Item #10
Proposed Hydraulic Code Update

August 8, 2014

TABLE OF CONTENTS

Summary

Meeting dates: August 8-9, 2014 Commission Meeting

Agenda item: HPA rule Update WAC 232-12-242 – Rule briefing and public hearing

Presenter(s): Lisa Veneroso, Habitat Assistant Director
Jeff Davis, Habitat Deputy Assistant Director
Randi Thurston, Habitat Protection Division Manager

Background summary:

Hydraulic Code Rules and related administrative procedures have not been significantly updated since 1994. WDFW began to revise the Hydraulic Code Rules in 2006 as part of developing a Habitat Conservation Plan (HCP) to provide long-term certainty of ESA compliance related to agency permitting action. Although work on the HCP ended in 2012, WDFW has remained committed to moving forward to improve HPA rules to incorporate more current scientific and technical knowledge to better protect fish life, to increase certainty for applicants, and to streamline the HPA approval process.

Approximately 2 hours will be needed for the presentation, questions/answers and public comment.

Policy issue(s) you are bringing to the Commission for consideration:

The proposed rule changes update the rules and clarify the application and permit-processing procedures, enabling the department to use available science and technology to prevent or mitigate the impacts to fish life and habitat posed by hydraulic projects. To facilitate these rule changes and to prepare for the upcoming recodification of department WACs, the department proposes repealing Chapter 220-110 WAC and creating new rules in Chapter 220-660 WAC.

Public involvement process used and what you learned:

WDFW has involved the public and stakeholders in developing the updated Hydraulic Code Rules. WDFW formed a Stakeholder Advisory Group to provide comments on an initial draft of the HPA rules. This group included eighteen representatives from the construction industry, non-governmental organizations, state and federal agencies, and tribes. This group met eight times between October 31 and the end of December, 2011, receiving presentations on and discussing issues relating to one or two specific aspects of the HPA rules at each meeting. The group engaged in policy discussions about the proposed changes and the impacts to their interests, and commented on revised rule proposals prepared by WDFW. Those rule documents were also posted on the WDFW web site for comment by any reader. Three additional drafts of the revised code rules have been posted on the WDFW website along with forms to comment on the rules. Staff reviewed the comments received and made changes to the rules that met the purpose and need of this project. The fourth draft accompanied the September 2013 PEIS. A final draft accompanies this supplemental draft PEIS. This draft was revised based on September 2013 PEIS comments and will be finalized concurrent with the

final EIS.

WDFW conducted a public scoping process for this EIS in summer 2012. The scoping notice was issued June 22, 2012 and the scoping comment period ended July 16, 2012. Scoping comments were accepted by email, through an online WDFW comment website, by fax, and by mail. WDFW received thirty-one comment documents. Generally, comments provided detailed suggestions for how rule changes should address specific problems or situations, or ways the proposals should not be changed from existing rules. Few commenters stated a preference among the alternatives presented, although from the overall tone of the comments provided, we deduced a leaning towards the preferred alternative.

WDFW has met one-on-one with Tribes and interested stakeholders to discuss the rule update on an ad-hoc basis since the CR-101 was filed in 2011. Stakeholders include Washington Association of Counties, Association of Washington Cities, Association of Washington Business, Washington Forest Protection Association, Ports Association, Washington Department of Transportation, Ecology, and WDNR, and the environmental community. WDFW also conducted seven public meetings, one in each of the six regions and one in Olympia, in October and November 2013. The purpose of the meetings was to answer questions and gather comment on the PEIS and draft rules.

The diversity of tribal, stakeholder, and public concerns and interests makes it challenging to develop comprehensive rule changes that meet the purpose and need of this project. The Supplemental Draft Programmatic Environmental Impact Statement evaluates four alternatives for changes to the Hydraulic Code Rules: Alternative 1 - No Action, consisting of the Current Rules; Alternative 2 – WDFW-proposed rule changes (preferred alternative); Alternative 3 - Increased Protection of Fish Life, which includes more restrictions to protect fish life; and Alternative 4 - Increased Protection for the Built Environment, which reduces restrictions in order to reduce project costs.

Department staff will brief the Commission on the CR 102 version of the hydraulic code, including a summary of comments received from stakeholders and tribes.

Action requested:

Take public comment. Staff plans to request adoption at the September 26 – 27, 2014 Commission Meeting.

Draft motion language:

N/A

Justification for Commission action:

Existing rules have not been updated to account for statutory changes to Chapter 77.55 RCW or changes in methods to protect fish life from the impacts of a variety of hydraulic project types in waters of the state. In addition, methods for submitting and processing applications have changed and the rules need to be updated to account for modern practices for administering the processing of applications. The proposed update reflects these changes.

Communications Plan:

Washington State Register
News Release
Agency Website
Direct email to State Environmental Policy Act (SEPA) parties of record
Direct email to interested Tribes and stakeholders

Form revised 12/5/12

Section 1

PROPOSED RULE MAKING

CR-102 (June 2012)
(Implements RCW 34.05.320)
Do **NOT** use for expedited rule making

Agency: Washington Department of Fish and Wildlife

☒ **Preproposal Statement of Inquiry was filed as WSR** 11-16-050 on 07/28/2011**; or**
☐ **Expedited Rule Making--Proposed notice was filed as WSR** _____**; or**
☐ **Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1).**

☒ **Original Notice**
☐ **Supplemental Notice to WSR** _____
☐ **Continuance of WSR** _____

Title of rule and other identifying information: (Describe Subject)
Chapter 220-110 WAC (Hydraulic Code Rules) – Repeal and replace with Chapter 220-660 (Hydraulic Code Rules)

Hearing location(s):
Natural Resources Building, Room 172
1111 Washington St. SE
Olympia, WA 98504

Date: August 8-9, 2014 Time: 8:30 a.m.

Submit written comments to:
Name: Randi Thurston
Address: 600 Capitol Way North
Olympia, WA 98501-1091
E-mail: Randi.Thurston@dfw.wa.gov
Fax: (360) 902-2602 by (date) August 1, 2014

Assistance for persons with disabilities: Contact
Tami Lininger by August 7, 2014
(360) 902-2207 or TTY at 1-800-833-6388

Date of intended adoption: On or after September 26, 2014
(Note: This is **NOT** the **effective** date)

Purpose of the proposal and its anticipated effects, including any changes in existing rules:
The Hydraulic Code Rules detail how hydraulic projects must be conducted to protect fish life. Hydraulic Code Rules and related administrative procedures have not been significantly updated since 1994. The proposed rule changes update the rules and clarify the application and permit-processing procedures, enabling the department to prevent or mitigate the impacts to fish life and habitat posed by hydraulic projects through the best available science. To facilitate these rule changes and prepare for the upcoming recodification of department WACs, the department proposes repealing Chapter 220-110 WAC and creating new rules in Chapter 220-660 WAC.
The department prepared a Supplemental Draft Programmatic Environmental Impact Statement (PEIS) on the proposed changes to the Hydraulic Code Rules. Comments on the Draft EIS and proposed rules are being taken separately but concurrently. The PEIS will be available for a 30 day public review beginning July 16, 2014 and will be available online at: http://wdfw.wa.gov/licensing/sepa/sepa_comment_docs.html. The document may be obtained in hard copy or CD by written request to the SEPA Responsible Official at SEPAdesk2@dfw.wa.gov, or by fax to (360) 902-2946.

Reasons supporting proposal: Existing rules have not been updated to account for statutory changes to Chapter 77.55. RCW or to changes in method to protect fish life from the impacts of a variety of hydraulic project types in waters of the state. In addition, methods for submitting and processing applications have changed and the rules need to be updated to account for modern practices for administering the processing of applications.

Statutory authority for adoption: RCW 77.04.012, 77.04.020, and 77.12.047.

Statute being implemented: RCW 77.04.012, 77.04.020, and 77.12.047.

Is rule necessary because of a:

Federal Law?	☐ Yes	☒ No
Federal Court Decision?	☐ Yes	☒ No
State Court Decision?	☐ Yes	☒ No

If yes, CITATION:

DATE
July 2, 2014

NAME (type or print)
Joanna Eide

SIGNATURE

TITLE
Rules Coordinator

CODE REVISER USE ONLY

OFFICE OF THE CODE REVISER
STATE OF WASHINGTON
FILED

DATE: July 02, 2014
TIME: 11:04 AM

WSR 14-14-133

(COMPLETE REVERSE SIDE)

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:
None.

Name of proponent: (person or organization) Washington Department of Fish and Wildlife

☐ Private
☐ Public
☒ Governmental

Name of agency personnel responsible for:

	Name	Office Location	Phone
Drafting.....	Randi Thurston	1111 Washington Street SE, Olympia, WA 98504	(360) 902-2602
Implementation.....…	Lisa Veneroso	1111 Washington Street SE, Olympia, WA 98504	(360) 902-2836
Enforcement.....	Steve Crown	1111 Washington Street SE, Olympia, WA 98504	(360) 902-2373

Has a small business economic impact statement been prepared under chapter 19.85 RCW or has a school district fiscal impact statement been prepared under section 1, chapter 210, Laws of 2012?

☒ Yes. Attach copy of small business economic impact statement or school district fiscal impact statement.*

A copy of the statement may be obtained by contacting:
Name: Randi Thurston
Address: 600 Capitol Way North
Olympia, WA 98501-1091
Phone: (360) 902-2602
Fax: (360) 902-2155
E-mail: Randi.Thurston@dfw.wa.gov

*A more detailed Small Business Economic Impact Statement, which includes the Cost-Benefit Analysis (below), is available by contacting Randi Thurston using the contact information provided above.

☐ No. Explain why no statement was prepared.
.

Is a cost-benefit analysis required under RCW 34.05.328?

☒ Yes A preliminary cost-benefit analysis may be obtained by contacting:
Name: Randi Thurston
Address: 600 Capitol Way North
Olympia, WA 98501-1091
phone (360) 902-2602
fax (360) 902-2155
e-mail Randi.Thurston@dfw.wa.gov

☐ No:

Chapter 220-660 WAC
HYDRAULIC CODE RULES

NEW SECTION

WAC 220-660-010 Purpose. A hydraulic project is the construction or performance of work that uses, diverts, obstructs, or changes the natural flow or bed of any of the salt or fresh waters of the state. Unless otherwise provided, any person who wants to conduct a hydraulic project must get a construction permit called the hydraulic project approval (HPA) from the department. The purpose of the HPA is to ensure that construction or performance of other work is done in a manner that protects fish life. This chapter establishes the rules for the department's HPA authority (chapter 77.55 RCW).

NEW SECTION

WAC 220-660-020 Instructions for using chapter 220-660 WAC. The technical provisions in WAC 220-660-090 through 220-660-460 represent common provisions for the protection of fish life for typical projects proposed to the department. Implementation of these provisions is necessary to minimize project-specific and cumulative impacts to fish life. These provisions reflect the current and best science, technology, and construction practices related to the protection of fish life. The department will incorporate new science and technology as it becomes available, and will allow alternative practices that provide equal or greater protection for fish life.

The technical provisions will apply to a hydraulic project when included as provisions on the HPA. Each application will be reviewed on an individual basis. Common technical provisions applicable to a specific project may be modified or deleted by the department pursuant to WAC 220-660-070. HPAs may also have special provisions to address project-specific or site-specific considerations not adequately addressed by the common technical provisions. In addition, all hydraulic projects must meet the applicable mitigation requirements in WAC 220-660-080.

In addition to the rules in this chapter, the department has developed guidance to help applicants. This guidance reflects the department's experience and expertise with various types of hydraulic projects. Following the guidance will help ensure that a hydraulic project adequately protects fish life and will speed the department's review and decision process. All guidance documents are available on the department's web site.

NEW SECTION

WAC 220-660-030 Definitions. The following are definitions for terms used in this chapter. Common terms that are already defined in statute are noted as such.

(1) "Abandoning an excavation site" means not working an excavation site for forty-eight hours or longer.

(2) "Aggregate" means a mixture of minerals separable by mechanical or physical means.

(3) "Aquatic beneficial plant" means all native and nonnative aquatic plants except those on the state noxious weed lists in WAC 16-750-005, 16-750-011, and 16-750-015.

(4) "Aquatic invasive species" means an invasive species of the animal kingdom with a life cycle that is at least partly dependent upon fresh, brackish, or marine waters. Examples include nutria, waterfowl, amphibians, fish, and shellfish.

(5) "Aquatic noxious weed" means an aquatic plant on the state noxious weed lists in WAC 16-750-005, 16-750-011, and 16-750-015.

(6) "Aquatic plant" means a native or nonnative emergent, submersed, partially submersed, free-floating, or floating-leaved plant species that is dependent upon fresh, brackish, or marine water ecosystems and includes all stages of development and parts.

(7) "*Aquatic Plants and Fish* pamphlet" means a document that details the rules for aquatic noxious weed and aquatic beneficial plant removal and control activities and that serves as the hydraulic project approval for certain plant removal and control activities in Washington state.

(8) "Artificial materials" means clean, inert materials used to construct diversion structures for mineral prospecting.

(9) "Associated human-made agricultural drainage facilities" means dikes, drains, pumps, drainage tiles, and drainage pipe made by humans that protect agricultural land.

(10) "Authorized agent" means someone who is authorized by the applicant to act on behalf of the applicant.

(11) "Bank" means any land surface landward of the ordinary high water line next to a body of water and constrains the water except during floods. The term bank also includes all land surfaces of islands within a body of water that are below the flood elevation of the surrounding body of water.

(12) "Bankfull width" means the width of the surface of the water at the point where water just begins to overflow into the active floodplain. In streams where there is no floodplain it is the width of a stream or river at the dominant channel forming flow with a recurrence interval in the one- to two-year range.

(13) "Beach area" means the beds between the ordinary high water line and extreme low water.

(14) "Bed" means the land below the ordinary high water lines of state waters. This definition does not include irrigation ditches, canals, storm water runoff devices, or other artificial watercourses except where they exist in a natural watercourse that has been altered artificially.

(15) "Bed materials" means naturally occurring materials such as gravel, cobble, rock, rubble, sand, mud, and aquatic plants that form the beds of state waters. Bed materials are also found in deposits or bars above the wetted perimeter of water bodies.

(16) "Board" means the pollution control hearings board created in chapter 43.21B RCW.

(17) "Bottom barrier or screen" means sheets of synthetic or natural fiber material used to cover and kill plants growing on the bottom of a watercourse.

(18) "Boulder" means a stream substrate particle larger than ten inches in diameter.

(19) "Bridge shadow" means the area under a bridge defined by the shadow cast by the sun. This area may not receive enough light and rain to support the plant growth needed for biotechnical bank stabilization.

(20) "Chronic danger" means a condition declared by the county legislative authority in which any property, except for property located on a marine shoreline, has experienced at least two consecutive years of flooding or erosion that has damaged or has threatened to damage a major structure, water supply system, septic system, or access to any road or highway.

(21) "Chronic danger HPA" means a written hydraulic project approval issued in response to a chronic danger declaration made by a county legislative authority.

(22) "Classify" means to sort aggregate by hand or through a screen, grizzly, or similar device to remove the larger material and concentrate the remaining aggregate.

(23) "Commission" means the Washington state fish and wildlife commission.

(24) "Compensatory mitigation" means the restoration, creation, enhancement, or preservation of aquatic resources for the purposes of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.

(25) "Concentrator" means a device used to physically or mechanically separate the valuable mineral content from aggregate.

(26) "Control" of an aquatic noxious weed means to prevent all seed production and to prevent the dispersal of all propagative parts capable of forming new plants.

(27) "County legislative authority" means a county commission, council, or other legislative body.

(28) "Crevicing" means removing aggregate from cracks and crevices using hand-held mineral prospecting tools or water pressure.

(29) "Critical food fish or shellfish habitats" means those habitats that are essential to fish life. These habitats include habitats of special concern listed in WAC 220-660-120 and 220-660-330 and habitats for priority fish and shellfish.

(30) "Department" means the department of fish and wildlife.

(31) "Design flood" means a stream discharge of a specific rate and probability that is best suited for the design of a project to create and shape habitat or to protect property and structures to a given level of risk (e.g., the 100-year design flood).

(32) "Director" means the director of the department of fish and wildlife.

(33) "Ditch" means a wholly artificial watercourse or a natural watercourse (waters of the state) altered by humans.

(34) "Diver-operated dredging" means the use of portable suction or hydraulic dredges held by SCUBA divers to remove aquatic plants.

(35) "Dredging" means removal of bed material using other than hand-held tools.

(36) "Early infestation" of an aquatic noxious weed means a stage of development, life history, or area of coverage that makes one hundred percent control and eradication likely to occur.

(37) "Emergency" means an immediate threat to life, the public, property, or of environmental degradation.

(38) "Emergency HPA" means a verbal or written hydraulic project approval issued in response to a declaration of emergency.

(39) "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.

(40) "Equipment" means any device powered by internal combustion; hydraulics; electricity, except less than one horsepower; or livestock used as draft animals, except saddle horses; and the lines, cables, arms, or extensions associated with the device.

(41) "Eradication" of an aquatic noxious weed means to eliminate a noxious weed within an area of infestation.

(42) "Established ford" means a crossing place in a watercourse that was in existence and used annually before 1986 or permitted by the department in or after 1986, and has identifiable approaches on the banks.

(43) "Excavation line" means a line on the dry bed at or parallel to the water's edge. The department determines the distance from the water's edge for each project site. The excavation line may change with water level fluctuations.

(44) "Excavation site" means the pit, furrow, or hole from which aggregate is removed to process and recover minerals, or into which wastewater is discharged to settle out sediments.

(45) "Excavation zone" means the area between the excavation line and the bank or the center of the gravel bar.

(46) "Expedited HPA" means a written hydraulic project approval issued in those instances where when normal permit processing would result in a significant hardship for the applicant or unacceptable damage to the environment.

(47) "Farm and agricultural land" means those lands identified in RCW 84.34.020.

(48) "Filter blanket" means one or more layers of pervious materials (organic, mineral, or synthetic) designed and installed to provide drainage, yet prevent the movement of soil particles by flowing water.

(49) "Fish conservation bank" means a fish habitat creation, restoration, or enhancement project intended to provide a bank of credits to compensate for impacts to fish habitat from future development projects. Fish conservation banks are managed to optimize desired habitat for listed and at-risk fish species.

(50) "Fish habitat" 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.

(51) "Fish habitat enhancement project" means a hydraulic project that meets criteria in RCW 77.55.181 (1)(a).

(52) "Fish habitat improvement structures or stream channel improvements" means natural materials such as large wood, rock, or synthetic materials such as chain or rope placed in or next to bodies of water to make existing conditions better for fish life. Examples are engineered logjams, large woody material, and boulders.

(53) "Fish guard" means a device installed at or near a surface water diversion head gate, or on the intake of any device used for pumping water from fish-bearing waters, to prevent entrainment, injury, or death of fish life. Fish guards physically keep fish from entering the diversion or pump intake and do not rely on avoidance behavior.

(54) "Fish life" means all fish species, including food fish, shellfish, game fish, nonclassified fish and shellfish species, and all stages of development of those species.

(55) "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 fish to pass barriers.

(56) "Fish screen" means "fish guard."

(57) "Flood gate" means a structure to control flooding through which water flows freely in one direction but is prevented from flowing in the other direction.

(58) "Food fish" means those species of the classes Osteichthyes, Agnatha, and Chondrichthyes that must not be fished for except as authorized by rule of the commission.

(59) "Forest practices hydraulic project" means a hydraulic project that requires a forest practices application or notification under chapter 76.09 RCW.

(60) "Frequent scour zone" means the area between the wetted perimeter and the toe of the slope. The frequent scour zone is comprised of aggregate, boulders, or bedrock. Organic soils are not present in the frequent scour zone.

(61) "Freshwater area" means those state waters and associated beds below (waterward of) the ordinary high water line that are upstream of stream and river mouths. Freshwater areas also include all lakes, ponds, and tributary streams and surface-water-connected wetlands that provide or maintain fish habitat.

(62) "Functional grating" means the percent open area of the grating that is not covered or blocked by any objects such as structural components, framing wood, flotation tubs, or objects placed on the surface of the grating.

(63) "Ganged equipment" means two or more pieces of mineral prospecting equipment coupled together to increase efficiency. An example is adding a second sluice to a high-banker.

(64) "General provisions" means those provisions that are in every HPA.

(65) "*Gold and Fish* pamphlet" means a document that details the rules for conducting small-scale and other prospecting and mining activities and that serves as the hydraulic project approval for certain mineral prospecting and mining activities in Washington state.

(66) "Habitat function" means the natural attributes of a given habitat that support the fish and shellfish species that rely upon that habitat.

(67) "Habitat value" means an estimate of habitat quality, ecologically important functions and the relative value of the hydraulic project site within the watershed.

(68) "Hand-held equipment" means equipment held by hand and powered by internal combustion, hydraulics, pneumatics, or electricity. Examples are chainsaws, drills, and grinders.

(69) "Hand-held mineral prospecting tools" means:

(a) Tools used for mineral prospecting that are held by hand and are not powered by internal combustion, hydraulics, or pneumatics. Ex-

amples are metal detectors, shovels, picks, trowels, hammers, pry bars, hand-operated winches, and battery-operated pumps specific to prospecting; and

(b) Vac-pacs.

(70) "Hand-held tools" means tools held by hand and are not powered by internal combustion, hydraulics, pneumatics, or electricity. Examples are shovels, rakes, hammers, pry bars, and cable winches. This definition does not apply to hand-held tools used for mineral prospecting. See "hand-held mineral prospecting tools."

(71) "Hatchery" means any water impoundment or facility used for the captive spawning, hatching, or rearing of fish life.

(72) "High-banker" means a stationary concentrator operated outside the wetted perimeter of the body of water from which the water is removed and that uses water supplied by hand or by pumping. A high-banker consists of a sluice box, hopper, and water supply. Aggregate is supplied to the high-banker by means other than suction dredging. This definition excludes rocker boxes. See Figure 1.

Figure 1: High-banker

(73) "High-banking" means using a high-banker to recover minerals.

(74) "Hydraulic drop" means an abrupt drop in water surface elevation.

(75) "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 freshwaters of the state.

(76) "Hydraulic project approval" or "HPA" means:

(a) A written approval for a hydraulic project issued under this chapter and signed by the director of the department or the director's designee; or

(b) A verbal approval for an emergency hydraulic project issued under this chapter by the director of the department or the director's designee; or

(c) The following printed pamphlet approvals:

(i) A "*Gold and Fish*" pamphlet issued under this chapter by the department, which identifies and authorizes specific minor hydraulic project activities for mineral prospecting and placer mining; or

(ii) An "*Aquatic Plants and Fish*" pamphlet issued under this chapter by the department, which identifies and authorizes specific aquatic noxious weed and aquatic beneficial plant removal and control activities.

(77) "Imminent danger" means a threat by weather, water flow, or other natural conditions that is likely to occur within sixty days of a request for a permit application.

(78) "In-lieu fee (ILF) program" means a state or federal certified program authorizing a person pay a fee to a third party in lieu of conducting project-specific mitigation or buying credits from a mitigation or fish conservation bank.

(79) "In-water blasting" means the use of explosives on, under, or in waters of the state, or in any location adjacent to the waters of the state, where blasting could impact fish life or fish habitat.

(80) "Job site" means the area of ground including and immediately adjacent to the area where work is conducted under an HPA. For mineral prospecting and placer mining projects, the job site includes the excavation site.

(81) "Joint aquatic resources permit application" or "JARPA" means a form provided by the department and other agencies that a person submits to request a written HPA for a hydraulic project.

(82) "Lake" means any natural standing fresh waters or artificially impounded fresh waters of the state, except impoundments of the Columbia and Snake rivers.

(83) "Large woody material" means trees or tree parts larger than four inches in diameter and longer than six feet, or rootwads, wholly or partially waterward of the ordinary high water line.

(84) "Macroalgae" means any of the nonvascular aquatic plant species (the red, green, or brown seaweeds) that can be seen without using a microscope. They may be attached to the substrate or other macroalgae by a holdfast, or found drifting individually or in mats.

(85) "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.

(86) "Major modification" means any change to a hydraulic project that is not a minor modification.

(87) "Marina" means a public or private facility providing boat moorage space, fuel, or commercial services. Commercial services include, but are not limited to, overnight or live-aboard boating accommodations.

(88) "Marine terminal" means a public or private commercial wharf located in the navigable water of the state and used, or intended to be used, as a port or facility for the storing, handling, transferring, or transporting of goods to and from vessels.

(89) "Mean annual flood" means the average of all the annual peak floods of record.

(90) "Mean higher high water" or "MHHW" means the tidal elevation obtained by averaging each day's highest tide at a particular location over a period of nineteen years, as determined by National Oceanic and Atmospheric Administration (NOAA). It is measured from mean lower low water, which is a reference datum used to delineate waters of the state in saltwater areas.

(91) "Mean lower low water" or "MLLW" means the 0.0 feet tidal elevation, as determined by NOAA. It is determined by averaging each day's lowest tide at a particular location over a period of nineteen years. MLLW is a reference datum used to delineate waters of the state

in saltwater areas. NOAA provides detailed information on their "Tides, Currents, and Predictions" web site.

(92) "Mechanical harvesting and cutting" means partially removing or controlling aquatic plants by using aquatic mechanical harvesters, which cut and collect aquatic plants, and mechanical cutters, which only cut aquatic plants.

(93) "Mineral prospect" or "mineral prospecting" means to excavate, process, or classify aggregate using hand-held mineral prospecting tools and mineral prospecting equipment.

(94) "Mineral prospecting equipment" means any natural or manufactured device, implement, or animal (other than the human body) used in any aspect of prospecting for or recovering minerals.

(95) "Mini high-banker" means a high-banker with a riffle area of three square feet or less. See Figure 2.

Figure 2: Mini high-banker

(96) "Mini rocker box" means a rocker box with a riffle area of three square feet or less. See Figure 3.

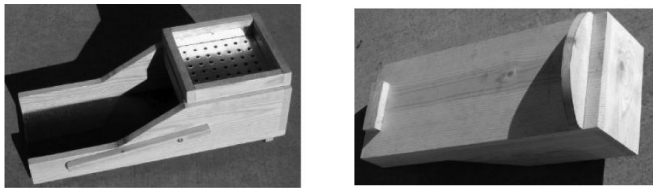


Figure 3: Mini rocker box (top view and bottom view)

(97) "Mining" means the production activity that follows mineral prospecting.

(98) "Minor modification" means a small change in work timing or plans and specifications of a hydraulic project.

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

(100) "Mitigation bank" means a site where wetlands or other aquatic resources are restored, created, enhanced, or preserved. The bank exists expressly to provide compensatory mitigation before unavoidable impacts to wetlands or other aquatic resources occur.

(101) "Mitigation sequencing" means taking the steps in the mitigation sequence. The department and the applicant must consider and implement mitigation actions in the following sequential order:

(a) Avoid the impact altogether by not taking a certain action or parts of an action.

(b) Minimize impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking steps to avoid or reduce impacts.

(c) Rectify the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reduce or eliminate the impact over time by preservation or maintenance.

(e) Compensate for remaining unmitigated impacts by replacing, enhancing, or providing substitute resources or environments.

(f) Monitor the impact and take appropriate corrective measures to reach the identified goal.

(102) "Multiple site permit" means a hydraulic project approval issued to a person under RCW 77.55.021 for hydraulic projects occurring at more than one specific location and which includes site-specific requirements.

(103) "Natural conditions" means environmental situations that occur or are found in nature. This does not include artificial or manufactured conditions.

(104) "Nearshore zone" means the three critical "edge" habitats as follows: The edge between upland and aquatic environments, the edge between the shallow productive zone and deep water, and the edge between fresh and marine waters.

(105) "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 waters 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 freshwater is the elevation of the mean annual flood.

(106) "Pan" means an open metal or plastic dish operated by hand to separate gold or other minerals from aggregate by washing the aggregate. See Figure 4.

Figure 4: Pan

(107) "Panning" means the use of a pan to wash aggregate.

(108) "Permanent ford" means a ford approved by the department that is in place for more than one operating season.

(109) "Person" means an applicant, authorized agent, permittee, or contractor. The term person includes an individual, or a public or private entity, or organization.

(110) "Placer" means a glacial or alluvial deposit of gravel or sand containing eroded particles of minerals.

(111) "Pool" means a portion of the stream with reduced current velocity, often with water deeper than the surrounding areas.

(112) "Power sluice" means "high-banker."

(113) "Power sluice/suction dredge combination" means a machine that can be used as a power sluice, or with minor modifications, as a suction dredge. See Figure 5.

Figure 5: Power sluices/suction dredge combination

(114) "Process aggregate" or "processing aggregate" means the physical or mechanical separation of the valuable mineral content within aggregate.

(115) "Prospecting" means the exploration for minerals and mineral deposits.

(116) "Protection of fish life" means avoiding and minimizing impacts to fish life and fish habitat through mitigation sequencing.

(117) "Purple loosestrife" means *Lythrum salicaria* and *Lythrum virgatum* as classified in RCW 17.10.010(10) and defined in RCW 17.26.020 (5)(b).

(118) "Qualified professional" means a scientist, engineer, or technologist specializing in a relevant applied science or technology including fisheries or wildlife biology, engineering, geomorphology, geology, hydrology, or hydrogeology. This person may be certified with an appropriate professional organization, and acting under that association's code of ethics and subject to disciplinary action by that association. A qualified professional can also be someone who, through demonstrated education, experience, accreditation, and knowledge relevant to the particular matter, may be reasonably relied on to provide advice within that person's area of expertise.

(119) "Redd" means a nest made in gravel, consisting of a depression dug by a fish for egg deposition, and associated gravel mounds. See Figure 6.

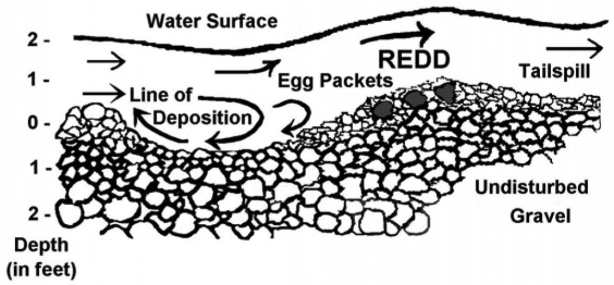


Figure 6: Cross-section of a typical redd

(120) "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.

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

(122)(a) "Riffle" means the bottom of a concentrator containing a series of interstices or grooves to catch and retain a mineral such as gold; or

(b) "Riffle" means a short, relatively shallow and coarse-bedded length of stream over which the stream flows at higher velocity and higher turbulence than it normally does in comparison to a pool.

(123) "River" means "watercourse."

(124) "Riparian zones" means the land adjacent to streams, rivers, ponds, lakes, and those wetlands whose soils and vegetation are influenced by ponded or channelized water. They are the transition areas between aquatic and upland habitats with elements of both ecosystems.

(125) "Rocker box" means a nonmotorized concentrator consisting of a hopper attached to a cradle and a sluice box operated with a rocking motion. See Figure 7.

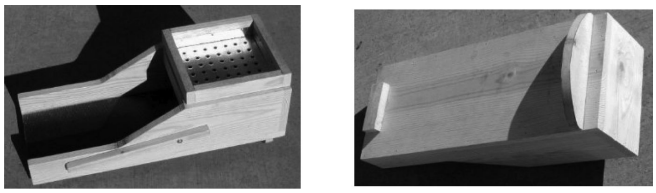


Figure 7: Rocker box

(126) "Rotovation" means the use of aquatic rotovators, machines that have underwater rototiller-like blades, to uproot aquatic plants as a means of control.

(127) "Roughened channel" means to construct a channel of a graded mix of sediment with enough roughness and hydraulic diversity to achieve fish passage. Roughened channels are designed to resist erosion and are often built at a steeper gradient than the prevailing channel.

(128) "Saltwater area" means those state waters with salinity as high as 35 parts per thousand of dissolved salts. It includes the as-

sociated beds below (waterward of) the ordinary high water line. Saltwater areas include estuaries and other surface water connected wetlands that provide or maintain fish habitat. Salinity in estuaries may range from 0.5 to 30 parts per thousand of dissolved salts.

(129) "Scientific measurement devices" means devices that measure and/or record environmental data, such as staff gauges, tide gauges, water recording devices, water quality testing and improvement devices, and similar instruments.

(130) "Seagrass" means native *Zostera* species, *Ruppia maritima*, and *Phyllospadix* species.

(131) "Shellfish" means those species of marine and freshwater invertebrates that have been classified and that must not be taken except as authorized by rule of the commission. The term shellfish includes all stages of development and the bodily parts of shellfish species.

(132) "Sluice" means a trough equipped with riffles across its bottom used to recover gold and other minerals with the use of flowing water. See Figure 8.

Figure 8: Sluice

(133) "Spartina" means *Spartina alterniflora*, *Spartina anglica*, *Spartina* x *townsendii*, and *Spartina patens* as classified in RCW 17.10.010(10) and defined in RCW 17.26.020 (5)(a).

(134) "Special provisions" means those requirements that are part of a HPA, are site- or project-specific, and supplement or amend the technical provisions.

(135) "Spiral wheel" means a hand-operated or battery-powered rotating pan used to recover gold and minerals with the use of water. See Figure 9.

Figure 9: Spiral wheel

(136) "Stable slope" means a slope without measurable evidence of slumping, sloughing, or other movement. Stable slopes will not show evidence of landslides, uprooted or tilted trees, exposed soils, water-saturated soils, and mud, or the recent erosion of soils and sediment. Woody vegetation is typically present on stable slopes.

(137) "Suction dredge" means a machine used to move submerged aggregate by hydraulic suction. The aggregate is processed through an attached sluice box to recover gold and other minerals. See Figure 10.

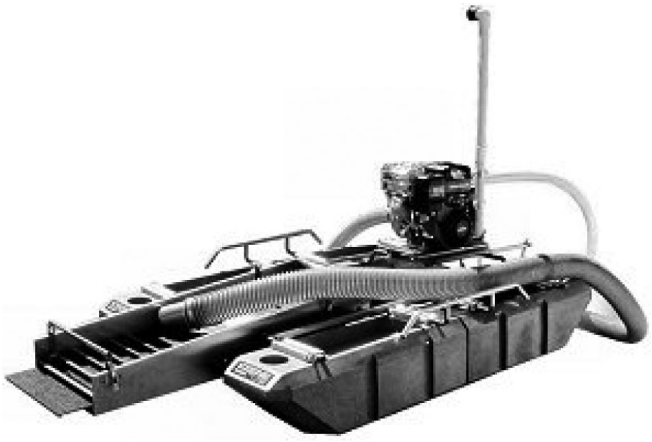


Figure 10: Suction dredge

(138) "Suction dredging" means using a suction dredge to recover gold and other minerals.

(139) "Tailings" means the waste material that remains after processing aggregate to remove valuable mineral content.

(140) "Temporary ford" means a ford that is in place for no more than one operating season or less.

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

(142) "Toe of the bank" means the distinct break in slope between the stream bank or shoreline and the stream bottom or marine beach or bed, excluding areas of sloughing. For steep banks that extend into the water, the toe may be submerged below (waterward of) the ordinary high water line. For artificial structures, such as jetties or bulkheads, the toe refers to the base of the structure where it meets the stream bed or marine beach or bed.

(143) "Toe of the slope" means the base or bottom of a slope at the point where the ground surface abruptly changes to a significantly flatter grade.

(144) "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.

(145) "Unstable slope" means a slope with visible or measurable evidence of slumping, sloughing, or other movement. Evidence of unstable slopes includes landslides, uprooted or tilted trees, exposed soils, water-saturated soils, and mud, or the recent erosion of soils and sediment. Woody vegetation is typically not present on unstable slopes.

(146) "Vac-pac" means a motorized, portable vacuum that you use for prospecting. See Figure 11.

Figure 11: Vac-pac

(147) "Water crossing structures" means structures that span over, through, or under a watercourse. Examples are bridges, culverts, conduits, and fords.

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

(149) "Watercourse" or "stream" means any portion of a stream or river channel, bed, bank, or bottom waterward of the ordinary high water line of waters of the state. 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 fish 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 or not the water is at peak level. A watercourse includes all surface-water-connected wetlands that provide or maintain fish habitat. This definition does not include irrigation ditches, canals, storm water treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans.

(150) "Waters of the state" or "state waters" means all salt and freshwaters waterward of the ordinary high water line and within the territorial boundary of the state. RCW 77.55.011(25).

(151) "Weed rolling" means the use of a mechanical roller designed to control aquatic plant growth.

(152) "Wetland(s)" is as defined in RCW 90.58.030.

(153) "Wetted perimeter" means the areas of a watercourse covered with water. The wetted perimeter varies with flow, discharge, and tides.

(154) "Woody vegetation" means perennial trees and shrubs having stiff stems and bark. Woody vegetation does not include grasses, forbs, or annual plants.

(155) "Written notice" or "written notification" means a communication via U.S. mail or via e-mail.

NEW SECTION

WAC 220-660-040 Applicability of hydraulic project approval authority. (1) **When an HPA is required:** A person must obtain an HPA from the department before conducting a hydraulic project, unless the activity is exempt from this requirement as provided in subsection (2) of this section.

(2) **No HPA is required for the following hydraulic projects:**

(a) Installing oyster stakes, boundary markers, or property line markers by hand or with hand-held tools;

(b) Driving across an established ford (RCW 77.55.031);

(c) Remedial actions by the department of ecology or a person under a consent decree, order, or agreed order under RCW 70.105D.090 (RCW 77.55.061). Although no HPA is required, the department of ecology must ensure compliance with the substantive requirements of this chapter;

(d) Landscape management plans approved by the department and the department of natural resources under RCW 76.09.350(2) serve as an HPA for the life of the plan if fish are selected as one of the public resources covered under the plan (RCW 77.55.201);

(e) Removing derelict fishing gear according to the guidelines described in RCW 77.12.865 (RCW 77.55.041);

(f) Removing crab pots and other shellfish gear under a permit issued under RCW 77.70.500;

(g) An activity conducted solely to remove or control *spartina* (RCW 77.55.051);

(h) An activity conducted solely to remove or control purple loosestrife performed with hand-held tools, hand-held equipment, or equipment carried by a person (RCW 77.55.051);

(i) Installing or removing a portable boat hoist in a lake if the hoist:

(i) Is not permanently installed;

(ii) Does not have armoring or other structures installed for a foundation or protection;

(iii) Is not installed or removed using equipment operated below the OHWL;

(iv) Is not installed at the inlet or outlet of any stream;

(v) Does not require any dredging, filling, pile driving, or any other bed modifications during installation or removal;

(vi) Is not modified during or after installation by adding docks, ramps, floats, or other structures that add surface area to the hoist or allow for moorage of additional watercraft; and

(vii) Is not installed in any of the following sockeye salmon-bearing lakes:

(A) Baker;

(B) Cle Elum;

(C) Osoyoos;

(D) Ozette;

(E) Pleasant;

(F) Quinault;

(G) Sammamish;

(H) Washington; and

(I) Wenatchee.

(j) Installing, maintaining, or removing scientific measurement devices if:

(i) All work is conducted waterward of the OHWL by hand or with hand-held tools;

(ii) The project does not create a blockage to fish passage, even temporarily; and

(iii) The project does not include dewatering the worksite, placing fill or concrete, or excavating or grading the streambed or bank.

(k) Forest practices hydraulic projects, as defined in chapter 76.09 RCW; and

(l) Installation or maintenance of tideland and floating private sector commercial fish and shellfish culture facilities (RCW 77.12.047). However, an HPA is required for the construction of appurtenance structures, such as bulkheads or boat ramps, that use, divert, obstruct, or change the bed or flow of any of the salt or fresh waters of the state.

NEW SECTION

WAC 220-660-050 Procedures——Hydraulic project approvals. (1) **Description:**

(a) There are six categories of HPAs: Standard, emergency, imminent danger, chronic danger, expedited, and pamphlet. These categories are discussed in more detail throughout this section. Most HPAs issued by the department are standard HPAs. Guidance for applying for an HPA is provided on the department's web site (wdfw.wa.gov).

(b) HPAs do not exempt a person from obtaining other necessary permits and following the rules and regulations of local, federal, and other Washington state agencies.

(2) **Fish life concerns:** Construction and other work activities in or near waterbodies can kill or injure fish or shellfish directly and can damage or destroy their habitat. Damaged or destroyed habitat can continue to cause lost production of fish and shellfish for as long as the habitat remains altered. HPAs help reduce the impacts of construction and other work to fish, shellfish, and their habitat.

(3) **Standard HPA:**

(a) The department issues a standard HPA when a hydraulic project does not qualify for an emergency, imminent danger, chronic danger, expedited or pamphlet HPA. A regular standard HPA is limited to a single project site.

(b) Special types of standard HPAs:

(i) Fish habitat enhancement project (FHEP) HPA.

(A) Projects must satisfy the requirements in RCW 77.55.181(1) to be processed as a fish habitat enhancement project.

(B) Projects that are compensatory mitigation for a development or other impacting project are not eligible. This includes proposals for mitigation banks or in-lieu fee mitigation proposals. The sole purpose of the project must be for fish habitat enhancement.

(C) The department may reject an FHEP proposed under RCW 77.55.181 if the local government raises concerns during the comment period that impacts from the project cannot be mitigated by conditioning the HPA. The department will reject an FHEP if the department determines that the size and the scale of the project raises public health or safety concerns. If the department rejects a project for streamlined processing, the department must provide written notice to the applicant and local government within forty-five days of receiving the application.

(D) An applicant whose fish habitat enhancement project is rejected may submit a new complete written application with project modifications or additional information required for streamlined processing. An applicant may request the department consider the project under standard HPA processing procedures by submitting a new complete written application for standard processing.

(ii) Multisite HPA.

(A) A standard HPA may authorize work at multiple project sites if:

(I) All project sites are within the same water resource inventory area (WRIA) or tidal reference area;

(II) The primary hydraulic project is the same at each site so there is little variability in HPA provisions across all sites; and

(III) Work will be conducted at no more than five project sites to ensure department staff has sufficient time to conduct site reviews.

(B) The department may make an exception for a project the department has scoped prior to application submittal.

(iii) General HPA.

(A) The department may issue general HPAs to government agencies, organizations, or companies to perform the same work in multiple waterbodies across a large geographic area.

(B) To qualify for a general HPA, projects must protect fish life:

(I) Technical provisions in the HPA must fully mitigate impacts to fish life;

(II) The projects must be relatively simple so that the HPA provisions are the same across all sites, and can therefore be permitted without site-specific provisions; and

(III) The projects must have little or no variability over time in site conditions or work performed.

(C) The department and the applicant may negotiate the scope and scale of the project types covered. The department and the applicant must agree on the fish protection provisions required before the application is submitted.

(D) The department may reject applications for a general HPA if:

(I) The proposed project does not meet the eligibility requirements described in subsection (3)(b)(iii)(B) of this section; or

(II) The department and the applicant cannot agree on the fish protection provisions.

(E) The department must provide written notice of rejection of a general HPA application to the applicant. The applicant may submit a new complete written application with project modifications or additional information required for department consideration under standard HPA processing procedures.

(iv) "Model" HPA.

(A) The department will establish a "model" HPA application and permitting process for qualifying hydraulic projects. To qualify, an individual project must comply with the technical provisions established in the application. Hydraulic projects that qualify for the model process must:

(I) Fully mitigate impacts to fish life in the technical provisions of the HPA;

(II) Be a low complexity project that minimizes misinterpretation of the HPA provisions allowing the HPA to be permitted without site-specific provisions; and

(III) Meet all of the eligibility requirements described in the model application.

(B) If needed to confirm project eligibility, the department may conduct a site visit before approving or rejecting a model application.

(C) The department may reject applications for model HPAs if:

(I) The plans and specifications for the project are insufficient to show that fish life will be protected; or

(II) The applicant or authorized agent does not fill out the application completely or correctly.

(D) The department must provide written notice of rejection of an application to the applicant. The applicant may submit a new complete written application with project modifications or additional information required for department consideration under standard HPA processing procedures under this section, or may submit a new model application if the department rejected the application because the person did not fill out the original application correctly.

(4) **Emergency HPA:**

(a) Declaring an emergency.

(i) Authority to declare an emergency, or continue an existing declaration of emergency, is conveyed to the governor, the department, or to a county legislative authority by statute. An emergency declaration may be made when there is an immediate threat to life, the public, property, or of environmental degradation;

(ii) The county legislative authority must notify the department, in writing, if it declares an emergency;

(iii) Emergency declarations made by the department must be documented in writing;

(iv) When an emergency is declared, the department must immediately grant verbal approval upon request for work to protect fish life

or property threatened by waters of the state because of the emergency, including repairing or replacing a stream crossing, removing obstructions, or protecting stream banks. The department may also grant written approval if the applicant agrees.

(b) If the department issues a verbal HPA, the department must follow up with a written HPA documenting the exact provisions of the verbal HPA within thirty days of issuing the verbal HPA.

(c) Compliance with the provisions of chapter 43.21C RCW (State Environmental Policy Act) is not required for emergency HPAs.

(d) The department may require a person to submit an as-built drawing within thirty days after the hydraulic project authorized in the emergency HPA is completed.

(e) Within ninety days after the authorized emergency hydraulic project is completed, any unavoidable impacts must be mitigated or a mitigation plan must be submitted to the department for approval.

(5) **Imminent danger HPA:**

(a) Authority to declare imminent danger is conveyed to the department or county legislative authority by statute. The county legislative authority must notify the department in writing if it determines that an imminent danger exists.

(b) Imminent danger declarations made by the department must be documented in writing.

(c) When imminent danger exists, the department must issue an expedited HPA upon request for work to remove obstructions, repair existing structures, restore banks, and to protect fish life or property.

(d) When imminent danger exists, and before starting work, a person must submit a complete written application to the department to obtain an imminent danger HPA. Compliance with the provisions of chapter 43.21C RCW (State Environmental Policy Act) is not required for imminent danger HPAs.

(e) Imminent danger HPAs must be issued by the department within fifteen calendar days after receiving a complete written application. Work under an imminent danger HPA must be completed within sixty calendar days of the date the HPA is issued.

(f) Within ninety days after the authorized imminent danger hydraulic project is completed, any unavoidable impacts must be mitigated or a mitigation plan must be submitted to the department for approval.

(6) **Chronic danger HPA:**

(a) The department must issue a chronic danger HPA, upon request, for work required to abate the chronic danger. This work may include removing obstructions, repairing existing structures, restoring banks, restoring road or highway access, protecting fish life, or protecting property.

(b) Authority to declare when a chronic danger exists is conveyed to a county legislative authority by statute. A chronic danger is a condition in which any property, except for property located on a marine shoreline, has experienced at least two consecutive years of flooding or erosion that has damaged or has threatened to damage a major structure, water supply system, septic system, or access to any road or highway.

(c) The county legislative authority must notify the department in writing when it determines a chronic danger exists.

(d) When chronic danger is declared, and before starting work, a person must submit a complete written application to the department to obtain a chronic danger HPA. Unless the project also satisfies the re-

quirements for fish habitat enhancement projects identified in RCW 77.55.181 (1)(a)(ii), compliance with the provisions of chapter 43.21C RCW (State Environmental Policy Act) is required. Projects that meet the requirements in RCW 77.55.181 (1)(a)(ii), will be processed under RCW 77.55.181(3), and the provisions of chapter 43.21C RCW will not be required.

(7) **Expedited HPA:**

(a) The department may issue an expedited HPA when normal processing would result in significant hardship for the applicant or unacceptable environmental damage would occur.

(b) Before starting work, a person must submit a complete written application to the department to obtain an HPA.

(c) Compliance with the provisions of chapter 43.21C RCW (State Environmental Policy Act) is not required for expedited HPAs. The department must issue expedited HPAs within fifteen calendar days after receipt of a complete written application. Work under an expedited HPA must be completed within sixty calendar days of the date the HPA is issued.

