 or fewer employees.
  4. In accordance with RCW 19.85.030 (1)(a) minor cost threshold is the greater of one percent of annual payroll, 0.3 percent of annual revenue, or \$100.
- Sources:** Washington State Employment Security Department 2020 Labor Market and Economic Data (Number of Businesses and Proportion Considered Small); United States Bureau of Labor Statistics 2020 Total Wages and Number of Establishments (Average Annual Payroll); Washington State Department of Revenue 2020 Gross Business Income and Number of Establishments (Average Annual Revenue).

Although businesses potentially impacted by the proposed rule can theoretically belong to any industry, some industries may be more likely to be affected than others. Outreach efforts consistently identified three main industries they felt were the most likely to be impacted: agriculture, forestry, and HOAs. Agricultural businesses rely on stream diversions for irrigation, forestry businesses for their haul road crossings, and HOAs for irrigation diversions (e.g., for lawn watering) and for culverts and crossings along privately owned roadways.

In addition to the association between these industries and particular structures they use in normal business operations, agriculture and forestry businesses may be more likely than businesses in other industries to own structures on the landscape simply due to their large landholdings. Washington has a total land area of 45.7 million acres, of which roughly 19.8 million are publicly owned and about six million are owned by tribes.<sup>26 27</sup> Of the remaining 19.9 acres of generally privately owned land, about four million (20 percent) are privately owned forestland and about 8.37 million (42 percent) are devoted to agriculture.<sup>28 29</sup>

<sup>26</sup> Washington State Recreation and Conservation Office. 2014. "Washington Public Lands Inventory Final Report."

<sup>27</sup> State of Washington Department of Ecology. "Working with tribal governments." Accessed November 3, 2022 at: <https://ecology.wa.gov/About-us/Accountability-transparency/Government-coordination/Tribal-relations>.

<sup>28</sup> Washington State Department of Commerce. "Stewardship and sustainability in a growing industry." Accessed November 1, 2022 at: <http://choosewashingtonstate.com/why-washington/our-key-sectors/forest-products>.

<sup>29</sup> Washington State Department of Agriculture. Agriculture Land Use geodatabase. Accessed October 6, 2022 at: <https://agr.wa.gov/departments/land-and-water/natural-resources/agricultural-land-use>.

**2.2 COST OF COMPLIANCE:** Consistent with RCW 19.85.040(1), this analysis evaluates the relevance of the following potential categories of costs to comply with the proposed rule:

- Reporting, recordkeeping, and other compliance requirements.
- Professional services that a small business is likely to need in order to comply with such requirements.
- Costs required to comply with the proposed rule, including costs of equipment, supplies, labor, professional services, and increased administrative costs.
- Based on input received, determine whether compliance with the rule will cause businesses to lose sales or revenue.

The range of costs for complying with the proposed rule will generally vary according to the structure type and the nature of the violation. For example, the violation could be caused by a buildup of debris, which could potentially be corrected with a few hours of labor (or less). At the higher end, situations could exist where a culvert

requires replacement with a bridge due to inadequate fish passage and large expected changes from climate change. Here we provide cost estimates for replacing (or in the case of dams, removing) five types of structures, though we acknowledge that full replacement (or removal) may not be necessary in every case. At the same time, many projects of this type receive at least partial funding through some grant or cost-sharing program. We highlight some of these programs in a subsequent section but note here that the cost estimates do not necessarily reflect the costs ultimately borne by an owner.

We collected project cost estimates from seven firms for five types of projects: (1) Installing diversion screens, (2) removing dams, (3) installing fish passage improvement structures, (4) installing culverts, and (5) installing bridges. For diversion screening, we learned that it is appropriate to consider two subcategories (small and large). Requested costs for each project type fell in three broad categories, or project phases: (1) permitting, (2) engineering and design, and (3) construction. Not all firms were able to provide estimates for each project and/or phase, and some firms combined permitting with design and engineering. For consistency, therefore, the summarized estimates presented in Exhibit 2-4 combine permitting with design and engineering into a single cost category. Full (anonymized) results from each firm are provided in Attachment C.

**EXHIBIT 2-4. COST RANGES FOR REPLACING RELEVANT STRUCTURES**

COST CATEGORY	DIVERSION SCREENING (SMALL)	DIVERSION SCREENING (LARGE)	DAM REMOVAL	FISH PASSAGE STRUCTURE	CULVERT	BRIDGE
Permitting, design, and engineering	N/A	\$2,000 - \$4M	\$15,000 - \$4M	\$30,000 - \$400,000	\$5,000 - \$400,000	\$15,000 - \$1M
Construction	\$100 - \$10,000	\$50,000 - \$400,000	\$50,000 - \$1.5M	\$200,000 - \$1.5M	\$40,000 - \$800,000	\$50,000 - \$5M
Total	\$100 - \$10,000	\$52,000 - \$4.4M	\$65,000 - \$5.5M	\$230,000 - \$1.9M	\$45,000 - \$1.2M	\$65,000 - \$6M

Source: Data collected from engineering and consulting firms performing the services (see Attachment C).

The ranges in project cost estimates reported in Exhibit 2-4 reflect two types of variation: variation between firms and variation due to project-specific characteristics. Firm-level variation is provided in Attachment C. Some comparisons between firms are possible in cases where multiple firms provide estimates for a project-phase combination. These are generally in agreement, with a few notable exceptions. One firm provided estimates for diversion screening that were several orders of magnitude larger than others, and another firm did the same for bridges. Differences of these type are most likely indicative of the firm's clientele (e.g., public utility diversions and state highway bridges versus privately owned structures).

Aside from firm-level variation, significant variation exists due to project-specific characteristics (summarized in Exhibit 2-5). Some factors apply to projects across many of the categories. These include things like the number of jurisdictions involved, which can complicate permitting, difficulties moving heavy equipment around more urban environments, and increased transportation costs to more remote locations.

**EXHIBIT 2-5. PROJECT-SPECIFIC CHARACTERISTICS DRIVING VARIATION IN TOTAL COST**

CATEGORY	DESCRIPTION
Structure characteristics	Structure type, dimensions, roadway design speed, vertical profile, intake speed
Geotechnical factors	Slope, soil type
Site characteristics	Presence of utility, ownership of adjacent land

CATEGORY	DESCRIPTION
Permitting requirements	Involvement of multiple jurisdictions, environmental concerns
Location characteristics	Population density (urban/rural), traffic management during construction
Hydrologic characteristics	Stream flow/velocity
<b>Notes:</b> The influence of these factors on cost are often interactive (e.g., larger structures can trigger additional permitting or require easements).	

Other cost drivers are more specific to particular project types. For diversions, the largest driver of variation is the flow rate at the point of diversion or intake. Smaller pump screens, for example, require a self-cleaning apparatus at flows beyond three cubic feet per second, which can increase the cost by several thousand dollars or more. Larger gravity diversion screens need custom fabrication and construction and require more permitting and complicated installation processes, driving the cost into the tens of thousands or even millions for a small number of very large projects.

Dam removal costs are highly dependent on project scale (i.e., dimensions) and the extent of sediment buildup in the reservoir. If the sediment is determined to contain contaminants, sediment disposal can represent a substantial portion of overall costs.

Costs for culverts and bridges are also highly dependent on scale. Other key factors include the vertical profile of the surrounding road, the designed speed of the roadway, and the need to manage traffic during construction.

Lacking detailed information about the project-specific characteristics (and ownership) of each structure in the inventory, it is impossible to determine the compliance costs for any particular business or even the distribution of compliance costs. However, published data containing costs of completed projects provides some information to characterize the likely distribution, and to ground the cost estimates more generally.

The National Oceanic and Atmospheric Association (NOAA) collects data for projects that received grant funds from the Pacific Coastal Salmon Recovery Fund, including fish screens and culverts.<sup>30</sup> The database identifies 69 completed "fish screen" projects. Median cost for these projects is \$72,236 and median is \$202,489. The database does not identify culvert replacement as a unique project type. However, a recent study utilized the database to analyze culvert project costs within Washington and Oregon.<sup>31</sup> Among the 1,236 culvert projects analyzed, mean cost was \$82,600.