(d) Any unavoidable impacts must be mitigated or a mitigation plan must be submitted to the department for approval within ninety days after completion of a hydraulic project authorized in an expedited HPA.

(8) **Pamphlet HPA:**

(a) There are two pamphlet HPAs, *Gold and Fish* and *Aquatic Plants and Fish*, that cover the most common types of mineral prospecting and removing or controlling aquatic plants, respectively. A person must follow the provisions in the pamphlet. If a person cannot follow the provisions, or disagrees with any provision, the permittee must apply for a standard HPA before commencing the hydraulic project.

(b) A person must review a pamphlet HPA before conducting the authorized hydraulic project.

(c) When a pamphlet HPA is required, the permittee must have the pamphlet HPA on the job site when conducting work and the pamphlet must be immediately available for inspection by the department upon request.

(d) All persons conducting the project must follow all provisions of the pamphlet HPA.

(e) The department may grant exceptions to a pamphlet HPA only if a person applies for a standard individual HPA for the project.

(f) Pamphlet HPAs do not exempt a person from obtaining other appropriate permits and following the rules and regulations of local, federal, and other Washington state agencies.

(9) **How to get an HPA:**

(a) How to get a pamphlet HPA: A person can print a pamphlet HPA from the department's web site. A person may also request a pamphlet HPA from the department either verbally or in writing.

(b) How to get an emergency HPA: Upon an emergency declaration, and before starting emergency work, a person must obtain a verbal or written HPA from the department. A complete written application is not required. However, a person must provide adequate information describing the proposed action. Compliance with the provisions of chapter 43.21C RCW (State Environmental Policy Act), is not required for emergency HPAs. A person may request a verbal or written emergency HPA from the biologist who issues HPAs for the geographic area where the emergency is located during normal business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m. After business hours, a person must con-

tact the emergency hotline at 360-902-2537 to request an emergency HPA.

(c) How to get a standard, expedited, or chronic danger HPA:

(i) A person must submit a complete written application to the department to obtain an HPA unless the project qualifies for one of the following:

(A) A pamphlet HPA, subsection (3) of this section;

(B) An emergency HPA, subsection (5) of this section;

(C) A minor modification of an HPA, WAC 220-660-030(97); and

(D) A major modification of an HPA, WAC 220-660-030(85).

(ii) When applying for an HPA, a person must submit one of the following application forms to the department:

(A) The electronic online application developed by the department;

(B) The current version of the JARPA;

(C) The current version of the JARPA including the most recent version of the application for streamlined processing of fish habitat enhancement projects when applying for streamlined processing under RCW 77.55.181. These may be submitted to the department as attachments to the online application form;

(D) The most recent version of the model HPA application or other department-approved alternative applications available from the department's public web site; or

(E) The current version of the JARPA if applying for approval of a watershed restoration project under RCW 77.55.171. This may be submitted to the department as an attachment to the online application form.

(iii) A complete application package for an HPA must contain:

(A) A completed application form signed and dated by the applicant, landowner or landowner representative, and the authorized agent, if any. Completing and submitting the application form through the department's online permitting system is the same as providing signature and date, if all documents required during the online application process are submitted to the department;

(B) Plans for the overall project;

(C) Complete plans and specifications for all aspects of the proposed construction or work waterward of the mean higher high water line in salt water, or waterward of the ordinary high water line in fresh water;

(D) A description of the measures that will be implemented for the protection of fish life and their habitats, including any reports assessing impacts to fish life and their habitats, and plans to mitigate those impacts to ensure the project results in no net loss of fish habitat function, value and quantity;

(E) For a standard or chronic danger HPA application, a copy of the written notice from the lead agency demonstrating compliance with any applicable requirements of the State Environmental Policy Act under chapter 43.21C RCW, unless otherwise provided for in chapter 77.55 RCW; or the project qualifies for a specific categorical exemption under chapter 197-11 WAC;

(F) Written approval by one of the entities specified in RCW 77.55.181 if the applicant is proposing a fish enhancement project;

(G) Payment of the application fee required under chapter 77.55 RCW. This fee must be submitted with the application or paid under a billing agreement previously established in advance with the department unless the project is one of the following project types that are exempt from the application fee:

(I) Project type approved under pamphlet permits;
(II) Mineral prospecting and mining;
(III) Projects on farm and agricultural land, as defined in RCW 84.34.020;
(IV) Projects reviewed by a department biologist on contract with the applicant; or
(V) Projects applied for before July 10, 2012, and modifications of permits issued to those projects; and
(H) Applicants seeking approval under the farm and agricultural land fee exemption must provide a copy of the county assessor's classification of the property on which the project occurs as farm and agricultural land as that term is defined in RCW 84.34.020.
(iv) HPA application submission:
(A) A person must submit the complete application package:
(I) Using the department's online permitting system;
(II) Sending the package via mail to:

Department of Fish and Wildlife
P.O. Box 43234
Olympia, Washington 98504-3234;

(III) E-mail: HPAapplications@dfw.wa.gov;
(IV) Fax: 360-902-2946;
(V) Uploading to a file transfer protocol site acceptable to the department; or
(VI) Hand-delivering to the department at 1111 Washington Street S.E., Olympia, WA 98504, Habitat Program, Fifth Floor. The department will not accept applications submitted elsewhere or by other than the applicant or authorized agent.
(B) Dimensions of printed documents submitted with the application package may not be larger than eleven inches by seventeen inches. Pages of documents submitted may not be bound except by paper clips or other temporary fastening.
(C) A person must submit applications and supporting documents with a combined total of thirty or more pages as digital files rather than printed documents. All digital files must be in formats compatible with Microsoft Word, Microsoft Excel, or Microsoft Access programs or in PDF, TIFF, JPEG, or GIF formats.
(D) Applications submitted to the habitat program during normal business hours are deemed received on the date the habitat program receives the application. The department may declare applications received by the habitat program after normal business hours as received on the next business day.
(10) **Incomplete applications:**
(a) Within ten days of receipt of the application, the department must determine whether an application meets the requirements of this section. If the department determines the application does not meet the requirements, the department will provide written or e-mailed notification of an incomplete application to the applicant or authorized agent. This written or e-mailed notification must include a description of information needed to make the application complete. The department may return the incomplete application to the applicant or authorized agent or hold the application on file until it receives the missing information. The department will not begin to process the application until it receives all information needed to complete the application.
(b) The applicant or authorized agent must submit additional information in response to a written notification of incomplete applica-

tion through the department's online permitting system or to the department's habitat program, Olympia headquarters office. The department will not accept additional information submitted elsewhere or by other than the applicant or authorized agent.

(c) The department may not process any application that has been incomplete for more than six months. The department must provide the applicant with written notification at the time the application expires. The applicant or authorized agent must submit a new complete application to receive further consideration of the project.

(11) **Refund of application fee:** The application fee is nonrefundable except when the application fee was paid but the proposed project is not a hydraulic project and therefore does not require an HPA, or the project is exempt from the fee. Upon determination that an application qualifies for a refund, the department must issue the refund within one week.

(12) **Application review period:**

(a) Once the department determines an application is complete, the department will provide to tribes and local, state, and federal permitting agencies a seven-calendar-day review and comment period. The department will not issue the HPA permit before the end of the review period to allow all interested tribes and agencies to provide comments to the department. The department may consider all written comments received when issuing or provisioning the HPA. The review period is concurrent with the department's overall review period. Emergency, expedited, and modified HPAs are exempt from the review period requirement.

(b) Except for imminent danger, expedited, and emergency HPAs, the department will grant or deny approval within forty-five calendar days of the receipt of a complete written application. The department will grant approval of imminent danger and expedited HPAs within fifteen days of the receipt of a complete written application. The department will grant approval of emergency HPAs immediately upon request if an emergency declaration has been made.

(13) **Suspending the review period:**

(a) An applicant or authorized agent may request a delay in processing a standard HPA. The applicant or authorized agent must submit a written request for the delay through the department's online permitting system or to the habitat program's Olympia headquarters office. The department may not accept delay requests submitted elsewhere or by a person other than the applicant or authorized agent.

(b) If the department suspends the review period, the department must immediately notify the applicant in writing of the reasons for the delay. The department may suspend the review period (with or without the applicant's concurrence) if:

(i) The site is physically inaccessible for inspection or not in a condition to be evaluated (i.e., snow cover, frozen);

(ii) The applicant or authorized agent remains unavailable or unable to arrange for a field evaluation of the proposed project within ten working days of the department's receipt of the application;

(iii) The applicant or authorized agent submits a written request for a delay;

(iv) The department is issuing a permit for a storm water discharge and is complying with the requirements of RCW 77.55.161 (3)(b); or

(v) The department is reviewing the application as part of a multiagency permit streamlining effort, and all participating permitting

agencies and the permit applicant agree to an extended timeline longer than forty-five calendar days.

(c) The department may not process any application if the application has been delayed for processing more than six months for any of the reasons identified in subsection (13)(a) or (b) of this section. The department must provide the applicant with written notification at the time the application expires. The applicant or authorized agent must submit a new complete application to receive further consideration of the project.

(14) **Issuing or denying a hydraulic project approval:**

(a) Protection of fish life is the only grounds upon which the department may deny or provision an HPA, as provided in RCW 77.55.021. The department may not unreasonably withhold or condition approval of a permit. The HPA provisions must reasonably relate to the project and must ensure that the project provides proper protection for fish life. The department may not impose provisions that attempt to optimize conditions for fish life that are out of proportion to the impact of the proposed project.

(b) The department may not deny an emergency, imminent danger, chronic danger, or an expedited HPA, as provided in RCW 77.55.021. In addition, the department may not deny an HPA for a project that complies with the conditions of RCW 77.55.141. However, these projects must meet the mitigation provisions in WAC 220-660-080 and the provisions in WAC 220-660-100 through 220-660-450 that are included in an HPA. The department will deny any other type of HPA or request to change an existing HPA when the project will not protect fish life, unless enough mitigation can be assured by provisioning the HPA or modifying the proposal. If the department denies approval, the department must provide the applicant with a written statement of the specific reasons why and how the proposed project would adversely affect fish life, as provided in RCW 77.55.021.

(c) The department may place specific time limitations on project activities in an HPA to protect fish life.

(d) The department may require a person to notify the department before construction starts, upon project completion, or at other times that the department deems necessary while the permit is in effect. The department may also require a person to provide periodic written reports to assess permit compliance.

(e) The HPA must contain provisions that allow for minor modifications to the work timing, plans, and specifications of the project without requiring the reissuance of the permit, as long as the modifications do not adversely affect fish life or their habitats. The permittee should contact the biologist who issued the HPA to request a minor modification.

(f) A person may propose or conduct a hydraulic project under an environmental excellence program agreement authorized under chapter 43.21K RCW. These projects must be applied for and permitted under the requirements of chapter 43.21K RCW.

(15) **Hydraulic project approval expiration time periods:**

(a) Except for emergency, imminent danger, expedited and pamphlet HPAs, the department may grant standard HPAs for a period of up to five years. The permittee must demonstrate substantial progress on construction of the portion of the project authorized in the HPA within two years of the date of issuance.

(b) Imminent danger and expedited HPAs may be granted for a period of up to sixty days, and emergency HPAs may be granted for the expected duration of the emergency hydraulic project.

(c) Pamphlet HPAs remain in effect indefinitely until modified or rescinded by the department.

(d) The following types of agricultural hydraulic project HPAs remain in effect without the need for periodic renewal; however, a person must notify the department before starting work each year:

(i) Seasonal work that diverts water for irrigation or stock watering; and

(ii) Stream bank stabilization projects to protect farm and agricultural land if the applicant can show that the problem causing the erosion occurs annually or more frequently. Evidence of erosion may include history of permit application, approval, or photographs. Periodic floodwaters alone do not constitute a problem that requires an HPA.

(16) **Requesting a time extension, renewal, or major modification of a hydraulic project approval:**

(a) The permittee may request a time extension, renewal, or modification of an active HPA. Before the HPA expires, the permittee or authorized agent, must submit a written request through the department's online permitting system or to the habitat program's Olympia headquarters office. The department may not accept requests for delay, renewal, or modification submitted elsewhere or by a person other than the permittee or authorized agent. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the control number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, payment of the application fee if the request is for a major modification and the original application was subject to an application fee, and the requestor's signature.

(b) Requests for time extensions, renewals, or modifications of HPAs are deemed received on the date received by the department. The department may declare applications submitted to habitat program after normal business hours as received on the next business day.

(c) Within forty-five days of the requested change, the department must approve or deny the request for a time extension, renewal, or modification to an approved HPA.

(d) A permittee may request a modification or renewal of an emergency HPA until the emergency declaration expires or is rescinded. Requests for changes to emergency HPAs may be verbal, but must contain all of the information in (a) of this subsection except that modifications requiring an application fee do not require payment of the fee at the time of the request. The department will invoice the permittee upon committing the HPA to writing.

(e) The department must not modify or renew an HPA beyond the applicable five-year or sixty-day periods. A person must submit a new complete application for a project needing further authorization beyond these time periods.

(f) The department will issue a written HPA if the request is approved.

(17) **Modifications of a hydraulic project approval initiated by the department:**

(a) After consulting with the permittee, the department may modify an HPA because of changed conditions. The modification becomes effective immediately upon issuance of a new HPA.

(b) For hydraulic projects that divert water for agricultural irrigation or stock watering, or when the hydraulic project or other work is associated with stream bank stabilization to protect farm and

agricultural land as defined in RCW 84.34.020, the department must show that changed conditions warrant the modification in order to protect fish life.

(c) The department may not charge an application fee for modifications to HPAs initiated by the department.

(18) **Requesting a transfer of a hydraulic project approval:** An HPA is not transferable to another person. A person wishing to conduct a hydraulic project must submit a new complete application package.

NEW SECTION

WAC 220-660-060 Integration of hydraulic project approvals and forest practices applications. (1) **Description:**

(a) In 1999, the *Forests and Fish Report* and Engrossed Substitute House Bill 2091, which amended the Forest Practices Act, chapter 76.09 RCW, envisioned a more integrated approach to permitting hydraulic projects that also require forest practices applications (FPAs). In May 2001, the forest practices board adopted permanent forest practices rules in Title 222 WAC, which incorporated fish protection measures normally included in hydraulic project approvals (HPAs) for projects in nonfish-bearing waters.

(b) In April 2012, the Washington state legislature, through Second Engrossed Substitute Senate Bill 6406, amended the Forest Practices Act in chapter 76.09 RCW and the hydraulic code statutes in chapter 77.55 RCW. The amendment requires integrating hydraulic code rule fish protection standards (Title 220 WAC) into the forest practices rules for hydraulic projects in fish-bearing waters on forest land. As codified in RCW 77.55.361 and 76.09.040, the requirements of the hydraulic code rules will no longer apply to any forest practices hydraulic project as soon as fish protection standards have been integrated into the forest practices rules, and technical guidance has been developed and approved for inclusion in the *Forest Practices Board Manual*. Thereafter, forest practices hydraulic projects will be regulated under forest practices rules. The amended statutes also include a requirement that the department adopt rules establishing the procedures for the concurrence review process. This process is outlined in subsection (3) of this section.

(2) **General review and comment on forest practices hydraulic projects:**

(a) The department may review and provide comments on any FPA.

(b) For FPAs that include a forest practices hydraulic project involving fish-bearing waters or shorelines of the state, the department must review the forest practices hydraulic projects and either provide comments to the department of natural resources (DNR), or document that the review has occurred without the need for comments. Before commenting, the department will strive to communicate with the applicant regarding any concerns relating to consistency with fish protection standards. The department will also strive to maintain communications with DNR as concerns arise and to inform DNR of communications with applicants.

(c) The department will encourage forest landowners to consult with department biologists, including site visits as needed, before submitting an FPA containing a hydraulic project. This will help ensure that project design plans and specifications meet fish protection

standards. Preapplication collaboration with the department will result in more efficient and successful outcomes for forest landowners and their proposed hydraulic projects. In addition to the general review and comment process for forest practices hydraulic projects described in this subsection, hydraulic projects meeting the criteria described in subsection (3)(a) of this section will follow the concurrence review process.

(3) **Concurrence review process:**

(a) The department must review forest practices hydraulic projects meeting the following criteria and provide written comments to DNR on the project's ability to meet fish protection standards:

(i) Culvert installation or replacement, and repair at or below the bankfull width, as that term is defined in WAC 222-16-010 on July 10, 2012, in fish-bearing rivers and streams that exceed five percent gradient;

(ii) Bridge construction or replacement, and repair at or below the bankfull width, of fish-bearing unconfined streams; or

(iii) Fill within the 100-year flood level, as that term is defined in WAC 222-16-010, of fish-bearing unconfined streams.

(b) After the department receives notification from DNR that an FPA includes one or more hydraulic projects meeting the criteria in subsection (3)(a) of this section, the department has thirty days to review the forest practices hydraulic project(s) for consistency with fish protection standards.

(c) Within five business days after notification from DNR, or as soon as possible thereafter, the department will determine if all information needed to assess the hydraulic project's consistency with fish protection standards is included in the application.

(d) If information is missing, the department will immediately contact the applicant to request the missing information. The department will also provide written notification to DNR, indicating that specific information is missing and that the applicant has been notified. If the applicant fails to provide missing information in a timely manner so that the department can complete its review within the required thirty-day time frame, the department may issue a nonconcurrence on a proposed project.

(e) If, during the thirty-day concurrence review period, the department determines that a forest practices hydraulic project may not be consistent with fish protection standards, the department will attempt to work with the applicant to modify the proposed project. The department will strive to include DNR on site visits with the applicant as needed.

(f) The department must provide written notification of concurrence or nonconcurrence to DNR within the thirty-day review period, stating whether or not the hydraulic project is consistent with fish protection standards. As part of the written notification to DNR, the department must provide information about the outcomes of any meetings with the applicant, including agreements or disagreements, any missing information requested, and any proposed changes needed to meet fish protection standards.

(g) The department will recommend that DNR deny the FPA when efforts described in subsection (3)(e) of this section have not resulted in a successful outcome, the project will result in direct or indirect harm to fish life, and enough mitigation cannot be assured by modifying the hydraulic project proposal or by DNR's agreement to add appropriate provisions to the FPA.

NEW SECTION

WAC 220-660-070 Changes to hydraulic project approval technical provisions. (1) The department may modify or delete technical provisions in this chapter through establishing conditions on an HPA permit when any of the following is demonstrated:

(a) There is no logical application to a project;

(b) A person provides an alternative to the provision that demonstrates that it provides equal or greater protection for fish life;

(c) Enforcement of the original provision would result in denial of an HPA when there is enough mitigation defined to allow the project;

(d) The modification or deletion of the provision will not cause a loss of or injury to fish or shellfish, or the loss or permanent degradation of the habitat that supports fish and shellfish populations;

(e) The proposed hydraulic project is part of an approved cleanup action under Model Toxics Control Act, Comprehensive Environmental Response Compensation and Liability Act, or Superfund Amendment and Reauthorization Act;

(f) The technical provisions conflict with applicable local, state, or federal regulations that provide equal or better protection for fish life;

(g) The technical provision or provisions are not possible due to geological, engineering or environmental constraints or safety concerns; or

(h) New scientific information is made available that demonstrates the project will result in equal or greater protection of fish and shellfish, and their related habitat.

(2) The department may add conditions on the HPA permit to protect fish life as needed to address project-specific or site-specific impacts not adequately addressed by the technical provisions. However, all provisions must relate to the project and be proportional to the impact of the project. The HPA will include all of the technical provisions with which a person will be required to comply.

NEW SECTION

WAC 220-660-080 Mitigation requirements for hydraulic projects. (1) **Description:** The department defines mitigation as sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts. The department applies the technical and special provisions to mitigate impacts to fish life from hydraulic projects. This mitigation minimizes loss of fish habitat function, value, and quantity.

(2) **Fish life concerns:** Work conducted in or near water can negatively impact fish life. Best management practices such as proper design and siting, construction timing, isolating the work area, sediment and erosion control, water-quality management, and revegetation can avoid, minimize, and rectify many of these impacts. These best management practices are reflected in the technical provisions. However, remaining impacts may require compensation to offset the loss of fish habitat function, value, and quantity.

(3) **Mitigation requirements:**

(a) The department must determine if the project actions proposed will mitigate for the project impacts to fish life, including fish habitat function, value, and quantity based on available information.

(b) A person must pay for any surveys, studies, or reports required by the department to determine if the hydraulic project mitigates impacts to fish life. When required, the department will provide a written explanation of why the information is required and what standards or protocols the applicant must follow.

(c) Mitigation includes all of the action steps in the mitigation sequence. The department and the applicant must consider and implement mitigation actions in the following sequential order:

(i) Avoid the impact altogether by not taking a certain action or parts of an action;

(ii) Minimize impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking steps to avoid or reduce impacts;

(iii) Rectify the impact by repairing, rehabilitating, or restoring the affected environment;

(iv) Reduce or eliminate the impact over time by preservation or maintenance;

(v) Compensate for remaining unmitigated impacts by replacing, enhancing, or providing substitute resources or environments; and

(vi) Monitor the impact and take appropriate corrective measures to reach the identified goal.

(d) Compensatory mitigation is not required for hydraulic projects if other actions in the mitigation sequence are taken that prevent or offset impacts to fish life.

(e) The department may require advance mitigation if an experimental mitigation technique is being performed. If required, the advance mitigation should be fully functional prior to the project impacts.

(f) Replacement of any portion of any structure must comply with the requirements in this chapter governing materials that may be used.

(4) **Compensatory mitigation:**

(a) The department may determine that compensatory mitigation actions are needed to offset impacts remaining after other actions in the mitigation sequence are completed.

(b) When compensatory mitigation is needed to offset impacts, the department prefers compensatory mitigation actions that restore impacted functions on-site or immediately adjacent to the impact site.

(c) The department may not limit the scope of compensatory mitigation options to areas on or near the project site, or to habitat types that are the same type as those on the project site. The department must fully review and give due consideration to compensatory mitigation proposals that improve the overall fish habitat functions and values of the watershed. The department must also accommodate the mitigation needs of the infrastructure or noninfrastructure development, including proposals or portions of proposals that are explored or developed in RCW 90.74.040. However, the department will not approve compensatory mitigation that does not provide equal or better fish habitat functions and values.

(d) The department will evaluate mitigation credits and debits on a scientifically valid measure of fish habitat function, value, and quantity such as the habitat equivalency analysis, habitat evaluation procedure or other method acceptable to the department. Compensatory mitigation must compensate for temporal losses, uncertainty of per-

formance, loss of habitat quantity and differences in habitat functions, types, and value.

(e) The department will consider the use of credits from an approved programmatic option such as a state or federal certified fish conservation bank, a joint 404/401 mitigation and fish conservation bank, or in-lieu fee program as a form of compensation only after the standard mitigation sequencing has been applied at the impact site. These credits should benefit the same fish stocks or fish species as those impacted by the hydraulic project.

(f) For calculating compensatory mitigation requirements under this chapter, the environmental baseline is habitat conditions at the time the HPA application is submitted. However, this baseline does not apply to hydraulic projects illegally constructed.

(g) The department will evaluate impacts caused by a hydraulic project by comparing the condition of the habitat before project construction or the performance of work to the anticipated condition of the habitat after project completion.

(h) Maintenance on a legally constructed structure does not require compensatory mitigation unless: The maintenance causes a new loss of fish habitat function, value or quantity not associated with the original construction of the structure.

(i) Maintenance work that rehabilitates and replaces a structure must comply with the applicable common technical provisions and project-specific and site-specific provisions.

(j) Removal of a human-made or engineered structure does not require compensatory mitigation. However, the department may require bank resloping, revegetation, and other job site stabilization measures after structure removal.

(k) The department may require monitoring to determine the extent and severity of impacts and the effectiveness of the compensation projects. The department may require corrective measures to ensure performance goals and objectives specified in the HPA are achieved. The monitoring and contingency plan must ensure the compensatory mitigation meets the performance goals and objectives. This plan may be part of a larger mitigation plan.

(5) **Mitigation plan:**

(a) The department may require a mitigation plan for projects with unavoidable adverse impacts and those with ongoing, complex, and experimental mitigation actions.

(b) The department must notify a person in writing if a mitigation plan is required and specify what the plan must include if a mitigation plan was not submitted with the application.

(c) An applicant may use a mitigation plan to propose compensatory mitigation within a watershed. Pursuant to RCW 90.74.020, a mitigation plan must:

(i) Guarantee long-term viability of the created, restored, enhanced, or preserved fish habitat, including assurances for protecting any essential fish habitat functions and values defined in the mitigation plan;

(ii) Provide long-term monitoring of any created, restored, or enhanced mitigation site; and

(iii) Be consistent with the local comprehensive land use plan and any other applicable planning process in effect for the development area, such as an adopted subbasin or watershed plan.

(d) When making a permit decision, the department must consider, pursuant to RCW 90.74.020, whether the mitigation plan provides equal or greater fish habitat functions and values compared to the existing

conditions. This consideration must be based upon the following factors:

(i) The relative value of the mitigation for the target fish species or fish stocks, in terms of the function, value, and quantity of habitat;

(ii) The compatibility of the proposal with broader resource management and habitat management objectives and plans, such as existing resource management plans, species recovery plans, watershed plans, critical areas ordinances, the forestry riparian easement program, the riparian open space program, the family forest fish passage program, and shoreline master programs;

(iii) The ability of the mitigation to address scarce fish habitat functions or values within a watershed;

(iv) The benefits of the proposal to the broader watershed landscape, including the benefits of connecting various fish habitat units and reducing population-limiting fish habitats;

(v) The benefits of implementing advance compensatory mitigation before the project's anticipated impacts occur; and

(vi) The significance of any negative impacts to nontarget fish species, fish stocks, or resources.

(e) A mitigation plan may be approved through a memorandum of agreement between a person and the department.

(f) The department will require a memorandum of agreement between an applicant and the department if mitigation actions, including monitoring, exceed the five-year statutory time limitation of the HPA.

NEW SECTION

WAC 220-660-090 Technical provisions. Technical provisions are avoidance and minimization mitigation measures commonly used to protect fish life. WAC 220-660-100 through 220-660-450 are common technical provisions listed by hydraulic project types. All projects will also be reviewed relative to the provisions of WAC 220-660-080. The department will require certain technical provisions depending upon the individual proposal and the site characteristics. Additional special provisions may be included to address site-specific conditions. Those provisions must be in the HPA. The department may apply saltwater provisions listed in WAC 220-660-310 through 220-660-450 to a project in tidally influenced areas upstream of river mouths and the mainstem Columbia River downstream of Bonneville Dam.

NEW SECTION

WAC 220-660-100 Freshwater habitats of special concern. (1) **Description:**

(a) There are ninety-one species of fish in Washington: Fifty species of native fish and forty-one introduced fish species. Freshwater habitats of special concern are listed in WAC 220-660-120 and 220-660-330, and include priority habitats in the priority habitats and species program. These habitats of special concern provide essential functions important in the developmental life histories of twen-

ty-two priority fish species. Priority fish species include species that are listed under state and federal endangered species laws, and species of recreational, commercial, or tribal importance.

(b) The presence of freshwater habitats of special concern or adjacent areas with similar characteristics may restrict project type, design, location, and timing. These restrictions also may benefit other fish species that use these habitats. The department may determine the location of such habitats by a site visit, and/or by considering maps, publications, and other available information.

(2) **Fish life concerns:**

(a) All fish and shellfish have special habitat requirements related to water quality and quantity (including temperature) and to the physical features of the stream or body of water in which they live. For example, salmon and steelhead spawn and live for a time in a stream before going to the ocean. They require an ample supply of clean, cool, well-oxygenated water. Adults need clean gravel in which to spawn and juvenile fish require in-stream cover such as tree parts, boulders, or overhanging banks in which to hide from predators. Vegetated stream banks shade the water from the warming effects of the sun. Insects drop off overhanging vegetation and provide food. When juvenile salmon or steelhead enter saltwater, their habitat requirements change. During this critical transition period, they must have shallow, nearshore waters where they can migrate, school, feed, and seek protection from larger fish. Each species of fish and shellfish has similar, yet unique requirements. They have become adapted to and require these natural conditions as a result of the ten thousand years of evolution since the last ice age. The degradation of any one of the elements of their required habitat results in reduced numbers of fish and shellfish.

(b) Construction activity in or near the water has the potential to kill fish or shellfish directly. More importantly, this activity can also alter the habitat that fish and shellfish require. Direct damage or loss of habitat results in direct loss of fish and shellfish production. Direct killing of fish or shellfish is usually a one-time loss. Damaged habitat, however, can continue to cause lost production of fish and shellfish for as long as the habitat remains altered.

(3) **Freshwater habitats of special concern:**

(a) The following habitats serve essential functions in the developmental life history of twenty-two priority fish species:

(i) Spawning habitat;

(ii) Rearing habitat;

(iii) Migration corridors;

(iv) Cover and shelter provided by large woody debris, live tree roots, deep pools, shallow water, undercut banks, overhanging vegetation, turbulence, and large interstitial areas in cobble or boulder substrate;

(v) Off-channel habitat including wall-based channels, flood swales, side channels, and floodplain spring channels;

(vi) Native aquatic vegetation beds; and

(vii) Native riparian vegetation zones.

(b) The following are important geomorphic processes that form and maintain freshwater habitats of special concern:

(i) Woody material sources, delivery, and transport; and

(ii) Sediment sources, delivery, and transport.

(c) A person may request information from the department about the location of priority fish species and freshwater habitats of spe-

cial concern. Information about priority fish species is also available on the department's web site.

NEW SECTION

WAC 220-660-110 Authorized work times in freshwater areas. (1) **Description:** The department authorizes work during less critical times of the year to reduce the risk of impacts to fish life at critical life stages. In-water work is not allowed during critical periods of the year unless a person can implement mitigation measures to eliminate risk to fish life.

(2) **Fish life concerns:** Work in or near watercourses can harm fish life including incubating eggs and fry, and juveniles and spawning adults, or other sensitive life history stages. Therefore, work must occur at times of the year when the risk to fish life is reduced unless the risk can be avoided.

(3) **Determining authorized work times:**

(a) The department has the discretion to modify timing windows depending on actual site conditions (such as hydrology, run timing, and fish presence) and the risk of the proposed work to fish life. The department must specify authorized work times for hydraulic projects in or near waters of the state when it issues HPAs. When determining the authorized work times, the department will use the information below to determine the appropriate timing window for each project individually. Work timing considers:

(i) Life history stages of the fish and shellfish species present:

(A) Presence or absence of spawning, incubating, rearing, migrating, and other critical habitat at or near the worksite; and

(B) The migration timing of juveniles and adults in both fresh and saltwater.

(ii) The expected impact of construction activities, equipment type, and access;

(iii) Best management practices proposed by the applicant, including proposed plans to:

(A) Control, contain, and manage sediment and erosion at the worksite;

(B) Contain and manage wastewater at the worksite;

(C) Isolate the impacts of the work to fish life using appropriate worksite isolation techniques; and

(D) Minimize damage to riparian, wetland, and aquatic vegetation at the worksite.

(iv) Mitigation measures volunteered or imposed upon the project;

(v) Existing or predicted weather conditions or flow during construction activities; and

(vi) Other circumstances and conditions.

(b) The department must publish on its public web site the times when spawning salmonids and their incubating eggs and fry, or other critical life history stage are least likely to be within Washington state fresh waters.

NEW SECTION

WAC 220-660-120 Common freshwater construction provisions. (1) **Description:** Common freshwater construction provisions can apply to many hydraulic projects. However, only applicable common construction provisions will be applied to a specific hydraulic project. Common construction provisions include job site access, equipment use, construction materials, sediment and erosion control containment, in-water work area isolation, fish removal, job site repair, and revegetation.

(2) **Fish life concerns:** Construction and other work can negatively affect fish life. Some activities may kill or injure fish while others can cause behavioral changes that reduce fish growth and survival. Some activities can damage the habitat used for spawning and egg incubation, rearing, feeding, hiding from predators, and migration.

(3) **Staging areas:** Establish staging areas (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

(4) **Job site access:**

(a) Use existing roadways or travel paths whenever possible. If not possible, minimize the number of new temporary access roads constructed.

(b) Design and locate new temporary access roads to avoid and minimize erosion and delivery of sediment to waters of the state.

(c) Clearly mark boundaries to establish the limit of work associated with site access and construction.

(d) Limit the removal of native vegetation to one side of the channel to maintain the best shade coverage. Where possible, locate the project access site to minimize the need to remove woody vegetation. Woody vegetation greater than six inches diameter that must be removed must be marked in the field by the applicant and specifically approved for removal by the department.

(e) Retain all natural habitat features on the bed or banks including large woody material and boulders. These natural habitat features may be moved during construction but they must be placed near the preproject location prior to demobilization.

(5) **Equipment use:**

(a) Avoid and minimize unintentional damage to or removal of riparian, aquatic, and wetland vegetation by confining the use of equipment to specific access and work corridors.

(b) Avoid and minimize the use of equipment below the OHWL of rivers, streams, and lakes.

(c) If wet or muddy conditions exist, in or near a riparian or wetland area, use equipment that reduces ground pressure, if possible.

(d) Check equipment daily for leaks and complete any required repairs in an upland location before using the equipment in or near the water.

(e) Equipment used in or near water must use vegetable-based lubricants.

(6) **Construction materials:**

(a) Store all construction and deconstruction material at a location and in a way that will prevent contaminants such as petroleum

products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

(b) Do not stockpile construction material below the OHML in rivers, streams, and lakes unless authorized to do so in the HPA.

(c) Use only clean, suitable material as fill material (no trash, debris, car bodies, asphalt, concrete, etc.).

(d) If the department approves the use of angular rock, the rock must be large enough and installed to withstand the 100-year peak flow or other design flow approved by the department.

(e) To prevent leaching, construct forms for any wet concrete. Place impervious material over any exposed concrete not lined with forms that will come in contact with waters of the state. Forms and impervious materials must remain in place until the concrete is cured.

(f) Do not use wood treated with oil-type preservative (creosote, pentachlorophenol) in any hydraulic project. Wood treated with waterborne preservative chemicals (ACZA, ACQ) may be used provided the western wood preservers institute has approved the waterborne chemical for use in the aquatic environment. The manufacturer must follow the western wood preservers guidelines and the best management practices to minimize preservative migration from treated wood into aquatic environments. To minimize leaching, wood treated with a preservative by someone other than a manufacturer must follow the field treating guidelines. These guidelines are available at www.wwpinstitute.org.

(g) Use tarps or other methods to completely contain treated wood sawdust, trimmings, and drill shavings.

(h) The department discourages the use of whole tires. Products made from scrap tires specifically manufactured for use in the aquatic environment are allowed by the department.

(7) **Construction-related sediment, erosion and pollution containment:**

(a) When possible, work in the dry watercourse (when no natural flow is occurring in the channel, or when flow is diverted around the worksite).

(b) Protect all disturbed areas from erosion. Maintain erosion and sediment control until demobilization and cleanup of the job site is completed.

(c) When using straw for erosion and sediment control, use only straw that has been certified as free of noxious weeds and their seeds.

(d) If flow conditions arise that are likely to result in unanticipated and unpreventable erosion or siltation of waters of the state, all hydraulic project activities must stop except those needed to control erosion and siltation.

(e) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

(f) Route the construction water (wastewater) the project to an upland area above the limits of anticipated floodwater. Remove fine sediment and other contaminants before discharging the construction water to waters of the state.

(g) Deposit waste material from the project, such as construction debris, silt, excess dirt, or overburden in an upland area above the limits of anticipated floodwater unless the material is authorized by the department for reuse in the project. Do not burn wood treated with

preservatives, trash, waste, or other deleterious materials below the OHWL.

(h) Deposit all trash from the project at an appropriate upland location.

(i) Prevent transporting and introducing aquatic invasive species by thoroughly cleaning vessels, equipment, boots, waders, and other gear before removing the gear from the worksite.

(8) **In-water work area isolation using block nets:**

(a) Do not install block nets at sites with heavy vegetation, large cobble or boulders, undercut banks, or deep pools unless there is no difficulty securing and/or maintaining the nets.

(b) Install a downstream block net if fish may reenter the work area from downstream.

(c) Install block nets at sites that have reduced flow volume or velocity, uniformity of depth, and good accessibility.

(d) After the first block net is secured at the upstream end, use a second block net to herd fish downstream and out of the project area.

(e) The department must determine the maximum size of the block net opening. The size of the opening depends on the bypass design, the purpose of the block net, and the fish species likely to be present.

(f) Install the block nets at an angle to the direction of flow (not perpendicular to the flow) to avoid entrapping fish in the net.

(g) To anchor block nets, place bags filled with clean round gravel along the bottom of the nets.

(h) Secure block nets along both banks and the channel bottom to prevent failure from debris accumulation, high flows, and/or flanking.

(i) To keep fish out of the worksite, leave block nets in place until the work is complete and conditions are suitable for fish.

(j) Check block nets at least three times a day for entangled fish and accumulated debris.

(9) **In-water work area isolation using a temporary bypass:**

(a) Isolate fish from the work area by using either a total or partial bypass to reroute the stream through a temporary channel or pipe.

(b) The hydraulic capacity of the stream bypass must be equal to or greater than the peak flow event expected when the bypass will be operated. A person may have to conduct a hydrologic analysis to determine the magnitude of this flow event. The department may not require hydraulic analysis for short-term bypass on low stream flows.

(c) Provide fish passage during times of the year when fish are expected to migrate.

(d) Sequence the work to minimize the duration of dewatering.

(e) Use the least-impacting method that is possible to temporarily bypass or exclude water from the work area. Consider the physical characteristics of the site and the anticipated volume of water flowing through the work area.

(f) Design the temporary bypass to minimize the length of the dewatered stream channel.

(g) During all phases of bypass installation and decommissioning, maintain flows downstream of the project site to ensure survival of all downstream fish.

(h) Install the temporary bypass before starting other construction work in the wetted perimeter.

(i) The department may require the installation of a cofferdam or similar device at the upstream and downstream end of the bypass to prevent backwater from entering the work area.

(j) Return diverted water to the channel immediately downstream of the work area. Dissipate flow energy from the diversion to prevent scour or erosion of the channel and bank.

(k) If the diversion inlet is a gravity diversion that provides fish passage, place the diversion outlet where it facilitates gradual and safe reentry of fish into the stream channel.

(l) If the bypass is a pumped diversion it must run continuously, once started, until it is no longer necessary to bypass flows. This requires back up pumps on site and twenty-four-hour monitoring for overnight operation.

(m) If the diversion inlet is a pump diversion in a fish-bearing stream, the pump intake structure must have a fish screen installed, operated, and maintained in accordance with RCW 77.57.010 and 77.57.070. Screen the pump intake by one of the following:

(i) Perforated plate: 0.094 inch (maximum opening diameter);

(ii) Profile bar: 0.069 inch (maximum width opening); or

(iii) Woven wire: 0.087 inch (maximum opening in the narrow direction).

(iv) The minimum open area for all types of fish guards is twenty-seven percent. The screened intake must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second.

(n) The fish screen must remain in place whenever water is withdrawn from the stream through the pump intake.

(o) Maintain fish screens to prevent injury or entrapment of fish.

(p) Remove fish screens on dewatering pumps in the isolated work area only after all fish are safe and excluded from the work area.

(q) Isolate pump hose intakes with block nets so that fish do not get near the intake.

(r) Before restoring water to the work area, stabilize the bed with clean material sized to match undisturbed sediments.

(s) Complete all in-water and channel restoration work before rewatering the work area.

(10) **In-water work area isolation using a cofferdam structure:**

(a) Use modeling to determine the impact of the cofferdam or similar device on water-surface elevations during all anticipated flows. The department will not require modeling for short-term cofferdams installed in low flow streams.

(b) When designing the cofferdam or similar device, consider the infiltration rate of seepage flow from the riverbed and banks.

(c) Install and remove cofferdams or similar devices in a way that maintains water quality.

(11) **In-water work without a bypass or cofferdam:**

(a) In the following instances, the department will not require the use of a cofferdam, bypass, or similar structure to separate the work area from waters of the state:

(i) When installing a cofferdam, bypass, or similar structure would cause greater impacts to fish life than it would prevent;

(ii) When the work area is in deep or swiftly flowing water;

(iii) When turbidity is not a concern;

(iv) When fish can be excluded by nets or screens; or

(v) When fish are not present.

(12) **Fish removal:**

(a) All persons participating in fish capture and removal must have training, knowledge, and skills in the safe handling of fish.

(b) If electrofishing will be conducted, a person with electrofishing training must be on-site to conduct or direct all electrofishing activity.

(c) If personnel are available, the department and affected tribes may help capture and move fish life from the job site.

(d) Place block nets up and downstream of the in-water work area.

(e) Capture and safely move fish life from the work area to the nearest suitable free-flowing water.

(13) **Demobilization and cleanup:**

(a) Restore the disturbed bed, bank, and riparian zones as close as possible to their preproject condition unless modified elevations and contours are authorized by the department in the approved construction drawings.

(b) Completely remove any temporary fill and return the affected areas to preproject elevation and contours. Fill material must be removed before the end of the in-water timing window if the fill material could erode into or deliver sediment-laden water into waters of the state.

(c) By the end of the in-water work period, abandon temporary roads in wet or flood-prone areas.

(d) By the end of the in-water work period, remove all temporary stream crossings and restore the bed and banks to their preproject condition.

(e) Upon completion of the project, remove all materials or equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.

(f) To prevent fish from stranding, backfill trenches, depressions, and holes in the bed that may entrain fish during high water or wave action.

(g) Removed or replaced structures and associated materials must not reenter waters of the state unless authorized by the department.

(h) To minimize sediment delivery to the stream or stream channel, do not return in-stream flows to the work area from a bypass, cofferdam or similar structure until all in-channel work is completed and the bed and banks are stabilized.

(i) Using a proven methodology, replace native riparian, aquatic, and wetland vascular plants (except noxious weeds) damaged or destroyed by construction.

(j) The department must approve planting densities and maintenance requirements for replanting on a site-specific basis.

(k) Complete replanting during the first dormant season (late fall through late winter) after project completion. Maintain plantings for at least three years to ensure at least eighty percent of the plantings survive. Failure to achieve the eighty percent survival in year three will require that a person submit a plan with follow-up measures to achieve requirements or reasons to modify requirements.

(l) The department may waive the requirement to plant vegetation where the potential for natural revegetation is adequate or where other factors preclude it.

(m) The department may require fencing or other structures to prevent livestock, wildlife, or unauthorized persons from accessing the replanted sites until the plantings are well established.

(n) Remove temporary erosion and sediment control methods after job site is stabilized.

(14) **Required permittee notification:** If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the department of the

problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington military department emergency management division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the department gives approval. The department may require additional measures to mitigate impacts.

NEW SECTION

WAC 220-660-130 Stream bank protection and lake shoreline stabilization. Appropriate methods to design stream bank structures are available in the department's *Integrated Streambank Protection Guidelines*, as well as other published manuals and guidelines.

(1) **Description:**

(a) Stream bank and lake shoreline erosion is a process where soil, gravel, and rock within the bank of a waterway become mobilized by the flow or wave action of water. Stream bank and lake shoreline erosion is a natural process that supplies the materials necessary to create features such as beaches, gravel bars, and floodplains. However, activities that alter the surrounding environment can greatly increase the rate of erosion. One of the primary causes of accelerated erosion is a reduction in the amount of vegetation within the riparian zone of a watercourse or lake.

(b) Stream bank protection and lake shoreline stabilization structures are permanent or temporary structures constructed to reduce or prevent stream bank and shoreline erosion. Structural techniques armor the bank with material such as riprap, concrete, or timber. Biotechnical techniques attempt to mimic natural processes by using live plantings, rootwads, and large woody material (LWM). Biotechnical techniques usually impact fish life less than structural techniques. Some projects integrate both structural and biotechnical techniques.

(2) **Fish life concerns:** Stream bank protection and lake shoreline stabilization alter the bed or beach and the physical processes that form and maintain fish habitat. Direct loss of habitat may include loss of cover, spawning beds, large woody material, riparian zone function, and floodplain connectivity as well as alteration of the channel/beach. These losses and alterations decrease the complexity and diversity of fish habitats.

(3) **Bank protection and lake shoreline stabilization design - General:**

(a) The department may require a person to submit a qualified professional's rationale with the HPA application for a new structure or a replacement structure extending waterward of the existing structure or bankline. This requirement does not apply to projects that address localized scour. The rationale for the proposed technique must include:

(i) An analysis performed by a qualified professional assessing the level of risk to existing buildings, roads, or services being threatened by the erosion;

(ii) Technical rationale specific to the project design, such as a reach and site assessment to identify the mechanism of the bank failure and cause of erosion; and

(iii) Evidence of erosion and/or slope instability to warrant the work.

(b) Avoid or minimize adverse impacts to fish life by using the least impacting technically feasible alternative. The common alternatives below are in order from most to the least preferred:

(i) No action – Natural channel processes to occur;

(ii) Biotechnical techniques;

(iii) Combination of biotechnical and structural techniques; and

(iv) Structural techniques.

(c) The department may require a person to incorporate large woody material or native vegetation into the design of the structures as partial or complete mitigation for unavoidable impacts to fish life.

(d) Restrict the area of stream bank protection and lake shoreline stabilization to the least amount needed to protect eroding banks.

(e) Where technically feasible, the toe of the structure must be located landward of the OHWL. Restrict the placement of material waterward of the OHWL to installing mitigation features (e.g., logs and rootwads) approved by the department.

(f) The project must be designed to withstand the maximum selected design flow for the project.

(4) **Stream bank protection design:**

(a) When the bankline of a river or stream has changed as a result of meander migration or lateral erosion, the current location of the bank must be maintained. If this new alignment poses imminent threat to safety or infrastructure, then, on a case-by-case basis, the department may grant an exemption to establish the bank alignment waterward of the current location to provide the minimum footprint necessary to construct the bank protection elements.

(b) The design of bank protection projects must avoid or minimize impacts to fish life. The department will evaluate designs on the basis of performance. Properly designed bank protection projects:

(i) Incorporate the ecological and geomorphological processes acting at the site in the design;

(ii) Use a site and reach assessment to understand the causes of erosion;

(iii) Recognize that natural bank erosion processes and rates are essential for ecological health of the aquatic system and ensure that the design includes bank treatments that allow for natural rates of erosion to occur when possible;

(iv) Move existing infrastructure away from the eroding bank when possible;

(v) Use design flows appropriate for the type of protection and function of the individual bank protection elements;

(vi) Use natural materials when possible, including large wood and vegetation;

(vii) Avoid affecting existing spawning and rearing habitat and the processes that create and maintain it; and

(viii) Recognize that stream bank erosion treatments can cause the need for more stream bank protection projects upstream and downstream from the project site and understand that the design must prevent or minimize these impacts to habitat and property.

(5) **Lake shoreline stabilization design:**

(a) If the OHWL reestablishes landward of a lake shoreline stabilization structure, the department will consider this reestablished OHWL to be the existing OHWL for permitting purposes. If the breach was a result of storm damage or other natural conditions, the bank protection structure may be repaired or replaced in the existing foot-

print if the work is conducted within three years from the date the damage occurred.

(b) The design of lake shoreline stabilization projects must avoid or minimize impacts to fish life. The department will evaluate designs on the basis of performance. Properly designed bank protection projects:

(i) Set back infrastructure away from the eroding shoreline;

(ii) Remove existing rock and concrete bulkheads when possible;

(iii) Use soft shore protection methods such as beach nourishment, large wood, bank resloping, and revegetation;

(iv) Prevent impacts to adjacent habitat; and

(v) Bury the base of the structure deep enough to prevent undermining. Where scour depth is deep enough, choose a design that adjusts to changing scour depth without compromising the function of the bank protection.

(6) **Bank protection and lake shoreline stabilization construction:**

(a) The department may require a person to establish the horizontal distance of the structure from a permanent benchmark(s) (fixed objects) before starting work on the project. The benchmarks must be located, marked, and protected to serve as a post-project reference for ten years.

(b) Do not release overburden material into the waters of the state when resloping the bank.

(c) Do not use bed gravel for exterior armor unless the department has specifically authorized it.

(d) Bank protection or shoreline stabilization material and filter blanket material must be placed from the bank or a barge. Dumping material onto the bank face may occur only if the toe is established and the material can be confined to the bank face.

NEW SECTION

WAC 220-660-140 Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas. The requirements in this section apply to location, design, and construction of permanent and seasonal docks, piers, ramps (gangways), floats, watercraft lifts, and mooring buoys.

(1) **Description:** Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings that are usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven, jacked, or cast vertically into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage.

(2) **Fish life concerns:**

(a) Over-water and in-water structures can alter physical processes that create or maintain fish habitat. These include altering the light regime, hydrology, substrate conditions, and water quality.

However, light reduction is a main impact to fish life at critical life stages. Light reduction, or shading, by over-water or in-water structures reduces survival of aquatic plants. Aquatic plants provide food, breeding areas, and protective nurseries for fish, shellfish, crustaceans, and many other animals.

(b) Shallow water provides juvenile fish a refuge from predators like larger fish. Over-water and in-water structures can alter movement of juvenile salmon, steelhead and other fish species. Structures grounding on the bed can physically block migration. The light/dark contrast of shading/no shading of over-water and in-water structures can affect migration behavior. Fish respond by moving into deeper water which increases the risk of predation. These structures may increase the exposure of juvenile salmon, steelhead, and other small fish to predators by providing predator habitat.

(3) **Residential and public recreational dock, pier, ramp, float, watercraft lift and buoy design – General:**

(a) Design and locate structures to avoid or minimize impacts to freshwater habitats of special concern.

(b) Design and locate structures to avoid or minimize impacts to fish spawning areas.

(c) Design and locate structures to avoid or minimize impacts to juvenile salmonid migration, feeding and rearing areas where shading impacts are a concern.

(i) Limit the width of residential piers and docks for the first thirty feet from the shoreline. Limit the width of recreational piers to the minimum width needed to accommodate the intended use.

(A) In certain river systems alternative residential dock criteria may apply.

(B) For the Columbia River, the following criteria may apply: Docks less than or equal to six feet in width should be located fifty feet from the shoreline and have twenty feet of water depth below the float (both criteria measured at mean low water).

(ii) Piers must extend far enough from the shoreline so floats do not impact juvenile salmonid migration, feeding and rearing areas. Grounding of floats is authorized in reservoirs and impoundments at times of the year when the water level is dropped.

(iii) The underside of pier must be at least one and one-half feet above the OHWL elevation unless prohibited by local land use regulations.

(iv) The department will require residential dock designs to include grating. The department may require a public recreational dock design to include grating.

(A) North/south oriented piers (338 to 22 degrees, or 158 to 202 degrees) greater than four feet in width must have a minimum of thirty percent of the entire deck surface covered in functional grating. The grating must be installed parallel to the length of the pier for the entire length of the pier.

(B) Northeast/southwest, northwest/southeast and east/west oriented piers (23 to 157 degrees, 203 to 337 degrees) must have at a minimum of fifty percent of the entire deck surface covered in functional grating regardless of width. The grating must be installed parallel to the width of the pier, evenly spaced along the entire length of the pier.

(C) Limit the width of residential ramps to four feet wide. Limit the width of public recreational ramps to the minimum width needed to accommodate the intended use. Cover the entire ramp surface with grating.

(D) A dock or float six feet wide or narrower must have at least thirty percent of the deck surface covered in functional grating. A dock or float wider than six feet (up to eight feet wide) must have at least fifty percent of the deck surface covered in functional grating. The grating material's open area must be at least sixty percent. In some waterbodies the department may require a higher proportion of grating. Locate flotation under the solid decked area only. Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above, or below the grating should not block light penetration.

(E) If only the minimum deck surface area described in (c)(iv)(A), (B), or (C) of this subsection is grated, the grating material's open area must be at least sixty percent unless the grating covers more than the minimum deck area. If the grating covers more than the minimum deck surface area, the grating material's open area can be reduced down to a minimum of forty percent open area.

(v) If grating is required, locate flotation under the solid decked area only.

(vi) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from attracting fish, unless there are safety constraints.

(d) Fully enclose and contain flotation for the structure in a shell (tub) or 20 - 25 mm polyethylene or polyurethane wrap. The shell or wrap must prevent breakup or loss of the flotation material into the water. The shell or wrap must not be readily subject to damage by ultraviolet radiation and abrasion.

(e) The design must not include skirting including batter fencing constructed around piers, docks, or floats unless specifically approved in an HPA.

(f) Helical screw, "duckbill," or other approved anchor(s) or piling may hold floats in place.

(g) The design should not use treated wood for the decking of the structure. The design may use treated wood for structural elements. Treated wood structural elements subject to abrasion by vessels, floats, or other objects must incorporate design features to minimize abrasion of the wood.

(h) The structure must have been usable at the site within the past twelve months of the time of application submittal to be considered a replacement structure.

(i) Replacement of more than thirty-three percent or two hundred fifty square feet of decking or replacement of decking substructure requires installation of functional grating. The grating must conform to the requirements in this section.

(4) **Pile design:**

(a) Use the minimum number of pilings required to construct a safe structure.

(b) Steel piles used to construct residential docks should not exceed six inches in diameter. Limit the diameter of steel piling used to construct public recreational docks to the minimum width needed to accommodate the intended use.

(c) The use of creosote or pentachlorophenol piling is prohibited. New and replacement piling can be steel, concrete, recycled plastic, or untreated or department approved treated wood.

(d) Treated wood piling must incorporate design features to minimize abrasion of the piling from contact with vessels, floats, or other objects.

(e) All pilings must be fitted with devices to prevent perching by fish-eating birds.

(5) **Watercraft lift design:**

(a) Design the watercraft lift/grid to avoid or minimize impacts to juvenile salmonid migration, feeding and rearing areas where shading impacts are a concern.

(b) The bottom of the watercraft lift/grid must be a minimum of one foot above the bed.

(c) Use the minimum number of pilings needed to support the watercraft lift/grid.

(6) **Mooring buoy design:**

(a) In waterbodies where mooring buoy systems might damage the bed and native submerged aquatic vegetation, locate and design the buoy system to minimize damage.

(i) Locate the buoy deep enough to prevent vessel grounding.

(ii) Design and install the buoy system with mid-water floats so that anchor lines do not drag.

(iii) In areas with native submerged aquatic vegetation, use an embedment-style mooring anchor instead of a surface-style mooring anchor.

(iv) Adequately size the mooring to prevent the anchor from shifting or dragging along the bed.

(b) If the department authorizes the use of a concrete anchor, use a precast concrete anchor.

(c) The mooring buoy must have a shell that is not readily subject to damage by ultraviolet radiation and abrasion caused by rubbing against vessels, the bed, and/or waterborne debris.

(7) **Residential and public recreational docks, pier, ramp, float, watercraft lift and buoy construction:**

(a) Operate and anchor vessels and barges such that they do not adversely impact native submerged aquatic vegetation.

(b) Reestablish the dock centerline during the construction phase using the same methodology used to establish the centerline on the construction drawings.

(c) A vibratory hammer or water jet drive piling is preferred for installing steel piling.

(d) If impact pile driving is used, set the drop height to the minimum needed to drive the piling.

(e) Use appropriate sound attenuation to minimize harm to fish from impact steel pile-driving noise.

(f) To avoid attracting fish to lights at night, limit impact steel pile driving to daylight hours.

(g) The department may require the following during piling removal:

(i) Use a vibratory or water jet system to dislodge piling, if possible.

(ii) After removal, place the piling on a construction barge or other dry storage site. Piles removed from the substrate must be moved immediately from the water into a barge or other dry storage site. The pile must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the pile.

(iii) If a treated wood pile breaks during extraction, remove the stump from the water column by fully extracting the stump or cutting it three feet below the substrate.

(iv) Cap the buried stump with clean sediment that matches the native material.

(v) Fill holes left by piling extraction with clean sediment that matches the native material.

(h) Securely anchor docks, floats, and mooring buoys.

(i) If the department authorizes the use of a concrete anchor, use a precast concrete anchor.

(j) Dispose of replaced docks, piers, ramps, floats, lines, chains, cables, and mooring anchors in an upland disposal site.

(k) Place floats and buoys removed seasonally in an upland area. Do not store on the beach.

NEW SECTION

WAC 220-660-150 Boat ramps and launches in freshwater areas. (1) **Description:** A boat ramp or launch is a sloping, stabilized roadway or entry point constructed on the shoreline for launching boats from vehicular trailers or by hand for primitive boat launch designs. Ramps and launches extend into the water at a slope of typically twelve to fifteen percent and are typically oriented perpendicular to the shoreline. Ramp and launch widths vary with intended use, whereas the length often depends on the slope of the shoreline and seasonal water levels. Ramps and launches are usually constructed in areas protected from wind and waves with access to deep water close to shore. Construction materials commonly consist of gravel, concrete, or asphalt; they are often associated with marinas and parking lots.

(2) **Fish life concerns:** A boat ramp or launch typically destroys fish and shellfish habitat in its footprint. A large number of ramps or launches in a given area reduces and fragments this habitat. Ramps and launches placed above bed grade can block sediment and wood movement, and alter nearshore juvenile fish migration behavior. Ramp and launch construction, maintenance and the associated vessel activity can damage or destroy aquatic vegetation.

(3) **Boat ramp and launch design:**

(a) Design and locate the ramps and launches to avoid adverse impacts to fish spawning areas.

(b) Design and locate the ramps and launches to avoid and minimize excavation below the OHWL.

(c) Design and construct the ramps and launches to minimize interference with wood and sediment movement.

(d) Design the boat ramps and launches to prevent erosive undercutting or breaking of ramp edges.

(e) Design and construct boarding floats to minimize grounding on and shading of the bed and interfering with sediment and wood movement.

(4) **Boat ramp and launch construction:**

(a) Construct the upland portions of the ramp and launch in the dry and when the water body is at its lowest elevation or flow.

(b) Construct footings or the base of the ramp and launch below the preexisting grade of the stream bank or lakeshore to minimize undermining of the structure.

(c) Construct a ramp and launch with concrete or compressed or hardened gravel or other suitable materials approved by the department.

(d) To construct a concrete ramp and launch below the OHWL, use precast concrete slabs or isolate the wet concrete from waters of the state until it is fully hardened.

(e) Securely anchor launching rails to the stream or lake bottom.

(5) **Ramp and hand launch maintenance:** If possible, sediment and woody material removed from ramps and launches must be placed at or below the OHWL downstream of the structure.

NEW SECTION

WAC 220-660-160 Marinas and terminals in freshwater areas. The provisions in this section apply to constructing, maintaining, repairing, and removing marinas and terminals in freshwater areas.

(1) **Description:**

(a) A marina is a public or private facility providing vessel moorage space, fuel, or commercial services. Commercial services include, but are not limited to, overnight or live-aboard vessel accommodations (RCW 77.55.011(13)).

(b) A terminal is a public or private commercial wharf located in the navigable waters of the state and used, or intended to be used, as a port or facility for storing, handling, transferring, or transporting goods, passengers, and vehicles to and from vessels (RCW 77.55.011(14)).

(2) **Fish life concerns:** Marinas and terminals can alter the physical processes that create or maintain fish habitat. Possible impacts may include alteration of the light regime, hydrology, substrate conditions, and water quality. Marinas and terminals often have a larger impact area than residential docks and are often associated with heavy boat traffic and human use. Thus, the size and magnitude of the potential impacts to fish life may be greater.

(3) **Marina and terminal design – Generally:**

(a) Design, locate, and construct new marinas and terminals to avoid impacts to fish spawning and juvenile salmon migration corridors, rearing and feeding areas.

(b) The department may require physical modeling, numerical modeling, or other information that demonstrates adequate water exchange and circulation after construction.

(c) Where possible, locate new marinas and terminals in areas that will minimize impacts to fish life.

(i) Locate new marinas and terminals to avoid and minimize impacts to native aquatic vegetation.

(ii) Locate new marinas and terminals in naturally deep areas to avoid and minimize dredging.

(iii) Locate new marinas and terminals in areas deep enough to avoid and minimize propeller wash impacts to the bed.

(iv) Where practicable, locate new marinas and terminals in areas with low or impaired biological integrity.

(v) Design marinas and terminals so most over-water coverage is in the deepest water possible; this is necessary to allow light penetration to shallow water areas.

(A) Minimize the amount of pier or dock area that directly contacts the shoreline. Minimize the width of over-water and in-water structures in shallow water areas.

(B) Design and construct piers and other above-water structures as high as possible to increase light transmission.

(C) When possible, use light-reflecting materials on the underside of above-water structures that are not grated.

(4) **Marina design:**

(a) The department may require a marina design to include grating to minimize impacts to juvenile salmonid migration corridors and native aquatic vegetation. If grating is required, locate flotation under the solid decked area only.

(b) Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above or below the grating should not block light penetration.

(c) If possible, provide slips for smaller boats in shallower water and place slips for larger boats in deeper water.

(d) Do not locate new boathouses, houseboats, and covered moorages less than thirty feet from the shoreline and in water less than twenty feet deep. Houseboats with basements are not authorized.

(e) Any replacement roof for a covered moorage and boathouse in water less than thirty feet from the shoreline and in water less than twenty feet deep must incorporate translucent materials or skylights in the roof.

(f) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from attracting fish, unless there are safety constraints.

(5) **Breakwater design:**

(a) Design and construct breakwaters to maintain shallow water juvenile salmon migration corridors.

(b) Avoid use of continuous sheet piles in water less than thirty feet from the shoreline and in water less than twenty feet deep.

(c) Use removable, floating breakwaters or wave boards.

(6) **Pile design:**

(a) Use the smallest diameter and number of pilings needed to construct a safe structure.

(b) New and replacement piling can be steel, concrete, recycled plastic, or untreated or department approved treated wood.

(c) Treated wood piling must incorporate design features to minimize abrasion of the piling from contact with vessels, floats, or other objects.

(d) If possible, all pilings must be fitted with devices to prevent perching by fish-eating birds.

(7) **Marina and terminal construction:**

(a) When installing steel piling, a vibratory hammer is preferred.

(b) If impact pile driving is needed, set the drop height to the minimum needed to drive the piling.

(c) Use appropriate sound attenuation to minimize harm to fish from impact steel pile-driving noise.

(d) To avoid attracting fish to light at night, limit impact pile driving to daylight hours.

(e) When removing piling:

(i) Use a vibratory system to dislodge piling, when possible;

(ii) After removal, place the piling on a construction barge or other dry storage site. Piles removed from the substrate must be moved immediately from the water into a barge or other dry storage site. The pile must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the pile;

(iii) If a treated wood pile breaks during extraction, remove the stump from the water column by fully extracting the stump or cutting it three feet below the substrate; and

(iv) Fill holes left by piling extraction with clean sediment that matches the native material.

(f) Securely anchor floats and mooring buoys.

(g) Dispose of replaced docks, piers, ramps, floats, lines, chains, cables, or mooring anchors in an upland disposal site.

(h) Place floats and buoys removed seasonally in an upland area (not on the beach).

(8) **Marina and terminal maintenance:**

(a) Upon request, the department must issue a renewable, five-year HPA for regular maintenance activities of a marina or terminal.

(b) Regular maintenance activities for the five-year HPA may include the following:

(i) Maintaining or repairing a boat ramp, launch, or float within the existing footprint;

(ii) Maintaining or repairing an existing over-water structure within the existing footprint;

(iii) Maintaining or repairing boat lifts or railway launches;

(iv) Maintaining or repairing pilings, including the replacing bumper pilings;

(v) Dredging less than fifty cubic yards of material;

(vi) Maintaining or repairing shoreline armoring or bank protection;

(vii) Maintaining or repairing wetland, riparian, or estuarine habitat; and

(viii) Maintaining or repairing an existing outfall.

(c) The five-year permit must include a requirement that a person give the department a fourteen-day notice before regular maintenance activities start.

NEW SECTION

WAC 220-660-170 Dredging in freshwater areas. The requirements of this section do not apply to suction dredging for mineral prospecting covered in WAC 220-660-300, or to diver-operated dredging for aquatic plant control covered in WAC 220-660-290.

(1) **Description:** Dredging includes removing substrate or sediment from rivers and lakes to improve vessel navigation and to maintain navigational channels and sediment traps for flow conveyance. River dredging is also used for flood abatement and to cleanup contaminated sediments.

(2) **Fish life concern:** Excessive deposition or aggradation may interfere with land use, hydraulic flow, and fish passage, and may cause stranding of fish. However, dredging can alter multiple fundamental channel processes, and effects can propagate upstream or downstream of the modified channel reach, or into tributaries, and may affect channel stability, habitat features, and floodplain interactions within and beyond the project area. Direct impacts include mortality, physiological stress, or displacement of fish and other organisms, increased sediment transport downstream, riparian damage, and temporary loss or imbalance of nutrients and food supply. This activity usually decreases the complexity and diversity of fish habitat.

(3) **Dredging design:**

(a) The department may not authorize dredging in fish spawning beds unless it creates or improves the access or quality of fish spawning beds as part of an approved restoration project.

(b) The department will evaluate the potential impacts of dredging and the disposal of dredged materials in eulachon spawning areas and provision these projects based on project location, seasonality, scale, frequency, and duration and on run timing, run size, and presence/absence in the work area.

(c) The department may require a preproject channel survey or assessment by a qualified professional to determine the root causes of a sediment deposition problem and the potential channel changes that may result from dredging. This provision does not apply to maintenance dredging of navigational channels and berthing areas.

(d) The department may require pre- and post-dredge project bathymetric for dredging of navigational channels and berthing areas.

(e) Use the dredge types and methods that minimize adverse impacts to fish and shellfish and their habitat.

(4) **Dredging construction:**

(a) Operate a hydraulic dredge with the intake at or below the bed surface. Raise the intake up to three feet above the bed only for brief periods of purging or flushing the intake system.

(b) Operate a dragline or clamshell to minimize turbidity. During excavation, each pass with the clamshell or dragline bucket must be complete. Stockpile dredged material in the location shown on the approved plan.

(c) To avoid fish stranding, the bed must not contain pits, potholes, or large depressions upon completion of the dredging.

(d) The department may require a person to use a boom or similar device to contain floatable materials while dredging of a lake or pond.

(e) Dispose of dredged bed materials at a department-approved in-water disposal site or outside the floodplain so they do not reenter state waters. The department may allow dredged material to be used for beneficial projects such as beach nourishment or capping of contaminated sediments.

(f) To minimize turbidity, hopper dredges, scows, and barges used to transport dredged materials to the disposal or transfer sites must completely contain the dredged material.

NEW SECTION

WAC 220-660-180 Sand and gravel removal. The requirements of this section do not apply to suction dredging for mineral prospecting covered in WAC 220-660-300, or to diver operated dredging for aquatic plant control covered in WAC 220-660-290.

(1) **Description:** Sand and gravel deposited by river processes is used as construction aggregate for roads and highways (base material and asphalt), pipelines (bedding), septic systems (drain rock in leach fields), and concrete (aggregate mix) for highways and buildings. In some areas, people remove aggregate mainly from river deposits, either from pits in river floodplains and terraces, or by removing gravel directly from riverbeds with heavy equipment.

(2) **Fish life concerns:** Removing sand and gravel from the active channel bed may affect sediment movement if it disrupts the sediment balance in the river. This disruption may cause channel adjustments that extend considerable distances beyond the excavation site. Removing instream sand and gravel changes the channel shape and bed elevation and may involve extensive clearing of vegetation, flow diversion, sediment stockpiling, and excavating deep pits. Removing sand and gravel can also produce a local sediment shortage that can reduce spawning potential and success in gravel-starved stream reaches. Disturbance or loss of gravel can create significant channel head cutting upstream from the project. Trenches or pits in the bed can trap fish. Other effects of removing instream gravel include a reduction of large woody material that is important as cover for fish, and short-term loss of insects and stream bugs that are food for fish.

(3) **Sand and gravel removal design:**

(a) Limit sand and gravel removal to exposed bars. Sand and gravel removal must not result in lowering the average channel cross-section profile either in the work area or downstream of it. The department may authorize removing additional sand and gravel, including from wetted portions of the channel, when the project is an integral part of a department-approved comprehensive flood control plan.

(b) The department requires a quantitative site assessment to document habitat changes. This includes preproject and post-project channel cross-section surveys for commercial sand and gravel removal projects. As a provision of a multi-year HPA, the department may require surveys to be conducted each fall. The surveys must reference cross-sections vertically to a permanent benchmark and horizontally to a permanent baseline. The cross-sections must be surveyed perpendicular to the high flow channel every one hundred feet through the work area and at cross-sections upstream and downstream at adjacent channel riffles. The HPA application submitted to the department must include the preproject survey information. A person must submit the post-project survey to the department within ninety days after removal of sand and gravel is finished or the expiration date of the HPA, whichever occurs first.

(4) **Sand and gravel removal construction:**

(a) The department must establish an excavation line, which is then identified in the HPA.

(b) Place boundary markers to identify the excavation zone. The department must approve the location of the boundary markers before a person starts to remove sand and gravel.

(c) Excavation must start at the excavation line and proceed toward the bank or the center of the bar, perpendicular to the alignment of the watercourse.

(d) Do not remove bed material from the waterward side of the excavation line.

(e) Do not place or operate equipment within the wetted perimeter of the watercourse.

(f) Remove sand and gravel within the excavation zone from a point starting at the excavation line and progressing upward toward the bank or the center of the bar on a minimum two percent gradient. The department may require a survey of the excavation zone upon completion of the sand and gravel removal operation to ensure the operation maintained a two percent gradient and that no depressions remain. When required, the permittee must pay for the survey.

(g) At the end of each workday, the excavation zone must not contain pits, potholes, or depressions that may trap fish because of fluctuating water levels.

(h) Limit stockpiling of material waterward of the OHWL, after the initial bed disturbance, to avoid impacts to fish life. If the department-approved stockpiling waterward of the OHWL, completely remove the material before fish start spawning in the area or stream flows start increasing. The department will determine timing restrictions for each site individually. If the water level rises and makes contact with stockpiles, further operation of equipment or removal of the stockpiles may not proceed unless the department authorizes the work.

(i) Leave the upstream end of the sand and gravel bar undisturbed to maintain watercourse stability waterward of the OHWL.

(j) Retain large woody material waterward of the OHWL. Large wood within the excavation zone must be repositioned within the watercourse. Other debris must be disposed of so it does not reenter the watercourse.

(k) Sand and gravel washing or crushing operations must take place above the limits of anticipated floodwater.

NEW SECTION

WAC 220-660-190 Water crossing structures. Appropriate methods to design water crossing structures are available in the department's *Water Crossing Design Guidelines*, or other published manuals and guidelines.

This section applies only to water crossings over fish-bearing waters. Crossings on streams with no fish must be designed to pass the 100-year recurrence interval flood flow, wood, and sediment to reduce the risk of catastrophic failure of the crossing.

An HPA is required for all construction or repair/replacement of any structure that crosses a stream, river, or other water body regardless of the location of the proposed work relative to the OHWL of state waters. An HPA is also required for bridge painting and other maintenance where there is potential for paint, sandblasting material, sediments, or bridge parts to fall into the water.

(1) **Description:** Water crossings are structures constructed to facilitate the movement of people, animals, or materials across or over rivers and other bodies of water. These structures include bridges, culverts, fords, and conduits. This chapter covers bridges, culverts, and fords. WAC 220-660-270 covers conduits. Generally, people use bridges to cross over larger streams and rivers, or over unstable channels; they use culverts to cross over smaller streams and they use fords when other stream crossing options would result in a greater impact to fish and their habitats.

(2) **Fish life concerns:**

(a) A person must design water crossing structures in fish-bearing streams to allow fish to move freely through them at all flows when fish are expected to move. All water crossings must retain upstream and downstream connection in order to maintain expected channel processes. These processes include the movement and distribution of wood and sediment and the shifting of channel patterns. Water crossings that are too small in relation to the stream can block or alter these processes, although some encroachment of the floodplain and

channel migration zone will be allowed when it can be shown that such encroachment has minimal impacts to fish and their habitat.

(b) Fords have a high potential to generate and deliver sediment and may impede fish passage. However, under limited circumstances, fords are appropriate when they provide better protection to fish and their habitats than other water crossing structures.

(3) **Permanent water crossing structures – Generally:**

(a) The water crossing design must provide unimpeded passage for all species of adult and juvenile fishes. Passage is assumed when there are no barriers due to behavioral impediments, excessive water slope, drop or velocity, shallow flow, lack of surface flow, uncharacteristically coarse bed material, and other related conditions.

(b) The water crossing design must ensure that upstream and downstream channel processes and functions commonly associated with the type of channel found at the site are unconstrained by the structure so they do not cause discernible impacts to fish life. The department will make an exception where there are human-made features in the floodplain that are outside the control of the applicant and they are unlikely to be removed. By complying with the provisions under subsections (4) and (6) of this section, the applicant is assumed to provide these processes and functions.

(c) If channelization, encroachment, or other human-made changes have degraded the channel in the vicinity of the crossing, the design must have a similar slope and cross section expected under common conditions in the reach.

(i) Similar slope: The slope should be that of a stable (equilibrium) channel and not over-steepened.

(ii) Similar cross section: The cross section under or within the water crossing must have a channel bed width, a thalweg, and any overbank area that match the expected stream measurements in order to limit main channel velocity and scour to prevailing conditions.

(d) A person may propose an alternative crossing design instead of complying with the provisions under subsections (4) and (6) of this section when the following circumstances exist:

(i) A person can design a water crossing using any design methodology approved by the department provided that the method specifically addresses fish passage, the protection of fish habitat, and the maintenance of expected channel processes defined by the site conditions.

(ii) A person may use an alternative design for an individual crossing on a case-by-case basis. To be approved, the alternative plan must include: Project objectives with performance measures, inspection schedule, maintenance triggers, and a contingency plan should the project fail to meet performance measures. Inspection must include compliance monitoring of performance measures after construction with an additional inspection three years after construction. Monitoring reports are required for these two inspections. The contingency plan is activated when the project fails to meet performance measures after the three-year inspection.

(iii) A person can use methods found in WAC 220-660-200. Fish passage improvement structures where extreme and unusual site conditions prevent them from complying with the provisions in this section and any associated impacts are adequately mitigated.

(e) To determine the average channel bed width for water crossing structure design, a person must use a minimum of three typical widths (bankfull or equivalent), measured in a stream reach that is characteristic of an alluvial or self-forming stream. A person must measure widths that describe prevailing conditions at straight channel sec-

tions and outside the influence of any culvert, bridge, or other artificial or unique channel constriction.

(f) When removing an existing crossing in preparation for a new crossing, a person must remove all the existing components (approach fill, foundations, stringers, deck, riprap, guide walls, culverts, aprons, etc.) likely to cause impacts to fish and their habitat. The department may approve the partial removal of certain components when leaving them has been shown to have no measurable, or minor, impact.

(4) **Bridge design:**

(a) The bridge must pass water, ice, large wood and associated woody material, and sediment likely to move under the bridge during the 100-year flood flows or the design flood flow approved by the department.

(b) The waterward face of all bridge elements that may come in contact with waters of the state including, but not limited to, abutments, piers, pilings, sills, foundations, aprons, wing walls, and approach fill must be landward of the OHWL. The requirement excludes midchannel piers and protection required at the toe of the embankment in confined channels.

(c) A bridge over a watercourse with an active floodplain must have a span wide enough to prevent a significant increase in the main channel average velocity (a measure of encroachment). This velocity must be determined at the 100-year flood flow or the design flood flow approved by the department. The significance threshold should be determined by considering bed coarsening, scour, backwater, floodplain flow, and related biological and geomorphological effects typically evaluated in a reach analysis.

(d) A person must design (size) the bridge to account for the lateral migration expected to occur during the bridge's lifespan to minimize the need for bank armoring. The department will approve encroachment into the channel migration zone if the mitigation sequencing can be shown to minimize impacts to fish and their habitat.

(e) Where there are existing flood control levees at the bridge construction site, or other infrastructure that is not the property of the bridge owner but would constrain the construction of a bridge, the department may approve a shorter bridge span than would otherwise be required to meet the requirements in this section.

(f) The design must have at least three feet of clearance between the bottom of the bridge structure and the water surface at the 100-year peak flow. The department may grant an exception based on engineering justification provided by the applicant.

(g) The bridge design must avoid the need for scour protection. Where midchannel piers are necessary, design them so no additional scour protection is required. If scour protection is unavoidable, the design must minimize the scour protection to the amount needed to protect piers and abutments. The design must specify the size and placement of the scour protection so it withstands expected peak flows.

(5) **Bridge construction:**

(a) If excavation or other construction activities take place waterward of the OHWL the work area must be isolated from the stream flow (if present) by using a cofferdam, bypass, or similar structure.

(b) A person must minimize damage to the bed and banks when placing the bridge structure.

(c) Biotechnical slope protection outside the bridge shadow is preferred.

(6) **Culvert design:**

(a) Stream simulation design:

(i) A stream simulation culvert must be designed and constructed to comply with the requirements of this subsection.

(ii) The width of the channel-bed inside a stream simulation culvert at the elevation of the streambed can be determined in one of two ways:

(A) The bed width may be calculated by using any published stream simulation design methodology approved by the department.

(B) The bed width of an individual culvert may be made on a case-by-case basis with an approved alternative plan that includes project objectives, inspection, maintenance, and contingency components. Inspection must include compliance monitoring after construction, and effectiveness monitoring after three years. Maintenance and contingency are triggered when project fails to meet objectives.

(iii) The stream simulation culvert must be set at the same gradient as the prevailing stream gradient.

(iv) The slope of the bed inside a stream-simulation culvert must not exceed the slope of the upstream channel by more than twenty-five percent.

(v) The stream simulation culvert must be countersunk a minimum of thirty percent and a maximum of fifty percent of the culvert rise, but not less than two feet. In the case of box and bottomless culverts, depth of culvert fill must be adequate to accommodate channel degradation and scour.

(vi) The median particle size of sediment placed inside the stream-simulation culvert must be plus or minus twenty percent of the median particle size found in a reference reach of the same stream. The department may approve exceptions if the proposed alternative sediment is appropriate given the circumstances.

(b) No-slope design:

(i) The stream channel in which a no-slope culvert will be placed must generally have a channel bed width that is ten feet or less and a gradient less than three percent. However, in some site-specific situations the department may approve no-slope in channels with a gradient up to five percent.

(ii) The length of the culvert must not exceed seventy-five feet.

(iii) A no-slope culvert must be designed and constructed to comply with the following requirements:

(A) The culvert is installed at a zero gradient.

(B) The width of the channel-bed inside a no-slope culvert at the elevation of the streambed must be equal to or greater than the average channel bed width.

(C) The no-slope culvert is countersunk a minimum of twenty percent of the culvert rise at the culvert outlet downstream and a maximum of forty-percent of the culvert rise at the culvert inlet upstream.

(D) Combining the requirements for culvert width and countersinking, the culvert must meet the following requirements:

(I) For a circular culvert, the minimum culvert diameter must be equal to or greater than the average channel bed width plus twenty-five percent.

(II) For a culvert with an oval cross section (elliptical, pipe arch, or "squashed" pipe) the horizontal width must be equal to or greater than the average channel bed width plus twenty-five percent.

(III) For a box or pipe arch culvert, the span must be equal to or greater than the average channel bed width.

(E) The no-slope culvert must be filled to the depth of the countersink provided in (b)(iii)(C) of this subsection with material simi-

lar to what is found in the adjacent channel streambed, unless either of the following conditions exist:

(I) The culvert is located in a wetland or in an area where the channel-bed is predominately fine sediment and the culvert will be backwatered; or

(II) The culvert will fill quickly because of the frequent rate of sediment transported through the culvert and will not cause excessive cutting or slumping of the upstream channel.

(7) **Temporary culvert design requirements:**

(a) The department must determine allowable placement of temporary culvert and time limitations based on the specific fish resources of concern at the proposed water crossing location.

(b) The design of the temporary crossing must maintain structural integrity at the peak flow expected to occur while the crossing is in place.

(c) Temporary culverts must provide unimpeded fish passage in locations where fish passage concerns exist.

(d) A person must remove the temporary culvert and block all approaches to vehicular traffic prior to the expiration of the HPA.

(8) **Emergency culvert requirements:**

(a) When there is an immediate threat to life, the public, private property, or of environmental degradation, a culvert may be replaced with one that is the same size or larger than the existing one. If the emergency crossing did not have a culvert or the size is not known, the emergency culvert should be large enough to safely pass the 100-year flood event with consideration for debris and sediment. In extreme circumstances, the department may approve the use of any available culvert.

(b) Fish passage must be provided at the times of the year when fish are expected to move. If the culvert design does not provide unimpeded fish passage a person can use methods found in WAC 220-660-200 (fish passage improvement structures) to pass fish until a culvert is constructed.

(9) **Culvert construction:**

(a) A person must establish the culvert invert elevation with reference point(s) or benchmark(s) created prior to starting work on this project. The reference point(s) must be clearly marked and preserved for post-project compliance. Prior to backfilling, the invert elevation, as stated on the plans, must be confirmed relative to the reference points with at least a construction-grade leveling device (such as an optical auto-level or laser level).

(b) A person must install the culvert in the dry or in isolation from the stream flow by using a bypass channel or culvert, or by pumping the stream flow around the work area. The department may grant exception if installing the culvert in the flowing stream reduces siltation or turbidity.

(c) A person must embed the top of footings of bottomless culverts sufficiently below potential scour depth to prevent exposure of the footing surface and undermining.

(d) The owner(s) must maintain the culvert to ensure it complies with subsection (3) of this section (general design requirement for water crossing structures).

(e) If the culvert becomes a hindrance to fish passage, the owner must obtain an HPA and provide prompt repair.

(10) **Permanent ford design:**

(a) A person must design and maintain a ford so the ford does not create a channel constriction, impede fish passage, block debris passage, or degrade water quality to the detriment of fish life.

(b) The department will authorize construction of new fords in limited situations when it is the least impacting water crossing option. The following are examples of situations where the department may authorize a ford:

(i) Where there is no maintenance access during winter months or early spring and the crossing has a high risk of failure from rain-on-snow events;

(ii) The road is seasonally inaccessible due to snow pack, weather, or other conditions that seasonally limit access to the water crossing structure;

(iii) The stream has extreme seasonal flow variations and low flows during anticipated ford use;

(iv) The channel has low bank height and low gradient approaches;

(v) The stream has dynamic floodplains, such as alluvial fans; or

(vi) The stream is subject to mass wasting events, debris transport, or extreme peak flows.

(c) Permanent fords must not impede fish passage.

(d) Fords must be located outside of all known or suspected fish spawning areas such as pool tailouts.

(e) Fords must only be used during periods of no or low stream flow (whether dry or frozen) to minimize the delivery of sediment to the stream.

(f) Traffic should be separated from flowing water by utilizing vented fords or other appropriate alternatives.

(11) **Temporary ford design:**

(a) The department may permit temporary fords only during the time of year that avoids high stream flows or expected fish spawning or migration.

(b) If fill is associated with the driving surface of a temporary ford, it must consist of clean washed gravel between one-quarter inch and four inches in diameter.

(c) If the natural streambed is composed of material smaller than gravel, the temporary ford design must maintain a positive separation between the watercourse bed and all fill associated with the ford to ensure that material used in ford construction is removable.

(12) **Ford construction:**

(a) Fords must be constructed during periods of low or no stream flow or in isolation from flowing water.

(b) Fords must be constructed perpendicular to the stream flow, or as close to perpendicular as practicable.

(c) Fords must be constructed using material approved by the department.

(d) If the streambed does not have a firm rock or gravel base, install clean, washed rock or gravel to reduce sedimentation. Broken concrete and pavement or other debris should not be used to construct hardened fords. Placement of material should be limited to the approaches and crossing.

(e) A person must countersink the prism of the ford below the watercourse bed. A person must design the prism to withstand overtopping flood events, and natural debris.

(f) Fill associated with the driving surface of a permanent ford must consist of material that will not attract spawning fish.

(g) A person must protect the driving surface of ford approaches from erosion to ensure that erodible fine silt does not enter waters of the state.

(h) Fords must be regularly inspected and maintained to provide for fish passage and maintain water quality.

(13) **Water crossing abandonment:** Water crossing removal must be compliant with the following provisions. In all instances a person must protect the job site from erosion and plant vegetation as necessary to restore the banks and other areas disturbed during construction or removal at the site.

(a) When removing temporary crossings, a person must remove the temporary culvert, bridge, ford, and any imported fill. The site must be restored to a similar width, depth, gradient, and substrate composition as the channel segments upstream and downstream from the crossing. If water-rounded granular materials were used for fill, and they are similar to those found in the existing channel bed, the department may allow the materials to remain on the site.

(b) When removing permanent crossings, a person must remove all the components of a bridge or culvert crossing (approach fill, sills, stringers, deck, riprap, guardrails, etc.). The department may approve leaving trees or other vegetation, fill materials when appropriate, or untreated log bridge stringers. The site must be restored to the original contours or a configuration approved by the department.

NEW SECTION

WAC 220-660-200 Fish passage improvement structures. The provisions in this section apply to fish ladders, weirs constructed for fish passage management, roughened channels, trap-and-haul operations, and hydraulic design culvert retrofits.

(1) **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.

(2) **Fish life concerns:** Barriers can block fish from using upstream spawning and rearing habitat. The main goal is to remove 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 possible to remove a barrier, fishways may be an alternative mitigation measure. The department does not generally recommend using fishways because they can be partial barriers to fish passage and generally require maintenance. Fish passage structures that mainly pass one species or class of fish may unintentionally limit the passage of other species.

(3) **Fish passage improvement structure design:**

(a) Fish passage improvement structures should not be used to bypass permanent natural barriers except in limited situations where they are needed to restore native fish species.

(b) The HPA application must have site and biological information relevant to the specific project, such as information on species present, hydrology and topography, and existing adjacent structures.

(c) The department may require compensatory mitigation if a fish passage structure cannot pass all fish species present at all mobile life stages.

(d) The design must consider site-specific conditions that could affect the function of the fishway. These include meander migration or vertical change in streambed elevation, debris and bedload movement, tampering, vandalism, and poaching.

(e) The fish passage structure design must withstand the maximum expected flow.

(f) 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.

(g) The fish passage structure must accommodate expected run sizes to prevent crowding and significant delay of fish migration as determined by the department.

(h) The department will determine the inspection interval depending on the type of fish passage improvement structure and watershed conditions.

(i) The department may require the installation of a temporary fish passage structure to provide passage through temporary obstructions. The department may not require a fish passage structure if a barrier exists for such short duration that the department determines that no lasting impacts to fish life will occur.

(4) **Temporary fish passage improvement structures design:**

(a) A person must maintain a fish passage structure in an effective condition. If the structure starts to hinder fish passage, the person must obtain an HPA and promptly repair the problem.

(b) The department may approve the installation of temporary fishways when permanent structures are damaged or are under construction, to conduct maintenance or repair, for enhancement projects, or for seasonal water diversion structures such as irrigation diversion dams.

(c) Temporary fishways must remain operational for the duration of the temporary obstruction and must be maintained and adjusted as needed to provide efficient passage of fish life.

(5) **Fish ladder design:**

(a) The department may authorize a fish ladder if:

(i) The fish ladder will enable fish passage at an existing barrier, but only until the existing barrier structure is replaced; or

(ii) The department determines that constructing a bridge, culvert, or roughened channel is not possible due to the nature of the obstruction such as a flow control structure or the slope of the stream.

(b) The fish ladder design must be appropriate for the slope of the channel, water surface elevations, species present, flow regime, and conditions of the channel.

(c) The fish ladder must be designed to prevent fish from leaping out of the structure.

(d) The fish ladder pool volume must provide the hydraulic and fish capacity needed to pass all adult and juvenile fish.

(e) The fish ladder entrance (downstream end):

(i) Must provide enough streaming flow attraction during high and low flows, without excessive velocity or turbulence, to ensure fish can locate and enter the fish ladder without significant delay;

(ii) Must minimize distractions that lure fish away from the entrance to prevent fish from becoming trapped, injured, or stranded;

(iii) Must be large enough to accommodate all expected debris and ice without damage or loss of passage efficiency;

(iv) Must provide a stable flow pattern and uniform velocity at the entrance pools and transition channels to allow fish to pass through the structure unimpeded;

(v) Must provide multiple entrances to the fish ladder if a single entrance cannot attract and provide passage to all adult and juvenile fish. If the work area has multiple zones where fish accumulate, each zone must have at least one entrance; and

(vi) May be required to have artificial light to optimize fish passage.

(f) Fish ladder auxiliary water supply system (AWS):

(i) To ensure fish are attracted to the fish ladder, an AWS may be required that supplies supplementary water.

(ii) An AWS must have a diffuser design that discourages attraction of fish life to it and to protect fish from injury.

(iii) An AWS must minimize the size of spaces between the diffuser to exclude and prevent injury to the smallest fish present.

(iv) An AWS must not use an auxiliary water supply from external sources that could confuse the homing instinct of fish.

(g) To prevent harm to fish life, the department may require screening of the AWS.

(h) The department may require a trash rack at the AWS intake.

(i) Fish ladder exits must:

(i) Have a water depth that is similar to the depth inside the fish ladder;

(ii) Be located to ensure fish can safely exit the structure without susceptibility to predators, without becoming disoriented, and with the ability to continue their upstream migration; and

(iii) Be designed to protect the exit from damage by debris.

(6) **Fish ladder construction:** To reduce potential contact injuries, all edges and surfaces exposed to fish must be ground smooth to the touch, with all edges aligning in a single smooth plane.

(7) **Fish ladder operation and maintenance:**

(a) If target fish species are present and actively migrating, enough water must be available at all stream flows to pass fish safely and efficiently through the fish ladder or the main channel without the need of a fish ladder.

(b) A person must inspect the fish ladder for proper function at a frequency determined by the department. Place wood and sediment retrieved during inspection and maintenance downstream of the fish ladder.

(c) A person operating or maintaining the fish ladder must be able to identify maintenance issues with the fish ladder and take corrective actions or notify the department if maintenance issues arise.

(d) The department may require shutdown of the fish ladder during high flows if the flow exceeds the fish passage design flow. However, a fish ladder must not be inoperable due to high flows for longer than seven days during the migration period for the target fish species. This provision applies to locations where the shutdown will not cause flooding or damage to infrastructure or property.

(8) **Fish passage weir design:**

(a) Design the weir to control the water surface elevation at the weir to provide fish passage over or through an obstruction.

(b) Design the weir to minimize impacts to natural channel geometry.

(c) Design the weir to ensure continued fish passage for all species present at all mobile life stages. The department may approve exceptions when it is implementing a program to restore native fish species or to protect native fish species from the introduction of nonnative fish species, and fish passage blockage is an intended component of the project.

(9) **Roughened channel design:**

(a) The department may authorize a person to construct a roughened channel to facilitate the passage of fish around abrupt hydraulic drops, through culverts, or at diversion sites for water withdrawal.

(b) Roughened channels must be designed by licensed professional engineers, geomorphologists, or other qualified professionals approved by the department.

(c) Where nonleaping fish are present or when other types of fish passage improvement structures would not pass fish well enough as determined by the department, a person may be required to construct a roughened channel to bypass an obstruction.

(d) Roughened channels must create an average cross-section velocity within the limits of fish-passage design criteria and the hydraulic design option.

(e) Roughened channels must minimize impact on the existing fish life and their habitat in the channel.

(f) The size and gradation of roughened channel bed material must resist erosion at the maximum expected flow and must result in a dense structure that prevents subsurface flow.

(10) **Trap-and-haul operations:**

(a) The department requires an HPA for installing, maintaining, and removing fish traps for trap-and-haul activities.

(b) The fish trap must be designed to withstand the maximum expected flow.

(c) The fish trap must be operated in a way that prevents crowding and delaying target fish species migration as determined by the department.

(11) **Hydraulic design culvert fish passage design:**

(a) The department may authorize an existing hydraulic design culvert to remain in place until the end of its design life or until another more appropriate culvert design can be constructed. However, a hydraulic design culvert cannot remain in place to the end of its design life if it does not provide for passage of fish.

(b) Before obtaining a permit to retrofit a culvert or construct a fish passage improvement structure using the hydraulic design method, a person must submit appropriate hydrology data and hydraulic design documentation prepared by a licensed professional engineer that demonstrates compliance with this section.

(c) The hydraulic design fish passage structure must include consideration of flood capacity for current conditions and future changes likely to occur within the stream channel, and debris and bedload passage.

(d) Plans submitted to the department to retrofit a culvert or to construct a fish passage improvement structure using the hydraulic design method must comply with the following:

(i) Minimum water depth at any location within a hydraulic design passage structure without a natural bed must be at least eight-tenths of a foot. The minimum depth of flow in the passage structure is determined by:

(A) The low flow design, which is the two-year seven-day low flow discharge for the subject basin; or

(B) When flow information for the site is unavailable, the department may authorize the use of calibrated flows from a comparable gauged site or the depth of the culvert when no water is flowing.

(ii) Maximum water velocity may not exceed the values in Table 1 at any point within a culvert. Measure maximum water velocity at the high fish passage design flow.

Table 1: Maximum Velocity Design Criteria for Hydraulic Design Culvert Installation

Culvert Length	Maximum Velocity
10 - 100 ft.	4.0 feet per second
100 - 200 ft.	3.0 feet per second
> 200 ft.	2.0 feet per second

(e) The hydraulic drop within the culvert or at the culvert inlet or outlet may not exceed one-half foot. When a drop has a submerged jet (the lowest part is below the downstream water surface) or is part of a natural or roughened channel design, the department may approve an exception to this drop limit.

(f) Water turbulence within the culvert must not be a barrier to passage of target fish species.

(g) The department may modify or approve design flow criteria for specific proposals as needed to address unusual fish passage requirements.

NEW SECTION

WAC 220-660-210 Channel relocation and realignment. (1) **Description:** The department discourages channel relocation and realignment and will approve them only when a person can demonstrate benefits or lack of adverse impact to fish life. Channel relocation may solve problems of channel encroachment and/or confinement, and foster the development of a new channel with appropriate channel morphology and healthy riparian zones. Channel relocation permanently changes the location of the channel. The new channel should be designed with bioengineered stability, rather than structural stability, so that the profile, pattern, cross-section and bed elevation can be expected to achieve long-term natural functioning.

(2) **Fish life concerns:**

(a) Channel relocation and realignment is a major undertaking involving reconstructing the channel bed, habitat features, channel banks, and floodplain. In-channel work will have a much greater impact on the bank and channel than off-channel work. This may result in the downstream burial of invertebrates, elevated suspended solids, and habitat destruction.

(b) However, channel relocation and realignment can also benefit fish life by altering channel planform, profile, and cross-section geometry to restore fish habitat. Restoration work can range from complete reconstruction of a channel to smaller-scale alterations that induce incremental changes to channel form.

(3) **Channel relocation and realignment design:** A channel relocation and realignment may be approved if:

(a) Permanent new channels are similar in length, width, depth, floodplain configuration, and gradient to the old channel or channels; and

(b) The new channel incorporates fish habitat components, bed materials, channel morphology, and native or other approved vegetation that provides better protection for fish life than that which previously existed in the old channel.

(4) **Channel relocation and realignment construction:**

(a) During construction, a person must isolate the new channel from the flowing watercourse.

(b) Before water is diverted into a permanent new channel(s), a person must install approved fish habitat components and bed and bank protection materials to prevent erosion as specified the approved design.

(c) When filling the old channel(s), water discharging from the fill must not adversely affect fish life.

(d) The angle of the structure used to divert the water into the new channel(s) must allow a smooth transition of water flow.