30 Pacific Northwest salmon habitat project database, 2022. National Marine Fisheries Service, Northwest Fisheries Science Center. Accessed November 11, 2022 at: <https://www.webapps.nwfsc.noaa.gov/pnshp/>.

31 Van Deynze, B., et al. 2022. "What influences spatial variability in restoration costs? Econometric cost models for inference and prediction in restoration planning." *Biological Conservation*.

A few studies report dam removal costs. One found a median cost of \$150,000 and mean cost of \$1.8 million based on a national survey of project managers for 317 completed dam removal projects.<sup>32</sup> Another analyzed a subset of projects contained in American Rivers' database of dam removals in the United States for which cost information was available, reporting a median of \$116,283 and a mean of \$440,448.<sup>33</sup>

32 Bernhardt E.S., et al. 2007. "Restoring Rivers One Reach at a Time: Results from a Survey of U.S. River Restoration Practitioners." *Restoration Ecology*.

33 Blachly, B. and E. Uchida. 2017. "Estimating the marginal cost of dam removal." *Environmental and Natural Resource Economics Working Papers*. University of Rhode Island.

The completed projects reported above do not perfectly match the projects relevant to this rule. However, they provide useful contextual information. First, all of the reported summary statistics fall within the range for each project type obtained from firms as part of this analysis (Exhibit 2-4), supporting the validity of our estimates.



Second, they suggest that the likely compliance cost for most affected businesses in Washington will be at the lower end of the range. The mean and median empirical cost estimates for completed screen, dam removal, and culvert replacement projects cited above are all well below the midpoints of the respective ranges in Exhibit 2-4. In addition, where both means and medians are reported, mean project costs exceed medians. These facts both suggest that values at the high end of the range are less common than those at the lower end (i.e., the distribution is skewed left, and higher-cost projects are outliers).

As a final note about costs, in particular situations, the only compliance cost will be the incremental cost of the climate-adapted crossing requirement versus the full cost of replacing a crossing to comply with fish passage and the climate requirement. Therefore, it would be beneficial to understand how these individual components contribute to overall costs. Regarding this question, firms included in outreach efforts generally indicated two things: (1) Any cost differential associated with constructing bridges and culverts on fish-bearing versus non-fish-bearing streams is negligible, and (2) their existing culvert and crossing design processes tend to already incorporate climate adaptation to some degree. As described in Section 1.3.2, some firms are aware of and already using WDFW's culverts and climate change web application, while others use either a rule of thumb for upsizing or the Washington state department of transportation (WSDOT) standard of increasing current bankfull width by 20 percent and adding two feet.

The culverts and climate change application predicts increases to bankfull width or peak flow will exceed five percent for roughly two-thirds of the state by area, which applies to about 97 percent of known culvert and crossing sites.<sup>34</sup> Some areas have projected increases as high as 42.6 percent for bankfull width and 203.5 percent for peak flow. Existing rules of thumb or the WSDOT standard may align with the culvert and climate change application when projected changes are modest, but current practices are unlikely to be sufficient in extreme cases. Unfortunately, there is no way to quantify a threshold when existing practices become insufficient. In addition, there is a large degree of site specificity affecting the incremental cost of upsizing a structure. For example, even minimal upsizing may trigger the need to purchase additional land, raise the vertical profile of the surrounding road, or relocate utilities, all of which can add significant costs. On the other hand, the incremental cost of upsizing may be restricted to the cost of any additional materials required, since permitting, design, and engineering often represent fixed costs. To summarize, the incremental cost of the climate adaptation requirement ranges from zero in cases where sufficient upsizing would occur absent the rule, to a substantial portion of the overall budget in complex cases where things like raising the roadbed, relocating utilities, or shifting from a culvert to bridge design may be necessary.

<sup>34</sup> The spatial correlation between structures and climate impacts arises because both are less likely in high elevation areas of the state.

**SUMMARY STATISTICS DESCRIBING THE MAGNITUDE OF CLIMATE-INDUCED PROJECTED CHANGES CONTAINED IN WDFW'S CULVERTS AND CLIMATE CHANGE WEB APPLICATION**

	<b>PORTION OF STATE WITH PROJECTED INCREASE 5% OR HIGHER</b>	<b>MEAN PROJECTED INCREASE (PERCENTAGE)</b>	<b>MEDIAN PROJECTED INCREASE (PERCENTAGE)</b>	<b>MAXIMUM PROJECTED INCREASE (PERCENTAGE)</b>
Bankfull width	0.64	11.6	9.3	42.6
100-year peak flow	0.66	32.5	25.3	203.5

**2.3 ASSESSMENT OF MINOR COST:** As summarized in Exhibit 2-4, the likely cost of complying with the rule ranges from \$100 for a small pump diversion screen to \$6 million or higher for a complex bridge construction. Uncertainty in the compliance cost arising from project and site specificity, coupled with uncertainty about the industry classification of any business incurring costs, suggests that the compliance costs will be minor in some situations and more than minor in others. For example, a relatively low compliance cost (e.g., \$500) would be below the minor cost threshold for businesses within most, but not all, industries (see Exhibit 2-3 for the minor cost threshold for each industry). As compliance costs are expected to exceed the minor cost threshold in at least some situations, however, this analysis finds that the proposed rule could impose more-than-minor costs on businesses.

**2.4 DISPROPORTIONATE ECONOMIC IMPACT ANALYSIS:** When proposed rule changes impose more-than-minor costs to businesses, RCW 19.85.040 requires an analysis that compares the cost of compliance for small businesses with the cost of compliance for the 10 percent of businesses that are the largest businesses required to comply with the proposed rules to determine whether the costs are considered disproportionate. RCW 19.85.040(1) describes the following formula for determining disproportionate impacts:

$$\frac{C_s}{A_s} > \frac{C_L}{A_L}$$

Where:

- $C$  indicates the cost of compliance,
- $A$  indicates an adjustment factor (total number of employees, total sales, or total labor hours),
- $S$  subscripts denote small businesses (those with 50 or fewer employees) required to comply with the proposed rule, and
- $L$  subscripts denote large businesses (the top 10 percent) required to comply with the rule.

If the analysis finds that the inequality condition is met, the proposed rule is considered to have a disproportionate impact on small businesses. As described in Section 2.1.2, data limitations prevent precise identification of sectors, industries, or particular businesses that may be affected. Therefore, there is no way to empirically perform the analysis. However, insight can be gained from simple reasoning.

As described in Section 2.3,  $C$  depends on the type and size of the structure as well as site-specific characteristics. These factors have no known or hypothesized relationship with business size within a particular industry or sector. Therefore, it is reasonable to assume that  $C_S = C_L$  (i.e., there is no difference between the expected cost of compliance for small and large businesses). All three potential adjustment factors, on the other hand, are expected to directly correlate with business size within an industry (i.e.,  $A_S < A_L$ ). It follows that for any industry, compliance costs are likely to be disproportionately borne by small businesses. Accordingly, this SBEIS identifies and documents cost mitigation strategies.<sup>35</sup>

<sup>35</sup> In the absence of sufficient data to calculate disproportionate impacts, an agency whose rule imposes more-than-minor costs must mitigate the costs to small businesses, where legal and feasible, as defined in this chapter (RCW 19.85.030(4)).

**2.5 COST MITIGATION STRATEGIES:** RCW 19.85.030 requires that, when a rule is expected to disproportionately impact small businesses, the agency consider several methods for reducing the impact of the rule on small businesses, where legal and feasible in meeting the stated objectives of the statutes upon which the rule is based. These methods may include decisions that were made in determining the provisions of the rule itself, or opportunities to reduce the costs of implementing the rule as written. This section outlines existing and proposed opportunities for offsetting compliance costs, as well as the steps WDFW has taken to limit the costs of the proposed rule to businesses.

The compliance costs presented in Section 2.2.3 represent estimates for the full cost of each relevant service. However, outreach to owners, owner representatives, and firms performing the services indicated that most relevant project types that have been completed to date received at least some grant funding. Exhibit 2-7 highlights these grant programs.