NEW SECTION

WAC 220-660-220 Large woody material placement, repositioning, and removal in freshwater areas. (1) **Description:** Large woody material (LWM) is trees and tree parts that enter stream channels mainly from stream bank undercutting, wind throw, and slope failures. Public agencies sometimes reposition or remove large woody material to address a threat to life, the public, or property. Large woody material is also placed in streams to restore or create fish habitat.

(2) **Fish life concerns:**

(a) Large woody material provides shelter for fish from high flows and predators. Sediment trapped by large woody material can create spawning areas for salmon and trout. Large woody material also provides habitat for aquatic insects that fish eat.

(b) Large woody material plays a main role in shaping stream channels by forming pools and increasing stream meandering and sediment storage. Large woody material dissipates flow energy, leading to improved fish migration and channel stability.

(3) **Large woody material placement, repositioning and removal – Generally:**

(a) The department will approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. The department will require a person to place the repositioned or removed wood directly back in the channel unless it is not possible due to geological, engineering or safety constraints. If large woody material must be removed from the channel, the department will require compensatory mitigation if the wood removal diminishes fish habitat function of value.

(b) The department will approve placement of large wood back in the channel to improve fish habitat. This may include placing channel-spanning logs, creating log jams, or introducing a single large log or rootwads to the channel. Large woody material may be stabilized against buoyant forces and hydraulic drag forces that may mobilize

wood during flood flows by pinning, anchoring or burying woody material in the floodplain.

(4) **Large woody material placement, repositioning or removal construction:**

(a) When placing, repositioning, or removing large woody material, station equipment on the bank, bridge, or other approved location.

(b) Do not drag large woody material. Suspend large woody material during placement, repositioning, or removal so it does not damage the bed or banks. A yarding corridor or full suspension is required to avoid damage to riparian vegetation. Full suspension can be achieved with hand operated or heavy equipment or aerial log yarding towers. Where needed, the department may authorize cutting the large woody material to a size that allows suspension during removal, but still retains value as a habitat structure.

(c) When a person cannot suspend large woody material above the bed and banks, use skid logs or similar methods to avoid bank damage. After completing the yarding operation, remove skid logs in a way that avoids damage to stream banks and vegetation, and restore the bank to preproject condition.

(d) Do not disturb large woody material embedded in a bank or bed except as allowed by the department.

(e) When repositioning or removing large woody material is allowed, fill and smooth over any depressions created in the bed with material that has the same composition as native material. Fill material must be sloped towards the bank at a slope similar to the prevailing condition. Reslope and replant disturbed banks.

(f) When repositioning or removing large woody material, minimize releasing bedload, logs, or debris downstream.

(g) Do not cut firewood from accumulations of large woody material in stream or river channels.

NEW SECTION

WAC 220-660-230 Beaver dam management. (1) **Description:**

(a) A person may need to remove, breach, or modify a beaver dam to prevent damage to private and public land or infrastructure from flooding. Beaver dams are normally removed using hand tools or equipment such as backhoes.

(b) An alternative to frequent dam removal is installing a beaver exclusion device. These devices prevent beavers from building a dam that blocks water flow at the mouth or inside of culverts.

(c) Installing a water level (flow) control device may be a preferred alternative to removing or breaching an established dam that maintains a beaver wetland; however, fish passage must be maintained. A person can install a water level control device to maintain a desirable beaver wetland. These devices are installed at the intended depth, extending upstream and downstream of the dam. This preserves the pond's habitat benefits.

(2) **Fish life concerns:**

(a) Beavers play an important ecological role in creating and maintaining ponds and wetlands for fish and wildlife habitat. Ponds also provide surface water storage that improves summer flows, as well as improving water quality through retaining sediment.

(b) Breaching, notching, or removing a dam can negatively affect fish and their habitat by dewatering the upstream pond, stranding fish, and releasing large volumes of water (that can be devoid of oxygen) and sediment downstream. Releasing sediment can affect downstream spawning areas. Breaching or removing a beaver dam may not prevent future beaver activity in the area. Persistent breaching or removing a beaver dam can increase the risk of negative impacts to fish habitat. In these instances, the department may recommend that a person consider other beaver management techniques.

(c) Beaver exclusion devices and water level control devices can create a design challenge for fish passage and the devices can decrease the likelihood for long-term fish passage.

(3) **Removal or breaching a beaver dam:**

(a) Beaver dams may be removed or modified only when:

(i) The continued existence of the beaver dam poses an imminent threat to the integrity of water crossing structures, other infrastructure, private and public land or in some rare cases the environment; and

(ii) The beaver dam has been in existence for less than one year. Removal of older dams will be considered on a site-specific basis.

(b) The department will decide if compensatory mitigation is required to offset habitat loss caused by removing or breaching any beaver dam older than one year. The department will not require compensatory mitigation to remove beaver dams less than one year old.

(c) The department may allow the use of explosives to remove a beaver dam if the department determines that the use of explosives has fewer impacts than other alternatives.

(d) Beaver dam management activities must take place when the work will cause the least impact to fish life. Except for an emergency or imminent danger, all work must occur when spawning or incubating fish are less likely to be present.

(e) When possible, remove or notch beaver dams by hand or with hand-held tools and hand-operated or motorized winches.

(4) **Removal or breaching a beaver dam construction:**

(a) Before starting work, install effective sediment and erosion control measures to prevent sediment from entering waters of the state. Inspect the sediment and erosion control measures regularly during construction and make all needed repairs if any damage occurs.

(b) Remove the dam gradually to allow the water to release slowly and prevent the downstream release of accumulated sediment at the bottom of the pond, or cause damage or erosion to the stream bed and banks. The department may specify in the HPA the rate water can be released.

(c) The notch must not extend below the height of the accumulated sediment.

(d) To prevent bank erosion and flooding of adjacent properties, the breach in the beaver dam must not be wider than the original stream channel as measured by the department. The department may approve larger breaches on a case-by-case basis.

(e) The department will specify the sequence in which to breach or remove a series of dams to avoid severe flooding and damage to fish habitat.

(f) Leave large woody material embedded in the stream bed or banks undisturbed.

(g) During and immediately after removal, monitor upstream and downstream for stranded fish in isolated pools. Capture and safely move all stranded or isolated fish to the nearest free-flowing water.

(5) **Water level control device installation design and construction:**

(a) Design and install water level control devices so that during low flows (when beavers are more actively increasing dam height), the flow passes through the device and maintains fish passage.

(b) Design and install water level control devices so that during low flows, the device will convey enough flow over and around the dam to pass fish; or design and install a water control device that also functions as a fish ladder.

(c) Install water level control devices in beaver ponds with pool depth of four feet or more. If the water level control device is installed in water shallower than four feet, the design must have an enclosure to protect the water intake from beaver activity.

(d) Maintain the water level control device to ensure it functions as designed.

(6) **Beaver exclusion devices design and construction:** Design, install, and maintain guards, grates, grills, fences and other beaver exclusion devices to provide unimpeded fish passage and to prevent beavers from plugging a culvert or other water crossing structures such as low bridge crossings.

NEW SECTION

WAC 220-660-240 Pond construction. (1) **Description:** A person may construct an out-of-channel pond for livestock watering, irrigation, fire protection, or other use. If the pond construction involves diverting water, a water right must be obtained prior to diverting waters of the state. This requirement does not apply to construction of storm water pond facilities landward of the ordinary high water line.

(2) **Fish life concerns:** To prevent fish from being injured or killed, a person must physically prevent fish from entering ponds not intended as fish habitat. Ponds can contribute to increased water temperatures and loss of instream flow in a watercourse, which may impact the survival of fish that need cold water for survival.

(3) **Pond design and construction:**

(a) Do not construct ponds within the watercourse.

(b) Design and construct the pond to protect fish life:

(i) Design, construct, and screen ponds to prevent the entry of fish unless the pond will provide beneficial habitat, as determined by the department; in which case, the design and construction must provide free and unrestricted fish access.

(ii) Unless the intent of the bypass reach is to enhance fish life or habitat, locate the outflow of the pond (return flow system) as close to the diversion point as possible so diverted water is absent from the watercourse for the shortest amount of time (shortest length of bypass reach).

(iii) Isolate the work area from the watercourse while constructing the pond, diversion system, and the return flow system. Design and construct the pond so the outflow temperature does not harm fish life.

NEW SECTION

WAC 220-660-250 Water diversions and intakes. (1) **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 other agricultural, hydropower, industrial, recreational, residential, municipal, and hatchery uses. A water right must be obtained prior to diverting water of the state.

(2) **Fish life concerns:** To protect fish, including salmon and steelhead, Washington state law (RCW 77.57.070 and 77.57.010) requires that all surface water diversions be screened to prevent fish from being drawn into the diversions where they are at risk for injury or death. In addition to screening water to prevent entrainment of fish life, 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 increasing predation, and fish may be physically injured or dewatered by active cleaning mechanisms or in bypass mechanisms.

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

(a) A written HPA is not required for 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 twenty-four hours of the emergency diversion, at the twenty-four-hour hotline number at 360-902-2536.

(b) The department cannot apply the hydraulic code to 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 an HPA for work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state, or that will utilize any of the waters of the state to divert water under a water right.

(c) Regulating water flow from a permanent permitted irrigation structure by operating valves, or manipulating stop logs, check boards, headgates, or headboards, does not require an HPA. Any hydraulic project activity related to a change in site conditions, the manner or location of water diversion, a new landowner or contact, or new biological information, will require an HPA modification.

(d) The department must allow a person who has gravel berm dam diversion permitted by the department before January 1994 to continue to have the dam if it complies with the provisions of the HPA. However, the department can provision the approval of gravel berms.

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

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

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

(c) Equip and maintain any device used for diverting water from a fish-bearing watercourse with a fish guard and approved by the department to prevent passage or impingement of fish into the diversion device. Maintain the fish screen and associated infrastructure as necessary to achieve the approach velocity, a functional bypass, and fish protection criteria.

(d) 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.

(e) Gravity diversions.

(i) Wing and check dams.

(A) Prior to construction of a wing or check dam, contact the department for opportunity to assess the site and determine whether active spawning and incubation is occurring at the site.

(B) Maintain diversion canals to maximize hydraulic gradient in the diversion canal to minimize the need for work within the natural watercourse. Maintenance includes removing sediment and debris at the point of diversion.

(C) Unless a gravel dam is authorized, temporary wing or check dams for irrigation may be constructed using some combination of jersey barriers, concrete blocks, steels posts and wood, pinned straw bales, plastic sheeting, and similar inert materials.

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

(E) Bed excavation depth to construct an irrigation diversion must not exceed eighteen inches unless otherwise authorized by the department to avoid destabilizing the streambed.

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

(G) Do not use logs or woody material waterward of the OHWL for construction of the dam unless specifically authorized. Large wood from upland locations may be used to create a wing or check dam.

(H) If logs or large woody material block water flow into a ditch or inhibit construction, a person may relocate them within the OHWL.

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

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

(ii) Diversion dams must not extend completely across the stream until reasonable effort has been exercised to seal the dam to achieve the water right.

(iii) Graveled wing dams must be removed or breached down to the natural bed elevation in at least two locations at the end of the irrigation season.

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

(i) Clean and maintain the fish bypass mechanism to ensure it is operational and will prevent injury or stranding of fish life prior to diverting water.

(ii) Ensure that there is sufficient flow within the bypass mechanism to safely return fish life from the fish screen to state waters.

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

(iv) Slowly ramp flows down 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 head gate completely until fish have either left the canal and bypass or are salvaged and returned to the stream. Head gates located downstream of the fish screen may be closed immediately at the end of the irrigation season.

NEW SECTION

WAC 220-660-260 Outfall structures in freshwater areas. (1) **Description:** Outfalls move water from one place to another, typically to a body of water. They may convey irrigation water, storm water, or other waste materials. The department recommends that a person construct energy dissipation structures at the landward side of buffers when possible so discharged water can infiltrate into the soil of the buffer or to sheet flow through the buffer into the stream.

(2) **Fish life concerns:** Outfalls can cause scouring or erosion of the bed. This can cause an increase in sediment supply to downstream reaches of rivers and streams. Outfalls can also cause bank erosion. This can cause a direct loss of bank side riparian zone habitat. Riprap and other energy dissipation structures can bury fish habitat and riparian zone vegetation. In addition, outfalls can entrain fish.

(3) **Limit of department authority over storm water outfall projects:**

(a) The department may not provision HPAs for storm water discharges in locations covered by a National Pollution Discharge Elimination System municipal storm water general permit for water quality or quantity impacts. The HPA is required only for the actual construction of any storm water outfall or associated structures.

(b) In locations not covered by a National Pollution Discharge Elimination System municipal storm water general permit, the department may provision HPAs to protect fish life from adverse effects, such as scouring or erosion of the bed of the water body, resulting from the direct hydraulic impacts of the discharge.

(i) Before prescribing specific discharge rates in an HPA under this subsection, the department must:

(A) Find that the discharge from the outfall will cause harmful effects to fish life;

(B) Send the findings to the applicant and to the city or county where the project is being proposed; and

(C) Allow a person to use local ordinances or other ways to avoid the adverse effects from the direct hydraulic discharge. The forty-five day requirement for issuing HPAs under RCW 77.55.021 is suspended when the department is meeting the requirements of this subsection.

(ii) After following the procedures in (b) of this subsection, the department may issue an HPA that prescribes the discharge rates from an outfall structure that will prevent adverse effects to the bed or flow of the waterway. The department may recommend, but not specify, the measures required to meet these discharge rates. The department may not require changes to the project design landward of the

mean higher high water mark of marine waters or the ordinary high water mark of fresh waters of the state.

(4) **Outfall design and construction:**

(a) Before designing and constructing an outfall consider alternatives such as tying into existing municipal storm water lines to avoid multiple storm water discharge points and low impact development (LID) techniques utilizing pervious pavement, infiltration galleries, green roofs, etc., to minimize discharge impacts.

(b) To prevent the entry of adult or juvenile fish, construct the outfall structure according to a design approved by WDFW.

(c) To prevent scouring, protect the watercourse bank and bed at the point of discharge using biotechnical techniques or other department-approved methods.

(d) Design and locate outfalls so that outflow or any associated energy dissipaters do not cause loss of fish and shellfish habitat. The department may require that energy be dissipated using one or more of the following methods, or other effective method proposed by a person and approved by the department:

(i) Existing natural habitat features (such as large logs, rootwads, natural large rocks, and rock shelves) without degrading the habitat function or value of the features;

(ii) Pads of native plants (live willow or dogwood stakes or other native shrubs) and biodegradable fabric;

(iii) Imported fish habitat components (large woody material);

(iv) Manufactured in-line energy dissipaters, such as a tee diffuser;

(v) Rounded rock energy dissipation pads; or

(vi) Angular rock energy dissipation pads, if the department determines other options are not possible.

NEW SECTION

WAC 220-660-270 Utility crossings in freshwater areas. (1) **Description:** Utility lines are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, and water lines from one side of a watercourse to the other.

(2) **Fish life concerns:**

(a) Utility crossings pose a risk to fish and fish habitat from potential changes of substrates, destabilization of stream banks and channels, loss of riparian habitat, and release of excessive sediment once stream flows resume. Utilities not buried below bed scour depth can require rock to protect them. This reduces fish habitat, inhibits channel processes and can become fish passage barriers due to the rock or the pipeline.

(b) Trenching through stream banks and channels alters habitat and substrate characteristics and therefore their productivity and should be avoided. Trenching may also cause the proportion of surface and subsurface flows to shift, altering stream hydrology. The department prefers trenchless crossing methods such as high-pressure directional drilling or punch and bore crossings that cause very little disturbance to the streambed and banks.

(3) **Utility line design:**

(a) Align the conduit as perpendicular as possible to the watercourse.

(b) Avoid crossing on meander bends, braided streams, alluvial fans, active floodplains, or any other area that is inherently unstable and may lead to eroding and scouring the streambed.

(c) Avoid areas of groundwater upwelling or locations within one hundred feet upstream of documented fish spawning areas.

(4) **Utility line construction:**

(a) Install the conduit well below scour depth of the watercourse to prevent natural scouring of the streambed from exposing the pipeline or cable.

(b) If construction involves boring or jacking:

(i) Isolate pits from surface water flow to prevent bore hole collapse; and

(ii) Before discharging the wastewater to state waters, route wastewater from project activities and dewatering to an area outside the watercourse to allow removal of fine sediment and other contaminants.

(c) If construction involves trench excavation:

(i) Trench widths should be as narrow as possible to accommodate the pipe/line and achieve the depth specified in the approved plan.

(ii) Excavate trenches in the dry or isolate them from the flowing watercourse by installing a cofferdam, culvert, flume, or other approved method;

(iii) Plowing, placement, and covering must occur in a single pass of the equipment;

(iv) Limit disturbance of the bed and banks to the amount needed to complete the project. Before returning flow, backfill trenches with approved materials and return the bed to preproject condition.

(v) Dispose of excess spoils, upland or on a barge so they will not reenter waters of the state.

(vi) Isolate the conduit approach trench from the watercourse until the conduit is laid across the watercourse.

(d) If construction involves directional drilling:

(i) Design the drill path to an appropriate depth below the watercourse to minimize the risk of frack-out and to a depth to prevent exposure of the line from natural scouring of the streambed; and

(ii) Locate the drill entry and exit points away from the banks of the watercourse to minimize impact on these areas.

NEW SECTION

WAC 220-660-280 Felling and yarding of timber. (1) **Description:** Timber felling includes "bucking" or cutting the felled tree into short lengths and limbing the felled tree. Yarding is the process of hauling logs from the cutting area to the landing and includes skidding (dragging the logs across the ground). There are three main kinds of yarding systems; ground based, cable, and aerial logging.

(2) **Fish life concerns:** Felling and yarding timber can damage the aquatic and stream bank riparian zone habitat if done incorrectly.

(3) **Felling and yarding:**

(a) Do not fell trees into or across a Type S, F, or Np watercourse except when the department specifically authorizes the activity. Felling into a Type N watercourse is allowed if trees are removed as soon as it is practicable to do so.

(b) Trees or logs that accidentally enter a watercourse with identifiable bed or banks must remain where they fall unless the department specifically authorizes the removal of parts or all of the trees or logs.

(c) Use full suspension when transporting logs across a watercourse with identifiable bed or banks, so no portion of the logs or limbs can enter the watercourse or damage the bed, banks, and riparian vegetation including riparian management zone trees.

(d) The number of cable crossings over the stream must be minimized to reduce damage or disturbance to RMZ trees. Place cable tailholds across watercourses with identifiable bed or banks, if they minimize the number of new yarding roads needed. When changing roads, a person must move the cable around or over the riparian vegetation and banks to avoid damaging the vegetation and banks.

(e) Unless the department authorizes limbs and other small debris to remain, remove limbs or other small debris that enter the watercourse with identifiable bed or banks, with each change in yarding road, or within seventy-two hours after entry into the watercourse or before the onset of high flows if anticipated to occur within seventy-two hours. Place the limbs and other small debris above the anticipated limits of floodwater. Remove limbs or other small debris from dry watercourses before the normal onset of high flows. Do not disturb large woody material that was in place before felling and yarding timber.

(f) Minimize the release of sediment to waters downstream from the felling or yarding activity. Use sediment control methods as needed to avoid the release of sediment downstream. Remove accumulated sediment from above check dams before their removal.

(g) Avoid or minimize skidding, ground lead yarding, or operating equipment within flowing waters in channels with defined bed or banks.

NEW SECTION

WAC 220-660-290 Aquatic plant removal and control. (1) **Description:** This section covers the physical and mechanical methods for controlling and removing aquatic plants. It does not address using grass carp, herbicides, or water column dye. Aquatic plant removal and control methods include physical, mechanical, biological, and chemical control methods. Often the best approach to controlling and removing aquatic plants is developing a vegetation management plan. A vegetation management plan is a comprehensive approach to controlling aquatic plants where all strategies are considered and usually some combination of techniques is selected and implemented. These plans should be based on the biology and ecology of the aquatic plant to be controlled and the environmental characteristics of the site. Integrated vegetation management planning is encouraged to comprehensively address aquatic plant problems for a watercourse.

(2) **Fish life concerns:** Beneficial plants play a significant role in lakes and streams by providing food and habitat for fish, stabilizing shorelines, and contributing to nutrient cycling. Sometimes beneficial plants can grow in overabundance, usually because of excessive inputs of nutrients such as nitrogen or phosphorus. In contrast, aquatic noxious weeds can threaten native vegetation, and fish, shellfish, and their habitat.

(3) **Limit of authority:**

(a) An activity conducted solely to remove or control spartina does not require an HPA.

(b) An activity conducted solely to remove or control purple loosestrife and that is performed with hand-held tools or equipment, or equipment carried by a person when used, does not require an HPA.

(c) Any other activity conducted solely to remove or control aquatic noxious weeds or aquatic beneficial plants requires either a copy of the current *Aquatic Plants and Fish* pamphlet HPA available from the department or an individual HPA.

(4) **Removal of aquatic plants by hand:**

(a) A copy of the current *Aquatic Plants and Fish* pamphlet available from the department serves as an HPA, unless otherwise indicated, and must be on the job site at all times.

(b) Hand removal or control of aquatic plants can help eradicate an early infestation of aquatic noxious weeds and can be effective for small, confined areas.

(c) Hand removal or control of both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Because of potential impacts to sockeye spawning areas, the department requires advance authorization for activities in Baker Lake and lakes Osoyoos, Ozette, Pleasant, Quinault, Sammamish, Washington, and Wenatchee. If authorization is given, the department may require mitigation through a written agreement between the applicant and the department for impacts of raking in the spawning area.

(ii) Work is restricted to hand-pulling, using hand-held tools or equipment, or using equipment that is carried by a person when used.

(iii) Removing or controlling aquatic beneficial plants to maintain an access for boating or swimming is allowed along no more than ten linear feet of the applicant's shoreline. The department requires advance authorization for boating and swimming access projects which cover a larger area.

(iv) When hand-pulling aquatic noxious weeds, remove the entire plant when possible. Completely remove detached plants and plant fragments from waters of the state when possible. Dispose of detached plants and plant fragments at an upland site such that they do not reenter waters of the state.

(v) Do not remove or disturb existing fish habitat components such as logs, stumps, and large boulders.

(vi) Conduct work in a manner that minimizes the release of sediment and sediment-laden water from the job site.

(vii) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, or any other toxic or harmful materials, from entering or leaching into waters of the state.

(viii) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(ix) Avoid using contaminated equipment, which can spread plant parts. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(5) **Bottom barriers and screens:**

(a) A copy of the current *Aquatic Plants and Fish* pamphlet available from the department serves as an HPA, unless otherwise indicated, and must be on the job site at all times.

(b) Bottom barriers or screens can help eradicate an early infestation of aquatic noxious weeds and are best used in small, confined areas where control of all plants is needed.

(c) Bottom barrier or screen projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Because of potential impacts to sockeye spawning areas, the department requires advance authorization for activities in Baker Lake and lakes Osoyoos, Ozette, Pleasant, Quinault, Sammamish, Washington, and Wenatchee. If authorization is given, the department may require mitigation through a written agreement between the applicant and the department for impacts of the activity to the spawning area.

(ii) For removing and controlling aquatic noxious weeds, the bottom barrier or screen material can cover no more than fifty percent of the length of the applicant's shoreline. The department requires advance authorization for bottom barrier or screen projects covering a larger area. Bottom barrier or screen and anchor material consisting of biodegradable material may be left in place. Within two years of placement, unless otherwise approved by the department, completely remove bottom barrier or screen and anchor material that is not biodegradable to encourage recolonization of aquatic beneficial plants.

(iii) To remove or control aquatic beneficial plants to maintain an area for boating or swimming, a bottom barrier or screen and anchor material may be installed along no more than ten linear feet of the applicant's shoreline. The department requires advance authorization for bottom barrier or screen projects for boating and swimming access projects covering a larger area.

(iv) Securely anchor a bottom barrier or screen material with pea gravel-filled bags, rock, or similar material to prevent billowing and movement off site.

(v) Regularly maintain a bottom barrier or screen and anchors to ensure the barrier or screen and anchors are functioning properly. Barriers or screens that have moved or are billowing must immediately be securely reinstalled or removed from waters of the state.

(vi) Existing fish habitat components such as logs, stumps, and large boulders may be relocated within the waterbody if needed to properly install the bottom barrier or screen. Do not remove these habitat components from the waterbody.

(vii) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(viii) Avoid using contaminated equipment, which can spread plant parts. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(6) **Weed rolling:**

(a) A copy of the current *Aquatic Plants and Fish* pamphlet available from the department serves as an HPA, unless otherwise indicated, and must be on the job site at all times.

(b) Weed rollers are best used when a person needs to control all aquatic plants.

(c) Weed rolling projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Because of potential impacts to sockeye spawning areas, the department requires advance authorization for activities in Baker Lake and lakes Osoyoos, Ozette, Pleasant, Quinault, Sammamish, Washington, and Wenatchee. If authorization is given, the department may require mitigation through a written agreement between the applicant and the department for impacts of the activity to the spawning area.

(ii) Weed rollers cannot be used to remove an early infestation of aquatic noxious weeds. Using weed rollers to remove or control all other infestation levels of aquatic noxious weeds can cover an area of no more than two thousand five hundred square feet. The department requires advance authorization for weed roller projects covering a larger area.

(iii) The department requires advance authorization to remove or control aquatic beneficial plants.

(iv) When using weed rollers to remove or control aquatic noxious weeds, completely remove detached plants and plant parts from the waterbody. Dispose of detached plants and plant parts at an upland site so they do not reenter waters of the state.

(v) Conduct work in a manner that minimizes the release of sediment and sediment-laden water from the job site.

(vi) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, or any other toxic or harmful materials, from entering or leaching into waters of the state.

(vii) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(viii) Existing fish habitat components such as logs, stumps, and large boulders may be relocated within the waterbody if needed to properly install the weed roller. Do not remove these habitat components from the waterbody.

(ix) Avoid using contaminated equipment, which can spread plant parts. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(7) **Mechanical harvesting and cutting:**

(a) A copy of the current *Aquatic Plants and Fish* pamphlet available from the department serves as an HPA, unless otherwise indicated, and must be on the job site at all times.

(b) Mechanical harvesting and cutting projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Do not use mechanical harvesters and cutters to remove an early infestation of aquatic noxious weeds.

(ii) The department requires advance authorization to remove aquatic beneficial plants.

(iii) When using mechanical harvesters or cutters to remove or control aquatic noxious weeds, completely remove detached plants and

plant parts from the waterbody. Dispose of detached plants and plant parts at an upland site so they do not reenter waters of the state.

(iv) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, or any other toxic or harmful materials, from entering or leaching into waters of the state. Keep equipment well-maintained and use food-grade oil in the hydraulic system.

(v) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(vi) Existing fish habitat components such as logs, stumps, and large boulders may be relocated within the waterbody to make room to operate the equipment. Do not remove these habitat components from the waterbody.

(vii) Conduct mechanical harvester and cutter operations only in waters deep enough to avoid contacting the bottom with the cutter blades.

(viii) Always operate mechanical harvesters and cutters so that they cause the least adverse impact to fish life.

(ix) Immediately and safely return all fish life to the waterbody that become entrained in the cut vegetation while operating a mechanical harvester.

(x) Avoid using contaminated equipment which can spread plant parts. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(xi) Limit alteration or disturbance of the bank and bank vegetation to that required to conduct the project. Protect all disturbed areas from erosion using vegetation or other means. Replant the banks within one year with native or other approved woody species.

(8) **Rotovation:**

(a) The department requires an individual HPA for rotovation projects. Rotovation projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Do not use rotovators to remove an early infestation of aquatic noxious weeds.

(ii) When using rotovation to remove or control aquatic noxious weeds, completely remove detached plants and plant parts from the waterbody. Dispose of detached plants and plant parts at an upland site so they do not reenter waters of the state.

(iii) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, or any other toxic or harmful materials, from entering or leaching into waters of the state. Keep equipment well-maintained and use food-grade oil in the hydraulic system.

(iv) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(v) Existing fish habitat components such as logs, stumps, and large boulders may be relocated within the waterbody if needed to op-

erate the equipment. Do not remove these habitat components from the waterbody.

(vi) Always operate rotovators such that they will cause the least adverse impact to fish life.

(vii) Avoid spreading plant parts through contaminated equipment. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(viii) Limit alteration or disturbance of the bank and bank vegetation to that needed to conduct the project. Protect all disturbed areas from erosion, using vegetation or other means. Replant the banks within one year with native or other approved woody species.

(ix) Do not rotovate in fish spawning areas unless approved by the department.

(9) **Aquatic plant dredging:**

(a) A copy of the current *Aquatic Plants and Fish* pamphlet available from the department serves as an HPA for diver-operated dredging only, unless otherwise indicated, and must be on the job site at all times.

(b) Dredging projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) Because of potential impacts to sockeye spawning areas, the department requires advance authorization for activities in Baker Lake and lakes Osoyoos, Ozette, Pleasant, Quinault, Sammamish, Washington, and Wenatchee. If authorization is given, the department may require mitigation through a written agreement between the applicant and the department for impacts of the activity to the spawning area.

(ii) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, or any other toxic or harmful materials, from entering or leaching into waters of the state. Keep equipment well-maintained and use food-grade oil in the hydraulic system.

(iii) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(iv) Existing fish habitat components such as logs, stumps, and large boulders may be relocated within the waterbody if needed to operate the equipment. Do not remove these habitat components from the waterbody.

(v) Conduct dredging at all times with dredge types and methods that cause the least adverse impact to fish life.

(vi) Avoid using contaminated equipment, which can spread plant parts. Thoroughly remove and properly dispose of all viable plants and plant parts from the equipment before using the equipment in waters of the state.

(vii) To avoid stranding fish, the bed must not contain pits, potholes, or large depressions when dredging is finished.

(viii) Limit alteration or disturbance of the bank and bank vegetation to that needed to conduct the project. Protect all disturbed areas from erosion, using vegetation or other means. Replant the banks within one year with native or other approved woody species.

(c) Diver-operated dredging only:

(i) Diver-operated dredging can help eradicate an early infestation of aquatic noxious weeds and can help conduct long-term maintenance after control or removal using other methods.

(ii) When using diver-operated dredging to remove or control aquatic noxious weeds, a person must completely remove plants and plant parts from the waterbody. Remove plants and plant fragments from the dredge slurry before returning it to the waterbody. Dispose of dredged bed materials, including detached plants and plant parts, at an upland disposal site so as not to reenter water of the state.

(iii) Operate a hydraulic dredge with the intake at or below the surface of the material that is being removed. Raise the intake up to three feet above the bed only for brief periods of purging or flushing the intake system.

(iv) The department requires advance authorization to eradicate or control aquatic beneficial plants.

(d) Dredging other than diver-operated dredging: The department requires an individual HPA for all dredging projects to control or remove aquatic plants that do not use divers. All dredging other than diver-operated dredging must comply with the following technical provisions:

(i) Do not use draglines and clamshell dredges to remove an early infestation of aquatic noxious weeds.

(ii) When using dredging to remove or control aquatic noxious weeds, a person must completely remove plants and plant parts from the waterbody. Dispose of dredged bed materials, including detached plants and plant parts, at an upland site so they not to reenter waters of the state.

(iii) Do not conduct dredging in fish spawning areas unless approved by the department.

(iv) Operate a hydraulic dredge with the intake high enough above the root system of the vegetation being removed so the bed is not excessively disturbed. Raise the intake up to three feet above the bed only for brief periods of purging or flushing the intake system.

(v) If a dragline or clamshell is used, operate in a way that minimizes turbidity. During excavation, complete each pass with the clamshell or dragline bucket. Do not stockpile dredged material waterward of the ordinary high water line.

(10) **Water level manipulation:**

(a) The department requires an individual HPA to manipulate water levels.

(b) Manipulating water levels (drawdowns) to remove or control aquatic noxious weeds or aquatic beneficial plants by exposing plants and root systems to extreme temperature and moisture conditions may be appropriate under specific circumstances. Accurate plant identification is important to ensure success.

(c) Water level manipulation projects to control or remove both aquatic noxious weeds and aquatic beneficial plants must comply with the following technical provisions except where otherwise indicated:

(i) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(ii) Manipulate water levels in a way that causes the least adverse impact to fish life.

(iii) Manipulate water levels gradually and in a controlled way to prevent a sudden release of impounded water or sediments that may result in downstream bed and bank degradation, sedimentation, or flooding. Water levels must be drawn down and brought back up at rates predetermined in consultation with and approved by the department. In-stream flow requirements must be maintained as water levels are brought back up.

(iv) Protect all disturbed areas from erosion, using vegetation or other means. Replant the banks within one year with native or other approved woody species.

NEW SECTION

WAC 220-660-300 Mineral prospecting. (1) **Description:** Mineral prospecting projects excavate, process, or classify aggregate using hand-held mineral prospecting tools and mineral prospecting equipment. When prospectors locate valuable minerals through prospecting, they may attempt to recover larger quantities of the minerals using a variety of small motorized equipment, including suction dredges, high bankers, and heavy equipment. The rules in this section apply to using hand-held mineral prospecting tools and small motorized equipment.

(2) **Fish life concerns:** Mineral prospecting and mining activities can harm fish and their habitat.

(a) Direct impacts from mineral prospecting and mining activities may include:

(i) Mortality from the physical effects of disturbing eggs or fry incubating within the bed;

(ii) Mortality from passing vulnerable fish through mineral prospecting equipment; and

(iii) Lower environmental productivity resulting from habitat modifications such as altered streambeds or lowered water quality.

(b) Indirect impacts may include changes in food resources and human disturbances.

(c) The department minimizes impacts of mineral prospecting by restricting the type of mining equipment allowed, limiting excavation zones within streams, and setting allowable timing windows.

(3) **General requirements:**

(a) A copy of the current *Gold and Fish* pamphlet is available from the department, and it contains the rules that a person must follow when using the pamphlet as the HPA for the mineral prospecting project.

(b) Alternatively, a person may request exceptions to the *Gold and Fish* pamphlet by applying for a standard individual written HPA as described in WAC 220-660-060. The department must deny an HPA when, in the judgment of the department, the project will result in direct or indirect harm to fish life, unless enough mitigation can be assured by provisioning the HPA or modifying the proposal. The department may apply saltwater provisions to written HPAs for tidally influenced areas upstream of river mouths and the mainstem Columbia River downstream of Bonneville Dam.

(c) Nothing in chapter 220-660 WAC relieves a person of the duty to obtain landowner permission and any other required permits before conducting any mineral prospecting activity.

(4) **Mineral prospecting in freshwater without timing restrictions:**

(a) A person may mineral prospect year-round in all fresh waters of the state, except lakes. A person must follow the rules listed below, but does not need to have the *Gold and Fish* pamphlet on the job site when working in fresh waters of the state.

(b) When mineral prospecting without timing restrictions, a person may use only hand-held mineral prospecting tools and the following mineral prospecting equipment:

(i) Pans;

(ii) Spiral wheels; and

(iii) Sluices, concentrators, mini rocker boxes, and mini high-bankers with riffle areas totaling three square feet or less, including ganged equipment.

(c) A person may not use vehicle-mounted winches. A person may use one hand-operated winch to move boulders or large woody material that is not embedded or located within the wetter perimeter. A person may use additional cables, chains, or ropes to stabilize boulders, or large woody material that is not embedded.

(d) A person may work within the wetted perimeter only from one-half hour before official sunrise to one-half hour after official sunset.

(e) A person may not disturb fish life or redds within the bed. If a person observes or encounters fish life or redds within the bed, or actively spawning fish when collecting or processing aggregate, a person must relocate their operation. A person must avoid areas containing live freshwater mussels. If a person encounters live mussels during excavation, a person must relocate the operation.

(f) Aggregate excavation, collection, and removal:

(i) A person may excavate only by hand or with hand-held mineral prospecting tools.

(ii) A person may not excavate, collect, or remove aggregate from within the wetted perimeter. See Figures 1 and 2.

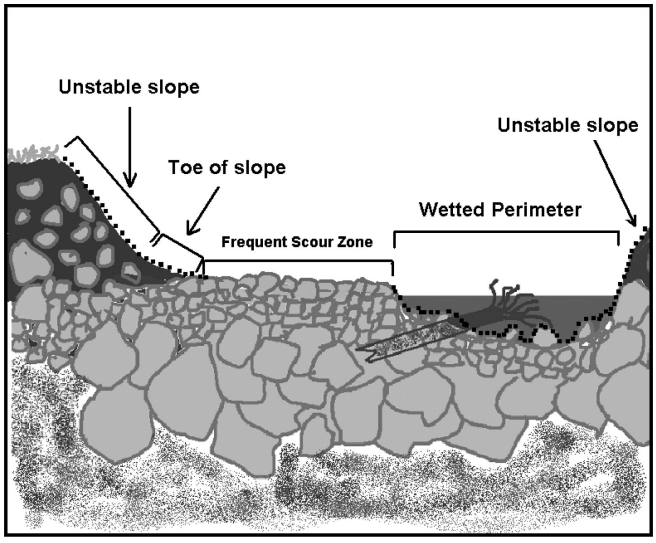


Figure 1: Cross section of a typical body of water, showing areas where excavation is not permitted under rules for mineral prospecting without timing restrictions. Dashed lines indicate areas where excavation is not permitted.

(iii) A person may work in only one excavation site at a time. However, a person may use a second excavation site as a settling pond. Multiple persons may work within a single excavation site.

(iv) When collecting or excavating aggregate, a person may not stand within, or allow aggregate to enter, the wetted perimeter.

(v) A person must fill all excavation sites and level all tailing piles before moving to another excavation site or abandoning an excavation site. If a person moves boulders, a person must return them, as well as possible, to their original location.

(vi) A person may not undermine, move, or disturb large woody material embedded in the slopes or located wholly or partially within the wetted perimeter. A person may move large woody material and boulders located entirely within the frequent scour zone, but a person must keep them within the frequent scour zone. A person may not cut large woody material. See Figure 2.

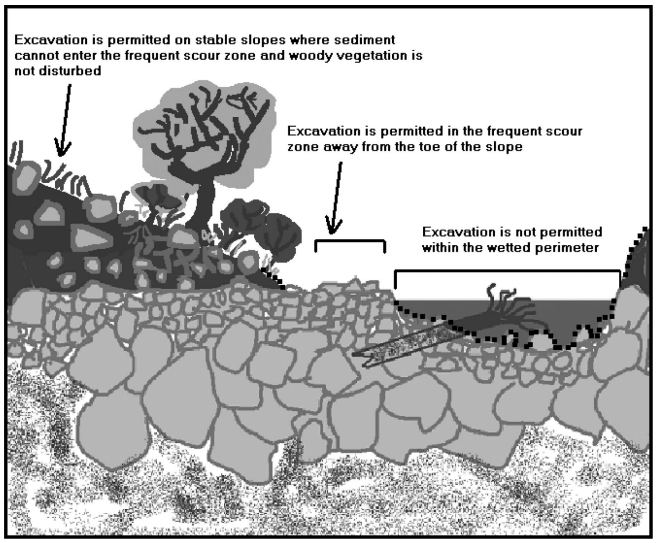


Figure 2: Permitted and prohibited excavation sites in a typical body of water under rules for mineral prospecting without timing restrictions. Dashed lines indicate areas where excavation is not permitted.

(vii) A person may not undermine, cut, or disturb live, rooted woody vegetation of any kind.

(viii) A person may not excavate, collect, or remove aggregate from the toe of the slope. A person also may not excavate, collect, or remove aggregate from an unstable slope or any slope that delivers, or might deliver sediment to the wetted perimeter or frequent scour zone. See Figures 3 and 4.

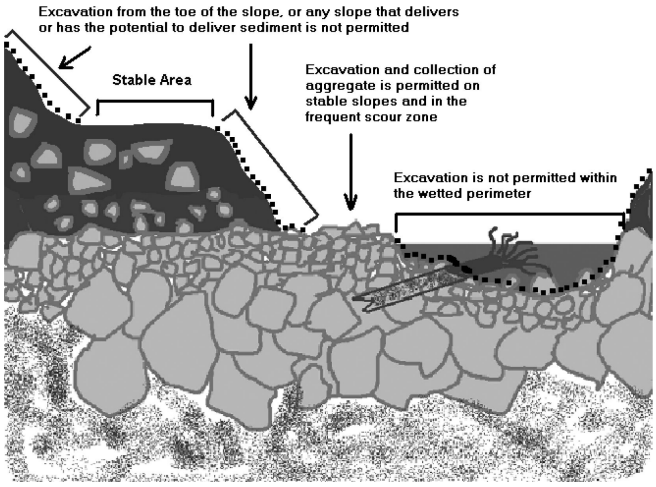


Figure 3: Limits on excavating, collecting, and removing aggregate on stream banks.

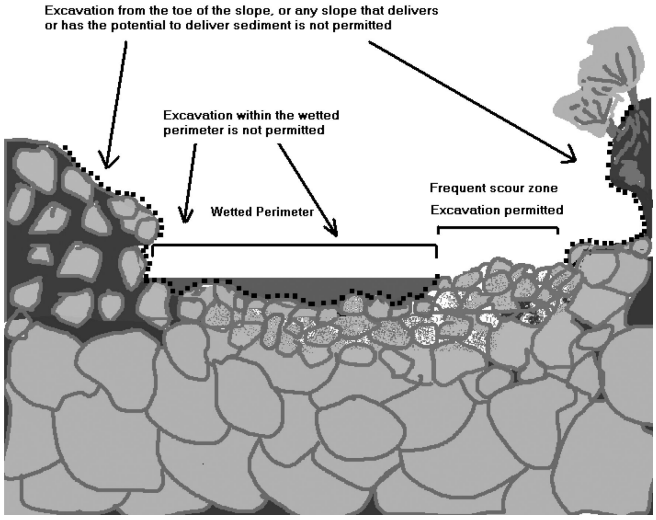


Figure 4: Excavating, collecting and removing aggregate within the wetted perimeter is not permitted.

(g) Processing aggregate:

(i) A person may stand within the wetted perimeter when processing aggregate with pans, spiral wheels, and sluices.

(ii) A person may not stand on or process directly on redds, or disturb incubating fish life. A person may not allow tailings or visible sediment plumes (visibly muddy water) to enter redds or areas where fish life are located within the bed.

(iii) A person may not level or disturb tailing piles that remain within the wetted perimeter after processing aggregate.

(iv) If a person collected or excavated aggregate outside of the frequent scour zone, a person must classify it at the collection or excavation site before processing.

(v) When using a sluice, a person may process only classified aggregate within the wetted perimeter.

(vi) The maximum width of a sluice, measured at its widest point, including attachments, must not exceed twenty-five percent of the width of the wetted perimeter at the point of placement.

(vii) A person may process with a sluice only in areas within the wetted perimeter that are composed mainly of boulders and bedrock. A person must separate sluice locations by at least fifty feet. A person may not place structures within the wetted perimeter to check or divert the water flow.

(viii) A person may operate mini high-bankers or other concentrators only outside the wetted perimeter. A person may not allow visible sediment or muddy water to enter the wetted perimeter. A second excavation site may be used as a settling pond.

(ix) As provided in RCW 77.57.010 and 77.57.070, any device a person uses for pumping water from fish-bearing waters must be equipped with a fish guard to prevent fish from entering the pump intake. A person must screen the pump intake with material that has openings no larger than five sixty-fourths inch for square openings, measured side to side, or three thirty-seconds inch diameter for round openings, and the screen must have at least one square inch of functional screen area for every gallon per minute (gpm) of water drawn through it. For example, a one hundred gpm-rated pump would require a screen with a surface area of at least one hundred square inches.

(x) A person may not excavate, collect, remove, or process aggregate within four hundred feet of any fishway, dam, or hatchery water intake.

(xi) A person may not disturb existing habitat improvement structures or stream channel improvements.

(xii) All equipment fueling and servicing must be done so that petroleum products do not enter the wetted perimeter or frequent scour zone. If a petroleum sheen or spill is observed, a person must immediately stop work, remove the equipment from the body of water, and contact the Washington military department emergency management division. A person may not return the equipment to the water until the problem is corrected. A person must store fuel and lubricants outside the frequent scour zone, and in the shade when possible.

(xiii) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately cease operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(5) **Mineral prospecting in fresh waters with timing restrictions**:

(a) A person may mineral prospect in fresh waters of the state only during the times and with the mineral prospecting equipment limitations identified in subsection (7) of this section. A person must have the *Gold and Fish* pamphlet on the job site and comply with the provisions listed below.

(b) When mineral prospecting with timing restrictions, a person may use only hand-held mineral prospecting tools and the following mineral prospecting equipment:

(i) Pans;

(ii) Spiral wheels;

(iii) Sluices, concentrators, rocker boxes, and high-bankers with riffle areas totaling ten square feet or less, including ganged equipment;

(iv) Suction dredges that have suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size. See Figure 5.

Figure 5: Dredge intake nozzle

(v) Power sluice/suction dredge combinations that have riffle areas totaling ten square feet or less, including ganged equipment; suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle; and pump intake hoses with inside diameters of four inches or less. The inside diameter of the dredge hose attached to the suction intake nozzle may be no greater than one inch larger than the nozzle size. See Figure 5; and

(vi) High-bankers and power sluices that have riffle areas totaling ten square feet or less, including ganged equipment, and pump intake hoses with inside diameters of four inches or less.

(c) The widest point of a sluice, including attachments, must not exceed twenty-five percent of the width of the wetted perimeter at the point of placement.

(d) The suction intake nozzle and hose of suction dredges and power sluice/suction dredge combinations must not exceed the diameters allowed in the listing for the stream or stream reach where a person is operating, as identified in subsection (7) of this section.

(e) A person may not use vehicle-mounted winches. A person may use one motorized winch and one hand-operated winch to move boulders and large woody material that is not embedded, and additional cables, chains, or ropes to stabilize them.

(f) Equipment separation:

(i) A person may use hand-held mineral prospecting tools; pans; spiral wheels; or sluices, mini rocker boxes, or mini high-bankers with riffle areas totaling three square feet or less, including ganged equipment, as close to other mineral prospecting equipment as desired.

(ii) When operating any sluice or rocker box with a riffle area larger than three square feet (including ganged equipment), suction dredge, power sluice/suction dredge combination, high-banker, or power sluice within the wetted perimeter, a person's equipment must be at least two hundred feet from all others also operating this type of equipment. This separation is measured as a radius from the center of

the equipment the person is operating. A person may locate this equipment closer than two hundred feet if only one piece of equipment is actually operating within that two hundred foot radius. See Figure 6.

(iii) When operating any sluice or rocker box with a riffle area larger than three square feet (including ganged equipment), suction dredge, power sluice/suction dredge combination, high-banker, or power sluice outside of the wetted perimeter that discharges tailings or wastewater to the wetted perimeter, a person's equipment must be at least two hundred feet from all others also operating this type of equipment. This separation is measured as a radius from the center of the equipment the person is operating. A person may locate this equipment closer than two hundred feet if only one piece of equipment is actually operating within that two hundred-foot radius. See Figure 6.

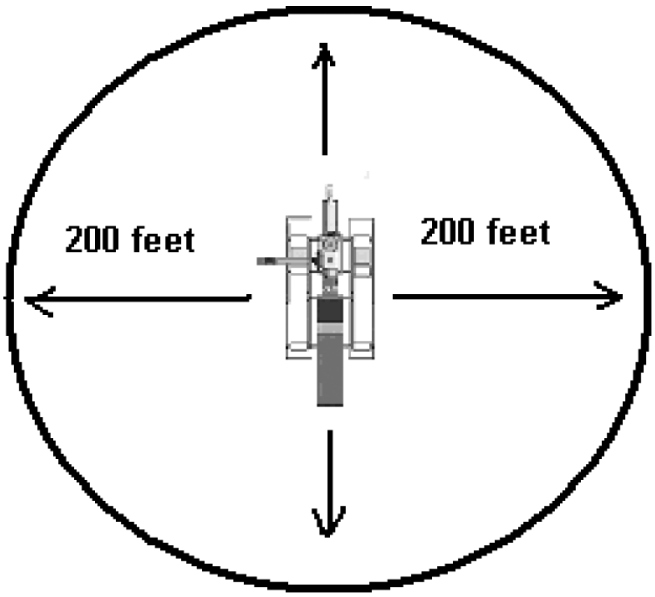


Figure 6: Equipment separation requirement.

(g) As provided in RCW 77.57.010 and 77.57.070, any device a person uses for pumping water from fish-bearing waters must be equipped with a fish guard to prevent fish from entering the pump intake. A person must screen the pump intake with material that has openings no larger than five sixty-fourths inch for square openings, measured side to side, or three thirty-seconds inch diameter for round openings, and the screen must have at least one square inch of functional screen area for every gallon per minute (gpm) of water drawn through it. For example, a one hundred gpm-rated pump would require a screen with a surface area of at least one hundred square inches.

(h) All equipment fueling and servicing must be done so that petroleum products do not enter the wetted perimeter or frequent scour zone. If a petroleum sheen or spill is observed, a person must immediately stop work, remove the equipment from the body of water, and contact the Washington military department emergency management division. A person may not return the equipment to the water until the problem is corrected. A person must store fuel and lubricants outside the frequent scour zone, and in the shade when possible.

(i) A person may work within the wetted perimeter or frequent scour zone only from one-half hour before official sunrise to one-half hour after official sunset. If a person's mineral prospecting equip-

ment exceeds one-half the width of the wetted perimeter of the stream, a person must remove the equipment from the wetted perimeter or move it so that at least fifty percent of the wetted perimeter is free of equipment from one-half hour after official sunset to one-half hour before official sunrise.

(j) A person may not excavate, collect, remove, or process aggregate within four hundred feet of any fishway, dam, or hatchery water intake.

(k) A person must not disturb existing habitat improvement structures or stream channel improvements.

(l) A person may not undermine, move, or disturb large woody material embedded in the slopes or located wholly or partially within the wetted perimeter. A person may move large woody material and boulders located entirely within the frequent scour zone, but a person must keep them within the frequent scour zone. A person may not cut large woody material.

(m) A person may not undermine, cut, or disturb live, rooted woody vegetation of any kind.

(n) A person may work in only one excavation site at a time. However, a person may use a second excavation site as a settling pond. Multiple individuals may work within a single excavation site.

(o) A person must fill all excavation sites and level all tailing piles before moving to another excavation site or abandoning an excavation site.

(p) A person may not excavate, collect, or remove aggregate from the toe of the slope. A person also may not excavate, collect, or remove aggregate from an unstable slope or any slope that delivers, or might deliver, sediment to the wetted perimeter or frequent scour zone. See Figures 7 and 8.

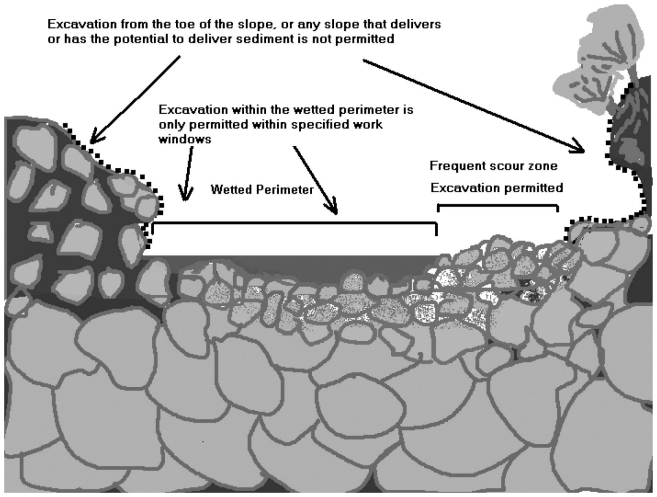


Figure 7: Cross section of a typical body of water showing unstable slopes, stable areas, and permitted or prohibited excavation sites under rules for mineral prospecting with timing restrictions. Dashed line indicates areas where excavation is not permitted.

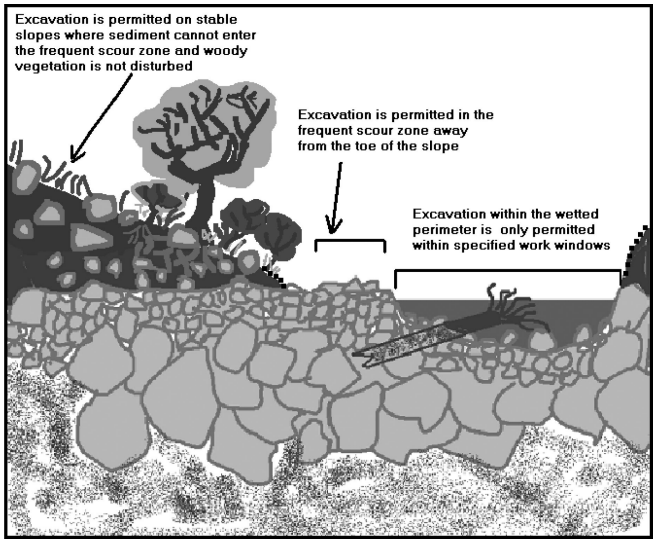


Figure 8: Cross section of a typical body of water showing unstable slopes, stable areas, and permitted or prohibited excavation sites under rules for mineral prospecting with timing restrictions. Dashed line indicates areas where excavation is not permitted.

(q) A person may partially divert a body of water into mineral prospecting equipment. However, at no time may the diversion structure be greater than fifty percent of the width of the wetted perimeter, including the width of the equipment. A person may not divert the body of water outside of the wetted perimeter.

(r) A person may use materials only from within the wetted perimeter, or artificial materials from outside the wetted perimeter, to construct the diversion structure by hand. Before abandoning the site, a person must remove artificial materials used to construct a diversion structure and restore the site to its approximate original condition.

(s) A person may process aggregate collected from the frequent scour zone:

(i) At any location if a person uses pans; spiral wheels; mini rocker boxes; mini high-bankers; or sluices or other concentrators with riffle areas three square feet or less, including ganged equipment.

(ii) Only in the frequent scour zone or upland areas landward of the frequent scour zone if a person uses power sluice/suction dredge combinations, high-bankers, or power sluices with riffle areas totaling ten square feet or less, including ganged equipment; or sluices or rocker boxes that have riffle areas larger than three, but less than ten square feet, including ganged equipment. A person may not discharge tailings to the wetted perimeter when using this equipment. However, a person may discharge wastewater to the wetted perimeter if its entry point into the wetted perimeter is at least two hundred feet from any other wastewater discharge entry point.

(t) A person may process aggregate collected from upland areas landward of the frequent scour zone:

(i) At any location if a person uses pans; spiral wheels; or sluices, concentrators, mini rocker boxes, and mini high-bankers with riffle areas totaling three square feet or less, including ganged equipment. A person must classify the aggregate at the excavation site

before processing with this equipment within the wetted perimeter or frequent scour zone.

(ii) Only at an upland location landward of the frequent scour zone if a person uses power sluice/suction dredge combinations; high-bankers; power sluices; or rocker boxes. A person may not allow tailings or wastewater to enter the wetted perimeter or frequent scour zone.

(iii) Within the wetted perimeter or frequent scour zone if a person uses a sluice with a riffle area greater than three square feet. A person must classify the aggregate at the excavation site prior to processing with a sluice with a riffle area exceeding three square feet.

(u) A person may use pressurized water only for crevicing or for redistributing dredge tailings within the wetted perimeter. No other use of pressurized water is permitted.

(v) A person may conduct crevicing in the wetted perimeter, in the frequent scour zone, or landward of the frequent scour zone. The hose connecting fittings of pressurized water tools used for crevicing may not have an inside diameter larger than three-quarters of an inch. If a person crevices landward of the frequent scour zone, no sediment or wastewater may be discharged into the wetted perimeter or the frequent scour zone.

(w) A person must avoid areas containing live freshwater mussels. If a person encounters live mussels during excavation, a person must relocate the operation.

(x) A person may not disturb redds. If a person observes or encounters redds or actively spawning fish when collecting or processing aggregate, a person must relocate the operation.

(y) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately stop operations and notify the department and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

(6) **Mineral prospecting on ocean beaches:**

(a) A person may mineral prospect year-round on ocean beaches of the state. A person must follow the rules listed below, and must have the *Gold and Fish* pamphlet on the job site when working on ocean beaches of the state, except as noted in this subsection.

(b) A person may mineral prospect only between the line of ordinary high tide and the line of extreme low tide on beaches within the Seashore Conservation Area set under RCW 79A.05.605 and managed by Washington state parks and recreation commission.

(c) No written or pamphlet HPA is required to mineral prospect south of the Copalis River, if a person operates landward of the upper limit of ghost shrimp burrowing in the beach; waterward of the ordinary high tide line; and a person does not use fresh water from fish-bearing streams during operations. See Figure 9.

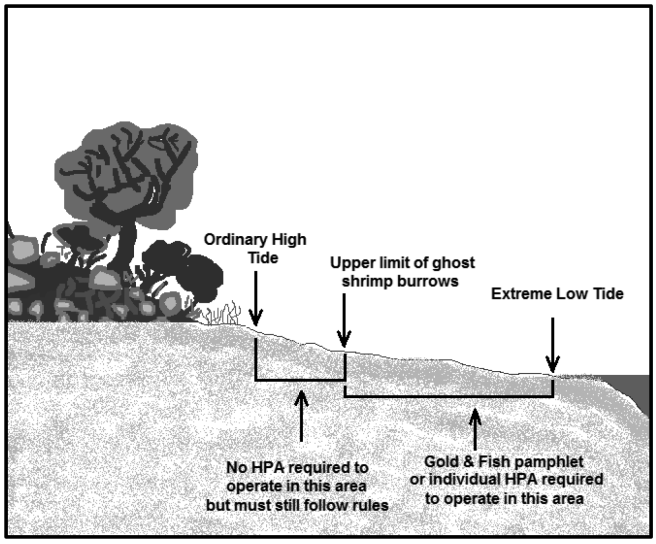


Figure 9. Beach area where no written or pamphlet HPA is required.

(d) A person may use only hand-held mineral prospecting tools and the following mineral prospecting equipment:

(i) Pans;

(ii) Spiral wheels;

(iii) Sluices, concentrators, rocker boxes, and high-bankers with riffle areas totaling ten square feet or less, including ganged equipment;

(iv) Suction dredges that have suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size;

(v) Power sluice/suction dredge combinations that have riffle areas totaling ten square feet or less, including ganged equipment; suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle; and pump intake hoses with inside diameters of four inches or less. The inside diameter of the dredge hose attached to the suction intake nozzle may be no greater than one inch larger than the nozzle size; and

(vi) High-bankers and power sluices that have riffle areas totaling ten square feet or less, including ganged equipment, and pump intake hoses with inside diameters of four inches or less.

(e) When operated in fish-bearing freshwater streams, the widest point of a sluice, including attachments, must not exceed twenty-five percent of the width of the wetted perimeter at the point of placement.

(f) A person may not use vehicle-mounted winches. A person may use one motorized winch and one hand-operated winch to move boulders and large woody material that is not embedded, and additional cables, chains, or ropes to stabilize them.

(g) Under RCW 77.57.010 and 77.57.070, any device a person uses for pumping water from fish-bearing waters must be equipped with a fish guard to prevent fish from entering the pump intake. A person

must screen the pump intake with material that has openings no larger than five sixty-fourths inch for square openings, measured side to side, or three thirty-seconds inch diameter for round openings, and the screen must have at least one square inch of functional screen area for every gallon per minute (gpm) of water drawn through it. For example, a one hundred gpm-rated pump would require a screen with a surface area of at least one hundred square inches.

(h) All equipment fueling and servicing must be done so that petroleum products do not enter the wetted perimeter. If a petroleum sheen or spill is observed, a person must immediately stop work, remove the equipment from the body of water and beach, and contact the Washington military department emergency management division. A person may not return the equipment to the water or beach until the problem is corrected. A person must store fuel and lubricants away from the water inside a vehicle or landward of the beach, and in the shade when possible.

(i) A person may work only from one-half hour before official sunrise to one-half hour after official sunset. If a person uses mineral prospecting equipment in a fish-bearing freshwater stream and the equipment exceeds one-half the width of the wetted perimeter of the stream, a person must remove the equipment from the wetted perimeter or move it so that at least fifty percent of the wetted perimeter is free of equipment from one-half hour after official sunset to one-half hour before official sunrise.

(j) A person may not undermine, cut, disturb, or move large woody material or woody debris jams.

(k) A person may work in only one excavation site at a time. However, a person may use a second excavation site as a settling pond. Multiple persons may work within a single excavation site.

(l) A person must backfill all trenches, depressions, or holes created in the beach during project activities before moving to another excavation site (except during use as a settling pond) or leaving an excavation site.

(m) A person may partially divert a body of water into mineral prospecting equipment. However, at no time may the diversion structure be greater than fifty percent of the width of the wetted perimeter of a fish-bearing freshwater stream, including the width of the equipment. A person may not divert the body of water outside of the wetted perimeter.

(n) A person may use materials only from within the wetted perimeter, or artificial materials from outside the wetted perimeter, to construct the diversion structure by hand. Before abandoning the site, a person must remove artificial materials used to construct a diversion structure and restore the site to its approximate original condition.

(o) A person may use pressurized water only for redistributing dredge tailings within the wetted perimeter. No other use of pressurized water is permitted.

(p) A person may not disturb live razor clams or other shellfish within the bed. If a person observes or encounters live razor clams or other shellfish during excavation, the person must relocate the operation.

(q) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately stop operations and notify the department, and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The

department will require additional measures to mitigate the prospecting impacts.

(7) **Authorized work times and mineral prospecting equipment restrictions by specific state waters for mineral prospecting and placer mining projects:**

(a) A person may conduct mineral prospecting and placer mining under subsections (5) and (6) of this section only in the state waters, with the equipment restrictions, and during the times specified in the following table of authorized work times.

(b) The general work time for a county applies to all state waters within that county, unless otherwise indicated in the table.

(c) The work time for state waters identified in the table of authorized work times applies to all its tributaries, unless otherwise indicated. Some state waters occur in multiple counties. Check the table for the county in which mineral prospecting or placer mining is to be conducted to determine the work time for that waterbody.

(d) Where a tributary is identified as a boundary, that boundary is the line perpendicular to the receiving stream that is projected from the most upstream point of the tributary mouth to the opposite bank of the receiving stream. See Figure 10.

(e) Mineral prospecting and placer mining within waterbodies identified in the table of authorized work times as "submit application" are not authorized under the *Gold and Fish* pamphlet. A person must obtain a written individual HPA to work in these waterbodies.

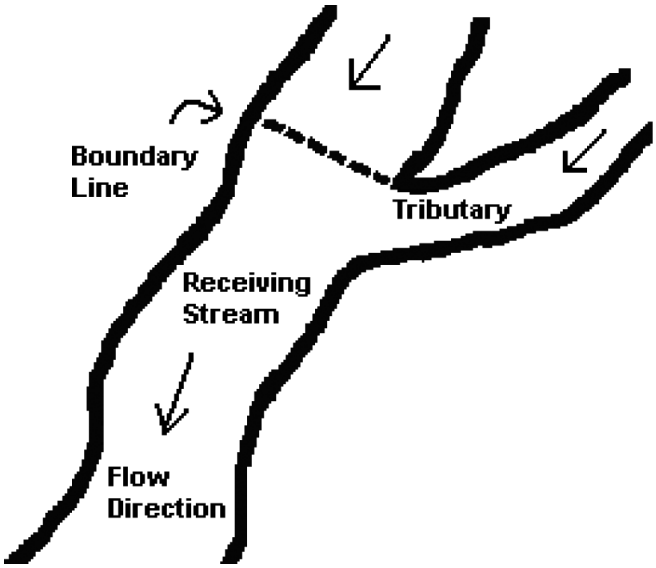


Figure 10: Where the boundary is located if a tributary listed as a boundary.

(f) Mineral prospecting using mineral prospecting equipment that has suction intake nozzles with inside diameters that should be four inches or less, but must be no greater than four and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle, is authorized only in the state waters identified in the table of authorized work times, and any tributaries to them, unless otherwise indicated in the table. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size.

(g) Mineral prospecting using mineral prospecting equipment that has suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle is authorized only in the state waters specifically identified in the table of authorized work times. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size. A person may use only mineral prospecting equipment with suction intake nozzle inside diameters of four and one-quarter inches or less in tributaries of these state waters. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size.

Table 2
Authorized Work Times and Mineral Prospecting Equipment Restrictions by Specific State Waters for Mineral Prospecting and Placer Mining Projects

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Adams County	July 1 - October 31	X	–
Crab Creek (41.0002)	July 16 - February 28	X	X
Esquatzel Creek (36.MISC)	June 1 - February 28	X	X
Palouse River (34.0003)	July 16 - February 28	X	X
Asotin County	July 16 - September 15	X	–
Snake River (35.0002)	See Below	–	–
Alpowa Creek (35.1440)	July 16 - December 15	X	–
Asotin Creek (35.1716)	July 16 - August 15	X	–
Couse Creek (35.2147)	July 16 - December 15	X	–
Grande Ronde River (35.2192)	July 16 - September 15	X	X
Ten Mile Creek (35.2100)	July 16 - December 15	X	–
Benton County	June 1 - September 30	X	–
Columbia River	See Below	–	–
Glade Creek (31.0851)	August 1 - September 30	X	–
Yakima River (37.0002)	June 1 - September 15	X	X
Amon Wasteway (37.0009)	June 1 - September 30	X	–
Corral Creek (37.0002)	June 1 - September 30	X	–
Spring Creek (37.0205)	June 1 - September 30	X	–
Chelan County	July 16 - August 15	X	–
Columbia River	See Below	–	–
Antoine Creek (49.0294) - Mouth to falls at river mile 1.0	July 1 - February 28	X	–
Antoine Creek (49.0294) - Upstream of falls at river mile 1.0	July 1 - March 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Chelan River (47.0052) - Mouth to Chelan Dam	July 16 - September 30	X	X
Colockum Creek (40.0760)	July 1 - October 31	X	–
Entiat River (46.0042) - Mouth to Entiat Falls	July 16 - July 31	X	X
Entiat River (46.0042) - Upstream of Entiat Falls	July 16 - March 31	X	–
Crum Canyon (46.0107)	July 16 - March 31	X	–
Mad River (46.0125)	July 16 - July 31	X	–
Indian Creek (46.0128)	July 16 - February 28	X	–
Lake Chelan (47.0052)	Submit Application	–	–
Railroad Creek (47.0410)	July 16 - September 30	X	–
Stehekin River (47.0508)	Submit Application	–	–
Twenty-Five Mile Creek (47.0195)	July 16 - September 30	X	–
Other Lake Chelan tributaries outside of North Cascades National Park	July 1 - August 15	X	–
Other Lake Chelan tributaries within North Cascades National Park	Submit Application	–	–
Number 1 Canyon (45.0011)	July 1 - February 28	X	–
Number 2 Canyon (45.0012)	July 1 - February 28	X	–
Squilchuck Creek (40.0836) - Mouth to South Wenatchee Avenue	July 1 - September 30	X	–
Squilchuck Creek (40.0836) - Upstream of South Wenatchee Avenue	July 1 - February 28	X	–
Stemilt Creek (40.0808) - Mouth to falls	July 1 - September 30	X	–
Stemilt Creek (40.0808) - Upstream of falls	July 1 - February 28	X	–
Wenatchee River (45.0030) - Mouth to Hwy 2 Bridge in Leavenworth	July 15 - September 30	X	X
Wenatchee River (45.0030) - Hwy 2 Bridge in Leavenworth to Lake Wenatchee	July 15 - August 15	X	X
Beaver Creek (45.0751)	July 1 - September 30	X	–
Chiwaukum Creek (45.0700)	July 1 - July 31	X	–
Chiwawa River (45.0759) - Mouth to Phelps Creek	July 1 - July 31	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Chiwawa River (45.0759) - Upstream of Phelps Creek	July 1 - July 31	X	–
Deep Creek (45.0764)	July 1 - February 28	X	–
Phelps Creek (45.0875)	July 16 - August 15	X	–
Icicle Creek (45.0474) - Mouth to Johnny Creek	July 1 - July 31	X	X
Icicle Creek (45.0474) - Upstream of Johnny Creek	July 1 - July 31	X	–
Fourth of July Creek (45.0525)	July 1 - February 28	X	–
Lake Wenatchee (45.0030)	Submit Application	–	–
Little Wenatchee (45.0985) - Mouth to Wilderness Boundary	July 1 - July 31	X	X
Little Wenatchee (45.0985) - Upstream of Wilderness Boundary	Submit Application	–	–
White River (45.1116) - Mouth to White River Falls	July 1 - July 31	X	X
White River (45.1116) - Upstream of White River Falls	July 1 - February 28	X	–
Nason Creek (45.0888)	July 1 - July 31	X	–
Peshastin Creek (45.0232) - Mouth to Negro Creek	July 16 - August 15	X	–
Peshastin Creek (45.0232) - Upstream of Negro Creek	August 1 - February 28	X	–
Ingalls Creek (45.0273) - Mouth to Cascade Creek	Submit Application	–	–
Ingalls Creek (45.0273) - Upstream of Cascade Creek	July 16 - February 28	X	–
Negro Creek (45.0323) - Mouth to falls at stream mile 2.9	Submit Application	–	–
Negro Creek (45.0323) - Upstream of falls at stream mile 2.9	July 16 - February 28	X	–
Ruby Creek (45.0318)	July 16 - February 28	X	–
Tronson Creek (45.0346)	August 1 - February 28	X	–
Scotty Creek (45.0376)	August 1 - February 28	X	–
Shaser Creek (45.0365)	August 1 - February 28	X	–
Clallam County	July 16 - September 15	X	–
Clallam River (19.0129)	August 1 - August 15	X	–
Dungeness River (18.0018)	Submit Application	–	–
Independent Creek (18.MISC)	August 1 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Elwha River (18.0272)	August 1 - August 15	X	X
Hoko River (19.0148)	August 1 - September 15	X	–
Jimmycomelately Creek (17.0285)	August 1 - August 31	X	–
Lake Ozette (20.0046)	Submit Application	–	–
Little Quilcene River (17.0076)	July 16 - August 31	X	–
Lake Ozette tributaries	July 16 - September 15	X	–
Lyre River (19.0031)	August 1 - September 15	X	–
McDonald Creek (18.0160)	August 1 - September 15	X	–
Morse Creek (18.0185)	August 1 - August 15	X	–
Ozette River (20.0046)	July 16 - September 15	X	–
Pysht River (19.0113)	August 1 - September 15	X	–
Quillayute River (20.0096, 20.0162, 20.0175)	August 1 - August 15	X	X
Bogachiel River (20.0162)	Submit Application	–	–
Calawah River (20.0175)	August 1 - August 15	X	X
Salmon Creek (17.0245)	July 16 - August 31	X	–
Sekiu River (19.0203)	August 1 - September 15	X	–
Snow Creek (17.0219)	July 16 - August 31	X	–
Sol Duc River (20.0096)	Submit Application	–	–
Lake Pleasant (20.0313)	Submit Application	–	–
Lake Pleasant tributaries	July 16 - September 15	X	–
Sooes River (20.0015)	July 16 - September 15	X	–
Clark County	July 16 - September 30	–	–
Columbia River	See Below	–	–
Lacamas Creek (28.0160) - Mouth to dam	August 1 - August 31	X	–
Lacamas Creek (28.0160) - Upstream of dam	August 1 - September 30	X	–
Lewis River (27.0168)	August 1 - August 15	X	X
East Fork Lewis River (27.0173) - Mouth to Lucia Falls	August 1 - August 15	X	X
East Fork Lewis River (27.0173) - Lucia Falls to Sunset Falls	August 1 - February 28	X	X
East Fork Lewis River (27.0173) - Upstream of Sunset Falls	August 1 - February 28	X	–
Lake River (28.0020)	January 1 - December 31	X	X
Burnt Bridge Creek (28.0143)	August 1 - August 31	X	–
Salmon Creek (28.0059)	August 1 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Whipple Creek (28.0038)	August 1 - September 30	X	–
North Fork Lewis River (27.0334) - Confluence of East Fork to Merwin Dam	August 1 - August 15	X	X
Cedar Creek (27.0339)	August 1 - September 15	X	–
North Fork Lewis River (27.0334) - Merwin Dam to Lower Falls	July 16 - August 15	X	X
Canyon Creek (27.0442)	July 16 - February 28	X	–
North Fork Lewis River (27.0168) - Upstream of Lower Falls	July 16 - August 15	X	X
Washougal River (28.0159) - Mouth to headwaters	August 1 - August 31	X	X
Columbia County	July 16 - September 30	X	–
Touchet River (32.0097)	August 1 - August 15	X	X
Grande Ronde River tributaries (35.2192)	July 16 - August 15	X	–
North Fork Touchet/Wolf Fork (32.0761)	Submit Application	–	–
South Fork Touchet (32.0708)	Submit Application	–	–
Tucannon River (35.0009)	July 16 - August 15	X	X
Walla Walla River (32.0008) - Mouth to Oregon state line	July 16 - September 15	X	X
Mill Creek (32.1436) - Mouth to Oregon state line	August 1 - August 15	X	–
Cowlitz County	July 16 - September 30	X	–
Chehalis River (22.0190/23.0190) - South Fork Chehalis River - Mouth to Fisk Falls	August 1 - August 31	X	X
Chehalis River (22.0190/23.0190) - South Fork Chehalis River - Upstream of Fisk Falls	August 1 - August 31	X	–
Columbia River	See Below	–	–
Abernathy Creek (25.0297)	July 16 - September 15	X	–
Burke Creek (27.0148)	August 1 - August 31	X	–
Burris Creek (27.0151)	August 1 - August 31	X	–
Bybee Creek (27.0142)	August 1 - August 31	X	–
Canyon Creek (27.0147)	August 1 - August 31	X	–
Coal Creek (25.0340)	July 16 - September 15	X	–
Clark Creek (25.0371)	August 1 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Cowlitz River (26.0002) - Mouth to barrier dam at river mile 49.5	July 16 - August 15	X	X
Coweeman River (26.0003) - Mouth to Baird Creek	August 1 - August 31	X	X
Coweeman River (26.0003) - Upstream of Baird Creek	August 1 - August 31	X	–
Cowlitz River (26.0002) - Tributaries below barrier dam to mouth	July 16 - September 30	X	–
Owl Creek (26.1441)	July 16 - September 15	X	–
Toutle River (26.0227)	July 16 - August 15	X	X
North Fork Toutle River (26.0314) - Mouth to Debris Dam	July 16 - August 15	X	X
North Fork Toutle River (26.0314) - Upstream of Debris Dam	July 16 - August 15	X	–
Green River (26.0323) - Mouth to Shultz Creek	July 16 - September 30	X	X
Green River (26.0323) - Upstream of Shultz Creek	July 16 - September 30	X	–
South Fork Toutle (26.0248) - Mouth to Bear Creek	July 16 - September 15	X	X
South Fork Toutle (26.0248) - Upstream of Bear Creek	July 16 - September 15	X	–
Tributaries to Silver Lake	July 16 - September 30	X	–
Germany Creek (25.0313)	July 16 - September 15	X	–
Kalama River (27.0002) - Mouth to Kalama Falls	August 1 - August 15	X	X
Kalama River (27.0002) - Upstream of Kalama Falls	August 1 - August 15	X	–
Lewis River (27.0168) - Mouth to East Fork Lewis River	August 1 - August 15	X	X
North Fork Lewis River (27.0334) - Confluence of East Fork to Merwin Dam	August 1 - August 15	X	X
North Fork Lewis River (27.0334) - Merwin Dam to Lower Falls	July 16 - August 15	X	X
Mill Creek (25.0284)	July 16 - September 15	X	–
Schoolhouse Creek (27.0139)	August 1 - August 31	X	–
Douglas County	July 1 - September 30	X	–
Columbia River	See Below	–	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Douglas Creek Canyon (44.0146)	May 16 - January 31	X	–
Foster Creek (50.0065)	August 1 - April 15	X	–
McCarteney Creek (44.0002)	July 1 - February 28	X	–
Pine/Corbaley Canyon Creek (44.0779)	September 16 - April 15	X	–
Rock Island Creek (44.0630)	July 1 - September 30	X	–
Ferry County	July 1 - August 31	X	–
Columbia River	See Below	–	–
Kettle River (60.0002)	June 16 - August 31	X	X
Boulder Creek (60.0130) - Mouth to Hodgson Road Bridge	Submit Application	–	–
Boulder Creek (60.0130) - Upstream of Hodgson Road Bridge	June 16 - February 28	X	–
Deadman Creek (60.0008) - Mouth to SR395 Crossing	Submit Application	–	–
Deadman Creek (60.0008) - Upstream of SR395	June 16 - February 28	X	–
Goosmus Creek (60.0254)	June 16 - February 28	X	–
Toroda Creek (60.0410)	July 1 - September 30	X	–
San Poil River (52.0004)	June 16 - September 30	X	X
Granite Creek (52.0099) - Mouth to Powerhouse Dam	June 16 - September 30	X	–
Granite Creek (52.0099) - Upstream of Powerhouse Dam	June 16 - February 28	X	–
West Fork San Poil River (52.0192) - Mouth to Deep Creek	June 16 - September 30	X	X
West Fork San Poil River (52.0192) - Upstream of Deep Creek	June 16 - September 30	X	–
Gold Creek (52.0197)	June 16 - February 28	X	–
Franklin County	June 1 - September 30	X	–
Columbia River	See Below	–	–
Snake River	See Below	–	–
Palouse River (34.0003)	July 16 - February 28	X	X
North bank tributaries of the lower Snake River between Palouse River and the mouth of the Snake River	June 16 - October 31	X	–
Garfield County	July 16 - September 30	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Snake River (35.0003)	See Below	–	–
Alpowa Creek (35.1440)	July 16 - December 15	X	–
Asotin Creek (35.1716)	July 16 - August 15	X	–
Deadman Creek (35.0688)	July 16 - December 15	X	–
Grande Ronde River tributaries (35.2192)	July 16 - August 15	X	–
Meadow Creek (35.0689)	July 16 - December 15	X	–
Tucannon River (35.0009) - Mouth to Panjab Creek	July 16 - August 15	X	X
Tucannon River (35.0009) - Upstream of Panjab Creek	July 16 - August 15	X	–
Pataha Creek (35.0123) - Mouth to Pataha Creek	January 1 - December 31	X	–
Pataha Creek (35.0123) - Upstream of Pataha Creek	July 16 - December 31	X	–
Grant County	July 1 - October 31	X	–
Columbia River	See Below	–	–
Crab Creek (41.0002)	July 16 - September 15	X	X
Grays Harbor County	July 16 - October 15	X	–
Chehalis River (22.0190/23.0190) - Mouth to Porter Creek	August 1 - August 31	X	X
Chehalis River (22.0190/23.0190) - Porter Creek to Fisk Falls	August 1 - August 15	X	X
Chehalis River (22.0190/23.0190) - Upstream of Fisk Falls	August 1 - August 15	X	–
Cedar Creek (23.0570)	August 1 - September 30	X	–
Cloquallum Creek (22.0501)	August 1 - September 30	X	–
Porter Creek (23.0543)	August 1 - September 30	X	–
Satsop River (22.0360)	August 1 - August 31	X	X
Wishkah River (22.0191)	August 1 - October 15	X	X
Wynoochee River (22.0260)	August 1 - September 30	X	X
Copalis River (21.0767)	August 1 - October 15	X	X
Elk River (22.1333)	July 1 - October 31	X	X
Hoquiam River (22.0137)	August 1 - October 15	X	X
Humptulips River (22.0004) - Mouth to Forks	August 1 - September 30	X	X
Humptulips River (22.0004) - Upstream of Forks	August 1 - September 30	X	–
Johns River (22.1270)	August 1 - September 30	X	X
Moclips River (21.0731)	August 1 - October 15	X	X
North River (24.0034)	August 1 - September 30	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Queets River (21.0001)	August 1 - August 15	X	X
Quinault River (21.0398)	August 1 - August 15	X	X
Raft River (21.0337)	August 1 - October 15	X	X
Island County	June 16 - October 15	X	–
Cavalero Creek (06.0065)	June 16 - December 15	X	–
Chapman Creek (06.0070)	June 16 - December 15	X	–
Crescent Creek (06.0002)	June 16 - December 15	X	–
Cultus Creek (06.0026)	June 16 - March 15	X	–
Deer Creek (06.0024)	June 16 - March 15	X	–
Dugualla Creek (06.0001)	June 16 - March 15	X	–
Glendale Creek (06.0025)	June 16 - December 15	X	–
Kristoferson Creek (06.0062-06.0063)	May 1 - December 15	X	–
Maxwelton Creek (06.0029)	June 16 - December 15	X	–
North Bluff Creek (06.0006)	June 16 - March 15	X	–
Old Clinton Creek (06.0023)	June 16 - March 15	X	–
Jefferson County	July 16 - October 31	X	–
Big Quilcene River (17.0012) - Mouth to falls	July 16 - August 31	X	X
Big Quilcene River (17.0012) - Falls to Forks	August 1 - February 28	X	X
Big Quilcene River (17.0012) - Upstream of Forks	August 1 - February 28	X	–
Bogachiel River (20.0162)	Submit Application	–	–
Chimacum Creek (17.0203)	July 16 - September 15	X	–
Donovan Creek (17.0115)	July 1 - October 15	X	–
Dosewallips River (16.0442)	July 16 - August 15	X	–
Duckabush River (16.0351)	July 16 - August 15	X	–
Dungeness River (18.0018)	August 1 - August 15	X	–
Elwha River (18.0272)	August 1 - August 15	X	X
Goodman Creek (20.0406)	August 1 - September 15	X	–
Hoh River (20.0422)	August 1 - August 15	X	X
Little Quilcene River (17.0076)	July 16 - August 31	X	–
Queets River (21.0001)	August 1 - August 15	X	X
Matheny Creek (21.0165)	August 1 - August 15	X	–
Sams River (21.0205)	August 1 - August 15	X	X
Quinault River (21.0398)	August 1 - August 15	X	X
Salmon Creek (17.0245)	July 16 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Skokomish River (16.0001)	August 1 - August 31	X	X
Snow Creek (17.0219)	July 16 - August 31	X	–
Tarboo Creek (17.0129)	August 1 - September 30	X	–
Thorndyke Creek (17.0170)	August 1 - October 15	X	–
King County	July 16 - September 30	X	–
Cedar River (08.0299) - Mouth to Forks	August 1 - August 31	X	X
Cedar River (08.0299) - Upstream of Forks	August 1 - August 31	X	–
Issaquah Creek (08.0178)	August 1 - August 31	X	–
Sammamish River (08.0057)	August 1 - August 31	X	–
Steele Creek (08.0379)	July 16 - February 28	X	–
Green River (Duwamish River) (09.0001) - Mouth to Sawmill Creek	August 1 - August 31	X	X
Green River (Duwamish River) (09.0001) - Upstream of Sawmill Creek	August 1 - August 31	X	–
Lake Washington tributaries (08.LKWA)	August 1 - August 31	X	–
Snoqualmie River (07.0219) - Mouth to Snoqualmie Falls	August 1 - August 15	X	X
Snoqualmie River (07.0219) - Snoqualmie Falls to mouth of South Fork	July 16 - February 28	X	X
Patterson Creek (07.0376)	July 16 - September 30	X	–
Middle Fork Snoqualmie River (07.0219) - Mouth to Taylor Creek	July 16 - February 28	X	X
Middle Fork Snoqualmie River (07.0219) - Upstream of Taylor Creek	July 16 - February 28	X	–
Goat Creek (07.0754)	July 16 - February 28	X	–
North Fork Snoqualmie River (07.0527) - Mouth to Lennox Creek	July 16 - February 28	X	X
North Fork Snoqualmie River (07.0527) - Upstream of Lennox Creek	July 16 - February 28	X	–
Deep Creek (07.0562)	July 16 - February 28	X	–
Illinois Creek (07.0624)	July 16 - February 28	X	–
Lennox Creek (07.0596)	July 16 - February 28	X	–
Bear Creek (07.0606)	July 16 - February 28	X	–
Raging River (07.0384)	August 1 - September 15	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
South Fork Skykomish River (07.0012) - Mouth to Sunset Falls	August 1 - August 15	X	X
South Fork Skykomish River (07.0012) - Upstream of Sunset Falls	August 1 - August 15	X	–
Beckler River (07.1413) - Mouth to Boulder Creek	August 1 - August 15	X	X
Beckler River (07.1413) - Upstream of Boulder Creek	July 16 - February 28	X	–
Rapid River (07.1461) - Mouth to Meadow Creek	August 1 - August 31	X	X
Rapid River (07.1461) - Upstream of Meadow Creek	August 1 - February 28	X	–
Index Creek (07.1264) - Mouth to Mud Lake Creek	August 1 - August 31	X	–
Index Creek (07.1264) - Upstream of Mud Lake Creek including Salmon Creek	July 16 - February 28	X	–
Miller River (07.1329) - Mouth to Forks	August 1 - August 15	X	X
Miller River (07.1329) - Upstream of Forks	August 1 - August 15	X	–
Coney Creek (07.1347)	July 16 - February 28	X	–
East Fork Miller River (07.1329) - Mouth to Great Falls Creek	July 16 - August 15	X	–
East Fork Miller River (07.1329) - Upstream of Great Falls Creek	July 16 - February 28	X	–
Foss River (07.1562) - Mouth to Forks	July 16 - August 31	X	X
East Fork Foss River (07.1562) - Mouth to Burn Creek	July 16 - August 15	X	X
East Fork Foss River (07.1562) - Upstream of Burn Creek	July 16 - February 28	X	–
West Fork Foss River (07.1573) - Mouth to falls at river mile 2.0	July 16 - August 31	X	–
West Fork Foss River (07.1573) - Upstream of falls at river mile 2.0	July 16 - February 28	X	–
West Fork Miller River (07.1335)	July 16 - February 28	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	**Mineral Prospecting is Allowed Only Between These Dates**	**State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter**	**State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter**
Money Creek (07.1300) - Mouth to 0.5 mile upstream of Kimball Creek	August 1 - August 31	X	–
Money Creek (07.1300) - Upstream of 0.5 mile upstream of Kimball Creek	August 1 - February 28	X	–
Kimball Creek (07.1301)	August 1 - August 31	X	–
Tye River (07.0012) - Mouth to Alpine Falls	August 1 - August 31	X	X
Tye River (07.0012) - Upstream of Alpine Falls	July 16 - February 28	X	–
South Fork Snoqualmie River (07.0467)	July 16 - February 28	X	X
Denny Creek (07.0517)	July 16 - February 28	X	–
Tolt River (07.0291) - Mouth to Forks	August 1 - August 31	X	X
North Fork Tolt River (07.0291) - Mouth to Yellow Creek	July 16 - September 15	X	X
North Fork Tolt River (07.0291) - Upstream of Yellow Creek	July 16 - February 28	X	–
South Fork Tolt River (07.0302) - Mouth to dam	July 16 - September 15	X	X
South Fork Tolt River (07.0302) - Upstream of Tolt Reservoir	July 16 - February 28	X	–
Yellow Creek (07.0337)	July 16 - February 28	X	–
White River (10.0031)	July 16 - August 15	X	X
Greenwater River (10.0122)	July 16 - August 15	X	X
Kittitas County	July 1 - September 30	X	–
Brushy Creek (40.0612)	July 1 - February 28	X	–
Colockum Creek (40.0760)	July 1 - October 31	X	–
Quilomene Creek (40.0613)	July 1 - October 31	X	–
Stemilt Creek (40.0808) - Upstream of falls	July 1 - February 28	X	–
Tarpiscan Creek (40.0723)	July 1 - February 28	X	–
Tekiason Creek (40.0686)	July 1 - February 28	X	–
Whisky Dick Creek (40.0591)	July 1 - February 28	X	–
Yakima River (39.0002) - Roza Dam to Teanaway River	August 1 - August 31	X	X
Naches River (38.0003) - Tieton River to Bumping River	July 1 - August 15	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Little Naches River (38.0852) - Mouth to Matthew Creek	July 16 - August 15	X	X
Little Naches River (38.0852) - Upstream of Matthew Creek	July 16 - August 15	X	–
Pileup Creek (38.0932)	July 16 - August 31	X	–
Gold Creek (38.MISC)	July 16 - February 28	X	–
Swauk Creek (39.1157)	July 16 - September 30	X	–
Baker Creek (39.1157)	July 16 - September 30	X	–
First Creek (39.1157)	July 16 - September 30	X	–
Iron Creek (39.1157)	July 16 - September 30	X	–
Williams Creek (39.1157)	July 16 - September 30	X	–
Boulder Creek (39.1157)	July 16 - February 28	X	–
Cougar Gulch (39.1157)	July 16 - February 28	X	–
Lion Gulch (39.1157)	July 16 - February 28	X	–
Yakima River (39.0002) - Teanaway River to Easton Dam	August 1 - August 31	X	X
Yakima River (39.0002) - Upstream of Easton Dam	August 1 - August 31	X	X
Cle Elum River (39.1434) - Mouth to dam	July 16 - August 31	X	X
Cle Elum River (39.1434) - Upstream of Cle Elum Dam	Submit Application	–	–
Big Boulder Creek (39.1434MISC)	August 1 - February 28	X	–
Camp Creek (39.1434MISC)	August 1 - February 28	X	–
Fortune Creek (39.1434MISC)	August 1 - August 15	X	–
South Fork Fortune Creek (39.1434MISC)	August 1 - February 28	X	–
Howson Creek (39.1434)	July 16 - February 28	X	–
Little Salmon Le Sac Creek (39.1482)	August 1 - August 15	X	–
Paris Creek (39.1434MISC)	August 1 - February 28	X	–
Salmon Le Sac Creek (39.1520)	August 1 - February 28	X	–
Kachess River (39.1739) - Upstream of Lake Kachess	Submit Application	–	–
Kachess River (39.1739) - Below dam	July 16 - August 15	X	X
Box Canyon Creek (39.1765)	Submit Application	–	–
Mineral Creek (39.1792)	August 1 - August 15	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Lake Keechelus (39.1842) tributaries	July 16 - August 15	X	–
Gold Creek (Lake Keechelus) (39.1842)	Submit Application	–	–
Manastash Creek (39.0988)	July 16 - September 30	X	–
Naneum Creek (39.0821)	July 16 - September 30	X	–
Taneum Creek (39.1081) - Mouth to I-90	July 16 - August 31	X	–
Taneum Creek (39.1157) - Upstream of I-90	July 16 - September 30	X	–
Teanaway River (39.1236)	July 16 - August 31	X	X
NF Teanaway River (39.1260)	Submit Application	–	–
Umtanum Creek (39.0553)	July 16 - September 30	X	–
Wenas Creek, Below dam (39.0032)	July 16 - October 15	X	–
Wenas Creek, Upstream of Wenas Lake (39.0032)	July 16 - February 28	X	–
Other Yakima River tributaries not listed	July 16 - August 31	X	–
Kitsap County	July 16 - October 15	X	–
Anderson Creek (15.0211)	August 1 - November 15	X	–
Barker Creek (15.0255)	August 1 - September 30	X	–
Big Beef Creek (15.0389)	August 1 - August 15	X	–
Big Scandia Creek (15.0280)	August 1 - September 30	X	–
Blackjack Creek (15.0203)	August 1 - September 30	X	–
Burley Creek (15.0056)	August 1 - September 30	X	–
Chico Creek (15.0229)	August 1 - October 15	X	–
Clear Creek (15.0249)	August 1 - September 30	X	–
Curley Creek (15.0185)	August 1 - September 30	X	–
Dewatto River (15.0420)	August 1 - August 15	X	–
Dogfish Creek (15.0285)	August 1 - August 15	X	–
Gorst Creek (15.0216)	August 1 - August 15	X	–
Grovers Creek (15.0299)	August 1 - August 31	X	–
Johnson Creek (15.0387)	August 1 - October 31	X	–
Ollala Creek (15.0107)	August 1 - September 30	X	–
Ross Creek (15.0209)	August 1 - November 15	X	–
Salmonberry Creek (15.0188)	August 1 - November 30	X	–
Seabeck Creek (15.0400)	August 1 - August 15	X	–
Steele Creek (15.0273)	August 1 - September 30	X	–
Tahuya River (15.0446)	August 1 - August 31	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Union River (15.0503)	August 1 - August 31	X	X
Klickitat County	July 15 - September 30	X	–
Alder Creek (31.0459)	August 1 - September 30	X	–
Chapman Creek (31.0192)	August 1 - September 30	X	–
Glade Creek (31.0851)	August 1 - September 30	X	–
Juniper Canyon Creek (31.0378)	August 1 - September 30	X	–
Klickitat River (30.0002) - Mouth to Klickitat hatchery	Submit Application	–	–
Klickitat River (30.0002) - Upstream of Klickitat hatchery	Submit Application	–	–
Little White Salmon River (29.0131) - Mouth to Cabbage Creek	July 16 - January 31	X	X
Little White Salmon River (29.0131) - Upstream of Cabbage Creek	July 16 - January 31	X	–
Pine Creek (31.0354)	August 1 - September 30	X	–
Rock Creek (31.0014)	August 1 - September 30	X	–
Six Prong Creek (31.0465)	August 1 - September 30	X	–
White Salmon River (29.0160) - Mouth to Cascade Creek	July 16 - August 15	X	X
White Salmon River (29.0160) - Upstream of Cascade Creek	July 16 - August 15	X	–
Wood Gulch Creek (31.0263)	August 1 - September 30	X	–
Lewis County	August 1 - September 30	X	–
Chehalis River (22.0190/23.0190) - Mouth to South Fork Chehalis River	August 1 - August 15	X	X
Chehalis River (22.0190/23.0190) - Upstream of South Fork Chehalis River	August 1 - August 31	X	X
Newaukum River (23.0882) - Mouth to South Fork	August 1 - August 31	X	X
Newaukum River (23.0882) - Upstream of South Fork	August 1 - August 31	X	–
Skookumchuck River (23.0761)	August 1 - August 31	X	X
Cowlitz River (26.0002)	August 1 - August 15	X	X
Cispus River (26.0668) - Mouth to Squaw Creek (26.1010)	August 1 - August 15	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Cispus River (26.0668) - Squaw Creek to Chambers Creek	July 16 - February 28	X	X
Cispus River (26.0668) - Upstream of Chambers Creek	July 16 - February 28	X	–
Yellowjacket Creek (26.0757)	August 1 - August 15	X	–
McCoy Creek (26.0766) - Mouth to lower falls	August 1 - August 15	X	–
McCoy Creek (26.0766) - Upstream of lower falls	July 16 - February 28	X	–
Walupt Creek (26.1010)	Submit Application	–	–
Packwood Lake tributaries	August 16 - September 15	X	–
Tilton River (26.0560) - Mouth to North Fork	August 1 - September 30	X	X
Tilton River (26.0560) - Upstream of North Fork	August 1 - September 30	X	–
Toutle River (26.0227)	August 1 - August 31	X	X
North Fork Toutle River (26.0314)	July 16 - August 15	X	X
Green River (26.0323)	July 16 - September 30	X	X
Deschutes River (13.0028)	July 16 - August 31	X	X
Little Deschutes River (13.0110)	July 16 - February 28	X	–
Nisqually River (11.0008) - Upstream of Alder Lake	July 16 - September 30	X	X
Lincoln County	June 16 - February 28	X	–
Columbia River	See Below	–	–
Hawk Creek (53.0101) - Mouth to falls	June 16 - August 31	X	–
Hawk Creek (53.0101) - Upstream of falls	June 16 - February 28	X	–
Upper Crab Creek (42.0001)	June 16 - February 28	X	–
Wilson Creek (43.0020)	June 16 - February 28	X	–
Mason County	August 1 - October 15	X	–
Cloquallum Creek (22.0501)	August 1 - September 30	X	–
Coulter Creek (15.0002)	August 1 - August 31	X	–
Dewatto River (15.0420)	August 1 - August 31	X	–
Goldsborough Creek (14.0035)	August 1 - October 15	X	–
John Creek (16.0253)	August 1 - August 31	X	–
Hamma Hamma River (16.0251) - Mouth to falls	August 1 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Johns Creek (14.0049)	August 1 - August 15	X	–
Lilliwaup River (16.0230) - Mouth to falls	August 1 - August 31	X	X
Lilliwaup River (16.0230) - Upstream of falls	August 1 - February 28	X	–
Mill Creek (14.0029)	August 1 - August 15	X	–
Satsop River (22.0360)	August 1 - August 31	X	–
Schaerer Creek (16.0326)	August 1 - August 31	X	–
Sherwood Creek (14.0094)	August 1 - August 15	X	–
Skokomish River (16.0001) - Mouth to Forks	August 1 - August 31	X	X
Skokomish River (16.0001) - Upstream of Forks	August 1 - August 31	X	–
Tahuya River (15.0446)	August 1 - August 31	X	–
Twanoh Creek (14.0134)	August 1 - October 31	X	–
Union River (15.0503)	August 1 - August 31	X	X
Okanogan County	July 1 - August 15	X	–
Aneas Creek (49.0243) - Mouth to falls	July 16 - August 31	X	–
Aneas Creek (49.0243) - Upstream of falls	July 1 - March 31	X	–
Chewiliken Creek (49.0232) - Mouth to falls	July 16 - August 31	X	–
Chewiliken Creek (49.0232) - Upstream of falls	July 1 - March 31	X	–
Chiliwist Creek (49.0034) - Mouth to falls	July 16 - August 31	X	–
Chiliwist Creek (49.0034) - Upstream of falls	July 1 - March 31	X	–
Foster Creek (50.0065)	July 1 - February 28	X	–
Methow River (48.0007) - Columbia confluence to Twisp River	July 1 - July 31	X	X
Methow River tributaries between Black Canyon Creek and Gold Creek	July 1 - February 28	X	–
Black Canyon Creek (48.0015) - Mouth to Left Fork	Submit Application	–	–
Black Canyon Creek (48.0015) - Upstream of Left Fork	July 1 - February 28	X	–
Gold Creek (48.0104) - Mouth to Foggy Dew Creek	Submit Application	–	–
Foggy Dew Creek (48.0153) - Mouth to Foggy Dew Falls	Submit Application	–	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Foggy Dew Creek (48.0153) - Upstream of Foggy Dew Falls	July 1 - February 28	X	–
Middle Fork Gold Creek (48.0139)	July 1 - February 28	X	–
North Fork Gold Creek (48.0104)	Submit Application	–	–
Crater Creek (48.0177) - Mouth to Martin Creek	Submit Application	–	–
Crater Creek (48.0177) - Upstream of Martin Creek	July 1 - February 28	X	–
Martin Creek (48.0177)	July 1 - February 28	X	–
South Fork Gold Creek (48.0105) - Mouth to Rainy Creek	Submit Application	–	–
South Fork Gold Creek (48.0105) - Upstream of Rainy Creek	July 1 - February 28	X	–
Rainy Creek (48.0105)	July 1 - February 28	X	–
McFarland Creek (48.0090) - Mouth to Vinegar Gulch	Submit Application	–	–
McFarland Creek (48.0090) - Upstream of Vinegar Gulch	July 1 - February 28	X	–
Methow River tributaries between Libby Creek and Beaver Creek	July 1 - February 28	X	–
Beaver Creek (48.0307)	Submit Application	–	–
Frazer Creek (48.0309)	July 1 - February 28	X	–
Lightning Creek (48.0361)	July 1 - February 28	X	–
Middle Fork Beaver Creek (48.0307)	July 1 - February 28	X	–
South Fork Beaver Creek (48.0342)	July 1 - February 28	X	–
Libby Creek (48.0203) - Mouth to Hornet Draw Creek	Submit Application	–	–
Libby Creek (48.0203) - Upstream of Hornet Draw	July 1 - February 28	X	–
Methow River (48.0007) - Twisp River to Goat Creek	July 1 - July 31	X	X
Methow River (48.0007) - Upstream of Goat Creek	July 1 - July 31	X	–
Chewuch River (48.0728) - Mouth to Meadow Creek	July 1 - July 31	X	X
Chewuch River (48.0728) - Upstream of Meadow Creek	July 1 - February 28	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Early Winters Creek (48.1408) - Mouth to Silver Star Creek	Submit Application	–	–
Early Winters Creek (48.1408) - Upstream of Silver Star Creek	July 1 - February 28	X	–
Goat Creek (48.1364) - Mouth to 500 feet upstream of Montana Creek	Submit Application	–	–
Goat Creek (48.1364) - 500 feet Upstream of Montana Creek to Roundup Creek	July 1 - February 28	X	–
Goat Creek (48.1364) - Upstream of Roundup Creek	Submit Application	–	–
Lost River (48.0592)	July 16 - August 15	X	X
Twisp River (48.0374)	July 1 - July 31	X	X
Buttermilk Creek (48.0466)	Submit Application	–	–
North Creek (48.0674)	Submit Application	–	–
North Fork Twisp River (48.0691)	July 1 - February 28	X	–
South Creek (48.0641) - Upstream of Louis Creek	July 1 - February 28	X	–
South Creek (48.0641) - Mouth to Louis Creek	Submit Application	–	–
South Fork Twisp River (48.0698)	July 1 - February 28	X	–
Wolf Creek (48.1300)	Submit Application	–	–
Myers Creek (60.0517)	July 1 - February 28	X	–
Bolster Creek (60.0517)	July 1 - February 28	X	–
Ethel Creek (60.0517)	July 1 - February 28	X	–
Gold Creek (60.0517)	July 1 - February 28	X	–
Mary Ann Creek (60.0517)	July 1 - February 28	X	–
North Fork Mary Ann Creek (60.0517)	July 1 - February 28	X	–
Okanogan River (49.0019) - Mouth to Zosel Dam	July 1 - August 31	X	X
Antoine Creek (49.0294) - Mouth to velocity gradient at river mile 1.0	July 1 - February 28	X	–
Antoine Creek (49.0294) - Upstream of falls	July 1 - March 31	X	–
Bonaparte Creek (49.0246) - Upstream of falls	July 1 - March 31	X	–
Bonaparte Creek (49.0246) - Mouth to Bonaparte Falls at river mile 1.0	July 1 - February 28	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Loup Loup Creek (49.0048) - Mouth to Loup Loup Falls at river mile 2.4	July 1 - February 28	X	–
Loup Loup Creek (49.0048) - Upstream of Loup Loup Falls at river mile 2.4	July 1 - March 31	X	–
Mosquito Creek (49.0321) - Mouth to falls	July 1 - August 31	X	–
Mosquito Creek (49.0321) - Upstream of falls	July 1 - March 31	X	–
Nine Mile Creek (49.0516)	July 1 - February 28	X	–
Omak Creek (49.0138) - Mouth to Mission Falls at river mile 5.4	July 1 - February 28	X	–
Omak Creek (49.0138) - Upstream of falls	July 1 - March 31	X	–
Salmon Creek (49.0079) - Mouth to diversion	July 1 - August 31	X	–
Salmon Creek (49.0079) - Upstream of diversion	July 1 - February 28	X	–
Similkameen River (49.0325) - Mouth to Enloe Dam	July 1 - August 31	X	X
Similkameen River (49.0325) - Upstream of Enloe Dam	July 1 - October 31	X	X
Sinlahekin Creek (49.0349) - Mouth to barrier dam at Connors Lake	July 1 - August 31	X	–
Cecile Creek (49.0447)	July 1 - February 28	X	–
Chopaka Creek (49.0357)	July 1 - February 28	X	–
Toats Coulee Creek (49.0368)	July 1 - February 28	X	–
Cougar Creek (49.0368)	July 1 - February 28	X	–
Siwash Creek (49.0284) - Falls to headwaters	July 1 - March 31	X	–
Siwash Creek (49.0284) - Mouth to falls at river mile 1.4	July 1 - February 28	X	–
Tonasket Creek (49.0501) - Mouth to Tonasket Falls at river mile 1.8	July 1 - February 28	X	–
Tonasket Creek (49.0501) - Upstream of Tonasket Falls at river mile 1.8	July 1 - March 31	X	–
Tunk Creek (49.0211) - Mouth to falls	July 1 - February 28	X	–
Tunk Creek (49.0211) - Upstream of falls	July 1 - March 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
San Poil River (52.0004)	June 16 - September 30	X	X
West Fork San Poil (52.0192)	June 16 - September 30	X	X
Gold Creek (52.0197)	June 16 - February 28	X	–
Toroda Creek (60.0410)	July 1 - September 30	X	–
Pacific County	August 1 - September 30	X	–
Bear River (24.0689)	August 1 - September 30	X	X
Bone River (24.0405)	August 1 - September 30	X	–
Chehalis River (22.0190/23.0190)	August 1 - August 15	X	X
Columbia River	See Below	–	–
Chinook River (24.MISC)	August 1 - September 30	X	X
Grays River (25.0093)	July 16 - September 15	X	X
Naselle River (24.0543)	August 1 - September 15	X	X
Nemah River (24.0460)	August 1 - September 30	X	X
Niawiakum River (24.0417)	August 1 - September 30	X	–
North River (24.0034)	August 1 - September 30	X	X
Palix River (24.0426)	August 1 - September 30	X	–
Willapa River (24.0251)	August 1 - September 30	X	X
Pend Oreille County	July 1 - August 31	X	–
Little Spokane River (55.0003)	August 1 - March 15	X	–
West Branch Little Spokane River (55.0439)	August 1 - March 15	X	–
Harvey Creek (62.0310) - Mouth to Rocky Fork of Harvey Creek	August 1 - August 31	X	–
Harvey Creek (62.0310) - Upstream of Rocky Fork of Harvey Creek	July 16 - February 28	X	–
Pend Oreille River (62.0002)	Submit Application	–	–
Big Muddy Creek (62.0279)	August 1 - March 15	X	–
Bracket Creek (62.0815)	August 1 - March 15	X	–
Calispel Creek (62.0628)	August 1 - August 31	X	–
Exposure Creek (62.0261)	August 1 - August 31	X	–
Kent Creek (62.0819)	August 1 - March 15	X	–
Le Clerc Creek (62.0415)	August 1 - August 31	X	–
Lime Creek (62.0014)	August 1 - March 15	X	–
Lodge Creek (62.0859)	August 1 - August 31	X	–
Lost Creek (62.0322)	August 1 - March 15	X	–
Marmust Creek (62.0842)	August 1 - March 15	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Pee Wee Creek (62.0007) - Mouth to falls	August 1 - August 31	X	–
Pee Wee Creek (62.0007) - Upstream of falls	August 1 - March 15	X	–
Renshaw Creek (62.0310)	August 1 - March 15	X	–
Sullivan (O'Sullivan) Creek (62.0074)	August 1 - August 31	X	–
North Fork Sullivan Creek (62.0075)	August 1 - August 31	X	–
Tributaries of Deep Creek in Pend Oreille County (61.0195)	July 16 - August 15	X	–
Currant Creek (61.0249)	July 16 - August 15	X	–
Meadow Creek (61.0351)	July 16 - August 15	X	–
Rocky Creek (61.0364)	July 16 - August 15	X	–
Silver Creek (61.0195)	July 16 - August 15	X	–
Smackout Creek (61.0226)	July 16 - August 15	X	–
Pierce County	July 16 - August 31	X	–
Chambers/Clover Creek Watershed (12.MISC)	July 16 - September 30	X	–
Flett Creek (12.0009)	July 16 - October 31	X	–
Leach Creek (12.0008)	July 16 - September 30	X	–
Nisqually River (11.0008) - Mouth to Alder Lake	July 16 - August 31	X	X
Nisqually River (11.0008) - Upstream of Alder Lake	July 16 - September 30	X	X
Mashel River (11.0101) - Mouth to Busy Wild Creek	July 16 - September 30	X	X
Mashel River (11.0101) - Upstream of Busy Wild Creek	July 16 - September 30	X	–
Puyallup River (10.0021) - Mouth to PSE Electron Powerhouse Outfall	July 16 - August 31	X	X
Puyallup River (10.0021) - Upstream of PSE Electron Powerhouse Outfall	July 16 - August 15	X	X
Carbon River (10.0413)	July 16 - August 15	X	X
Cayada Creek (10.0525) - Mouth to falls about 800 feet upstream	July 16 - August 31	X	–
Cayada Creek (10.0525) - Upstream of the falls	January 1 - December 31	X	–
South Prairie Creek (10.0429)	July 16 - August 15	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Voight Creek (10.0414) - Mouth to falls at river mile 4.0	July 16 - August 31	X	–
Voight Creek (10.0414) - Upstream of falls river mile 4.0	July 16 - February 28	X	–
White River (10.0031)	July 16 - August 15	X	X
Clearwater River (10.0080)	July 16 - August 15	X	X
Greenwater River (10.0122)	July 16 - August 15	X	X
Huckleberry Creek (10.0253)	July 16 - August 15	X	–
West Fork White River (10.0186)	July 16 - August 15	X	X
Sequalitchew Creek (12.0019)	July 16 - September 30	X	–
San Juan County	July 1 - August 31	X	–
Cascade Creek (02.0057), Orcas Island - Upstream of Lower Falls	July 1 - February 28	X	–
Cascade Creek (02.0057), Orcas Island, Buck Bay to falls located approximately 300 feet above mouth	July 1 - October 31	X	–
Doe Creek (02.MISC), San Juan Island, Westcott Bay to falls (approximately 250 feet from mouth)	June 16 - October 15	X	–
False Bay Creek (02.MISC) - San Juan Island; mouth to lake	July 1 - October 31	X	–
Glenwood Springs, Orcas Island; direct tributary to Eastsound Bay	July 1 - October 15	X	–
Moran Creek (02.MISC) - Orcas Island; from Cascade Lake delta upstream 1/4 mile	July 1 - October 15	X	–
Unnamed Creek (02.0041) - San Juan Island; mouth to lake	July 1 - October 15	X	–
Skagit County	August 1 - September 15	X	–
Granite Creek (04.2313) - Upstream of East Creek	July 16 - February 28	X	–
North Fork Stillaguamish River (05.0135) - Mouth to Squire Creek	August 1 - August 15	X	X
North Fork Stillaguamish River (05.0135) - Squire Creek to Cascade Creek	August 1 - August 15	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
North Fork Stillaguamish River (05.0135) - Upstream of Cascade Creek	July 16 - February 28	X	–
Samish River (03.0005)	August 1 - September 15	X	–
Skagit River (03.0176/04.0176)	Submit Application	–	–
Baker River (04.0435) - Mouth to Baker Dam	Submit Application	–	–
Cascade River (04.1411)	Submit Application	–	–
Day Creek (03.1435)	July 16 - February 28	X	–
Lookout Creek (04.1447)	July 16 - February 28	X	–
Sibley Creek (04.1481)	July 16 - February 28	X	–
Day Creek (03.0299) - Mouth to Rocky Creek	Submit Application	–	–
Day Creek (03.0299) - Upstream of Rocky Creek	August 1 - February 28	X	–
Finney Creek (04.0392) - Mouth to Big Fir Creek	Submit Application	–	–
Finney Creek (04.0392) - Upstream of Big Fir Creek	July 16 - February 28	X	–
Illabot Creek (04.1346)	Submit Application	–	–
Sauk River (04.0673) - Mouth to Forks	Submit Application	–	–
Sauk River (04.0673) - Upstream of Forks	August 1 - August 15	X	–
Suiattle River (04.0710)	Submit Application	X	X
Wiseman Creek (03.0280) - Mouth to SR20	Submit Application	–	–
Wiseman Creek (03.0280) - Upstream of SR20	July 16 - February 28	X	–
South Fork Nooksack River (01.0246) - Mouth to falls at river mile 30	Submit Application	–	–
South Fork Nooksack River (01.0246) - Falls at river mile 30 to Wanlick Creek	Submit Application	–	–
South Fork Nooksack River (01.0246) - Upstream of Wanlick Creek	Submit Application	–	–
Skamania County	July 15 - September 15	X	–
Columbia River	See Below	–	–
Cispus River (26.0668)	August 1 - August 15	X	X
Cispus River (26.0668) tributaries located in Skamania County	August 1 - October 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
East Fork Lewis River (27.0173) - Lucia Falls to Sunset Falls	August 1 - February 28	X	X
East Fork Lewis River (27.0173) - Upstream of Sunset Falls	August 1 - February 28	X	–
Green River (26.0323) (Tributary of North Fork Toutle River)	July 16 - September 30	X	X
Hamilton Creek (28.0303)	August 1 - August 31	X	–
Hardy Creek (28.0303)	August 1 - August 31	X	–
Little White Salmon River (29.0131) - Mouth to Hatchery	July 16 - August 15	X	X
Little White Salmon River (29.0131) - Hatchery to Cabbage Creek	July 16 - January 31	X	X
Little White Salmon River (29.0131) - Upstream of Cabbage Creek	July 16 - January 31	X	–
North Fork Lewis River (27.0168) - Merwin Dam to Lower Falls	July 16 - August 15	X	X
Canyon Creek (27.0442)	July 16 - February 28	X	–
North Fork Lewis River (27.0168) - Upstream of Lower Falls	July 16 - February 28	X	X
Washougal River (28.0159) - Mouth to Stebbins Creek	August 1 - August 31	X	X
Washougal River (28.0159) - Upstream of Stebbins Creek	August 1 - August 31	X	–
White Salmon River (29.0160) - Mouth to Cascade Creek	July 16 - August 15	X	X
White Salmon River (29.0160) - Upstream of Cascade Creek	July 16 - August 15	X	–
Wind River (29.0023)	August 1 - August 15	X	X
Woodward Creek (28.0298)	August 1 - August 31	X	–
Snohomish County	July 16 - September 15	X	–
Lake Washington tributaries	August 1 - August 15	X	–
Sauk River (04.0673) - Mouth to Forks	August 1 - August 15	X	X
Sauk River (04.0673) - Upstream of Forks	August 1 - August 15	X	–
Suiattle River (04.0710)	August 1 - August 15	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Snohomish River (07.0012) - Mouth to Highway 9	August 1 - October 31	X	X
Snohomish River (07.0012) - Upstream of Highway 9	August 1 - August 15	X	X
Pilchuck River (07.0125) - Mouth to city of Snohomish Diversion Dam	August 1 - August 31	X	X
Pilchuck River (07.0125) - City of Snohomish Diversion Dam to Boulder Creek	August 1 - September 15	X	X
Pilchuck River (07.0125) - Upstream of Boulder Creek	August 1 - September 15	X	–
Skykomish River (07.0012) - Mouth to Forks	August 1 - August 15	X	X
Deer Creek (05.0173) - Mouth to stream mile 0.5	August 1 - August 31	X	–
Deer Creek (05.0173) - Upstream of stream mile 0.5	August 1 - February 28	X	–
North Fork Skykomish River (07.0982) - Mouth to Bear Creek Falls	August 1 - August 31	X	X
North Fork Skykomish River (07.0982) - Bear Creek Falls to Deer Falls	August 1 - August 31	X	X
North Fork Skykomish River (07.0982) - Deer Falls to West Cady Creek	August 1 - February 28	X	X
North Fork Skykomish River (07.0982) - Upstream of West Cady Creek	August 1 - February 28	X	–
Howard Creek (07.1042)	July 16 - February 28	X	–
Silver Creek (07.1053) - Mouth to Lake Gulch	August 1 - August 31	X	–
Silver Creek (07.1053) - Upstream of Lake Gulch	August 1 - February 28	X	–
Troublesome Creek (07.1085)	August 1 - February 28	X	–
West Fork Troublesome Creek (07.1092)	August 1 - August 31	X	–
South Fork Skykomish River (07.0012) - Mouth to Sunset Falls	August 1 - August 15	X	X
Beckler River (07.1413) - Mouth to Boulder Creek	August 1 - August 15	X	X
Beckler River (07.1413) - Upstream of Boulder Creek	July 16 - February 28	X	–
Rapid River (07.1461) - Mouth to Meadow Creek	August 1 - August 31	X	X