**GRANT PROGRAMS AVAILABLE FOR OFFSETTING COSTS TO OWNERS FOR CERTAIN PROJECT TYPES**

PROGRAM NAME	LEVEL AND ADMINISTERING AGENCY	PROGRAM INFORMATION
Fish Barrier Removal Board <sup>1</sup>	State; DFW and Recreation and Conservation Office	Grant program for fish passage projects that remove impediments to salmon and steelhead migration. Up to \$40 million in funding available for 2021-2022.
Family Forest Fish Passage <sup>2</sup>	State; DNR and Recreation and Conservation Office	Funding for private forestland owners to remove culverts/stream crossings that prevent trout, salmon, and other fish from traveling upstream. Structures must be on forestland and on a fish-bearing stream. Up to \$5.9 million in funding for 2022-2023. \$5,000 cost-sharing for owners who have harvested in the previous three years.
Salmon Recovery Funding Board <sup>3</sup>	State; Recreation and Conservation Office	Funding for salmon habitat protection for existing, high-quality habitat or restoration for degraded habitat. Typical projects replace barriers to fish migration, replant stream banks, remove shoreline armoring, etc. Open to local/state agencies, tribes, private landowners, nonprofits. Applicants can request between \$5,000 and \$200,000.
Barrier Removal Grants <sup>4</sup>	Federal; NOAA	\$65 million in funding available in 2022 for projects that remove in-stream barriers to fish passage (under Bipartisan Infrastructure Law). Open to institutions of higher education, non-profits, commercial organizations, and state, local, and tribal governments. Award amounts range from \$1 million to \$15 million.
Fish Passage Program <sup>5</sup>	Federal; U.S. Fish and Wildlife Service	Working with private landowners and tribes to remove obsolete/dangerous dams and working with transportation agencies to improve road stream crossings. \$200 million in funding from the bipartisan infrastructure law over the next five years. Six projects in Washington have received funding for culvert replacement and fish passage barrier removal.
Watershed and Flood Prevention Operations Program <sup>6</sup>	Federal; USDA Natural Resource Conservation Service	Technical and financial assistance to states, local governments, and tribes (project sponsors) for watershed protection projects. Project sponsors can then leverage NRCS assistance to help landowners implement the projects. Types of projects include fish and wildlife enhancement.
Washington Coast Restoration and Resiliency Initiative <sup>7</sup>	State; Recreation and Conservation Office	Grants of up to \$2 million for specific coastal communities to address restoration and resiliency projects. Eligible applicants include cities, counties, conservation districts, private or public corporations, tribes, nonprofits, and state and federal agencies.
Estuary and Salmon Restoration Program <sup>8</sup>	State; WDFW	Funding and technical assistance for organizations restoring shoreline and nearshore habitats for salmon restoration. Small grants ranging from \$30,000 to \$150,000 are available for local engagement and restoration projects.
Conservation District Resources <sup>9</sup>	State; Conservation Commission	Various grant and cost-share programs through conservation districts, including reimbursement for cultural resources surveys and monitoring, which may be required for some fishways projects.

<sup>1</sup> <https://wdfw.wa.gov/about/advisory/fbrb>; <https://ecology.wa.gov/Blog/Posts/September-2021/Up-To-40-million-available-for-streamflow-restora>.

<sup>2</sup> <https://www.dnr.wa.gov/fffpp>; <https://rco.wa.gov/grant/family-forest-fish-passage-program/>.

<sup>3</sup> <https://rco.wa.gov/grant/salmon-recovery/>.

<sup>4</sup> <https://www.fisheries.noaa.gov/grant/restoring-fish-passage-through-barrier-removal-grants>.

<sup>5</sup> <https://www.fws.gov/program/national-fish-passage>; <https://www.arcgis.com/apps/dashboards/99040e452de9487f80d9f5748f717880>.

<sup>6</sup> <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo/>; <https://www.nrcs.usda.gov/wps/portal/nrcs/main/ma/programs/planning/wo/>.

<sup>7</sup> <https://rco.wa.gov/grant/washington-coast-restoration-and-resiliency-initiative/>.

<sup>8</sup> <https://wdfw.wa.gov/species-habitats/habitat-recovery/puget-sound/esrp-esrp-grants>.

<sup>9</sup> <https://www.scc.wa.gov/cd/grants-contracts-and-finance>.

Additionally, RCW 19.85.030(2) specifies particular options that the agency must consider in mitigating rule costs. Exhibit 2-8 identi-

fies each type of cost mitigation opportunity and how WDFW has considered them during this rule-making process.

**EXHIBIT 2-8. WDFW ASSESSMENT OF COST MITIGATION OPPORTUNITIES OUTLINED IN RCW 19.85.030**

RCW 19.85.030(2) REQUIREMENTS	WDFW RESPONSE
(a) Reducing, modifying, or eliminating substantive regulatory requirements	Two exemptions (agricultural drainage system components installed on or before May 20, 2003, and lawful diversions installed on or before June 11, 1947, in waters containing game fish) are likely to eliminate a large number of small businesses from rule requirements.
(b) Simplifying, reducing, or eliminating recordkeeping and reporting requirements	The rule does not introduce any new recordkeeping or reporting requirements.
(c) Reducing the frequency of inspections	WDFW will limit the criteria that trigger a technical assistance or compliance visit, focusing on high priority projects.
(d) Delaying compliance timetables	
(e) Reducing or modifying fine schedules for noncompliance	The rule does not authorize fines, and to the contrary, introduces a graduated system of technical assistance and voluntary compliance options that may be exercised before WDFW resorts to mandatory compliance measures. Following inspection, WDFW can opt to take no action.
(f) Any other mitigation techniques, including those suggested by small businesses or small business advocates	WDFW will direct owners toward existing cost mitigation resources (e.g., grant programs) and is considering a revolving loan program to assist owners achieve compliance.

Many remaining costs associated with the rule, including costs to small businesses, do not readily lend themselves to legal or feasible reductions that are consistent with the clear objectives of chapter 77.57 RCW. The statutes on which the rules are based require fish passage and appropriate screening of diversions, which will impose some unavoidable costs notwithstanding these mitigation efforts.

**2.6 INVOLVEMENT OF SMALL BUSINESSES IN RULE-MAKING PROCESS:** This section describes how WDFW has sought to engage affected parties, including small businesses, in the rule-making process, and how small businesses were involved in the development of the SBEIS.

**2.6.1 INVOLVEMENT IN THE PRESENT RULE MAKING:** The proposed rule targets fish passage and screening activities throughout Washington state and does not directly regulate a specific industry or group of businesses. Additionally, the rule does not target specific landowners. Due to the rule's broad nature and numerous fish passage and water diversion structures throughout the state, identifying small business owners has been difficult, especially with available data. To ensure due consideration of potential effects on small businesses, WDFW took a broad approach to outreach, communicating the objectives of the rule proposal and soliciting input through virtual presentations. News releases and social media notifications were also used to publicize rule-making activities. This provided opportunities for potentially affected small businesses to be involved in the rule proposal process. The outreach activities and events to date are summarized in Exhibit 2-9.

**WDFW OUTREACH ACTIVITIES FOR PROPOSED RULE**

DATE	ACTIVITY
June 23 and July 1, 2020	Tribal technical workshop presentation on existing WDFW fish passage and screening processes and to take comments about the direction of rule development
July 1, 2020	CR-101, preproposal statement of inquiry, published (filed on June 17, 2020)
July 20, 2020	News release
July 29, 2020	General public technical workshop presentation on existing WDFW fish passage and screening processes and to take comments about the direction of rule development
February 10, 2021	Tribal policy webinar to review the initial draft rule proposal and take comments
February 16, 2021	News release

DATE	ACTIVITY
February 26, 2021	General public policy webinar to review the initial draft rule proposal and take comments
October 11, 2022	News release
October 18, 2022	Tribal second policy webinar to review the updated draft rule proposal and take comments
October 25, 2022	General public second policy webinar to review the updated draft rule proposal and take comments

In addition, WDFW has attempted to identify and directly contact affected industries for engagement. For example, employees at the Washington Forest Protection Association were emailed regarding the October 25, 2022, policy webinar and were encouraged to provide feedback regarding the draft rule language. More recently, WDFW has engaged with the department of agriculture (DOA) to work with their affected stakeholders. WDFW has accepted public comments via email, phone, fax, and mail since the first news release on July 20, 2020. In 2021, WDFW began to offer a dedicated public input website for additional comments and feedback. There has been minimal engagement from self-identified business owners.