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Rapid River (07.1461) - Upstream of Meadow Creek	August 1 - February 28	X	X
Sultan River (07.0881) - Mouth to Diversion Dam at river mile 9.4	August 1 - August 15	X	X
Sultan River (07.0881) - Diversion Dam to Elk Creek	July 16 - February 28	X	X
Sultan River (07.0881) - Upstream of Elk Creek	July 16 - February 28	X	–
Wallace River (07.0940) - Mouth to Wallace Falls	August 1 - August 31	X	X
Wallace River (07.0940) - Upstream of Wallace Falls	August 1 - February 28	X	–
Olney Creek (07.0946) - Mouth to Olney Falls	August 1 - August 31	X	–
Olney Creek (07.0946) - Upstream of Olney Falls	August 1 - February 28	X	–
Snoqualmie River Mouth to falls (07.0219)	August 1 - August 15	X	X
All other Snohomish River tributaries	August 1 - August 31	X	–
Stillaguamish River (05.0001) - Mouth to Forks	August 1 - August 31	X	X
North Fork Stillaguamish River (05.0135) - Mouth to Squire Creek	August 1 - August 15	X	X
North Fork Stillaguamish River (05.0135) - Squire Creek to Cascade Creek	August 1 - August 15	X	–
North Fork Stillaguamish River (05.0135) - Upstream of Cascade Creek	July 16 - February 28	X	–
South Fork Stillaguamish River (05.0001) - Mouth to Deer Creek	August 1 - August 15	X	X
South Fork Stillaguamish River (05.0001) - Upstream of Deer Creek	August 1 - August 15	X	–
Spokane County	June 16 - August 31	X	–
Latah Creek (56.0003)	June 16 - August 31	X	–
Little Spokane River (55.0600) - Mouth to Deer Creek	June 16 - August 31	X	X
Little Spokane River (55.0600) - Upstream of Deer Creek	June 16 - August 31	X	–
Spokane River (57.0001)	June 16 - August 31	X	X
Stevens County	July 16 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Columbia River	See Below	–	–
Big Sheep Creek (61.0150)	July 16 - August 15	X	–
Colville River (59.0002) - Mouth to the falls	July 16 - September 30	X	X
Colville River (59.0002) - Upstream of the falls	July 16 - September 30	X	X
Deep Creek (61.0195)	July 16 - August 15	X	–
Onion Creek (61.0098)	July 16 - August 15	X	–
Sheep Creek (59.0861)	July 16 - September 30	X	–
Lake Roosevelt tributaries from the mouth of the Spokane River to mouth of the Colville River	July 16 - February 28	X	–
Lake Roosevelt tributaries from the mouth of the Colville River north to the B.C. border	July 16 - February 28	X	–
Tributaries of Little Spokane River (55.0600)	June 16 - August 31	X	–
Calispel Creek (62.0628)	August 1 - August 31	X	–
Other tributaries to the Pend Oreille River in Stevens County	July 1 - August 31	X	–
Thurston County	July 16 - September 15	X	–
Cedar Creek (23.0570)	August 1 - September 30	X	–
Chehalis River (22.0190/23.0190) - Upstream of Porter Creek	August 1 - August 15	X	X
Skookumchuck River (23.0761) - Mouth to Skookumchuck Reservoir	August 1 - August 31	X	X
Skookumchuck River (23.0761) - Upstream of Skookumchuck Reservoir	August 1 - August 31	X	–
Deschutes River (13.0028) - Mouth to Deschutes Falls	July 16 - August 31	X	X
Deschutes River (13.0028) - Upstream of Deschutes Falls	July 16 - August 31	X	–
Ellis Creek (13.0022)	May 16 - September 30	X	–
Little Deschutes River (13.0110)	July 16 - February 28	X	–
McLane Creek (13.0138)	August 1 - October 31	X	–
Percival Creek (13.0029)	July 16 - August 31	X	–
Nisqually River (11.0008)	July 16 - August 31	X	X
Tributaries of Nisqually River (11.0008)	July 16 - August 31	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Porter Creek (23.0543)	August 1 - September 30	X	–
Schneider Creek (14.0009)	August 1 - October 31	X	–
Waddell Creek (23.0677)	August 1 - September 30	X	–
Woodard Creek (13.0012)	July 16 - August 31	X	–
Woodland Creek (13.0006)	July 16 - September 30	X	–
Wahkiakum County	July 16 - September 15	X	–
Columbia River	See Below	–	–
Abernathy Creek (25.0297)	July 16 - September 15	X	–
Deep River (25.0011)	July 16 - September 15	X	X
Elochoman River (25.0236)	July 16 - September 15	X	X
Grays River (25.0093)	July 16 - September 15	X	X
Mill Creek (25.0284)	July 16 - September 15	X	–
Naselle River (24.0543)	July 16 - September 15	X	X
Skamokowa Creek (25.0194)	July 16 - September 15	X	–
Walla Walla County	July 16 - September 30	X	–
Walla Walla River (32.0008) - Mouth to Oregon state line	July 16 - September 15	X	X
Mill Creek (32.1436) - Mouth to Oregon state line	August 1 - August 15	X	–
Touchet River (32.0097) - Mouth to Forks	August 1 - August 15	X	X
North Fork Touchet/Wolf Fork (32.0761)	Submit Application	–	–
South Fork Touchet (32.0708)	Submit Application	–	–
Whatcom County	July 16 - August 15	X	–
Damfino Creek (00.0032)	July 16 - August 31	X	–
Nooksack River (01.0120)	Submit Application	–	–
Cascade Creek (02.0057) - Mouth to FR 37	Submit Application	–	–
Cascade Creek (02.0057) - Upstream of FR 37	July 16 - February 28	X	–
Middle Fork Nooksack River (01.0339) - Mouth to city of Bellingham Diversion Dam	Submit Application	–	–
Middle Fork Nooksack River (01.0339) - Upstream of city of Bellingham Diversion Dam	Submit Application	–	–
North Fork Nooksack River (01.0120) - Mouth to Nooksack Falls	Submit Application	–	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
North Fork Nooksack River (01.0120) - Upstream of Nooksack Falls	Submit Application	–	–
Barometer Creek (01.0513)	July 16 - February 28	X	–
Ruth Creek (01.0531)	July 16 - February 28	X	–
Swamp Creek (01.0518)	July 16 - February 28	X	–
Wells Creek (02.0057)	Submit Application	–	–
Bar Creek (01.0500)	July 16 - February 28	X	–
South Fork Nooksack (01.0246) - Mouth to Wanlick Creek	Submit Application	–	–
South Fork Nooksack (01.0246) - Upstream of Wanlick Creek	Submit Application	–	–
Samish River (03.0005)	July 16 - August 15	X	–
Skagit River (03.0176/04.0176)	Submit Application	–	–
Baker River (04.0435) - Mouth to Baker Lake Dam (04.0435)	Submit Application	–	–
Baker River (04.0435) - Baker Lake to National Park boundary	Submit Application	–	–
Boulder Creek (04.0499)	July 16 - February 28	X	–
Park Creek (04.0506) - Mouth to fish passage barrier at river mile 1.6	Submit Application	–	–
Park Creek (04.0506) - Upstream of river mile 1.6	July 16 - February 28	X	–
Swift Creek (04.0509) - Mouth to Rainbow Creek	Submit Application	–	–
Swift Creek (04.0509) - Upstream of Rainbow Creek	July 16 - February 28	X	–
Ross Lake tributaries (03.0176/04.0176)	Submit Application	–	–
Ruby Creek (04.2199)	Submit Application	–	–
Canyon Creek (04.2458) - Mouth to Barron Creek	Submit Application	–	–
Canyon Creek (04.2458) - Upstream of Barron Creek and tributaries	October 1 - February 28	X	–
Barron Creek (04.2591)	October 1 - February 28	X	–
Boulder Creek (04.2478) - Mouth to 300 feet upstream	Submit Application	–	–
Boulder Creek (04.2478) - 300 feet upstream of mouth to headwaters	October 1 - February 28	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Friday Creek (04.2549) - Mouth to 300 feet upstream	Submit Application	–	–
Friday Creek (04.2549) - 300 feet upstream of mouth to headwaters	October 1 - February 28	X	–
Holmes Creek (04.2473) - Mouth to 300 feet upstream	Submit Application	–	–
Holmes Creek (04.2473) - 300 feet upstream of mouth to headwaters	October 1 - February 28	X	–
Mill Creek (04.2504) - Mouth to 300 feet upstream	Submit Application	–	–
Mill Creek (04.2504) - 300 feet upstream of mouth to headwaters	October 1 - February 28	X	–
Nickol Creek (04.2476) - Mouth to 300 feet upstream	Submit Application	–	–
Nickol Creek (04.2476) - 300 feet upstream of mouth to headwaters	October 1 - February 28	X	–
North Fork Canyon Creek (04.2583) - Mouth to Elk Creek	Submit Application	–	–
Cascade Creek (05.2584)	October 1 - February 28	X	–
North Fork Canyon Creek (04.2583) - Upstream of Elk Creek	October 1 - February 28	X	–
Slate Creek (04.2557) - Mouth to falls at river mile 0.6	Submit Application	–	–
Slate Creek (04.2557) - Upstream of falls at river mile 0.6	October 1 - February 28	X	–
Granite Creek (04.2313) - Mouth to East Creek	Submit Application	–	–
Granite Creek (04.2313) - Upstream of East Creek and tributaries	October 1 - February 28	X	–
Saar Creek (00.0003)	August 1 - September 30	X	–
Silesia Creek (00.0042) - Canadian border to Middle Fork	July 16 - August 15	X	–
Silesia Creek (00.0042) - Middle Fork to National Park boundary	July 16 - February 28	X	–
Rapid Creek (00.0048)	July 16 - February 28	X	–
West Fork Silesia Creek (00.0044)	July 16 - February 28	X	–
Winchester Creek (00.0045)	July 16 - February 28	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Whitman County	July 16 - December 15	X	–
Snake River (35.0002)	See Below	–	–
Alkali Flats Creek (35.0570)	July 16 - December 15	X	–
Almota Creek (35.1017)	July 16 - December 15	X	–
Little Almota Creek (35.1018)	July 16 - December 15	X	–
Palouse River (34.0003) - Mouth to Palouse Falls	July 16 - September 30	X	X
Palouse River (34.0003) - Upstream of Palouse Falls	July 16 - February 28	X	X
Penewawa Creek (35.0916)	July 16 - December 15	X	–
Wawawi Canyon Creek (35.1165)	July 16 - December 15	X	–
Yakima County	June 1 - September 15	X	–
Glade Creek (31.0851)	August 1 - September 30	X	–
Klickitat River (30.0002)	Submit Application	–	–
Yakima River (37.0002/38.0002/39.0002) - Mouth to Roza Dam	June 1 - September 15	X	X
Ahtanum Creek (37.1382)	June 16 - September 30	X	–
North Fork Ahtanum Creek (37.1382)	Submit Application	–	–
South Fork Ahtanum Creek (37.1382)	Submit Application	–	–
Naches River (38.0003) - Mouth to Tieton River	July 1 - October 15	X	X
Naches River (38.0003) - Upstream of mouth of Tieton River to Bumping River	July 1 - August 15	X	X
Bumping River (38.0998)	July 16 - August 15	X	X
American River (38.1000)	Submit Application	–	–
Gold Creek (38.MISC)	July 16 - February 28	X	–
Kettle Creek (38.1033)	Submit Application	–	–
Miner Creek (38.1027)	July 16 - February 28	X	–
Morse Creek (38.1072) - Mouth to SR410 crossing	August 1 - August 15	X	–
Morse Creek (38.1072) - Upstream of SR410 crossing	August 1 - February 28	X	–
Rock Creek (38.MISC)	July 16 - February 28	X	–
Timber Creek (38.1062)	August 1 - August 15	X	–
Union Creek (38.1045) - Upstream of 500 feet above falls	August 1 - February 28	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Union Creek (38.1045) - Mouth to 500 feet above falls	Submit Application	–	–
Other American River tributaries not listed	August 1 - February 28	X	–
Deep Creek (38.MISC)	Submit Application	–	–
Copper Creek (38.MISC)	August 1 - August 15	X	–
Cowiche Creek (38.0005) - Mouth to South Fork Cowiche Creek	July 1 - September 30	X	–
North Fork Cowiche Creek (38.0008)	July 1 - February 28	X	–
South Fork Cowiche Creek (38.0031) - Mouth to Reynolds Creek	July 1 - September 30	X	–
South Fork Cowiche Creek (38.0031) - Upstream of Reynolds Creek	July 16 - October 31	X	–
Granite Creek (38.MISC)	August 1 - August 15	X	–
Little Naches River (38.0852) - Mouth to Matthews Creek	July 16 - August 15	X	X
Little Naches River (38.0852) - Upstream of Matthews Creek	July 16 - August 15	X	–
Crow Creek (38.0858)	July 16 - August 15	X	–
Nile Creek (38.0692)	July 16 - October 15	X	–
Rattlesnake Creek (38.0518)	July 16 - August 15	X	–
Tieton River (38.0166) - Mouth to Rimrock Dam	July 1 - August 31	X	X
North Fork Tieton River (38.0291) - Below Clear Lake Dam	Submit Application	–	–
North Fork Tieton River (38.0291) - Upstream of Clear Lake	July 1 - August 15	X	–
Clear Creek (38.0317)	July 16 - February 28	X	–
South Fork Tieton River (38.0374) - Below South Fork Falls	Submit Application	–	–
South Fork Tieton River (38.0374) - Upstream of South Fork Falls	July 16 - February 28	X	–
Indian Creek (38.0302)	Submit Application	–	–
Tributaries of Tieton River below Rimrock Dam	July 16 - February 28	X	–
Umtanum Creek (39.0553)	July 16 - September 30	X	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Wenas Creek (39.0032)	July 16 - October 15	X	–
Other Yakima River tributaries	July 16 - August 31	X	–
Columbia River	–	–	–
Mouth to the I-205 Bridge	August 1 - March 31	X	X
I-205 Bridge to Bonneville Dam	July 16 - September 15	X	X
Bonneville Dam to Snake River	July 16 - February 28	X	X
Snake River to Priest Rapids Dam	July 16 - September 30	X	X
Priest Rapids Dam to Mouth of Crab Creek	July 16 - February 28	X	X
Mouth of Crab Creek to Wanapum Dam	July 16 - September 30	X	X
Wanapum Dam to the SR 285 bridge in South Wenatchee	July 16 - February 28	X	X
SR 285 bridge in South Wenatchee to the SR 2 bridge	July 16 - September 30	X	X
SR 2 bridge to one mile downstream of the Chelan River	July 16 - February 28	X	X
From one mile downstream of the Chelan River to the SR 97 bridge	July 16 - September 30	X	X
From SR 97 bridge to Chief Joseph Dam	July 16 - February 28	X	X
Chief Joseph Dam to Grand Coulee Dam	June 16 - March 31	X	X
Grand Coulee Dam to Canadian border	Submit Application	–	–
All Columbia River tributaries	See County Listings	–	–
Snake River	–	X	–
Mouth to Ice Harbor Dam	July 16 - September 30	X	X
Ice Harbor Dam to Mouth of Clearwater River	July 16 - March 31	X	X
Mouth of Clearwater River to state line	August 1 - August 31	X	X
All Snake River tributaries	See County Listings	–	–
Lakes	Submit Application	–	–
Strait of Juan de Fuca, Puget Sound, Hood Canal	Submit Application	–	–

Washington Counties and State Waters (Water Resource Inventory Area (WRIA) in parentheses)	Mineral Prospecting is Allowed Only Between These Dates	State Waters (and tributaries, unless otherwise indicated) in Which a Person May Use Mineral Prospecting Equipment With a Four and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter	State Waters (NOT including tributaries) in Which a Person May Use Mineral Prospecting Equipment With a Five and One-Quarter Inch Maximum Suction Intake Nozzle Inside Diameter
Ocean beaches within the Seashore Conservation Area established under RCW 79A.05.605	January 1 - December 31	X	X
All waters within Indian tribal reservation, National Park, state park, or wilderness boundaries, except those within the Seashore Conservation Area established under RCW 79A.05.605	Submit Application	–	–

NEW SECTION

WAC 220-660-310 Tidal reference areas. (1) **Description:** The department uses the following tidal reference areas to delineate segments of the state's marine shorelines. The authorized work times in saltwater areas vary by tidal reference area.

(2) **Definitions for tidal reference areas:**

(a) Tidal Reference Area 1 (Shelton): All saltwater areas in Oakland Bay and Hammersley Inlet westerly of a line projected from Hungerford Point to Arcadia.

(b) Tidal Reference Area 2 (Olympia): All saltwater areas between a line projected from Hungerford Point to Arcadia and a line projected from Johnson Point to Devil's Head. This includes Totten, Eld, Budd, Case, and Henderson Inlets, and Pickering Passage.

(c) Tidal Reference Area 3 (South Puget Sound): All saltwater areas easterly and northerly of a line projected from Johnson Point to Devil's Head and southerly of the Tacoma Narrows Bridge.

(d) Tidal Reference Area 4 (Tacoma): All saltwater areas northerly of the Tacoma Narrows Bridge and southerly of a line projected true west and true east across Puget Sound from the northern tip of Vashon Island.

(e) Tidal Reference Area 5 (Seattle): All saltwater areas northerly of a line projected true west and true east across Puget Sound from the northern tip of Vashon Island and southerly of a line projected true east from Point Jefferson at 47°45'N. latitude across Puget Sound. This area includes Port Orchard, Port Madison, and Dyes and Sinclair Inlets.

(f) Tidal Reference Area 6 (Edmonds): All saltwater areas northerly of a line projected true east from Point Jefferson at 47°45'N. latitude across Puget Sound and southerly of a line projected true east from Possession Point to Mukilteo and from Foulweather Bluff to Double Bluff.

(g) Tidal Reference Area 7 (Everett): All saltwater areas northerly of a line projected true east from Possession Point to Chennault

Beach, easterly of a line projected 5° true from East Point to Lowell Point, and southerly of the Stanwood to Camano Island Highway. This area includes Port Gardner, Port Susan, and parts of Possession Sound and Saratoga Passage.

(h) Tidal Reference Area 8 (Yokeko Point): All saltwater area westerly and northerly of a line projected 5° true from East Point to Lowell Point, north of the Stanwood to Camano Island Highway, and easterly and southerly of Deception Pass Bridge and the Swinomish Channel Bridge on State Route 20. This area includes Holmes Harbor, Saratoga Passage, Skagit Bay, Similk Bay, and most of the Swinomish Channel.

(i) Tidal Reference Area 9 (Blaine): All saltwater area in Skagit County and Whatcom County that lies northerly of the Swinomish Channel Bridge on State Route 20 and westerly and northerly of Deception Pass Bridge.

(j) Tidal Reference Area 10 (Port Townsend): All saltwater area of Puget Sound as defined in WAC 220-16-210, except Hood Canal south of a line projected from Tala Point to Foulweather Bluff, and except all waters defined in Tidal Reference Areas 1 through 9. Area 10 includes waters of the San Juan Islands, Admiralty Inlet, the Strait of Juan de Fuca, and associated bays and inlets.

(k) Tidal Reference Area 11 (Union): All saltwater area of Hood Canal southerly and easterly of a line projected from the northern entrance of Lilliwaup Bay to the northern entrance of Dewatto Bay.

(l) Tidal Reference Area 12 (Seabeck): All saltwater areas of Hood Canal northerly of a line projected from the northern entrance of Lilliwaup Bay to the northern entrance of Dewatto Bay and southerly of a line projected true east from Hazel Point. This area includes Dabob Bay and Quilcene Bay.

(m) Tidal Reference Area 13 (Bangor): All saltwater area of Hood Canal northerly of a line projected true east from Hazel Point and south of a line projected from Tala Point to Foulweather Bluff. This area includes Port Gamble.

(n) Tidal Reference Area 14 (Ocean Beaches): All saltwater area between Cape Flattery and the Oregon border at the mouth of the Columbia River, excluding Grays Harbor and Willapa Bay.

(o) Tidal Reference Area 15 (Westport): All saltwater area in Grays Harbor easterly of a line projected from the outermost end of the north jetty to the outermost end of the south jetty, and westerly of 123°59'W. longitude.

(p) Tidal Reference Area 16 (Aberdeen): All saltwater area in Grays Harbor easterly of 123°59'W. longitude and westerly of the State Route 101 Bridge across the Chehalis River.

(q) Tidal Reference Area 17 (Willapa Bay): All saltwater area in Willapa Bay easterly of a line projected from Leadbetter Point to Cape Shoalwater.

NEW SECTION

WAC 220-660-320 Saltwater habitats of special concern. (1) **Description:**

(a) Saltwater habitats of special concern provide essential functions in the developmental life history of fish life. These habitats include:

(i) Spawning areas for forage fish;

(ii) Settlement and nursery areas for juvenile rockfish and lingcod;

(iii) Migration, rearing, and feeding areas for juvenile salmon;

(iv) Settlement areas for native shellfish;

(v) Areas of native aquatic and riparian vegetation that support fish life; and

(vi) Feeder bluffs that form and maintain forage fish spawning beaches.

(b) The presence of saltwater habitats of special concern or adjacent areas with similar bed materials may restrict project type, design, location, and timing. Department staff or a department-trained biologist may conduct a site visit to determine the location of such habitats. In addition, the department may consider maps, publications, and other available information to determine the location.

(2) **Fish life concerns:**

(a) The nearshore zone represents three critical edge habitats; the edge between upland and aquatic environments, the edge between the shallow productive zone and deep water, and the edge between fresh and marine waters. Variations in wave energy, sediment delivery and movement, sunlight, water depth, salinity, and location associated with nearshore edges create a broad range of physical conditions that support a wide diversity and abundance of fish life. Disruption of nearshore ecosystem processes and physical conditions can adversely affect ecological functions, which will in turn cause a loss of fish life.

(b) Hydraulic projects ranging from installing stairways across bluff faces to building docks and bulkheads to dredging may contribute to a loss of habitat in the nearshore zone. Ongoing activities increasingly fragment and degrade the remaining habitat. Saltwater habitats of special concern require a higher level of protection because they provide essential functions in the developmental life history of fish life.

(3) **Saltwater habitats of special concern:**

(a) A person may request information from the department about the location of saltwater habitats of special concern.

(b) Saltwater habitats of special concern are habitats that provide essential functions in the development of priority fish species, including the following:

(i) Pacific sand lance (*Ammodytes hexapterus*) spawning beds are located in the upper beach area in saltwater areas typically composed of sand and/or pea gravel;

(ii) Surf smelt (*Hypomesus pretiosus*) spawning beds are located in the upper beach area in saltwater areas typically composed of sand and/or small gravel and shell material;

(iii) Pacific herring (*Clupea pallasi*) spawning beds are located in lower beach areas and shallow subtidal areas in saltwater areas. Spawning substrate may consist of seagrass, macroalgae, and other structure such as subtidal worm tubes;

(iv) Lingcod (*Ophiodon elongatus*) settlement and nursery areas are located in beach and subtidal areas with sand, seagrass, subtidal worm tubes, and other materials;

(v) Rockfish (*Sebastes* spp.) settlement and nursery areas are located in kelp beds, seagrass beds, and pinnacles, boulders, and other structurally complex habitats;

(vi) Juvenile salmonid (family Salmonidae) migration corridors and rearing and feeding areas are common throughout estuarine, intertidal and shallow subtidal saltwater areas of the state;

(vii) Olympia oyster (*Ostrea conchaphila)* settlement areas are located in sheltered bays and estuaries near 0.0 feet MLLW;

(viii) Seagrasses (*Zostera marina*, *Ruppia maritima* and *Phyllospadix* spp.) beds;

(ix) Kelp (order Laminariales) beds;

(x) Intertidal wetland plant areas (except noxious aquatic weeds); and

(xi) Native riparian vegetation zones.

(4) **Nearshore zone geomorphic processes that form and maintain saltwater habitats of special concern:**

(a) Hydraulic projects should be located and constructed to avoid impacts to processes that create and maintain habitats (geomorphic processes) in the nearshore zone. This is because impacts to geomorphic processes are difficult to mitigate.

(b) The following are nearshore geomorphic processes that form and maintain saltwater habitats of special concern:

(i) Sediment supply and transport;

(ii) Beach and bluff erosion and sediment accretion;

(iii) Distributary channel migration; and

(iv) Tidal channel formation and maintenance.

NEW SECTION

WAC 220-660-330 Authorized work times in saltwater areas. (1) **Description:** The department applies timing windows to reduce the risk of impacts to fish life at critical life stages. In-water work is not allowed during critical periods of the year unless a person can take mitigation measures to eliminate risk during critical periods.

(2) **Fish life concerns:** Work in or near salt waters of the state can harm fish life at critical life stages including spawning, incubation, juvenile migration, rearing, and feeding. Therefore, work must occur at times of the year when the risk to fish life is reduced unless the risk can be avoided.

(3) **Authorized work times:** The department must specify authorized work times for hydraulic projects when it issues HPAs. The department will allow work waterward of the OHWL for the following times, areas, and species.

(a) Tidal Reference Areas 1 through 17; March 1 through October 15 for projects in or adjacent to documented Pacific sand lance spawning beds.

(b) Tidal Reference Areas 1 through 17; October 15 through May 15 for projects in or adjacent to juvenile lingcod settlement and nursery areas.

(c) Tidal Reference Areas 1 through 17; September 30 through March 15 for projects in or adjacent to juvenile rockfish settlement and nursery areas.

(d) Tidal Reference Area 14; October 1 through May 15 for projects in or adjacent to documented razor clam beds.

(e) Tidal Reference Areas 1 through 17; the authorized times and areas for protection of migrating juvenile salmonids in the nearshore, and for projects in documented Pacific herring spawning beds and in or adjacent to documented surf smelt are listed in the following table:

Table 3

Authorized Times for Protection of Juvenile Salmonid Migration, Feeding and Rearing Areas and Pacific Herring Spawning and Surf Smelt Spawning Beds

AUTHORIZED TIMES			
Tidal Reference Area	**Juvenile Salmonid Migration, feeding and Rearing Areas**	**Surf Smelt Spawning Beds**	**Herring Spawning Beds**
1	July 15 - February 15	(not present)	April 1 - January 15
2	July 15 - February 15	April 1 - June 30	April 1 - January 15
3	July 15 - February 15	May 1 - September 30	April 1 - January 15
4	August 1 - February 15 for all work except dredging. September 1 - February 15 for dredging.	April 15 - September 30	April 15 - January 15
5	August 1 - February 15 for all work except dredging. September 1 - February 15 for dredging in all areas except Duwamish Waterway. October 16 - February 15 for dredging in the Duwamish Waterway upstream of the East and West Waterways.	April 1 - August 31 in all areas except Eagle Harbor and Sinclair Inlet. In Eagle Harbor and Sinclair Inlet, authorization is conditional upon inspection because year-round spawning occurs.	May 1 - January 15
6	July 15 - February 15 for all work except dredging. September 1 - February 15 for dredging.	April 1 - August 31	(not present)
7	July 15 - February 15 for all work except dredging in Port Gardner and the Snohomish River. September 15 - February 15 for dredging in Port Gardner. September 1 - February 15 for dredging in the Snohomish River.	Authorization is conditional upon inspection because year-round spawning occurs.	April 15 - January 31
8	August 1 - February 15	Authorization is conditional upon inspection, because year-round spawning occurs.	April 15 - January 31
9	August 1 - February 15	Authorization is conditional upon inspection, because year-round spawning occurs.	April 15 - January 31 south of a line running due west from Governor's Point. June 15 - January 31 north of a line running due west from Governor's Point.
10	July 15 - February 15 July 15 - January 15 for all work from Tala Point to the Dungeness River. September 1 - March 1 San Juan Islands.	April 1 - July 31 except in the San Juan Islands where authorization is conditional upon inspection because year-round spawning occurs.	May 1 - January 15
11	July 15 - January 15	March 1 - September 15	April 1 - January 15
12	July 15 - January 15	March 1 - August 31	April 15 - February 15
13	July 15 - January 15	February 16 - July 31	April 15 - January 15
14	July 15 - February 15	October 1 - June 30	(not present)
15	July 15 - February 15	(not present)	February 1 - March 31

AUTHORIZED TIMES			
Tidal Reference Area	**Juvenile Salmonid Migration, feeding and Rearing Areas**	**Surf Smelt Spawning Beds**	**Herring Spawning Beds**
16	July 15 - February 15	(not present)	March 15 - January 31
17	July 15 - February 15	(not present)	March 15 - January 31

(f) If the surf smelt spawning season for the project location is six months or longer, the department may permit work outside of the authorized work times if an intertidal forage fish spawning bed surveys:

(i) A department trained biologist, following the department's intertidal forage fish spawning habitat survey protocol per WAC 220-660-370, conducts a spawning survey at the worksite;

(ii) The results of the inspection show that no spawning is occurring or has recently occurred; and

(iii) If the survey shows eggs are not present, the person may start work. The person must start work within seventy-two hours of a survey.