**2.6.2 INVOLVEMENT IN SBEIS DEVELOPMENT:** As described previously, because this rule making does not regulate a specific industry or group of businesses, it was not possible to systematically identify and target outreach activities at businesses in general, and small businesses in particular, that may incur costs as a result of the rule. IEC did, however, conduct several interviews with state agencies and other groups who interact directly and regularly with the two industries most likely to own structures based on the scale of their landholdings (agriculture and forestry). These included representatives from conservation districts, DOA, Washington state department of natural resources, and the Washington state water resources association. A complete description of the outreach activities conducted to support this analysis is included in Attachment A.

**2.7 JOBS CREATED OR LOST:** Increased compliance will drive an increase in demand for all services related to replacing or modifying diversion screens and fishways (e.g., permitting, engineering, design, construction). For example, several interviewees mentioned firms manufacturing precast concrete structures (i.e., box culverts) as potential beneficiaries. To the extent that increased demand for these products and services results in firms hiring additional staff, that creation of jobs could be considered an indirect effect of the rule. However, whether this would occur, and the number of businesses or jobs affected, is uncertain. On a related note, several interviewees also indicated that there is currently a lack of professional capacity in the state to perform the relevant services. The effect of the proposed rule on job losses is also uncertain. Compliance costs are highly variable, but they can potentially be significant. Imposing significant costs on any business carries a risk of job loss. At the same time, WDFW has taken many steps and identified many opportunities to mitigate the costs to owners. Coupled with WDFW's stated intention of prioritizing the highest impact projects, it is unlikely that the proposed rule will result in significant job losses.

**2.8 SUMMARY CONCLUSIONS:** The proposed rule targets structures on the landscape posing an impediment to fish passage and safety. These structures can theoretically be owned by businesses from any industry, although businesses within some industries (e.g., agriculture and for-

estry) are more likely to own relevant structures due to the nature of their business and their large landholding. Regardless, only a portion of any structures owned by businesses will be impacted by the rule.

Compliance costs stemming from the rule are expected to range widely depending on a number of factors. They may be as low as \$100 for a small pump diversion screen to over \$6 million for a complicated bridge design. Compliance cost variation, coupled with variation between industry in the minor cost threshold, suggests that the costs are likely to be more than minor in some but not all cases.

Finally, within any industry and for any particular project, the costs are expected to disproportionately impact small businesses. This is because no known relationship exists between drivers of project costs and business size, so cost per \$100 of revenue, cost per employee, or cost per labor hour will almost certainly be higher for small businesses. Given the findings outlined above, WDFW has identified several actions intended to mitigate the impacts to small businesses.

**REFERENCES: LEGAL AND POLICY DOCUMENTS:** Chapters 19.85, 76.09, 77.55, 77.57, 87.03 RCW and chapter 220-660 WAC.

*Washington v. United States*, 584 U.S. \_\_\_\_ (2018)

**PEER REVIEWED RESEARCH:**

Bernhardt E.S., et al. 2007. "Restoring Rivers One Reach at a Time: Results from a Survey of U.S. River Restoration Practitioners." Restoration Ecology.

Van Deynze, B., et al. 2022. "What influences spatial variability in restoration costs? Econometric cost models for inference and prediction in restoration planning." Biological Conservation.

Wilhere, G., et al. 2017. "Incorporating climate change into culvert design in Washington State, USA." Ecological Engineering.

**TECHNICAL REPORTS AND OTHER NON-PEER REVIEWED RESEARCH:**

Blachly, B. and E. Uchida. 2017. "Estimating the marginal cost of dam removal." Environmental and Natural Resource Economics Working Papers. University of Rhode Island.

Cascadia Consulting Group. 2018. "Southern Resident Orca Task Force: Report and Recommendations." Accessed October 20, 2022 at: [https://www.governor.wa.gov/sites/default/files/OrcaTaskForce\\_reportandrecommendations\\_11.16.18.pdf](https://www.governor.wa.gov/sites/default/files/OrcaTaskForce_reportandrecommendations_11.16.18.pdf).

Wilhere, G., et al. 2017. "Incorporating Climate Change into the Design of Water Crossing Structures - Final Project Report." Washington Department of Fish and Wildlife.

A copy of the statement may be obtained by contacting Gabrielle Stilwater, P.O. Box 43200, Olympia, WA 98504-3200, phone 564-999-0768, fax 360-902-2946, Attn: Gabrielle Stilwater, TTY 360-902-2207, email FishPassageRules@dfw.wa.gov, <https://wdfw.wa.gov/species-habitats/habitat-recovery/fish-passage/rule-making>.

July 17, 2023  
Scott Bird  
Rules Coordinator

OTS-4699.3

**Chapter 220-670 WAC  
FISHWAY AND SCREENING RULES**

NEW SECTION

**WAC 220-670-010 Purpose.** The ability of salmon and steelhead to migrate to and from their traditional spawning grounds is vital to their recovery in Washington. Additionally, other fish species and the freshwater life stages of juvenile salmon move between different areas of the stream to find suitable habitat. Barriers such as deteriorating or outdated fishways and water diversions block fish from swimming upstream and moving within the stream, undermining recovery efforts. Two actions crucial to fish recovery are correcting human-made fish passage barriers and properly screening surface water diversions to enable safe upstream and downstream passage for all fish at all life stages.

This chapter establishes rules for the department's fish passage and screening authorities under chapter 77.57 RCW.

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NEW SECTION**WAC 220-670-020 Instructions for using chapter 220-670 WAC.**

This chapter defines passability and protection standards for fishways and fish guards, and with respect to those structures, provides for the protection of fish life at all life stages. These rules are intended to be used in tandem with chapter 220-660 WAC, Hydraulic code rules. The hydraulic code rules contain guidance for the construction or performance of hydraulic projects that will use, divert, obstruct, or change the natural flow or bed of any salt or fresh waters of the state. Both chapters reflect the current and best science, technology, and construction practices related to fish protection.

The department will consider new science and technology as it becomes available and will allow alternative practices that provide equal or greater protection for fish life. In addition to the rules in this chapter, the department has developed guidance to help owners of fishways and water diversions understand and comply with fishway and screening requirements. The guidance reflects the department's experience and expertise with various types of structures. Following the guidance will help ensure that a structure will adequately protect and pass fish. All guidance documents are available on the department's website.

[]

NEW SECTION

**WAC 220-670-030 Definitions.** The following are definitions for terms used in this chapter:

(1) "Bankfull width" means the width of the surface of the water at the point where water just begins to overflow into the active flood plain. In streams where there is no flood plain, it is often the width of a stream or river at the dominant channel forming flow that recurs every one to two years.

- (2) "Climate adapted water crossing" means a water crossing structure for which the design has been modified to accommodate changes in the stream flow and/or channel shape caused by future climate change.
- (3) "Department" means the department of fish and wildlife.
- (4) "Director" means the director of the department of fish and wildlife.
- (5) "Ditch" means a wholly artificial watercourse or a lake, river, or stream altered by humans.
- (6) "Diversion" means to divert water from one course to another. Diversion, when used without qualification, includes the diversion of surface water and the withdrawal of groundwater.
- (7) "Diversion structure" means any structure that functions to facilitate withdrawal of water from the natural watercourse.
- (8) "Emergency" means an immediate threat to life, the public, property, or of environmental degradation.
- (9) "Entrained" means the entrapment of fish into a watercourse diversion that has no screen, into high velocity water along the face of an improperly designed screen, or into the vegetation cut by a mechanical harvester.
- (10) "Fish" means all fish species, including food fish, shellfish, game fish, unclassified fish and shellfish species, and all stages of development of those species.
- (11) "Fish guard" means a device installed at or near a surface water diversion headgate, or on the intake of any device used for removing water from fish-bearing waters, to prevent entrainment, impingement, injury, or death of fish life. Fish guards physically keep fish from entering the diversion or intake and do not rely on avoidance behavior.
- (12) "Fish habitat" or "habitat that supports fish life" means habitat, which is used by fish life at any life stage at any time of the year including potential habitat likely to be used by fish life, which could reasonably be recovered by restoration or management and includes off-channel habitat.
- (13) "Fish passage improvement structure" means artificial structures that are used to provide passage through, over, and/or around artificial barriers. They provide a graduated change in gradient with refuge areas allowing for fish to pass barriers.
- (14) "Fish screen" means fish guard.
- (15) "Fishway" means a structure, facility, or device that is designed to enable fish to effectively pass around or through an obstruction without undue stress or delay. They are generally known as "water crossing structures" or "fish passage improvement structures."
- (16) "Game fish" is defined by RCW 77.08.020.
- (17) "Hydraulic project" means the construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state.
- (18) "Impinge" or "impingement" means the condition where a fish comes in contact with the surface of a screen and cannot volitionally escape. This occurs when the approach velocity exceeds the swimming capability of a fish given the screen size and condition.
- (19) "Lake" means any natural standing fresh waters or artificially impounded natural fresh waters of the state, except impoundments of the Columbia and Snake rivers.
- (20) "Maintenance" means repairing, remodeling, or making minor alterations to a facility or project to keep the facility or project in properly functioning and safe condition.



(21) "Mitigation" means sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts to fish life or habitat that supports fish life.

(22) "Ordinary high water line" or "OHWL" means the mark on the shores of all water that will be found by examining the bed and banks and ascertaining where the presence and action of water are so common and usual, and so long continued in ordinary years as to mark upon the soil or vegetation a character distinct from the abutting upland. Provided, that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater is the line of mean higher high water and the ordinary high water line adjoining fresh water is the elevation of the mean annual flood.

(23) "Person" means a structure owner, the owner's agent, or the person in charge of operating the structure. The term person includes an individual, a public or private entity, or organization.

(24) "Protection of fish life" means avoiding, minimizing unavoidable impacts, and compensating for remaining impacts to fish life and the habitat that supports fish life through mitigation sequencing.

(25) "Rehabilitation" means major work required to restore the integrity of a structurally deficient or functionally obsolete structure. This can include partial replacement of a structure.

(26) "Replacement" means the complete removal of an existing structure and construction of a substitute structure in the same location.

(27) "River" means "watercourse."

(28) "Tide gate" means a one-way check valve that prevents the backflow of tidal water.

(29) "Unimpeded fish passage" means the free movement of all fish species at any mobile life stage around or through a human-made or natural structure.

(30) "Water crossing structures" means structures that span over, through, or under a water course. Examples are bridges, culverts, and conduits.

(31) "Water right" means a certificate of water right, a vested water right or claim to a valid vested water right, or a water permit, under Title 90 RCW.

(32) "Watercourse," "river," or "stream" means any portion of a stream or river channel, bed, bank, or bottom waterward of the ordinary high water line. Watercourse also means areas in which fish may spawn, reside, or pass, and tributary waters with defined bed or banks that influence the quality of habitat downstream. Watercourse also means waters that flow intermittently or that fluctuate in level during the year, and the term applies to the entire bed of such waters whether the water is at peak level. A watercourse includes all surface-water-connected wetlands that provide or maintain habitat that supports fish life. This definition does not include irrigation ditches, canals, stormwater treatment and conveyance systems, or entirely artificially watercourses, except where they exist in a natural watercourse that has been altered by humans.

(33) "Written notice" or "written notification" means a communication sent through U.S. mail or email.

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NEW SECTION

**WAC 220-670-040 Applicability of fish passage and screening authority.** (1) The standards of this chapter apply to the following structures and circumstances:

(a) Performance standards:

(i) Ensuring that all fish species at all life stages can freely move through and/or around fishways.

(ii) Ensuring that all fish species at all life stages are safe from diversion structures that may harm or cause entrainment or impingement.

(b) Projects:

(i) All new fishways and diversion structures connecting to a lake, stream, or river.

(ii) The repair or replacement of existing noncompliant fishways and diversion structures connecting to a lake, stream, or river.

(2) The provisions of this chapter do not apply to the following:

(a) Tide gates, flood gates, and associated human-made agricultural drainage facilities that were originally installed as part of an agricultural drainage system on or before May 20, 2003, or the repair, replacement, or improvement of such tide gates or flood gates.

(b) Lawful diversions of water from a lake, stream, or river that

(i) contain game fish exclusively (do not contain food fish), and (ii) were installed on or prior to June 11, 1947.

(3) For fishways and water diversion devices in existence on September 1, 1963, or before, the director may authorize removal, relocation, reconstruction, or other modification of an inadequate fishway or fish screen without cost to owner. The fishway or diversion structure will be maintained at the expense of the owner.

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NEW SECTION**WAC 220-670-050 Standards for fishways and water diversions.**

This section requires fish passage through obstructions and appropriate screening of water diversions. The standards of this section are intended to ensure protection and passability for fish at all life stages.

(1) **Water crossing structures.** This subsection applies only to water crossing structures over fish-bearing lakes, streams, and rivers.

(a) **Description:** Water crossing structures are built to facilitate the movement of people, animals, or materials across or over rivers and other water bodies. These structures include bridges, culverts, and conduits.

(b) **Fish life concerns:** Water crossing structures in fish-bearing streams must allow fish to move freely through them at all flows when fish are expected to move. All water crossing structures must retain upstream and downstream connection to maintain fish habitat and provide unimpeded fish movement. Structures that are not designed to accommodate current and future flows can block or alter these processes. Growing evidence shows that climate change is impacting our region's aquatic systems. Washington's hydrology is changing, including reductions in glaciers and snowpack size and earlier peak stream flow in

many rivers. Most freshwater fish species can only survive in certain water temperature ranges or stream flow conditions. Climate change can threaten aquatic ecosystems by altering these conditions including increasing stream temperature, altering stream flow due to drought or increased storms, and worsening other stressors. These trends are expected to continue, along with increasing flood size and decreasing summer low flows. Typically, the size of water crossing structures like culverts and bridges is based on bankfull width. As the size of floods increases, water crossing sizes must also increase. Culverts are generally designed to last 50 to 100 years under current stream conditions. Designing culverts to be resilient to future changes in stream conditions will reduce the risk of structural failure and the creation of fish passage barriers.

(c) **Standards:**

(i) Water crossing structures must provide unimpeded passage for all species of adult and life history stages of fish. Passage is assumed when there are no barriers due to behavioral impediments, excessive water slope, drop or velocity, shallow flow, lack of surface flow, and other related conditions. Fish passage improvement structures will only be approved where (A) extreme and unusual site conditions prevent a person from complying with the standards in this section and (B) associated impacts are adequately mitigated.

(ii) Projections of future 100-year peak flow and future bankfull width shall be fully considered in the design of water crossing structures, and, taking those projections into account, water crossing structures must be capable of freely passing all species and life histories of fish expected to be present in that system. To determine the future bankfull width and future 100-year peak flow, a person must use (A) the department's Culverts and Climate Change web application located on the department's website, or (B) another method approved by the department. If the projected change in bankfull width and 100-year peak flow is less than five percent, further consideration of future bankfull width and future peak flow is not required in the design of the water crossing structure.

(iii) Climate adapted water crossings must still follow the rules provided elsewhere in this chapter and in chapter 220-660 WAC. Appropriate methods to design water crossing structures are available in the department's *Water Crossing Design Guidelines*, or other published manuals and guidelines approved by the department. A list of approved manuals and guidelines is on the department's website.

(iv) Methods and guidance to initially determine if the fishway can freely pass fish can be found within the fish passage inventory and assessment guidance on the department's website. The fish passage inventory and assessment guidance should be considered along with the site-specific metrics listed above.

(d) **Existing water crossing structures:** Structures that were in existence on or before the adoption of this chapter that were legally installed are not required to consider projections of future bankfull width and future 100-year peak flows unless being rehabilitated or replaced, so long as they function as originally intended, have not exceeded their useful life, and are not otherwise required to be replaced relative to an existing agreement.

(2) **Fish passage improvement structures.** The standards in this subsection apply to fish passage improvement structures, including fish ladders, weirs constructed for fish passage management, roughened channels, trap-and-haul operations, and hydraulic design culvert retrofits.

(a) **Description:** Fish passage improvement structures facilitate the passage of fish through or around a barrier. They restore upstream and downstream fish access to habitats that have become isolated by human activities such as placing culverts, dams, and other artificial obstructions.