(g) In documented intertidal forage fish spawning areas, the department must not allow work during surf smelt spawning seasons shorter than six months or during the Pacific sand lance spawning season. The department will make exceptions for projects receiving emergency, imminent danger, and expedited HPAs.

(h) The department will require an intertidal forage fish spawning bed survey if the job site is adjacent to a documented forage fish spawning bed, the beach at the job site has bed materials similar to the documented beach, and the work will occur during the spawning season.

(i) When specifying authorized work times for hydraulic projects, the department must consider the construction techniques, mitigation measures proposed, location of the project, and characteristics of habitats potentially affected by the project. The department may inspect the work area to evaluate the habitat.

(j) During times when work in waters of the state is prohibited to protect nearshore juvenile salmonid migration, rearing, and feeding areas, the department may permit construction if the structure is located at or landward of the OHWL, and if all construction work is conducted from the landward side of the project.

(k) The department may apply additional timing restrictions to protect other important fish and shellfish habitat at a specific site.

NEW SECTION

WAC 220-660-340 Intertidal forage fish spawning bed surveys. (1) **Description:** The department uses intertidal forage fish spawning bed surveys to determine presence, absence, quantity, and timing of surf smelt (*Hypomesus pretiosus*) and Pacific sand lance (*Ammodytes hexapterus*) spawning. The department may require an applicant to hire a qualified, department-trained biologist to conduct an intertidal forage fish spawning survey before working in potential surf smelt and Pacific sand lance spawning habitat or in documented surf smelt spawning areas where the spawning season is six months or longer. The presence of eggs may restrict project type, design, location, and timing.

(2) **Fish life concerns:** Surf smelt and Pacific sand lance are important food for marine mammals, birds, and fish, including Pacific salmon. The department protects forage fish spawning beds by limiting construction activities on beaches when and where spawning is documented.

(3) **Intertidal forage fish surveys:**

(a) A biologist must complete the department's forage fish spawning beach survey training to be approved by the department to conduct intertidal forage fish spawning bed surveys.

(b) A biologist must follow the department-approved intertidal forage fish spawning protocol and use the standard department data sheets when conducting forage fish spawning beach surveys. The protocol and data sheets are available on the department's web site. The department may modify this protocol when only the presence or absence of surf smelt eggs needs to be determined.

(c) A biologist must submit the completed, standard department data sheets to the department within seventy-two hours of the survey.

NEW SECTION

WAC 220-660-350 Seagrass and macroalgae habitat surveys. (1) **Description:** The department has developed survey guidelines for seagrass and macroalgae habitat to improve protection of these important habitats in Puget Sound and coastal waters. The guidelines contain protocols for both preliminary and advanced surveys to help evaluate potential impacts to these habitats at project sites with various conditions. Because statistical considerations are an integral part of the advanced surveys, the guidelines include a sample size calculator to help determine the number of samples the diver/biologist must take. The guidelines are available on the department's web site.

(2) **Fish life concerns:**

(a) Seagrass and macroalgae such as kelp play a critical role in the nearshore zone ecosystem as primary producers, generating nutrients and substrate that form the base of the food chain. The dense and complex structure created by seagrass and macroalgae beds also provides refuge and foraging habitat for fishes, invertebrates, and other organisms.

(b) Direct impacts can occur on a local or site-specific scale from impacts to substrate and changes to light levels. Dredging, filling, or otherwise altering the substrate can make a site uninhabitable for seagrass and macroalgae and the species that depend on them. Boat propellers and anchors can physically damage plants, disturb sediments, and alter the habitat. Over-water structures such as piers, docks, and floats decrease the amount of light available. These habitat impacts can cause a substantial reduction in the size and diversity of the plant community.

(3) **Seagrass and macroalgae surveys:**

(a) The department will require a person to submit a seagrass and macroalgae survey as part of an HPA application for the following work unless the department can determine the project will not impact seagrass and macroalgae:

(i) Constructing a new dock, mooring buoy, or other over-water structure;

(ii) Constructing a replacement over-water structure outside the previously allowed footprint;

(iii) New dredging, trenching, filling, or grading; and

(iv) Maintenance dredging, trenching, filling, or grading outside the previously allowed footprint.

(b) The department will use the preliminary survey to:

(i) Determine if seagrass or macroalgae are present at the proposed work area;

(ii) Evaluate if the applicant can locate and construct the project to avoid or minimize impacts to seagrass, kelp, or macroalgae; and

(iii) Establish a location for the project that will minimize impacts when avoidance is not possible.

(c) The department will use advanced surveys to estimate project impacts to seagrass and macroalgae in herring spawning beds. Advanced surveys must occur between June 1 and October 1 and are conducted to:

(i) Measure the project's impact to seagrass and macroalgae; and

(ii) Measure the performance of mitigation actions.

(d) The department must measure direct impacts by calculating the total area and density of seagrass and macroalgae affected by the project. The department uses this information to help calculate the size of the mitigation area required to compensate for seagrass and macroalgae loss.

(e) The department must measure mitigation success by comparing seagrass and macroalgae densities at a mitigation (or impact) site to those of a reference site. These comparisons must be statistically rigorous. The department has set monitoring standards for these surveys:

(i) $\alpha = 0.10$;

(ii) Power $(1 - \beta) = 0.90$; and

(iii) A difference of mean seagrass density of at least twenty percent. The department has developed survey guidelines for seagrass and macroalgae habitat. The department will consider other survey methods if they meet established monitoring standards.

(f) The divers/biologists who conduct the surveys must be qualified to identify the predominant seagrass and macroalgae species in the work area.

(g) If the department approves a monitoring and contingency plan, the department may require a qualified diver/biologist to monitor project impacts to determine seagrass or macroalgae loss and the required mitigation.

(h) Survey results and interpretation are subject to department approval.

NEW SECTION

WAC 220-660-360 Common saltwater construction provisions. (1) **Description:** Common saltwater construction provisions can apply to many hydraulic projects. However, only applicable common construction provisions will be applied to a specific hydraulic project. Common construction provisions include job site access, equipment use, construction materials, sediment and erosion control containment, and job site repair and revegetation.

(2) **Fish life concerns:** Construction and other work can negatively affect fish life. Some activities may kill or injure fish while others can cause behavioral changes that reduce fish growth and survival. Some activities can damage the habitat used for spawning and egg incubation, rearing, feeding, hiding from predators, and migration.

(3) **Staging areas:** Establish staging areas (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) at a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

(4) **Job site access:**

(a) Clearly mark boundaries to establish the limit of work associated with site access and construction.

(b) Limit the removal of native to the minimum amount needed to construct the project. Woody vegetation greater than six inches diameter that must be removed must be marked in the field by the applicant and specifically approved for removal by the department. The department may require this large woody material to be placed on the beach after work is completed. A revegetation plan must be submitted to restore riparian vegetation removed as part of the project.

(c) Retain all natural habitat features on the beach larger than twelve inches in diameter including trees, stumps, logs, and large rocks. These natural habitat features may be moved during construction but they must be placed near the preproject location prior to demobilization.

(5) **Equipment use:**

(a) Use of equipment on the beach area must be held to a minimum and confined to specific access and work corridors.

(b) Check equipment daily for leaks and complete any required repairs before using the equipment in or near the water. Do not complete repairs on the beach.

(c) Equipment used in or near water must use vegetable-based lubricants.

(6) **Vessel operation:**

(a) Operate vessels in water deep enough to prevent impacts from grounding and propeller wash to seagrass and kelp beds.

(b) Do not deploy anchors or spuds in seagrass and kelp beds.

(c) Maintain anchor cable tension so anchor cables do not drag on the bed.

(7) **Construction materials:**

(a) Bed material, other than material excavated for bulkhead footings or placement of bulkhead base rock, must not be utilized for project construction or fills. The department may allow placement of dredged material in areas for beneficial uses such as beach nourishment or cleanup of contaminated sediments.

(b) Wet concrete must be prevented from entering waters of the state. Forms for any concrete structure must be constructed to prevent leaching of wet concrete. Impervious material must be placed over any exposed concrete not lined with forms that will come in contact with waters of the state. Forms and impervious material must remain in place until the concrete is cured.

(c) Do not use wood treated with oil-type preservatives (creosote, pentachlorophenol) in any hydraulic project. Wood treated with waterborne preservative chemicals (ACZA, ACQ) may be used provided the western wood preservers institute has approved the waterborne chemical

for use in the aquatic environment. The manufacturer must follow the western wood preservers guidelines and the best management practices to minimize preservative migration from treated wood into aquatic environments. To minimize leaching, wood treated with a preservative by someone other than a manufacturer must follow the field treating guidelines. These guidelines are available at http://www.wwpinstitute.org/.

(8) **Construction-related sediment, erosion and pollution containment:**

(a) Project activities within the beach area must not occur when the project area, including the work corridor, is undated by tidal waters unless the work is occurring from a vessel or barge.

(b) Protect all disturbed areas from erosion. Maintain erosion and sediment control until demobilization and cleanup of the job site is completed.

(c) When using straw for erosion and sediment control, use only straw that has been certified as free of noxious weeds and their seeds.

(d) Prevent contaminants from the project, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

(e) Use tarps or other methods to completely contain treated wood sawdust, trimmings, and drill shavings.

(f) Deposit waste material from the project, such as construction debris, silt, excess dirt, or overburden, in an upland area above extreme high tide waters unless the material is authorized by the department for reuse in the project.

(g) Prevent transporting and introducing aquatic invasive species by thoroughly cleaning vessels, equipment, boots, waders, and other gear removing the gear from the worksite.

(9) **Demobilization and cleanup:**

(a) Reshape beach area depressions created during project activities to preproject beach level upon project completion.

(b) All debris or deleterious material resulting from construction must be removed from the beach area or bed and prevented from entering waters of the state.

(c) Do not burn wood treated with preservatives, trash, waste, or other deleterious materials not be burned below the OHWL.

(d) Restore the disturbed bed, bank, and riparian zones as close as possible to their preproject condition unless modified elevations and contours are authorized by the department in the approved construction drawings.

(e) Using a proven methodology, replace native riparian, aquatic, and wetland vascular plants (except noxious weeds) damaged or destroyed by construction. The department may require a vegetation monitoring and contingency plan.

(f) The department must approve planting densities and maintenance requirements for replanting on a site-specific basis.

(g) Complete replanting during the first dormant season (late fall through late winter) after project completion. Maintain plantings for at least three years to ensure at least eighty percent of the plantings survive. Failure to achieve the eighty percent survival in year three will require that a person submit a plan with follow-up measures to achieve requirements or reasons to modify requirements.

(h) The department may waive the requirement to plant vegetation where the potential for natural revegetation is adequate.

(i) The department may require fencing or other structures to prevent livestock, wildlife, or unauthorized persons from accessing the replanted sites until the plantings are well established.

(j) Remove temporary erosion and sediment control methods after job site is stabilized.

(10) **Required permittee notification:** If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the department of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington military department emergency management division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the department gives approval. The department may require additional measures to mitigate impacts.

NEW SECTION

WAC 220-660-370 Bank protection in saltwater areas. RCW 77.55.141 applies to single-family residence bank protection that will not result in a permanent loss of critical food fish and shellfish habitat. RCW 77.55.021 applies to nonsingle-family residence bank protection and single-family residence bank protection that does not comply with the criteria in RCW 77.55.141. Appropriate methods to design marine bank protection are available in the department's *Marine Shoreline Design Guidelines*, as well as other published manuals and guidelines.

(1) **Description:** A bank protection structure is a permanent or temporary structure constructed to protect or stabilize the bank. Bank protection methods are either hard or soft techniques. Soft approaches attempt to mimic natural processes by using biotechnical methods such as live plantings, rootwads and large woody material (LWM), and beach nourishment. Usually, soft approaches are designed to be less impacting to fish life. Hard approaches armor the bank with material such as rock, concrete, or wood intended to prevent erosion of the bank. Some projects use both hard and soft approaches, but to be considered soft, the total area of the project must consist of at least eighty-five percent in aerial extent naturally occurring materials used in ways that are consistent with the shore processes taking place in the vicinity of the project. The remaining fifteen percent of the total project area must not interrupt sediment delivery to the beach (e.g., must not bulkhead a feeder bluff) and still be called soft. The total area extends cross-shore from MLLW to OHW, and long-shore from a line perpendicular to the shoreline at the beginning of one end of construction to the other end.

(2) **Fish life concerns:** Bank protection structures alter the beach and disrupt nearshore ecosystem processes and physical conditions. This alteration can cause a loss of the beach spawning habitat for Pacific sand lance and surf smelt and a loss of migration, feeding, and rearing habitat for juvenile salmon. To protect fish life, the department protects the beaches where critical food fish or shellfish habitat occur and the nearshore zone geomorphic processes that form and maintain this critical habitat.

(3) **Bulkheads and other bank protection design:**

(a) If the OHWL is changed since an existing bank protection structure was built, and OHWL reestablishes landward of a bulkhead protection structure, the department will consider this reestablished OHWL to be the existing OHWL for permitting purposes. If repairs to the existing structure are completed within three years of the breach, the bank protection structure may be repaired or replaced in the original footprint.

(b) Avoid or minimize adverse impacts to fish life by using the least impacting technically feasible alternative. The common alternatives below are in order from most preferred to least preferred:

(i) Remove the bank protection structure;

(ii) No action - Control upland drainage;

(iii) Protect, enhance, and replace vegetation;

(iv) Relocate improvements or structures;

(v) Construct a soft structure by placing beach nourishment and large woody material;

(vi) Construct upland retaining walls;

(vii) Construct a hard structure such as bulkhead and rock revetment landward of the OHWL; and

(viii) Construct a hard structure such as a bulkhead and rock revetments at the OHWL.

(c) Upon receipt of a complete application, the department will determine the applicable RCW under which to process the application.

(i) A new, replacement, or repaired single-family residence bulkhead in saltwater areas must not result in the permanent loss of critical food fish or shellfish habitat to be processed under RCW 77.55.141.

(ii) If a new, replacement, or repaired single-family residence bulkhead project in a saltwater area will result in the permanent loss of critical food fish or shellfish habitat, the department must instead process the application under RCW 77.55.021.

(d) An HPA application for new, replacement, or rehabilitated bulkhead or other bank protection work must include a site assessment, alternatives analysis and design rationale by a qualified professional (such as a coastal geologist, geomorphologist, etc.) for the proposed project and selected technique. The department may grant an exemption depending on the scale and nature of the project. In addition, this requirement does not apply to projects processed under RCW 77.55.141. This report must include:

(i) An assessment of the level of risk to existing buildings, roads, or services being threatened by the erosion;

(ii) Evidence of erosion and/or slope instability to warrant the stabilization work;

(iii) Technical rationale specific to the design developed;

(iv) An analysis of the benefits and impacts associated with the chosen protection technique; and

(v) An explanation of the technique chosen, design parameters, types of materials, quantities, staging, and site rehabilitation.

(e) The department may require the design of bank protection projects to incorporate beach nourishment, large woody material or native vegetation as mitigation.

(4) **Single-family residence bulkhead projects processed under RCW 77.55.141:**

(a) Locate the waterward face of a new bulkhead at or above the OHWL. Where this is not possible because of geological, engineering, or safety concerns, the bulkhead may extend waterward of the OHWL the

least distance needed to excavate for footings or place base rock, but no more than six feet waterward of the OHWL.

(b) Do not locate the waterward face of a replacement or repaired bulkhead further waterward than the structure it is replacing. Where removing the existing bulkhead will result in environmental degradation such as releasing deleterious material or problems due to geological, engineering, or safety concerns, the department will authorize the replacement bulkhead to extend waterward of, but directly abutting, the existing structure. In these instances, the design must use the least-impacting type of structure and construction method.

(5) **Bank protection projects processed under RCW 77.55.021:**

(a) Locate the waterward face of a new bulkhead at or above the OHWL. Where this is not possible because of geological, engineering, or safety concerns, the bulkhead may extend waterward of the OHWL the least distance needed to excavate for footings or place base rock, but no greater than six feet. Soft shoreline stabilization techniques that provide restoration of shoreline ecological functions may be permitted waterward of the OHWL.

(b) Do not locate the waterward face of a replacement or repaired bulkhead further waterward than the structure it is replacing. Where removing the existing bulkhead will result in environmental degradation such as releasing deleterious material or problems due to geological, engineering, or safety concerns, the department will authorize the replacement bulkhead to extend waterward of, but directly abutting, the existing structure. In these instances, the design must use the least-impacting type of structure and construction method.

(6) **Bulkhead and other bank protection construction:**

(a) The department may require a person to establish the horizontal distance of the structure from a permanent benchmark(s) (fixed objects) before starting work on the project. The benchmarks must be located, marked, and protected to serve as a post-project reference for ten years.

(b) A person must not conduct project activities when tidal waters cover the work area including the work corridor, except the area occupied by a grounded barge.

(c) No stockpiling of excavated materials containing silt, clay, or fine-grained soil is allowed below the OHWL.

(d) The department may allow stockpiling of sand, gravel, and other coarse material below the OHWL. Place this material within the designated work corridor waterward of the bulkhead footing or base rock. Remove all excavated or stockpiled material from the beach within seventy-two hours of construction.

(e) Backfill all trenches, depressions, or holes created during construction that are waterward of the OHWL before they are filled by tidal waters.

NEW SECTION

WAC 220-660-380 Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in saltwater areas. This section applies to the design and construction of permanent, seasonal or temporary docks, piers, ramps (gangways), floats, watercraft lifts, and mooring.

(1) **Description:** Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings that are usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven or jacked into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage.

(2) **Fish life concerns:**

(a) Over-water and in-water structures can alter physical processes that create or maintain fish habitat. These include changing the light regime, hydrology, substrate conditions, and water quality. Light reduction is the main impact to fish life at critical life stages. Light reduction or shading by over-water or in-water structures reduces survival of aquatic plants. Aquatic plants provide food, breeding areas, and protective nurseries for fish, shellfish, and many other animals.

(b) Shallow water provides juvenile fish a refuge from predators like larger fish. Over-water and in-water structures can alter movement of juvenile salmon, steelhead and other fish species. Structures grounding on the bed can physically block migration and damage forage fish spawning beds. The light/dark contrast of shading/no shading caused by over-water and in-water structures can affect migration behavior. Fish respond by moving into deeper water which increases the risk of predation.

(3) **Residential and public recreational pier, ramp, float, watercraft lift and buoy design – Generally:**

(a) The department requires that new structures are designed with a pier and ramp to span the intertidal beach, if possible.

(b) Design and locate structures to avoid or minimize impacts to salt water habitats of special concern.

(i) Design and locate structures to avoid or minimize adverse impacts to juvenile salmonid mitigation, feeding and rearing areas.

(ii) Design and locate structures to avoid or minimize adverse impacts to documented Pacific herring, Pacific sand lance and surf smelt spawning beds and rockfish and lingcod settlement and nursery areas.

(iii) The department may require an eelgrass/macroalgae habitat survey for all new construction. A survey is not required for replacement of an existing structure within its original footprint.

(A) Structures must be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet away from seagrass and kelp at extreme low water.

(B) In documented herring spawning areas, located structures at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet from macroalgae beds away from algae species on which herring spawn at extreme low water.

(iv) If artificial nighttime lighting is used in the project, use low-intensity lights that are located and shielded to prevent light from attracting fish, unless there are safety constraints.

(c) The design must not include skirting including batter fencing constructed around piers, docks, or floats unless specifically approved in an HPA. The design should not use treated wood for the deck-

ing of the structure. The design may use treated wood for structural elements. Treated wood structural elements subject to abrasion by vessels, floats, or other objects must incorporate design features such as rub strips to minimize abrasion of the wood.

(d) The structure must have been usable at the site within the past twelve months of the time of application submittal to be considered a replacement structure.

(e) Replacement of more than thirty-three percent or two hundred fifty square feet of decking or replacement of decking substructure requires installation of functional grating. The grating must conform to the requirements in this section.

(4) **Pier and ramp design:**

(a) Design piers and floats to maximize height over the bed to improve light transmission. The bottom of the pier must be at least six feet above the bed at the landward end.

(b) Limit the width of residential piers to no more than six feet wide. Limit the width of recreational piers to the minimum width needed to accommodate the intended use.

(c) North/south oriented piers (338 to 22 degrees, or 158 to 202 degrees) greater than four feet in width must have a minimum of thirty percent of the entire deck surface covered in functional grating. The grating must be installed parallel to the length of the pier for the entire length of the pier.

(d) Northeast/southwest, northwest/southeast, and east/west oriented piers (23 to 157 degrees, 203 to 337 degrees) must have at a minimum of fifty percent of the entire deck surface covered in functional grating regardless of width. The grating must be installed parallel to the width of the pier, evenly spaced along the entire length of the pier.

(e) If only the minimum pier deck surface described in (c) or (d) of this subsection is covered, the grating material's open area must be a minimum of sixty percent open area unless grating covers more than the minimum pier deck area of the pier. If the grating covers more than the minimum deck surface area, the grating material's open area can be reduced down to a minimum of forty percent open area. Limit the width of residential ramps to four feet wide. Limit the width of public recreational ramps to the minimum width needed to accommodate the intended use. Cover the entire ramp surface with grating.

(5) **Float design (floats connected to a pier):**

(a) If possible, place float so that the largest dimension is oriented north/south.

(b) Limit the width of residential floats to eight feet. Limit the width of public recreational floats to the minimum width needed to accommodate the intended use.

(c) If possible, limit the length of single-family dock floats to thirty feet and joint-use dock floats to sixty feet.

(d) If the design has a float positioned perpendicular to the ramp to serve as a ramp landing, this float must not be more than six feet wide and ten feet long.

(e) Design floats with stoppers or support pilings that keep the bottom of the floats at least one foot above the substrate so that the structure will not rest on the bottom.

(f) A float six feet wide or less must have a minimum of thirty percent of the entire deck surface covered in functional grating. A float between six and eight feet wide must have at least fifty percent of the entire deck surface covered in functional grating. Orient grating so the lengthwise opening maximizes the amount of light penetra-

tion. Any objects on, above, or below the grating should not block light penetration. Flotation must be located under the solid decked area only.

(g) The grating material's open area must be at least sixty percent.

(h) Flotation for the structure must be fully enclosed and contained in a shell (tub). The shell or wrap must prevent breakup or loss of the flotation material into the water. The shell or wrap must not be readily subject to damage by ultraviolet radiation and abrasion.

(i) Helical screw or "duckbill" anchor(s), pilings (with stops), and float support/stub pilings may be used to hold floats in place.

(j) If a project uses anchors to hold the float in place, the anchor lines must not rest on the substrate at any time.

(6) **Pile design:**

(a) Use the minimum number of pilings required to construct a safe structure.

(b) Steel piles used to construct residential docks should not exceed twelve inches in diameter. Limit the diameter of steel piling used to construct public recreational docks to the minimum diameter needed to accommodate the intended use.

(c) The use of creosote or pentachlorophenol piling is prohibited. New and replacement piling can be steel, concrete, recycled plastic, or untreated or treated wood authorized by the department.

(d) Treated wood piling must incorporate design features to minimize abrasion of the piling from contact with vessels, floats, or other objects.

(e) All pilings must be fitted with devices to prevent perching by fish-eating birds.

(7) **Watercraft lift/grid design:**

(a) Design the watercraft lift/grid to minimize shading caused by the structure.

(b) The bottom of the watercraft lift/grid must be a minimum of one foot above the bed.

(c) Use the minimum number of piles needed to support the watercraft lift/grid.

(8) **Buoy design:**

(a) In waterbodies where buoy systems might damage submerged aquatic vegetation, locate and design the buoy system to minimize damage.

(i) When possible, use Helix or Manta Ray embedment style anchors.

(A) Eelgrass/macroalgae habitat surveys are not required if an embedment-style mooring anchor is installed. The department will require the diver/installer to locate the anchor so the mooring buoy system will not damage submerged aquatic vegetation.

(B) Eelgrass/macroalgae habitat surveys are required if a surface style mooring anchor is installed. The surveys are needed to ensure the mooring buoy system is installed at a location where submerged aquatic vegetation will not be damaged.

(ii) Place the buoy deep enough to prevent vessel grounding.

(iii) Locate the buoy to avoid damage from vessel propellers to submerged aquatic vegetation.

(iv) Design the buoy system with a mid-water float so that anchor lines do not drag.

(v) Adequately size the mooring to prevent the anchor from shifting or dragging along the bed.

(b) If the department authorizes the use of a concrete anchor, use a precast concrete anchor.

(c) The buoy must have a shell that is resistant to ultraviolet radiation (sunlight) and abrasion caused by rubbing against vessels, the bed, and/or waterborne debris.

(9) **Replacement floating docks:** The department will authorize replacement floating docks, provided:

(a) The area of replaced floating dock structure is not expanded;

(b) The replaced floating dock is not relocated within waters of the state without written authorization from the department. The replaced structure must be removed and disposed of upland such that it does not reenter state waters;

(c) Floats are designed with stoppers or support pilings that keep the bottom of the floats at least one foot above the substrate so that the structure will not rest on the bottom;

(d) A float six feet wide or less must have a minimum of thirty percent of the entire deck surface covered in functional grating. A float between six and eight feet wide must have at least fifty percent of the entire deck surface covered in functional grating. Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above, or below the grating should not block light penetration. Flotation must be located under the solid decked area only;

(e) The grating material's open area must be at least sixty percent;

(f) Flotation for the structure must be fully enclosed and contained in a shell (tub). The shell or wrap must prevent breakup or loss of the flotation material into the water. The shell or wrap must not be readily subject to damage by ultraviolet radiation and abrasion.

(10) **Residential and public recreational dock, pier, ramp, float, floating dock, watercraft lift, and buoy construction:**

(a) Operate and anchor vessels and barges so that they do not adversely impact seagrass, kelp, or forage fish spawning beds.

(b) The dock centerline must be reestablished during construction using the same methodology used to establish the centerline during the eelgrass/macroalgae habitat survey.

(c) When installing steel piling, a vibratory hammer is preferred.

(d) If impact pile driving is used, set the drop height to the minimum needed to drive the piling.

(e) Use appropriate sound attenuation to minimize harm to fish from impact steel pile-driving noise.

(f) To avoid attracting fish to light at night, limit impact pile driving to daylight hours.

(g) The department may require the following during piling removal:

(i) Use of a vibratory system to dislodge piling when possible;

(ii) Placing the piling on a construction barge or other dry storage site after the piling is removed. The pile must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the pile;

(iii) If a treated wood pile breaks during extraction, remove the stump from the water column by fully extracting the stump or cutting it three feet below the substrate;

(iv) Fill holes left by piling extraction with clean sediment that matches the native material;

(v) When removing creosote piling:

(A) Containment booms and absorbent sausage booms (or other oil absorbent fabric) must be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters as a result of construction activities to remove creosote pilings. All accumulated debris must be collected and disposed upland at an approved disposal site; and

(B) Creosote logs and timbers must be fully suspended during removal so no portion of the log drags through the water or onto the beach.

(h) Securely anchor dock, floats, and mooring buoys. Dispose of replaced piers, ramps, floats, docks, lines, chains, cables, or mooring anchors in an upland disposal site; and

(i) Place floats and buoys removed seasonally in an upland area. Do not store on the beach.

NEW SECTION

WAC 220-660-390 Boat ramps and launches in saltwater areas. (1) **Description:** A boat ramp or launch is a sloping stabilized roadway or entry point constructed on the shoreline for launching boats from vehicular trailers or by hand for primitive boat launch designs. Ramps and launches extend into the water at a slope of typically twelve to fifteen percent and are typically oriented perpendicular to the shoreline. Ramp and launch widths vary with intended use, and the length often depends on the slope of the shoreline and tidal amplitudes. Ramps and launches are usually constructed in protected areas with access to deep water close to shore. Construction materials commonly consist of gravel, concrete, or asphalt; they are often associated with marinas and parking lots. A railway-type boat launch consists of a pair of railroad tracks supported by pilings, and extends from the upland down to the beach.

(2) **Fish life concerns:** A boat ramp or launch removes seabed habitat from use by fish and shellfish. A large number of ramps or launches in a given area increases the amount of loss and fragments this habitat. Ramps and launches placed above beach grade can block sediment movement (littoral drift). Ramp and launch construction, maintenance and the associated vessel activity can damage or destroy aquatic vegetation and forage fish spawning beds.

(3) **Boat ramp and launch design:**

(a) Design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.

(b) The department may require an eelgrass/macroalgae habitat survey for all new ramp or launch construction. A survey is not required for replacement of an existing structure within its original footprint.

(c) Design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

(d) Design boat ramps and launches to minimize impacts to tidal currents and littoral drift. Common alternatives are ordered from least to most impacting:

(i) Elevated railway-type launches;

(ii) Hoist or lift launches;

(iii) Elevated ramps; and

(iv) Ramps constructed at beach grade.

(e) The department will authorize boat ramps and launches on marine accretion shoreforms (such as barrier beaches, points, spits, and hooks) only if there will be no impact to natural physical processes that create and maintain shoreform habitats.

(f) Design and construct boat ramps and launches to prevent erosive undercutting or breaking of ramp edges.

(g) Ramps elevated above the beach grade must have side slopes no steeper than one and one-half feet horizontal to one foot vertical.

(h) Locate and design new boat ramps and launches to avoid or minimize the need for dredging. The department will allow dredging to maintain access to an existing boat ramp or launch if the access was dredged as part of the original project.

(i) Design boarding floats to minimize grounding on and shading of the bed and impacts to tidal currents and littoral drift.

(j) Use the smallest number of pilings required to construct a safe railway-type launch.

(k) The rails of a rail launching system must lie on and follow the grade of the existing bed and bank.

(4) **Ramp and launch construction:**

(a) Construct the ramp or launch when the work area is not covered by tidal water.

(b) Construct footings or the base of the ramp and launch below the preexisting grade of the beach to minimize undermining of the structure.

(c) To construct a concrete boat ramp below the OHWL, use precast concrete slabs or isolate the wet concrete from waters of the state until it is fully hardened.

(d) Securely anchor launching rails to the bed or support railway launch piling.

(5) **Ramp and hand launch maintenance:** If possible, sediment and woody material removed from ramps and launches must be placed at or below the OHWL downdrift of the structure.

NEW SECTION

WAC 220-660-400 Marinas and terminals in saltwater areas. This section applies to constructing, maintaining, repairing, and removing marinas and terminals in saltwater areas.

(1) **Description:**

(a) A marina is a public or private facility providing vessel moorage space, fuel, or commercial services. Commercial services include overnight or live-aboard vessel accommodations (RCW 77.55.011(13)).

(b) A terminal is a public or private commercial wharf located in the navigable waters of the state and used, or intended to be used, as a port or facility to store, handle, transfer, or transport goods, passengers, and vehicles to and from vessels (RCW 77.55.011(14)).

(2) **Fish life concerns:** Marinas and terminals can alter the physical processes that create or maintain fish habitat. Impacts may include altering the light regime, hydrology, substrate conditions, and water quality under and adjacent to structures. Marinas and terminals often have a larger impact area than residential docks and are often associated with heavy boat traffic and human use. Thus, the size and

magnitude of the potential impacts to fish life may be greater than those from residential docks.

(3) **Marina and marine terminal design – Generally:**

(a) The department may require a person to provide physical modeling, numerical modeling, or other information that demonstrates adequate water exchange and circulation after construction.

(b) The department may require eelgrass/macroalgae habitat survey for a new construction. A survey is not required for replacement of an existing structure within its original footprint.

(c) When possible, locate new marinas and terminals in areas that will minimize impacts to fish life.

(i) Locate new marinas and terminals to avoid and minimize impacts to seagrass and kelp.

(ii) Locate new marinas and terminals in naturally deep areas to avoid or minimize dredging.

(iii) Locate new marinas and terminals in areas deep enough to avoid or minimize propeller wash impacts to the bed.

(iv) Locate new marinas and terminals in areas with existing low or impaired biological value.

(v) Design and construct marinas and terminals so that most overwater coverage is in the deepest water possible; this is necessary to allow light penetration to the intertidal and shallow subtidal areas.

(A) Minimize the amount of pier area that directly contacts the shoreline.

(B) Minimize the width of intertidal and shallow subtidal overwater and in-water structures.

(C) Design and construct piers and other above-water structures as high as possible to increase light transmission.

(D) When possible, maximize the amount of light-reflecting materials on the underside of above-water structures that are not grated.

(4) **Marina design:**

(a) The department prohibits constructing marinas on or over the following saltwater habitats of special concern: Pacific herring spawning beds and lingcod and rockfish settlement and nursery areas.

(b) Locate and construct new marinas to avoid and minimize adverse impacts to surf smelt, Pacific sand lance, seagrass, kelp and intertidal vascular plants.

(c) The department may require a marina design to include grating to minimize impacts to juvenile salmonid migration corridors and native aquatic vegetation.

(i) If grating is required, locate flotation under the solid decked area only.

(ii) Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above, or below the grating should not block light penetration.

(iii) Grating material must have at least a sixty percent open area.

(d) If possible, place slips for smaller boats in shallower water and place slips for larger boats in deeper water.

(e) Locate new boathouses, houseboats, and covered moorages waterward of the phototrophic zone.

(f) Any replacement roof for covered moorage or a boathouse in landward of the phototrophic zone must use translucent materials or skylights in the roof.

(g) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from attracting fish, unless there are safety constraints.

(h) The following provisions apply to marina construction landward of the existing OHWL:

(i) A single entrance may be required; and

(ii) The entire inner shoreline must comply with bank protection provisions in WAC 220-660-370.

(i) The following provisions apply to marina construction waterward of the OHWL:

(i) If a person must protect the bank area inside the marina they must comply with bank protection provisions in WAC 220-660-370. Between the elevation of the toe of the bulkhead and MLLW, the beach slope must not exceed one and one-half feet horizontal to one foot vertical.

(ii) For a single entrance or breach marina, the breakwater structure may not exceed one and one-half feet horizontal to one foot vertical slope inside and outside the marina.

(j) The following provisions apply when a marina includes breaches that form shore breakwaters (jetties) and detached breakwaters:

(i) The toe of the shore breakwaters (jetties) may extend seaward to 0.0 feet MLLW, but may not extend seaward more than two hundred fifty feet from OHWL;

(ii) The shore breakwaters must have a slope of at least one and one-half feet horizontal to one foot vertical throughout;

(iii) The breaches between the shore breakwaters and the detached breakwaters must be at least twenty feet wide measured at the toe of the slope;

(iv) Removable, floating breakwaters or wave boards should be used whenever possible; and

(v) Avoid the use of continuous sheet piles whenever possible.

(5) **Pile design:**

(a) Use the smallest diameter and number of pilings needed to construct a safe structure.

(b) The use of creosote or pentachlorophenol piling is prohibited. New and replacement piling can be steel, concrete, recycled plastic, or untreated or department approved treated wood.

(c) Treated wood piling must incorporate design features to minimize abrasion of the piling from contact with vessels, floats, or other objects.

(d) If possible, all pilings must be fitted with devices to prevent perching by fish-eating birds.

(6) **Marina and marine terminal construction:**

(a) Operate and anchor vessels and barges so that they do not adversely impact seagrass or macroalgae species used as herring spawning substrate.

(b) The dock(s) centerline must be reestablished during construction using the same methodology used to establish the centerline during the eelgrass/macroalgae habitat survey.

(c) When installing steel piling, a vibratory hammer is preferred.

(d) If impact pile driving is used, set the drop height to the minimum needed to drive the piling.

(e) Use appropriate sound attenuation to minimize harm to fish from impact steel pile-driving noise.

(f) When possible, limit impact steel pile driving to daylight hours to avoid attracting fish to light at night.

(g) When removing piling:

(i) Use a vibratory system to dislodge piling, when possible;

(ii) After removal, place the piling on a construction barge or other dry storage site. The pile must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the pile;

(iii) If a treated wood pile breaks during extraction, remove the stump from the water column by fully extracting the stump or cutting it three feet below the substrate; and

(iv) Fill holes left by piling extraction with clean sediment that matches the native material;

(h) When removing creosote piling:

(i) Containment booms and absorbent sausage booms (or other oil absorbent fabric) must be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters as a result of construction activities to remove creosote pilings. All accumulated debris must be collected and disposed upland at an approved disposal site; and

(ii) Creosote logs and timbers must be fully suspended during removal so no portion of the log drags through the water or onto the beach;

(i) Securely anchor floats and mooring buoys;

(j) Dispose of replaced piers, ramps, floats, docks, lines, chains, cables, or mooring anchors in an upland disposal site; and

(k) Place floats and buoys removed seasonally in an upland area. Do not store on the beach.

(7) **Marina and marine terminal maintenance:**

(a) Upon request, the department must issue a renewable, five-year HPA for regular maintenance activities of a marina or marine terminal.

(b) In this section, regular maintenance activities may include the following work:

(i) Maintain or repair a boat ramp, launch, or float within its existing footprint;

(ii) Maintain or repair an existing over-water structure within its existing footprint;

(iii) Maintain or repair boat lifts or railway launches;

(iv) Maintain or repair pilings, including replacing bumper pilings;

(v) Dredge less than fifty cubic yards of material;

(vi) Maintain or repair shoreline armoring or bank protection;

(vii) Maintain or repair wetland, riparian zone, or estuarine habitat; and

(viii) Maintain or repair an existing outfall.

(c) A five-year permit must include a provision that a person give the department a fourteen-day notice before regular maintenance activities start.

NEW SECTION

WAC 220-660-410 Dredging in saltwater areas. (1) **Description:** Dredging includes removing substrate to improve vessel navigation and to maintain navigation channels. Dredging is also used to cleanup contaminated sediments.

(2) **Fish life concerns:** Dredging may result in changes in bathymetry, habitat conversion, and changes to estuarine and nearshore zone

ecosystem dynamics such as salinity intrusion. Dredging may convert intertidal and shallow subtidal habitat to deeper subtidal habitat. Dredging may affect the plant and animal communities that are uniquely adapted to the particular light, current, and substrate regimes of intertidal and shallow subtidal areas. In addition to changing the habitat, dredging equipment can injure or kill fish and shellfish during the uptake of sediments and water. Suspended sediments released into the water column by dredging can affect fish by interfering with breathing and feeding, and by changing predator-prey relationships.

(3) **Dredging – Generally:**

(a) The department may require hydrodynamic modeling to assess changes in salinity, turbidity, and other physiochemical regimes for new dredging projects and expansions.

(b) Design project to avoid dredging and expansions that convert intertidal to subtidal habitat.

(c) The department prohibits new dredging in sand lance, surf smelt, and herring spawning beds; rockfish and lingcod settlement and nursery areas; and Olympia oyster settlement areas.

(d) The department requires eelgrass/macroalgae habitat surveys for all new dredging. Surveys are not required for maintenance dredging within their original footprint.

(e) Dredging must avoid adverse impacts to seagrasses, kelp, macroalgae, intertidal vascular plants, and geoduck tracts.

(f) Limit the depth of the maintenance dredging to no deeper than the channel depth at the seaward end. The department may authorize dredging to depths deeper than the channel at the seaward end only in berthing areas and turning basins for commercial shipping.

(g) In addition to those timing limitations listed in WAC 220-660-320, the department may further restrict dredge timing to protect other fish life.

(4) **Dredging construction:**

(a) Conduct dredging with dredge types and methods that cause the least impacts to fish life.

(b) Operate a hydraulic dredge with the intake at or below the bed surface. Raise the intake up to three feet above the bed only for brief periods of purging or flushing the intake system.

(c) Operate a dragline or clamshell to minimize turbidity. During excavation, each pass with the clamshell or dragline bucket must be complete. Dredged material must not be stockpiled waterward of the OHWL.

(d) Dispose of dredged bed materials at an approved in-water disposal site or in an upland location so the materials do not reenter state waters. The department may allow dredged material placement for beneficial uses such as beach nourishment or capping of contaminated sediments.

(e) To minimize turbidity, hopper dredges, scows and barges used to transport dredged materials to the disposal or transfer sites must completely contain the dredged material.

(f) When possible, limit dredging operations to daylight hours to avoid attracting fish to lights.

NEW SECTION

WAC 220-660-420 Artificial aquatic habitat structures in saltwater areas. (1) **Description:** An artificial aquatic habitat structure is a structure that humans design and place to provide long-term alterations to saltwater bottom habitat. The structure is designed and located to contribute to fish and shellfish management. Examples include artificial reefs.

(2) **Fish habitat concerns:** Artificial aquatic habitat structures draw large numbers of fish for the same reasons natural habitat structures do: They provide shelter, food, and a place for some species to spawn. They have holes and crevices in which both predator and prey can hide. However, artificial aquatic habitat structures alter the seabed and change the natural habitat. This alteration can change the make-up of the fish community and displace fish that used the natural habitat. Because artificial aquatic habitat structures can draw large numbers of fish into one place, coordination with fisheries managers is critical to prevent overfishing at these sites.

(3) **Artificial aquatic habitat structure design:**

(a) Artificial aquatic habitat structures must meet one or more of the following needs:

(i) Enhance fish viewing opportunity at a specific location;

(ii) Enhance or conserve aquatic resources; or

(iii) Mitigate for impacted fish habitat.

(b) Resource benefits must outweigh negative impacts caused by construction and placement of the structure.

(c) The department may require compensatory mitigation for unavoidable construction impacts to fish, shellfish, and their habitat.

(d) Artificial aquatic habitat structures must fill a habitat need identified in (a) of this subsection. HPA applications must include the target fish species, species groups, or life stages that a person wants to enhance or rebuild. The critical habitat and environmental requirements of those species must be identified.

(e) A complete application to construct an artificial aquatic habitat structure must include the results of approved preconstruction surveys, a statement of the fishery or habitat need for the proposed structure, ongoing maintenance needs, if any, and a plan for quarterly monitoring for two years after construction.

(f) The department will require at least four preconstruction surveys:

(i) Preconstruction surveys must be conducted during each seasonal quarter prior to the start of the project (January through March, April through June, July through September, and October through December);

(ii) Post-construction quarterly monitoring must follow department-approved biological protocols. A person must submit results of completed surveys to the department annually; and

(iii) The department may require additional surveys.

(4) **Artificial aquatic habitat structure construction:**

(a) Locate the structure a minimum of two hundred yards away from other areas of hard-rock habitat to reduce the probability of an aquatic invasive species infestation.

(b) Locate the structure where it will least disturb adjacent shorelines.

(c) Construct the structures with high-density materials that are nontoxic and inert in sea water.

(d) Use clean materials to construct the structure. A person must not use materials that would leach metals, petroleum products, or other hazardous materials.

(e) At least ninety-five percent of the construction materials must be larger than one foot in diameter.

(f) Avoid using vertical walls. Structures must consist of piles of loose material or separate modules.

(g) Place the structure where it will cause the least impact to fish life and the habitat.

(h) Reef material must not cover more than fifty percent of the natural substrate within the permitted area.

(i) Any one rock pile or module must not cover more than ten percent of the total permitted area.

(j) Rock piles must be located at least fifty feet apart.

NEW SECTION

WAC 220-660-430 Outfall and tide and flood gate structures in saltwater areas. (1) **Description:** Outfalls move water from one place to another, typically to a body of water. Outfalls may convey storm water, or other waste materials. Tide and flood gates are adjustable gates used to control water flow in estuary, river, stream, or levee systems.

(2) **Fish life concerns:** Outfalls can increase erosion of a bed and bank, trap sediment, and cause a direct loss of beach and bank riparian habitat.

(3) **Limit of department authority over storm water outfall and tide and floodgate projects:**

(a) The department may not provision HPAs for storm water discharges in locations covered by a National Pollution Discharge Elimination System municipal storm water general permit for water quality or quantity impacts. An HPA is required only for the actual construction of any storm water outfall or associated structures.

(b) In locations not covered by a National Pollution Discharge Elimination System municipal storm water general permit, the department may issue HPAs that contain provisions to protect fish life from the direct hydraulic impacts of the discharge, such as scouring or erosion of the waterbody bed. Before issuing an HPA under this subsection, the department must:

(i) Find that the discharge from the outfall will cause harmful effects to fish life;

(ii) Send the findings to the applicant and to the city or county where the project is being proposed; and

(iii) Allow a person to use local ordinances or other ways to avoid the adverse effects resulting from the direct hydraulic discharge. The forty-five day requirement for HPA issuance under RCW 77.55.021 is suspended when the department is meeting the requirements of this subsection.

(c) After following the procedures set forth in (b) of this subsection, the department may issue an HPA that prescribes the discharge rates from an outfall structure to prevent adverse effects to the bed or flow of the waterway. The department may recommend, but not specify, the measures required to meet these discharge rates. The depart-

ment may not require changes to the project design waterward of the mean higher high-water mark of marine waters.

(d) The department may not require a fishway on a tide gate, flood gate, or other associated human-made agricultural drainage facilities as a provision of a permit if such a fishway was not originally installed as part of an agricultural drainage system existing on or before May 20, 2003. The department may require a fishway on a tide or flood gate as part of a nonagricultural drainage system and on agricultural drainage systems existing after May 20, 2003.

(4) **Outfall design:**

(a) To prevent scouring, protect the shoreline bank and bed at the point of discharge using bioengineering methods or other department-approved methods.

(b) Design and locate outfalls so that the outflow or any associated energy dissipaters do not cause loss of fish and shellfish habitat. The department may require that energy be dissipated using one or more of the following methods, or other effective method proposed by a person and approved by the department:

(i) Existing natural habitat features (such as large logs, root wads, natural large rocks, or rock shelves) without degrading the habitat function or value of these features;

(ii) Pads of native plants (shrubs and grasses) and biodegradable fabric;

(iii) Imported fish habitat components (large woody material);

(iv) Manufactured in-line energy dissipaters, such as a tee diffuser;

(v) Rounded rock energy dissipation pads; or

(vi) Angular rock energy dissipation pads, if the department determines other options are not possible.

(c) An outfall pipe or other structural element that crosses a beach must be buried deep enough to avoid interrupting the along-shore sediment drift.

(d) To minimize impacts to saltwater habitats of special concern, the department may require that the outlet of submerged outfall piping not protrude above grade landward of minus thirty feet MLLW.

(e) The department may require an eelgrass/macroalgae habitat survey for new construction. A survey is not required for replacement of an existing structure within its original footprint.

(5) **Outfall construction:**

(a) To protect critical food fish or shellfish habitats, the department may apply timing constraints to proposed projects. The department must consider the construction techniques, location of the project, and characteristics of habitats potentially affected by the project. The department may inspect the work area to evaluate the habitats near the project.