(b) **Fish life concerns:** Barriers can block fish from using or accessing upstream or downstream spawning and rearing habitat. The preferred method of providing fish passage is to remove artificial fish passage barriers and ensure unimpeded passage of fish at all life stages, as well as to maintain natural channel processes and function. However, when it is not feasible to remove an artificial barrier, a fish passage improvement structure may be an alternative mitigation measure. Fish passage improvement structures are generally not preferred because they can be partial barriers to fish passage and generally require regular maintenance to provide fish passage as intended. Fish passage improvement structures that mainly pass one species, life history stage, or class of fish may unintentionally limit the passage of other species.

(c) **Standards:**

(i) Fish passage improvement structures, such as fish ladders, must not accumulate sediment, ice, and debris at the downstream entrance, or upstream exit of the structure that could impact flow or passage.

(ii) The fish passage structure must not result in significant migratory delays as determined by the department or mortality to fish life due to disorientation, distraction, predation, stress, or injury.

(iii) Water must adequately flow through the structure at a reasonable velocity for the species and life history stages that are expected to be present in that system.

(iv) Any water surface drop present at a fish passage improvement structure must not exceed .24 meters at any of the controls to be fully passable.

(v) Fish passage improvement structures should not be used to bypass permanent natural barriers except in limited situations where the department determines they are necessary to restore native fish species.

(vi) Methods and guidance to initially determine if the fish passage improvement structure can pass fish can be found within the fish passage inventory and assessment guidance on the department's website. The fish passage inventory and assessment guidance should be considered along with the site-specific metrics listed above.

(3) **Water diversions.** This subsection applies to water diversions and fish guards. For diversions and fish guards in wholly artificial waterways, the provisions in this section match those of WAC 220-660-250 to ensure consistent design and construction of diversions and screens.

(a) **Description:** Surface water diversions are common instream features in agricultural areas where the water is used for irrigation. Throughout the state, people also divert water for hydropower, industrial, recreational, residential, municipal, and hatchery uses. A water right must be obtained by the Washington department of ecology prior to diverting waters of the state.

(b) **Fish life concerns:** Surface water diversions must be appropriately screened to prevent fish from being drawn into the diversions where they are at risk of injury or death from entrainment and/or impingement. Other elements of a water diversion can result in direct and indirect sources of injury or mortality. Wing and check dams can

prevent or delay upstream and downstream fish passage, increase predation, and fish may be physically injured or dewatered by active cleaning mechanisms or bypass mechanisms.

(c) **Standards:** Diversion structures must be designed and maintained so that fish are unharmed if fish life is present at a diversion or water intake. Effective fish screening is assumed when a given fish screen has appropriately sized screen material and approach velocities, no apparent damage, such as holes, dents, or corrosion, and there is no accumulation of woody, vegetative, or other debris near the screen when the device is in use. Fish screen design criteria and methods to initially determine if the diversion structure is protecting fish is described in the fish passage inventory and assessment guidance on the department's website. The fish passage inventory and assessment guidance should be considered along with the site-specific metrics listed in this section.

(d) **Water diversion design, construction, operation, and maintenance:**

(i) A diversion structure must not hinder upstream or downstream adult and juvenile fish passage. If passage problems develop, the department may require a person to modify the diversion structure.

(ii) At pump stations, screens, and headgate areas, a person may use excavation equipment or suction dredge to remove accumulated silts and gravel from within 20 feet of the point of diversion unless otherwise permitted. Place material must be removed from the OHWL so it will not reenter a lake, river, or stream. The water diversion must be open during this work to capture disturbed sediment within the irrigation diversion and minimize loss of sediment into the stream.

(iii) A person must equip and maintain any device used for diverting water from a fish-bearing watercourse with a fish screen approved by the department to prevent passage, entrainment, or impingement of fish into the diversion structure. A person must maintain the fish screen and associated structures as necessary to achieve the appropriate approach velocity, a functional bypass, and fish protection criteria. Methods and guidance to initially determine if the diversion structure is protecting fish life can be found within the fish passage inventory and assessment guidance on the department's website. The fish passage inventory and assessment guidance should be considered along with the site-specific metrics listed in this section.

(iv) Irrigation diversions must not create blind diversion channels leading to the fish screen. Diversions must be equipped with a fish bypass mechanism to provide opportunity for fish entrained within a delivery canal to volitionally return to the stream.

(v) Gravity diversions:

(A) Wing and check dams.

(I) Prior to constructing a wing or check dam, a person must contact the department for opportunity to assess the site and determine whether active spawning and incubation is occurring at the site.

(II) A person must maintain diversion canals to maximize hydraulic gradient in the diversion canal to minimize the need for work within the natural watercourse. Maintenance includes removing accumulated sediment and debris from the point of diversion.

(III) Unless a permanent structure is approved, temporary wing or check dams for irrigation may be constructed using a combination of local bed materials, jersey barriers, concrete blocks, steel posts and wood, pinned straw bales, plastic sheeting, and similar inert materials.

(IV) Where gravel dams are permitted, they must be constructed with gravels available on-site waterward of the ordinary high water line, or with clean round gravel transported to the site. Limit bed disturbance to the minimum needed to achieve the provisions of the water right.

(V) Bed excavation depth to construct an irrigation diversion must not exceed 18 inches unless otherwise approved by the department to avoid destabilizing the streambed.

(VI) Earth or dirt must not be used to seal check or wing dams. Straw, plastic sheeting, filter fabric, and similar inert materials may be used to seal wing or check dams.

(VII) Do not use logs or other woody material waterward of the ordinary high water line to construct the dam unless approved by the department. Large wood from upland locations may be used to create a wing or check dam.

(VIII) If logs or other large woody material block water flow into a ditch or inhibit construction, a person may relocate them within the ordinary high water line.

(IX) Wing or check dams must be constructed in a manner that does not cause bank erosion.

(X) All foreign materials, except clean or native gravel or large woody material, used to construct wing or check dams must be removed within seven days after the end of the irrigation season.

(B) Diversion dams must not extend completely across the stream unless needed to seal the dam to achieve the water right.

(C) Temporary water control structures must be removed or breached down to the natural bed elevation in at least two locations at the end of the irrigation season. Temporary water control structures include, but are not limited to, gravel berms or temporary check structures made from hay bales, wood, metal, or other materials.

(vi) Start-up and shut-down of water diversions.

(A) A person must clean and maintain the fish bypass mechanism of all roots, sediments, vegetation, and debris prior to diverting water to ensure it is operational and will prevent injury or stranding of fish life.

(B) A person must ensure that there is sufficient flow within the bypass mechanism to safely return fish life from the fish screen to state waters.

(C) If at any point during water diversion there is insufficient instream flow to provide opportunity for fish life to migrate downstream of the bypass outlet, a person must close the fish bypass until there is sufficient flow.

(D) A person must slowly ramp down flows at the end of the irrigation season in a manner that prevents stranding or predation of fish life within a canal above the fish screens or within the fish bypass mechanism. Do not close the headgate completely or remove the diversion structure until fish have either left the canal and bypass or are salvaged and returned to the stream. Headgates located downstream of the fish screen may be closed immediately at the end of the irrigation season.

**(e) Limit of department authority over water diversions and intakes:**

(i) The department cannot limit emergency water diversions during emergency fire response. When possible, a person must notify the department before the emergency diversion. When advance notification is not possible, a person must notify the department within 24 hours of

the emergency diversion, at the 24-hour hotline phone number at 360-902-2537.

(ii) The department cannot limit the amount or timing of water diverted under a water right, other than ensuring that there is sufficient bypass flow to return fish back to the stream of origin from a water diversion. However, the department requires compliance with the provisions within chapter 220-660 WAC for work that will use, divert, obstruct, or change the natural flow or bed of any lake, river, or stream, or that will utilize any of the waters of a lake, river, or stream to divert water under a water right. The department also requires compliance with the provisions of this chapter to ensure adequate fish passage and/or protection at a water diversion site.

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#### NEW SECTION

##### **WAC 220-670-060 Compliance with chapter 220-670 WAC standards.**

A person must comply with all applicable standards of chapters 77.57 and 77.55 RCW, and this chapter. The department will help the regulated community understand how to voluntarily comply through education and technical assistance.

When a person does not voluntarily comply, the department may progressively elevate enforcement responses to achieve a compliant structure. The type of enforcement actions range from issuing a voluntary correction request, to issuing a mandatory notice to comply and, when appropriate, civil and/or criminal enforcement actions, such as injunctive relief or criminal prosecution. This section outlines the enforcement tools available to WDFW to facilitate compliance with chapter 77.57 RCW and this chapter.

(1) **Voluntary compliance:**

(a) "Voluntary compliance" means an act of following a rule or law, or of acting according to an agreement without being forced to comply.

(b) For the construction of a new fishway, diversion, or fish screen, or rehabilitation, replacement, or maintenance of an existing fishway, diversion, or fish screen, a person must obtain a construction permit called the hydraulic project approval (HPA) from the department when applicable. Procedures for an HPA can be found in chapter 220-660 WAC.

(c) At proposed or existing structure locations where an HPA is not required, the department may request a structure owner enter into an agreement to ensure the construction of a new fishway, diversion, or fish screen, or the rehabilitation, replacement, or maintenance of an existing fishway, diversion, or fish screen is done in a manner that protects fish life. In the absence of such an agreement, the department will assess compliance with the requirements of chapter 77.57 RCW and this chapter independently. The agreement must protect fish life as follows:

(i) Technical provisions in the agreement must meet requirements within this chapter for fishways and water diversions; and

(ii) The provisions in the agreement may include the proposed project plans for meeting the requirements of this chapter and a narrative that includes detail on construction materials, timing, inva-

sive species control, pre- and post-construction notifications, clean up, and other considerations specific to the site and project.

(2) **Technical assistance program:** The department will continue to develop programs to encourage voluntary compliance. These programs include technical assistance visits, printed information, information and assistance by telephone, training meetings, and other appropriate delivery methods of technical assistance. Technical assistance includes:

(a) Information on the laws, rules, and compliance methods and technologies applicable to the department's programs;

(b) Information on methods to avoid compliance problems;

(c) Assistance in applying for required department permits; and

(d) Information on the mission, goals, and objectives of the program.

(3) **Technical assistance site visit:**

(a) A technical assistance visit is defined as a visit by the department to a project site or other location that:

(i) Has been requested or is voluntarily accepted; and

(ii) The department declares to be a technical assistance visit at the start of the visit.

(b) If during a technical assistance visit the department identifies any violations of law or department rules, the department will inform the person of the violation, including a description of what is not in compliance and how to achieve compliance during the visit or within a reasonable time thereafter. The technical assistance visit may result in a correction request or notice to comply.

(c) The department may issue a notice to comply under this section without first issuing a correction request when a violation is observed during a technical assistance visit if:

(i) The person has previously been notified for the same or similar type of violation under chapter 77.57 or 77.55 RCW; or

(ii) The violation has a probability of causing more than minor harm to fish life.

(4) **Compliance inspections:** If the department becomes aware of conditions that do not comply with the applicable laws and rules enforced by the department, the department may conduct a compliance inspection site visit.

(a) During a compliance inspection the department may issue a correction request or notice to comply. If the department identifies any violations of law or department rules, the department will inform the fishway or diversion structure owner of the violation, including a description of what is not in compliance and how to achieve compliance during the visit or within a reasonable time thereafter.

(b) The department recognizes the high volume of existing fish passage and diversion structures throughout Washington. When prioritizing compliance inspection site visits, prioritizing the deployment of compliance resources, and determining the appropriate enforcement response to a violation, the department will consider the nature of the fish resources impacted by the existing noncompliant structure as well as the quality and quantity of associated habitat.

(c) The department will also consider the following when determining the appropriate enforcement response to a violation:

(i) Previous violation history of the person;

(ii) Severity and repairability of the impact of the violation(s) on fish life;

(iii) Whether the violation(s) was intentional; and



(iv) The extent, if any, to which the person has cooperated or is cooperating with the department in addressing the violation(s) and its impact on fish life.

(5) **Compliance pathways:**

(a) **Correction request:**

(i) A correction request is an informal written request issued to a fishway owner, the owner's agent, or the person in charge, or the diversion structure owner, which can be used to gain compliance and communicate violations discovered during a technical assistance site visit or compliance inspection.

(ii) When issuing a correction request, the department must provide for a reasonable time to achieve compliance.

(iii) Contents of a correction request: A correction request must include:

(A) A description of what is not in compliance with chapter 77.57 RCW or this chapter;

(B) The text of the specific section(s) or subsection(s) of chapter 77.57 RCW or this chapter;

(C) A statement of what is required to achieve compliance;

(D) The date by which the fishway or fish screen owner must achieve compliance;

(E) Notice of the means to obtain technical assistance services provided by the department or others; and

(F) Notice of when, where, and to whom a request may be submitted to the department to extend, for good cause, the deadline for achieving compliance with the correction request.

(iv) The correction request may request the structure owner to enter into an agreement with the department in order to correct a non-compliant structure. The agreement must protect fish life as follows:

(A) The agreement must specify the corrective action to be taken and may also require additional action to avoid, minimize, and rectify for adverse impacts to fish life associated with the corrective action;

(B) Technical provisions in the agreement must meet requirements within this chapter for fishways and water diversions; and

(C) The provisions in the agreement must include the proposed project plans for meeting the requirements of this chapter and a narrative that includes detail on construction materials, timing, invasive species control, pre- and post-construction notifications, clean up, and other considerations specific to the site and project.

(v) The department must provide for a reasonable time to achieve compliance.

(vi) Time extension to comply: A request for an extension of the deadline for achieving compliance with the correction request must be submitted to the department in writing. The department must respond in writing to a request for extension of the deadline.

(vii) A correction request is not a formal enforcement action and is not subject to appeal under WAC 220-670-070 or 220-670-080.

(viii) The department may issue a notice to comply without first issuing a correction request when a violation is observed if:

(A) The person has previously been notified for the same or similar type of violation under chapter 77.57 or 77.55 RCW; or

(B) The violation has a probability of causing more than minor harm to fish life.

(b) **Notice to comply:**

(i) If a correction request does not effectuate full compliance with chapter 77.57 RCW and this chapter, the person has previously

been subject to an enforcement action for the same or similar type of violation under chapter 77.57 or 77.55 RCW, or there is probability a violation may cause more than minor harm to fish life, the department may issue a notice to comply to the structure owner.

(A) A notice to comply must specify the corrective action to be taken, and may also require additional action to avoid, minimize, and rectify adverse impacts to fish life associated with the corrective action.

(B) Contents of a notice to comply. A notice to comply must include:

(I) A description of the condition that is not in compliance with chapter 77.57 RCW and/or this chapter;

(II) The text of the specific section(s) or subsection(s) of chapter 77.57 RCW and/or this chapter;

(III) A statement of what is required to achieve compliance;

(IV) The date by which the department requires compliance to be achieved;

(V) Notice of the means to obtain any technical assistance services provided by the department or others;

(VI) Notice of when, where, and to whom a request may be submitted to the department to extend, for good cause, the deadline for achieving compliance with the order; and

(VII) The right to appeal.

(ii) The department must provide for a reasonable time to achieve compliance, which shall not be less than 30 days.

(iii) Signature authority for a notice to comply: A notice to comply must be authorized by a regional habitat program manager, regional director, habitat program division manager, habitat program director, habitat program deputy director, or department director.

(iv) Providing notice: Within five business days of issuing a notice to comply, the department must mail a copy of the notice to the last known address of the structure owner or, at the department's option if the structure is a fishway or requires a fishway, to the last known address of the owner's agent or the person in charge of operating the structure. Within five business days of issuing a notice to comply, the department must also mail a copy of the notice to the local jurisdiction in which the fishway or diversion structure is located.

(v) Consequences of noncompliance: Failure to comply with a notice to comply can result in subsequent civil or criminal enforcement actions.

(vi) Time extension to comply: A request for an extension of the deadline for achieving compliance with the notice to comply must be submitted to the department in writing. The department must respond in writing to a request for extension of the deadline.

(vii) Appealing a notice to comply: A notice to comply may be appealed within 30 days from the date of receipt of the notice by the structure owner. Informal appeals must be filed in the form and manner provided in WAC 220-670-070 and formal appeals must be filed in the form and manner provided in WAC 220-670-080.

(c) **Additional responses to noncompliance:**

(i) The department may initiate additional civil or criminal enforcement actions in circumstances where a structure owner has failed to comply with a notice to comply.

(ii) Civil or criminal enforcement action may include any remedy available under Washington law, specifically including, but not limited to:

(A) An action for injunctive relief to abate a noncompliant obstruction or diversion structure as a public nuisance.

(B) Reporting the violation to law enforcement as a gross misdemeanor under RCW 77.15.310.

(C) Reporting the violation to law enforcement as a gross misdemeanor under RCW 77.15.320.

(D) Department removal of obstruction(s) and construction of fishway(s).

(I) If a person fails to construct and maintain a fishway or to remove the dam or obstruction in a manner satisfactory to the director, then within 30 days after written notice to comply has been served upon the owner, their agent, or the person in charge, the director may construct a fishway or remove the dam or obstruction. Expenses incurred by the department constitute the value of a lien upon the dam or obstruction and upon the personal property of the person owning the dam or obstruction. Notice of the lien shall be filed and recorded in the office of the county auditor of the county in which the dam or obstruction is situated. The lien may be foreclosed in an action brought in the name of the state.

(II) If, within 30 days after notice to construct a fishway or remove a dam or obstruction, the owner, the owner's agent, or the person in charge fails to do so, the dam or obstruction is deemed a public nuisance and the director may take possession of the dam or obstruction and destroy it. No liability shall attach for the destruction.

(E) Replacement/repair of a noncompliant diversion structure by the department:

(I) If an owner fails to equip a diversion structure with a fish guard approved by the director, the director or the director's designee may close a water diversion structure and keep it closed until it is properly equipped with a fish guard, screen, or bypass.

(II) The fish screens must be installed at places and times prescribed by the director, and based on plans approved by the director prior to construction, upon 30 days' notice to the owner of the diversion structure.

(III) If within 30 days after notice to equip a diversion structure the owner fails to do so, the director may take possession of the diversion structure and close the device until it is properly equipped. Expenses incurred by the department constitute the value of a lien upon the diversion structure and upon the real and personal property of the owner. Notice of the lien will be filed and recorded in the office of the county auditor of the county in which the action is taken.

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#### NEW SECTION

**WAC 220-670-070 Informal appeal of notice to comply.** An informal appeal is an internal department review of a notice to comply and is conducted under chapter 34.05 RCW (Administrative Procedure Act).

(1) The department recommends that a structure owner aggrieved by a notice to comply issued under this chapter contact the department employee responsible for issuing the notice before initiating an in-

formal appeal. Discussion of concerns with the department employee may result in a resolution without the need for an informal appeal.

(2) The department encourages a structure owner aggrieved by a notice to comply to take advantage of the informal appeal process before initiating a formal appeal. However, a structure owner may pursue a formal appeal under WAC 220-670-080 without first obtaining informal review under this section. This rule does not apply to correction requests.

(3) Requesting an informal appeal. A notice to comply may be informally appealed only by the structure owner.

(4) A request for an informal appeal must be in writing and must be received by the department within 30 days from the date of receipt of the notice to comply. "Date of receipt" means:

(a) Five business days after the date of mailing; or

(b) The date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence, up to 45 days from the date of mailing. A sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the department, must constitute enough evidence of actual receipt.

(5) A request for informal appeal must be submitted in one of the following ways:

(a) Mailed to:

Fishways & Diversion Appeals Coordinator  
Department of Fish and Wildlife  
Habitat Program  
P.O. Box 43234  
Olympia, WA 98504-3234

(b) Email: FishPassageRules@dfw.wa.gov

(c) Fax: 360-902-2946; or

(d) Hand delivered to the Natural Resources Building, 1111 Washington Street S.E., Olympia, Washington 98501, Habitat Program, Fifth Floor.

(6) The request must be plainly labeled as "Request for Informal Appeal" and must include the following:

(a) The appellant's name, address, email address (if available), and phone number;

(b) The specific components of the notice to comply that the appellant contests;

(c) The date of the notice being contested;

(d) A copy of the notice that the appellant contests;

(e) A short and plain statement explaining why the appellant considers the notice to be unlawful;

(f) A clear and concise statement of facts to explain the appellant's grounds for appeal;

(g) The specific relief requested;

(h) The attorney's name, address, email address (if available), and phone number, if the appellant is represented by legal counsel; and

(i) The signature of the appellant or their attorney.

(7) Upon receipt of a valid request for an informal appeal, the department may initiate a review of the notice to comply.

(8) Informal conference. If the appellant agrees, resolution of the appeal may be facilitated through an informal conference. The informal conference is an optional part of the informal appeal and is normally a discussion between the appellant, the department employee responsible for the decision, and a supervisor. The time period for

the department to issue a decision on an informal appeal is suspended during the informal conference process.

(9) Informal appeal hearings. If a resolution is not reached through the informal conference process, then the fishway and water diversion appeals coordinator or designee may conduct an informal appeal hearing or review. Upon completion of the informal appeal hearing or review, the fishway and water diversion appeals coordinator or designee must recommend a decision to the director or designee. The director or designee must approve or decline to approve the recommended decision within 60 days of the date the department received the request for informal appeal, unless the appellant agrees to an extension of time. The department must notify the appellant in writing of the decision of the director or designee.

(10) If the department declines to initiate an informal review of its action after receipt of a valid request, or the appellant still wishes to contest the department action following completion of the informal appeal process, the appellant may initiate a formal appeal under WAC 220-670-080. Formal review must be requested within the time periods specified in WAC 220-670-080.

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#### NEW SECTION

**WAC 220-670-080 Formal appeal of notice to comply.** A formal appeal is an adjudicative proceeding under chapter 34.05 RCW.

(1) The department recommends that a structure owner aggrieved by a notice to comply issued under this chapter contact the department employee responsible for making the decision on the fishway or water diversion before initiating a formal appeal. Discussion of concerns with the department employee may result in a resolution without the need for a formal appeal.

(2) The department encourages a structure owner aggrieved by a notice to comply issued under this chapter to take advantage of the informal appeals process under WAC 220-670-070 before initiating a formal appeal. However, a structure owner may pursue a formal appeal under this section without first completing the informal appeal process under WAC 220-670-070. This rule does not apply to correction requests.

(3) Requesting a formal appeal. Issuance of a notice to comply may be formally appealed only by the structure owner.

(4) A request for formal appeal must be in writing and must be received by the department within 30 days from the date of receipt of the notice to comply. "Date of receipt" means:

(a) Five business days after the date of mailing; or

(b) The date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence, up to 45 days from the date of mailing. A sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the department, must constitute enough evidence of actual receipt.

(5) A request for formal appeal must be submitted in one of the following ways:

(a) Mailed to:

Fishways & Diversion Appeals Coordinator

Department of Fish and Wildlife  
Habitat Program  
P.O. Box 43234  
Olympia, WA 98504-3234

(b) Email: FishPassageRules@dfw.wa.gov

(c) Fax: 360-902-2946; or

(d) Hand delivered to the Natural Resources Building, 1111 Washington Street S.E., Olympia, Washington 98501, Habitat Program, Fifth Floor.

(6) The request must be plainly labeled as "Request for Formal Appeal" and, must include the following:

(a) The appellant's name, address, email address (if available), and phone number, and if represented by an attorney, the attorney's name, mailing address, email address, and phone number;

(b) The specific components of the notice to comply that the appellant contests;

(c) The date of the notice to comply being contested;

(d) A copy of the notice to comply that the appellant contests;

(e) A short and plain statement explaining why the appellant considers the notice to be unlawful;

(f) A clear and concise statement of facts to explain the appellant's grounds for appeal;

(g) The specific relief requested;

(h) The signature of the appellant or their attorney.

(7) The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal must be within 30 days from the date of receipt of the department's written decision in response to the informal appeal.

(8) The department at its discretion may stay the effectiveness of any decision or order that has been formally appealed. At any time during the appeal, the appellant may seek a stay from the presiding officer pursuant to RCW 34.05.467.

(9) If there is no timely request for an appeal, the notice to comply will be final and nonappealable.

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