(b) During times when work in waters of the state is prohibited to protect nearshore juvenile salmonid migration, rearing, and feeding areas, the department may permit construction if the outfall is located at or landward of the OHWL, and if all construction work is conducted from the landward side of the project.

(c) The department may require a person to establish structure elevations relative to permanent benchmarks before starting work on the project. The benchmarks must be located, marked, and protected to serve as a post-project reference for ten years.

(d) A person must not conduct project activities when tidal waters cover the work area including the work corridor, except the area occupied by a grounded barge.

(e) If a preconstruction seagrass and macroalgae habitat survey was performed, the conveyance pipe centerline must be reestablished during construction using the same methodology used to establish the centerline during the seagrass and macroalgae habitat survey.

NEW SECTION

WAC 220-660-440 Utility crossings in saltwater areas. (1) **Description:** Utility crossings are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, or water underneath waterbodies.

(2) **Fish life concerns:** Utility crossings pose a risk to fish and fish habitat because of potential changes of substrates, destabilization of marine shoreline and distributary channels, loss of riparian vegetation zone, and loss of aquatic vegetation. Trenching through banks and beaches alters habitat, substrate characteristics, and therefore their productivity.

(3) **Utility crossing design:** A person must locate utility crossings to avoid impacts to saltwater habitats of special concern.

(4) **Utility crossing construction:**

(a) A person must excavate for and install cables, sewer lines, and other utilities using equipment and techniques that minimize adverse impacts to fish and shellfish and their habitats.

(b) The department may require an eelgrass/macroalgae habitat survey for new construction. A survey is not required for replacement of an existing structure within its original footprint.

(c) If a preconstruction seagrass and macroalgae habitat survey was performed, reestablish the utility line centerline during construction using the same methodology used to establish the centerline during the seagrass and macroalgae habitat survey.

(d) A person must not excavate trenches within the beach area when tidal waters cover the work area. The department may allow stockpiling of sand, gravel, and other coarse material below the OHWL. Place this material within the designated work corridor waterward of the OHWL. Remove all excavated or stockpiled material from the beach within seventy-two hours of the end of construction.

(e) No stockpiling of excavated materials containing silt, clay, or fine-grained soil or bed material is allowed below OWHL.

(f) Backfill all construction-related trenches, depressions, or holes that are waterward of the OHWL before they are filled by tidal waters.

NEW SECTION

WAC 220-660-450 Test boring in saltwater areas. (1) **Description:** Boring is used to obtain information about the physical properties of the bed. This information is often needed to design foundations for proposed structures and to repair existing structures. Test boring is also commonly used to gather information about the contamination levels of sediment proposed for dredging.

(2) **Fish life concerns:** Boring-related impacts to fish life are usually minor and short term. Short-term impacts from the project include increased turbidity and noise levels and small vibrations created mainly from the drill rig.

(3) **Boring construction:** While boring, a person must:

(a) Take samples only within the proposed footprint of the hydraulic project;

(b) Conduct boring in a way that minimizes turbidity and discharge of silt to the water column as follows:

(i) Completely contain each boring and cone penetration action within the casing;

(ii) Do not discharge turbid or slurry laden process water into state waters;

(iii) Minimize suspending sediment while collecting samples. Place all excess sediment and water derived during coring activities in proper containers, labeled, characterized, and disposed of by the operators in accordance with the appropriate guidelines; and

(iv) Deposit all waste material such as drill spoils and cuttings, construction debris, silt, excess dirt, excess gravel, or overburden resulting from this project in an upland location so that it does not enter waters of the state;

(c) After geotechnical or sediment information has been logged, seal the bore hole and substrate surface with the appropriate material including bentonite grout, pellets, and/or chips; and

(d) Check drilling equipment daily for leaks and maintain it in good repair to prevent lubricants, grease, and any other deleterious materials from entering state waters.

NEW SECTION

WAC 220-660-460 Informal appeal of administrative actions. (1) The department recommends that a person aggrieved by the issuance, denial, provisioning, or modification of an HPA contact the department employee responsible for making the decision on the HPA before initiating an informal appeal. Discussion of concerns with the department employee often results in a resolution of the problem without the need for an informal appeal.

(2) The department encourages aggrieved persons to take advantage of the informal appeal process before initiating a formal appeal. However, the informal appeal process is not mandatory, and a person may proceed directly to a formal appeal under WAC 220-660-470.

(a) This rule does not apply to any provisions in pamphlet HPAs. A person who disagrees with a provision in a pamphlet HPA may apply for an individual, written HPA.

(b) Any person with legal standing may request an informal appeal of the following department actions:

(i) The issuance, denial, provisioning, or modification of an HPA; or

(ii) An order imposing civil penalties.

(3) A request for an informal appeal must be in writing and must be received by the department within thirty days from the date of receipt of the decision or order. "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. A person's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the department, must constitute enough evidence of actual receipt. The date of actual receipt; however, may not exceed forty-five days from the date of mailing.

(4) A request for informal appeal must be:

(a) Mailed to the:

HPA Appeals Coordinator
Department of Fish and Wildlife
Habitat Program
600 Capitol Way N.
Olympia, Washington 98501-1091;

(b) E-mail: HPAapplications@dfw.wa.gov;

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

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

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

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

(b) The specific department action that the appellant contests;

(c) The date the department issued, denied, provisioned, or modified an HPA, or the date the department issued the order imposing civil penalties;

(d) The log number or a copy of the HPA, or a copy of the order imposing civil penalties;

(e) A short and plain statement explaining why the appellant considers the department action or order to provide inadequate protection of fish life or to be otherwise unlawful;

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

(g) Whether the appellant is the permittee, HPA applicant, landowner, resident, or another person with an interest in the department action in question;

(h) The specific relief requested;

(i) The attorney's name, address, e-mail address (if available), and phone number, if the appellant is represented by legal counsel; and

(j) The signature of the appellant or his or her attorney.

(6) Upon receipt of a valid request for an informal appeal, the department may initiate a review of the department action. If the appellant agrees, and the appellant applied for the HPA, 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.

(7) If a resolution is not reached through the informal conference process, the appellant is not the person who applied for the HPA, or the appeal involves an order imposing civil penalties, the HPA appeals coordinator or designee may conduct an informal appeal hearing or review. Upon completion of the informal appeal hearing or review, the HPA appeals coordinator or designee must recommend a decision to the director or designee. The director or designee must approve or de-

cline to approve the recommended decision within sixty 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.

(8) 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 220-660-470. Formal review must be requested within the time periods specified in WAC 220-660-470.

NEW SECTION

WAC 220-660-470 Formal appeal of administrative actions. The department recommends that a person aggrieved by the issuance, denial, provisioning, or modification of an HPA contact the department employee responsible for making the decision on the HPA before initiating a formal appeal. Discussion of concerns with the department employee often results in a resolution of the problem without the need for a formal appeal.

The department encourages aggrieved persons to take advantage of the informal appeal process under WAC 220-660-460 before initiating a formal appeal. However, the informal appeal process is not mandatory, and a person may proceed directly to a formal appeal.

This rule does not apply to any provisions in pamphlet HPAs. A person who disagrees with a provision in a pamphlet HPA may apply for an individual, written HPA.

(1) Any person with standing may request a formal appeal of the following department actions:

(a) The issuance, denial, provisioning, or modification of an HPA; or

(b) An order imposing civil penalties.

(2) As required by the Administrative Procedure Act, chapter 34.05 RCW, the department must inform the HPA permittee or applicant, or person subject to civil penalty order of the department, of the opportunity for appeal, the time within which to file a written request for an appeal, and the place to file it.

(3) A request for formal appeal must be in writing and must be filed with the clerk of the pollution control hearings board (PCHB) and served on the department within thirty days from the date of receipt of the decision or order. "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. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the department, must constitute enough evidence of actual receipt. The date of actual receipt; however, may not exceed forty-five days from the date of mailing.

(4) Service on the department must be:

(a) Mailed to:

HPA Appeals Coordinator
Department of Fish and Wildlife

Habitat Program
600 Capitol Way N.
Olympia, Washington 98501-1091;

(b) E-mail: HPAapplications@dfw.wa.gov;
(c) Fax: 360-902-2946; or
(d) Hand-delivered to the Natural Resources Building, 1111 Washington Street S.E., Habitat Program, Fifth Floor.

(5) The request for formal appeal must contain the information required by WAC 371-08-340. 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 thirty days from the date of receipt of the department's written decision in response to the informal appeal.

(6) The department at its discretion may stay the effectiveness of any decision or order that has been appealed to the PCHB. The department will use the standards in WAC 371-08-415(4) to make a decision on any stay request. At any time during the appeal to the PCHB, the appellant may apply to the PCHB for a stay of the decision or order, or removal of a stay imposed by the department.

(7) If there is no timely request for an appeal, the department action will be final and nonappealable.

NEW SECTION

WAC 220-660-480 Compliance with HPA provisions. (1) **Department program:** The department will develop programs to encourage voluntary compliance with HPA provisions by providing technical assistance consistent with statutory requirements. The programs must provide technical assistance visits, printed information, information and assistance by telephone, training meetings, and other appropriate methods. In addition, the department must provide upon request a list of organizations, including private companies that provide technical assistance. This list must be compiled by the department from information submitted by the organizations and does not constitute an endorsement by the department of any organization.

(2) **Technical assistance visit:**

(a) For the purposes of this chapter, a technical assistance visit is 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) During a technical assistance visit, or within a reasonable time thereafter, the department must inform the person of any violations of law or department rules identified by the department as follows:

(i) A description of what is not in compliance and the text of the specific section or subsection of the applicable state law or rule;

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

(iii) The date by which the project must achieve compliance;

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

(v) Notice of when, where, and to whom a request to extend the time to achieve compliance for good cause may be filed with the department; and

(vi) A technical assistance notice is not a formal enforcement action and is not subject to appeal.

(3) **Notice of correction:**

(a) If during any inspection or visit that is not a technical assistance visit, the department becomes aware of conditions that do not comply with applicable laws and rules enforced by the department and are not subject to penalties as provided for in subsection (4) of this section, the department may issue a notice of correction to the responsible party that must include:

(i) A description of what is not in compliance and the text of the specific section or subsection of the applicable state law or rule;

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

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

(iv) Notice of the means to contact any technical assistance services provided by the department or others; and

(v) Notice of when, where, and to who in the department a person may file a request to extend the time to achieve compliance for good cause.

(b) A notice of correction is not a formal enforcement action, is not subject to appeal, and is a public record.

(c) If the department issues a notice of correction, it must not issue a civil penalty for the violations identified in the notice of correction unless the responsible party fails to comply with the notice.

(4) **Civil penalties:**

(a) The department may issue a civil penalty provided for by law without first issuing a notice of correction if:

(i) The person has previously been subject to an enforcement action for the same or similar type of HPA violation, or has been given previous notice of the same or similar type of HPA violation;

(ii) Compliance is not achieved by the date set by the department in a previously issued notice of correction, if the department has responded to any request for review of such date by reaffirming the original date or establishing a new date;

(iii) The violation has a probability of placing a person in danger of death or bodily harm, has a probability of causing more than minor environmental harm, or has a probability of causing physical damage to the property of another in an amount exceeding one thousand dollars; or

(iv) The violation was committed by a business that employed fifty or more employees on at least one day in each of the preceding twelve months.

(b) The department may impose a civil penalty of up to one hundred dollars per day for a violation of any provisions of chapter 77.55 RCW or chapter 220-660 WAC. The department must impose the civil penalty with an order in writing delivered by certified mail or personal service to the person who is penalized. The notice must describe the violation, identify the amount of the penalty, identify how to pay the penalty, and identify the process for informal and formal appeals of the penalty. If the violation is an ongoing violation, the penalty may accrue for each additional day of violation.

(c) If a civil penalty order is not appealed in a timely way under WAC 220-660-460 or 220-660-470, the civil penalty order is final and nonappealable. If appealed, the civil penalty becomes final upon issuance of a final order not subject to any further administrative appeal. When a civil penalty order becomes final, it is due and payable. If the civil penalty is not paid within thirty days after it becomes due and payable, the department may seek enforcement of the order under RCW 77.55.291 and 34.05.578.

(d) The penalty imposed is due and payable thirty days after receipt of a notice imposing the penalty unless an appeal is filed. Whenever an appeal of any penalty incurred under this chapter is filed, the penalty is due and payable only upon completion of all review proceedings and the issuance of a final order confirming the penalty in whole or in part.

(e) If the amount of any penalty is not paid within thirty days after it is due and payable, the attorney general, upon the request of the director, must bring an action in the name of the state of Washington in the superior court of Thurston County or of any county in which such violator may do business, to recover such penalty. In all such actions, the procedure and rules of evidence must be the same as an ordinary civil action. All penalties recovered under this section must be paid into the state's general fund.

(f) The department must comply with the requirements of RCW 34.05.110 before issuing a civil penalty to a small business as defined in that statute.

(5) **Time for compliance:** The department must provide for a reasonable time to achieve compliance. Any person receiving a notice of correction under subsection (3) or (4) of this section may request an extension of time for good cause to achieve compliance. The person must request an extension from the department in writing and follow the procedures specified by the department in the notice. The department must respond in writing within ten calendar days.

(6) **Criminal penalty:** Under RCW 77.15.300, it is a gross misdemeanor to construct any form of hydraulic project or perform other work on a hydraulic project without having first obtained an HPA from the department, or to violate any requirements or conditions of the HPA for such construction or work.

REPEALER

The following chapter of the Washington Administrative Code is repealed:

WAC 220-110-010	Purpose.
WAC 220-110-020	Definitions.
WAC 220-110-030	Hydraulic project approvals—Procedures.
WAC 220-110-031	Pamphlet hydraulic project approvals—Procedures.
WAC 220-110-032	Modification of technical provisions.
WAC 220-110-035	Miscellaneous hydraulic projects—Permit requirements and exemptions.
WAC 220-110-040	Freshwater technical provisions.
WAC 220-110-050	Bank protection.
WAC 220-110-060	Construction of freshwater docks, piers, and floats and the driving or removal of piling.
WAC 220-110-070	Water crossing structures.
WAC 220-110-080	Channel change/realignment.
WAC 220-110-085	Integration of hydraulic project approvals and forest practices applications.
WAC 220-110-100	Conduit crossing.
WAC 220-110-120	Temporary bypass culvert, flume, or channel.
WAC 220-110-130	Dredging in freshwater areas.
WAC 220-110-140	Gravel removal.
WAC 220-110-150	Large woody material removal or repositioning.
WAC 220-110-160	Felling and yarding of timber.
WAC 220-110-170	Outfall structures.
WAC 220-110-180	Pond construction.
WAC 220-110-190	Water diversions.
WAC 220-110-200	Mineral prospecting.
WAC 220-110-201	Mineral prospecting without timing restrictions.
WAC 220-110-202	Mineral prospecting with timing restrictions.
WAC 220-110-206	Authorized work times and mineral prospecting equipment restrictions by specific state waters for mineral prospecting and placer mining projects.
WAC 220-110-223	Freshwater lake bulkheads.
WAC 220-110-224	Freshwater boat hoists, ramps, and launches.
WAC 220-110-230	Saltwater technical provisions.
WAC 220-110-240	Tidal reference areas.

WAC 220-110-250	Saltwater habitats of special concern.
WAC 220-110-270	Common saltwater technical provisions.
WAC 220-110-271	Prohibited work times in saltwater areas.
WAC 220-110-280	Bulkheads and bank protection in saltwater areas (nonsingle family residence).
WAC 220-110-285	Single-family residence bulkheads in saltwater areas.
WAC 220-110-290	Saltwater boat ramps and launches.
WAC 220-110-300	Saltwater piers, pilings, docks, floats, rafts, ramps, boathouses, houseboats, and associated moorings.
WAC 220-110-310	Utility lines.
WAC 220-110-320	Dredging in saltwater areas.
WAC 220-110-330	Marinas in saltwater areas.
WAC 220-110-331	Aquatic plant removal and control technical provisions.
WAC 220-110-332	Hand removal or control.
WAC 220-110-333	Bottom barriers or screens.
WAC 220-110-334	Weed rolling.
WAC 220-110-335	Mechanical harvesting and cutting.
WAC 220-110-336	Rotovation.
WAC 220-110-337	Aquatic plant dredging.
WAC 220-110-338	Water level manipulation.
WAC 220-110-340	Informal appeal of administrative actions.
WAC 220-110-350	Formal appeal of administrative actions.
WAC 220-110-360	Penalties.

Hydraulic Code Rulemaking (Chapter 220-660 WAC)- Small Business Economic Impact Statement

1 Background and Scope

1.1 Small Business Economic Impact Statement

Prior to adopting a rule the Revised Code of Washington (RCW) 34.05.325 directs an agency to:

> *Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented…*

In addition the Regulatory Fairness Act, in RCW 19.85.040, directs that

> *To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules …*

In RCW 19.85.020 (3) "Small business" is defined as

> *… any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.*

This report presents the findings of both the Cost Benefit Analysis (CBA), as directed under RCW 34.05.325, and the Small Business Economic Impact Statement (SBEIS), as directed under RCW 19.85.040.

1.2 Public participation and review of proposed rules

WDFW has involved the public and stakeholders in developing the updated Hydraulic Code Rules. WDFW formed a Stakeholder Advisory Group to provide comments on an initial draft of the HPA rules. This group included eighteen representatives from the construction industry, non-governmental organizations, state and federal agencies, and tribes. This group met eight times between October 31 and the end of December, 2011, receiving presentations on and discussing issues relating to one or two specific aspects of the HPA rules at each meeting. The group engaged in policy discussions about the proposed changes and the impacts to their interests, and commented on revised rule proposals prepared by WDFW. Those rule documents were also posted on the WDFW web site for comment by any reader. Three separate drafts of the revised code rules have been posted on the WDFW website along with forms to comment on the rules. The fourth draft accompanied the September 2013 PEIS. A final draft accompanies this supplemental draft PEIS. This draft was revised based on September 2013 PEIS comments and will be finalized concurrent with the final EIS. The Fish and Wildlife Commission will consider the final draft rules and hear public testimony prior to adopting final rules in the summer of 2014.

2 Proposed Action and Baseline

2.1 Changes under the proposed rules

The proposed rule changes will update the requirements and make them consistent with statutory, procedural, and administrative changes and current fish science and design technology. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a structure for adaptive management in response to changing science and technology and/or the results of effectiveness monitoring.

2.2 Baseline

Defining the baseline, against which to measure potential impacts of the proposed changes to the Hydraulic Code Rules, is not as simple as comparing the existing rules, last updated in 1994, to the proposed changes. Other federal and state regulatory authorities and judicial decisions dictate the design, construction and maintenance of projects located in waters of the state. If a permittee is required to follow other, existing, rule(s), regulation(s) and (standards) that are the same or more stringent, than those proposed by WDFW, then the economic impact *attributable* to WDFW's proposed rule change would be minimized, or even eliminated. For instance, comparing a road culvert designed according to the change proposed to Chapter 220-660-190 WAC, Water Crossing Structures, to an existing culvert size might increase the cost of the design and/or construction of the culvert, but the existing culvert does not satisfy the fish passage required National Marine Fisheries Service Anadromous Salmonid Passage Facility Design (see Section 2.2.1.1, below). Therefore to assign the costs of the proposed rule changes in Chapter 220-660-190 WAC would overstate the impact of the proposed rule change.

3 Data Profile, Methods and Results

WDFW maintains a database of Hydraulic Project Approval (HPA) applications. The database contains information about individual applications including the year the application was submitted, the status of the application, the name of the company (or individual) submitting the application and categorizes the applicants into groups. The applicant groups are:

- Agriculture, including farms, timber companies and local dike, drainage and irrigation districts
- Single Family Residence
- Multiple Family Use including homeowners associations,
- Commercial/Industrial, including energy companies, land development, private marinas, etc.
- Government, including federal, tribal, state and regional
- Non-Profit Agency Public,
- Non-Profit Agency Private

The method used to estimate the probable costs of the proposed rule changes answered the following questions:

- How many HPAs will be submitted annually that have to meet the requirements of a proposed rule change for which there are no related regulations (see Table 1)?
- What is a reasonable range of estimated costs for those proposed rule changes?

Estimates of both the range of costs and the annual volume of HPAs are used to estimate a range of implementation costs of the proposed rule changes. For example if a proposed rule change is likely to increase project costs significantly but the likelihood that any project will be effected by the proposed change is low, then the expected cost of the proposed rule change could be low. Conversely, if the cost of implementing a proposed rule change on any one project is relatively low, but the proposed rule change would likely impact a relatively high percentage of projects seeking an HPA then the expected cost of the proposed rule change could be high.

In addition to understanding the potential costs and annual number of proposed rule change this analysis also answered the following:

- who (which entities) might be impacted by the proposed rule changes, e.g. federal and state agencies, tribes, commercial and industrial users, residential, etc.?

Understanding the type of entity (e.g. agriculture, government, etc.) impacted by the proposed rule changes contributes to the Small Business Economic Impact Statement, which estimates whether a small business is disproportionate affected by the proposed rule changes. Also, understanding which entity might be impacted helps estimate the number of HPAs that would be exempt from the 404 permitting requirement.

To answer two of the above three questions; 1) how many HPAs are submitted in one year and 2) which applicants might be impacted by the proposed rule change, the analysis assumed that the historical record of HPAs, that is - the types of projects that have needed permits and the types of entities that applied - represents the best estimate of future projects and applicants.

WDFW maintains a database of Hydraulic Project Approval (HPA) applications (Chapman, 2014a). **Table 2** shows the number of HPA's issued per year from 2008 through 2012. On average over 2,500 applications are issued per year.

Table 2. Number of HPAs issued per year, 2008-2012, all projects, all applicants, excluding forestry.

Year	2008	2009	2010	2011	2012	Grand Total	5-Year Average
HPA Count	2,657	2,666	2,177	2,456	2,782	12,738	2,548

Source: Barber, E. 2014.

What follows is a description of the historical record of HPAs issued over the 5-year period from 2008 to 2012, including an estimate of how many applications would have been impacted by the proposed rules had the rules been in effect during that period of time. Also, a description of the estimated costs of each HPA is described.

3.1 Who Applies for HPAs?

The WDFW HPA database contains information about individual applications including (but not limited to) the:

- year the application was submitted,
- status of the application (pending, issued, hold, etc.)
- type of application (e.g. forest practice, JARPA, public notice, etc.),
- description of the project
- name of the company (or individual) submitting the application
- applicant groups (e.g. government, agriculture, commercial/industrial, residential, etc.)

Table 3 lists the number of HPA's issued between 2008 and 2012 by applicant group. Single family residences and government are the top two applicant groups, each individually representing just over 35.0 percent of all the HPAs, for a combined total of 70 percent of the HPAs for the time period. Agricultural applicants are third in volume, with 14.0 percent of the HPAs from 2008-2012, followed by commercial/industrial applicants submitting 8.0 percent of all HPAs. The remainder of the applicant groups represent less than 6.0 percent of all HPA's for the study period.

Table 3. Total HPAs by Applicant Group, 2008 - 2012

Applicant Group	Number of HPAs		Percent of Total
	5-Year Total	5-Year Average	
Agriculture	1,737	249	14%
Commercial/Industrial	964	961	8%
Government	4,606	46	36%
Multiple Family Use	225	90	2%
Non-Profit Agency Private	419	21	3%
Non-Profit Agency Public	101	937	1%
Single Family Residence	4,686	243	37%
Grand Total	12,738	2,548	100%

Source: Source: Barber, E. 2014.

3.2 How Many HPAs Could Be Subject to the Proposed Rule Changes?

Table 4. presents an estimate of the average annual number of HPAs, issued between 2008 and 2013, that may have been subject to a proposed rule change, had the rules been in effect at the time. Note that any one HPA may be included in **Table 4** in multiple columns, as one HPA could be subject to more than one rule.

The majority of all HPAs, approximately 32.0 percent, issued between 2008 and 2013 were subject to proposed rule 220-660-190, water crossing structure. Twenty percent of all applications issued between 2008 and 2013 would have been subject to proposed rule 220-660-310, Tidal reference areas, and proposed rule 220-660-330, Authorized work times in saltwater areas. Thirteen percent of the HPAs would have been subject to five proposed rules; Freshwater habitats of special concern (220-660-100), Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas (220-660-140), Saltwater habitats of special concern (220-660-320), Intertidal forage fish spawning bed surveys (220-660-340) and Seagrass and macroalgae habitat surveys (220-660-350). The remainder of the rules would have impacted ten percent or less of the HPAs

Table 4. Estimate of the Average Annual Percent of Total HPAs by Proposed Rules, 2008-2013.

Proposed WAC Sections		Percent of Total
Number	Title	
220-660-100	Freshwater habitats of special concern	12.9%
220-660-110	Authorized work times in freshwater areas	0.0%
220-660-120	Common freshwater construction provisions	0.0%
220-660-130	Streambank protection and lake shoreline stabilization	0.0%
220-660140	Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas	12.9%
220-660-150	Boat ramps and launches in freshwater areas	0.9%
220-660160	Marinas and terminals in freshwater areas	0.3%
220-660-170	Dredging in freshwater areas	7.8%
220-660-180	Sand and gravel removal	0.3%
220-660-190	Water crossing structures	31.8%
220-660-200	Fish passage improvement structures	9.4%
220-660-210	Channel relocation and realignment	0.1%
220-660-220	Large woody material placement, repositioning, and removal in freshwater areas	7.1%
220-660-230	Beaver dam management	1.1%
220-660-240	Pond construction	0.3%
220-660-250	Water diversions and intakes	4.2%
220-660-260	Outfall structures in freshwater areas	1.8%
220-660-270	Utility crossings in freshwater areas	2.6%
220-660-280	Felling and yarding of timber	0.1%
220-660-290	Aquatic plant removal and control	0.3%

Proposed WAC Sections		Percent of Total
Number	Title	
220-660-300	Mineral prospecting	8.9%
220-660-310	Tidal reference areas	19.7%
220-660-320	Saltwater habitats of special concern	13.4%
220-660-330	Authorized work times in saltwater areas	19.7%
220-660-340	Intertidal forage fish spawning bed surveys	13.2%
220-660-350	Seagrass and macroalgae habitat surveys	13.4%
220-660-370	Bank protection in saltwater areas	5.9%
220-660380	Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas	5.2%
220-660-390	Boat ramps and launches in saltwater areas	0.7%
220-660-400	Marinas and terminals in saltwater areas	0.6%
220-660-410	Dredging in saltwater areas	0.6%
220-660-420	Artificial Aquatic Habitat Structures	0.4%

Source: Barber, E. WDFW 2014.

Table 5 shows the annual average number of HPAs assumed to be subject to the proposed rule changes by applicant group. Included in Table 5 are the proposed rules that could potentially impact greater than 5.0 percent of the annual average number of HPAs. As seen in **Table 4**, 32.0 percent of the average annual HPAs are subject to the proposed rule 220-660-190, Water crossing structures. Of those HPAs the majority, 49.0 percent, are issued to governments. Twenty percent of the HPAs subject to the Water crossing structures proposed rule are issued to Agricultural and Forestry applicants. Sixteen percent of the HPAs subject to the Water crossing structures rule are issued to Commercial and Industrial applicants.

The Single Family Residence applicant group is issued the largest number of HPAs (64.0 percent) that are subject to the proposed Tidal reference area rule (220-660-310) and proposed Authorized work times in saltwater areas rule (220-660-330). Governments are issued 21.0 percent of HPAs subject to these two proposed rules.

Governments and Single family residents continue to be the two applicant groups with the majority of the HPAs subject to the proposed rule for nearly all other proposed rules except Fish passage improvement structures (220-660-200). With Fish passage improvement structures Governments are still issued the most (37.0 percent) of all HPAs however the Commercial/Industrial and Agriculture & Forestry applicant group receive 30.0 percent and 25.0 percent of the HPAs, respectively.

Table 5. Estimated Five-Year Average Annual Number of HPAs by Rule and Applicant Group, Ordered by Volume, 2008-2012.

Proposed WAC Sections		Agri. & Forestry	Commercial /Industrial	Govt	Multiple Family Use	Non-Profit Agency		Single Family Residence	Grand Total	Percent of Total
Number	Title					Private	Public			
220-660- 190	Water crossing structures	159	133	393	9	17	4	95	810	32%
	% by applicant	*20%*	*16%*	*49%*	*1%*	*2%*	*0%*	*12%*	*100%*	
220-660-310	Tidal reference areas	7	36	104	13	19	3	319	501	20%
	% by applicant	*1%*	*7%*	*21%*	*3%*	*4%*	*1%*	*64%*	*100%*	
220-660-330	Authorized work times in saltwater areas	7	36	104	13	19	3	319	501	20%
	% by applicant	*1%*	*7%*	*21%*	*3%*	*4%*	*1%*	*64%*	*100%*	
220-660-100	Freshwater habitats of special concern	20	17	162	5	11	2	111	328	13%
	% by applicant	*6%*	*5%*	*49%*	*2%*	*3%*	*1%*	*34%*	*100%*	
220-660-140	Res. & public rec docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas	12	23	33	14	16	1	228	327	13%
	% by applicant	*4%*	*7%*	*10%*	*4%*	*5%*	*0%*	*70%*	*100%*	
220-660-320	Saltwater habitats of special concern	6	32	83	12	16	1	192	342	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*5%*	*0%*	*56%*	*100%*	
220-660-340	Intertidal forage fish spawning bed surveys	6	30	82	12	15	1	190	336	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*4%*	*0%*	*57%*	*100%*	
220-660-350	Seagrass and macroalgae habitat surveys	6	32	83	12	16	1	192	342	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*5%*	*0%*	*56%*	*100%*	
220-660-200	Fish passage improvement structures	294	361	445	1	31	6	57	1,195	9%
	% by applicant	*25%*	*30%*	*37%*	*0%*	*3%*	*1%*	*5%*	*100%*	
220-660-300	Mineral prospecting					5	2	1,130	1,137	9%
	% by applicant	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*99%*	*100%*	
220-660-170	Dredging in freshwater areas	78	46	619	6	47	17	181	994	8%
	% by applicant	*8%*	*5%*	*62%*	*1%*	*5%*	*2%*	*18%*	*100%*	
220-660-220	Large woody material placement, repositioning, and removal in freshwater areas	63	51	479	15	92	13	191	904	7%
	% by applicant	*7%*	*6%*	*53%*	*2%*	*10%*	*1%*	*21%*	*100%*	
220-660-370	Bank protection in saltwater areas	7	34	142	13	23	3	527	749	6%
	% by applicant	*1%*	*5%*	*19%*	*2%*	*3%*	*0%*	*70%*	*100%*	

Table 7. Quantified and Qualified Estimated Costs of Implementing Proposed Rule Changes

Proposed Section Change		Est. Historical Permits	Econ. Impact	Estimated Annual HPA		Estimated Annual HPA		DRAFT Cost per HPA		DRAFT Cost Extended		Notes
Number	Title			Low	High	Low	High	Low	High	Low	High	
		(%)		(%)	(%)	(#)	(#)	($s)	($s)	($ 000s)	($ 000s)	
220-660-040	Applicability of hydraulic project approval requirements	0.0%	⊕	0.0%	0.0%	0	0	N/E	N/E	N/E	N/E	(i)
220-660-050	Procedures — hydraulic project approvals	N/E	⊕	N/E	N/E	526	1,176	-$150	-$150	-$79	-$176	(ii)
220-660-080	Mitigation requirements for hydraulic projects	N/E	◒	9.0%	15.0%	325	390	N/E	N/E	N/E	N/E	(iii)
220-660-110	Authorized work times in freshwater areas	N/E	⊕	N/E	N/E	233	350	N/E	N/E	N/E	N/E	(i)
220-660-120	Common freshwater construction provisions	80.0%	◒	72.0%	88.0%	233	264	0%	0%	$0	$0	(iv)
220-660-130	Streambank protection and lake shoreline stabilization	N/E	◒	N/E	N/E	325	390	N/E	N/E	N/E	N/E	(v)
220-660-170	Dredging in freshwater areas	7.8%	◒	7.0%	8.6%	4	4	N/E	N/E	N/E	N/E	(iv)
220-660-190	Water crossing structures	31.8%	◒	28.6%	35.0%	146	178	N/E	N/E	N/E	N/E	(iv)
220-660-230	Beaver dam management	1.1%	⊕	1.0%	1.3%	26	32	N/E	N/E	N/E	N/E	
220-660-300	Mineral prospecting	8.9%	⊕	8.0%	9.8%	205	250	N/E	N/E	N/E	N/E	
220-660-350	Seagrass and macroalgae habitat surveys	13.4%	●	12.1%	14.8%	308	377	$1,200	$10,000	$370	$3,770	(vii)
220-660-360	Common freshwater construction provisions	80.0%	◒	72.0%	88.0%	233	264	0%	0%	$0	$0	(iv)
220-660-410	Dredging in saltwater areas	0.6%	◒	0.5%	0.6%	0	0	0%	0%	$0	$0	(vi)
Total of estimated quantified impacts										**$291**	**$3,594**	

N/A = Not Applicable; N/E = Not Estimated

(i) Unable to estimate the number of HPAs, also costs savings relatively small.

(ii) Number of HPAs estimated as the difference between the GHPAs issued and the number of individual projects completed under the GHPA. Cost conservatively estimated as the cost of the permit, not including labor to prepare the permit application.

(iii) Mitigation of the HPA applicants exempt from 404 permits, the cost of mitigation is project specific.

(iv) Sources: (a) Guy, 2011; (b) Stroud, 2011; (c) Kaczmarek, 2011; (d) Fabricatros and Manufactures Association; (e) Keidle, 2011. The number of HPAs was estimated where the number of applications is only those where Project_Environ = Freshwater or Marine as appropriate and applicant group = Agric & forestry. Costs are the percent increase in construction costs for material that complies with the proposed rule.

(v) Unable to estimate the number of HPAs, also costs savings would range widely based on project specifics.

(vi) Potential impact for HPAs where applicant is exempt from a 404 permit, e.g. farming, ranching, silviculture and projects costs vary widely.

(vii) Swarts,2014, Thurston, 2014.

4 Small Business Economic Impact Statement

The Regulatory Fairness Act, in RCW 19.85.040, directs that

> *To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules …*

In RCW 19.85.020 (3) "Small business" is defined as

> *… any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.*

None of the proposed rule changes would have a disproportionate cost impact on small businesses.

Section 2

Global Change

"Fish" is changed to "fish life" unless the language is specific to finfish. (Environmental Coalition)

"Fish and shellfish" is changed to "fish life". (Environmental Coalition)

"Fish habitat" is changed to "fish life habitat". Fish life habitat is defined. This definition is the same as the CR-102 definition for "fish habitat". (Environmental Coalition)

"Eelgrass/macroalgae habitat survey" is changed to "seagrass/macroalgae habitat survey". (Environmental coalition)

"Fish and shellfish and their habitats" is changed to "fish life and the habitat that supports fish life populations." (WDFW)

Add the Following to Section 030 Definitions

<u>030(20) "Channel bed width" means the width of the bankfull channel, although bankfull may not be well defined in some channels. For those streams which are non-alluvial or do not have floodplains, the channel width must be determined using features that do not depend on a floodplain.</u> (WFPA)

<u>030(106) "No-net-loss" means:
(a) Avoidance or mitigation of adverse impacts to fish life; or
(b) Avoidance or mitigation of net loss of habitat functions necessary to sustain fish life; or
(c) Avoidance or mitigation of loss of area by habitat type.
Mitigation to achieve no-net-loss should benefit those organisms being impacted.</u> (WDFW)

Amend the Following Definitions in Section 030 Definitions

(030)(30) "Critical food fish or shellfish habitats" means those habitats that are essential to fish life. These habitats include habitats of special concern listed in WAC 220-660-120 and 220-660-330 ~~and habitats for priority fish and shellfish~~.

(030)(51)" Fish fife habitat" 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. (Environmental Coalition)

030~~(61)~~(62) "Freshwater area" means those state waters and associated beds below (waterward of) the ordinary high water line that are upstream of stream and river mouths. "Freshwater areas" also include all lakes, ponds, and tributary streams and surface-water-connected wetlands that provide or maintain ~~fish~~ habitat. <u>This definition does not include irrigation ditches, canals, stormwater treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans.</u> (Counties)

030~~(116)~~(118)"Protection of fish life" means avoiding, ~~and~~ minimizing and compensating for unavoidable impacts to fish life and ~~fish~~ the habitat that supports fish life populations through mitigation sequencing. (Environmental Coalition)

030~~(128)~~ (130) "Saltwater area" means those state waters with salinity as high as 35 parts per thousand of dissolved salts. It includes the associated beds below (waterward of) the ordinary high water line. Saltwater areas include estuaries and other surface water connected wetlands that provide or maintain ~~fish~~ habitat. Salinity in estuaries may range from 0.5 to 30 parts per thousand of dissolved salts. This definition does not include irrigation ditches, canals, stormwater treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans. (Counties)

030~~(149)~~ (151) "Watercourse", "river" or "stream" means any portion of a stream or river channel, bed, bank, or bottom waterward (waterward of) of the ordinary high water line of waters of the state. "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 fish habitat downstream. "Watercourse" also means waters that flow intermittently or that fluctuates in level during the year, and the term applies to the entire bed of such waters whether or not the water is at peak level. A "watercourse" includes all surface-water-connected wetlands that provide or maintain fish habitat. This definition does not include irrigation ditches, canals, stormwater treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans. (WDFW)

Amendment to Section 050 Procedures – Hydraulic project approvals

050(2) Fish life concerns: Construction and other work activities in or near waterbodies can kill or injure fish life ~~or shellfish~~ directly and can damage or destroy ~~their~~ habitat that supports fish life populations. Damaged or destroyed habitat can continue to cause lost fish ~~life~~ production ~~of fish and shellfish~~ for as long as the habitat remains altered. HPAs help ensure ~~reduce the impacts of~~ construction and other work is done in a way that protects fish life. ~~to fish, shellfish, and their habitat~~. (WDFW)

050(3)(a) The department issues a standard HPA when a hydraulic project does not qualify for an emergency, imminent danger, chronic danger, expedited or pamphlet HPA. An individual ~~regular~~ standard HPA is limited to a single project site. Special types of standard HPAs may cover multiple project sites. (Environmental Coalition)

050(3)(b)(iii)(C) The general HPA will include a requirement that notice be given to the department before scheduled maintenance or other activities utilizing heavy equipment begin. The department may waive this requirement if the permittee and department meet annually to review scheduled activities for the upcoming year. (WDFW)

Amendments to Section 080 Mitigation requirements for hydraulic projects

080(3)(c) All work subject to this chapter must achieve no net loss through a sequence of mitigation actions. (Tribes)

080(4)(b) When compensatory mitigation is needed to offset impacts, the department prefers compensatory mitigation actions that restore impacted functions on-site or immediately adjacent to the impact site. If mitigation actions on-site or at an adjacent site cannot mitigate the project impacts, then the department prefers mitigation actions at another location benefit the same habitat types and same fish life populations as those impacted by the project. (Tribes)

080(4)(c) The department may not limit the scope of compensatory mitigation options to areas on or near the project site, or to habitat types that are same type as those on the project site. The department must fully review and give due consideration to compensatory mitigation proposals that improve overall habitat functions and values ~~of~~ in the watershed for the affected fish life populations at the project site. At the request of the project proponent, the department must also accommodate the mitigation needs of the infrastructure or non-infrastructure development, including proposals or portions of proposals that are explored or developed in RCW 90.74.040. However, the Department will not approve compensatory mitigation that does not provide equal or better fish life habitat functions and values. (Tribes and Environmental Coalition)

080(4)(d) The department will evaluate mitigation credits and debits on a scientifically valid measure of fish life habitat function, value, and quantity ~~such as the habitat equivalency analysis, habitat evaluation procedure or other method acceptable to the department~~. Compensatory mitigation must compensate for temporal losses, uncertainty of performance, loss of habitat quantity and differences in habitat functions, types, and value. (Tribes)

080(4)(e) The department will consider the use of credits from an approved programmatic option such as a state or federal certified fish conservation bank, a joint 404/401 mitigation and fish conservation bank, or in-lieu fee program as a form of compensation only after the standard mitigation sequencing has been applied at the impact site. These credits should benefit the same fish life species or populations ~~stocks or fish life species~~ as those impacted by the hydraulic project. (Tribes)

080(4)(f) For calculating compensatory mitigation requirements under this chapter, the environmental baseline is habitat conditions at the time the HPA application is submitted. However, this baseline does not apply to hydraulic projects illegally constructed. Illegally constructed does not include structures that predate the hydraulic code or structures that were previously authorized under past versions of the hydraulic code. (WSDOT)

080(5)(a) The department may require a mitigation plan for projects with ~~unavoidable adverse impacts and those with~~ ongoing, complex, and experimental mitigation actions. (Ports)

080(5)(d)(i) The relative value of the mitigation for the target fish life species or ~~stocks~~ populations, in terms of the function, value, and quantity of habitat; (Tribes)

080(5)(d)(ii) The compatibility of the proposal with broader resource management and habitat management objectives and plans, such as existing resource management plans, species recovery plans and associated habitat restoration strategies, watershed plans, critical areas ordinances, the forestry riparian easement program, the riparian open space program, the family forest fish passage program, and shoreline master programs; (Tribes)

080(5)(d)(vi) The significance of any negative impacts to non-target fish life species and populations ~~stocks, or resources~~. (Tribes)

Amendments to Section 100 Freshwater habitat of special concern

100(1)(a) ~~There are ninety-one species of fish in Washington: Fifty species of native fish and forty-one introduced fish species. Freshwater habitats of special concern are listed in WAC 220-660-120 and 220-660-330, and include priority habitats in the priority habitats and species program. These~~ Freshwater habitats of special concern provide essential functions important in the developmental life histories of twenty-two priority fish species. Priority fish species include species that are listed under state and federal endangered species laws, and species of recreational, commercial, or tribal importance. (WDFW)

Amendment to Section 110 Authorized work times in freshwater areas

110(1) The department authorizes work during less critical times of the year to reduce the risk of impacts to fish life at ~~critical~~ certain life stages. In-water work is not allowed during critical periods of the year unless a person can implement mitigation measures to eliminate risk to fish life. (WDFW)

Amendment to Section 120 Common freshwater construction provisions

120(4)(d) Limit the removal of native vegetation to one side of the channel to maintain the best shade coverage. Where possible, locate the project access site to minimize the need to remove woody vegetation. Woody vegetation greater than four ~~six~~ inches diameter that must be removed must be marked in the field by the applicant and specifically approved for removal by the department. (Tribes)

120(5)(e) Equipment used in or near water must use vegetable-based lubricants. The department may waive this requirement for a small project that has minimal use of equipment in or near the water provided the duration project is forty-hours or less. (WSDOT)

120(12) (f) The department will require all person(s) removing fish from a job site to follow an approved protocol. An approved protocol is available on the department website or a person may submit another protocol with their application. The department will approve the alternate protocol if it provides equal or better fish protection. The protocol will be authorized by the department in the HPA. (Tribes)

120(13)(j) The department must approve species composition, planting densities and maintenance requirements for replanting on a site-specific basis. (Tribes)

Amendments to Section 130 Stream bank protection and lake shoreline stabilization

WAC 220-660-130 Stream bank protection and lake shoreline stabilization. ~~Appropriate~~ Suitable methods to ~~design stream bank structures~~ identify and select an appropriate streambank protection technique are available in the department's *Integrated Streambank Protection Guidelines*, as well as other published manuals and guidelines. (Tribes)

130(3)(a) The department may require a person to submit a qualified professional's rationale with the HPA application for a new structure or a replacement structure extending waterward of the existing structure or bankline. This requirement does not apply to projects that address ~~localized~~ constriction and drop/weir scour. The rationale for the proposed technique must include: (Tribes and WSDOT)

Amendment to Section 140 Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas.

140(1) Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings ~~that are~~ usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven, jacked, or cast vertically into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage. (WDFW)

Amendment to Section 170 Dredging in freshwater areas

170(3)(c) The department may require a pre-project channel survey or assessment by a qualified professional to determine the root causes of a sediment deposition problem and the potential channel changes that may result from dredging. This provision does not apply to maintenance dredging of navigational channels and berthing areas and boat ramp and boat launch approaches. (Ports)

Amendment to Section 180 Sand and gravel removal

180(3)(a) Limit sand and gravel removal to exposed bars. Sand and gravel removal must not result in lowering the average channel cross-section profile either in the work area or downstream of it. ~~The department may authorize removing additional sand and gravel, including from wetted portions of the channel, when the project is an integral part of a department-approved comprehensive flood control plan.~~ (Tribes)

Amendments to Section 190 Water Crossings

WAC 220-660-190 Water crossing structures. Appropriate methods to design water crossing structures are available in the department's Water Crossing Design Guidelines, or other published manuals and guidelines. A list of approved manuals and guidelines is on the department's website. (WSDOT)

This section applies only to water crossings over fish-bearing waters. Crossings on streams with no fish must be designed to pass ~~the 100-year recurrence interval flood flow,~~ wood, and sediment expected in the stream reach to reduce the risk of catastrophic failure of the crossing. Water crossing structures on non-fish streams in the forest environment designed to pass the 100-year flood flow with debris likely to be encountered meet this standard. (WSDOT and WFPA)

An HPA is required for all construction or repair/replacement of any structure that crosses a stream, river, or other water body regardless of the location of the proposed work relative to the OHWL of state waters. An HPA is also required for bridge painting and other maintenance where there is potential for paint, sandblasting material, sediments, or bridge parts to fall into the water. An HPA is not required for utility crossings attached to bridge structures. (WDFW)

190(1) Description: Water crossings are structures constructed to facilitate the movement of people, animals, or materials across or over rivers and other bodies of water. These structures include bridges, culverts, fords, and conduits. This ~~chapter~~ section covers bridges, culverts, and fords.; WAC 220-660-270 covers conduits. Generally, people use bridges to cross over larger streams and rivers, or over unstable channels; they use culverts to cross over smaller streams and they use fords when other stream crossing options would result in a greater impact to fish life and the t~~heir~~ habitat that supports fish life populations. (WDFW)

190(2) (a) A person must design water crossing structures in fish-bearing streams to allow fish to move freely through them at all flows when fish are expected to move. All water crossings must retain upstream and downstream connection in order to maintain expected channel processes. These processes include the movement and distribution of wood and sediment and ~~the~~ shifting ~~of~~ channel patterns. Water crossings that are too small in relation to the stream can block or alter these processes, although some encroachment of the floodplain and channel migration zone will be allowed when it can be shown that such encroachment has minimal impacts to fish life and the t~~heir~~ habitat that supports fish life populations. (WDFW)

190(3)(b) ~~The water crossing design must ensure that upstream and downstream channel processes and functions commonly associated with the type of channel found at the site are unconstrained by the structure so they do not cause discernible impacts to fish life~~. The water crossing structure must be designed to avoid and minimize measurable impacts to the expected channel functions and processes found at the site, or mitigate for impacts to them. The department will make an exception where there are human-made features in the floodplain that are outside the control of the applicant and they are unlikely to be removed. By complying with the provisions under subsections (4) and (6) of this section, the applicant is assumed to provide these processes and functions. (WSDOT)

190(3)(c)(i) Similar slope: The slope should be that of a stable ~~(equilibrium)~~ channel ~~and not over-steepened~~ that would fit within the geomorphic context of the reach. (WSDOT)

190(3)(d) A person may propose ~~an~~ one of the following alternative crossing design methods instead of complying with the provisions under subsections (4) and (6) of this section ~~when the following circumstances exist~~: (WSDOT)

190(3) (c) A bridge over a watercourse with an active floodplain must be designed ~~have a span wide enough~~ to prevent a significant increase in the main channel average velocity (a measure of encroachment) The bridge is defined as the main bridge span(s) plus floodplain relief structures and approach road overtopping. This velocity must be determined at the 100-year flood flow or the design flood flow approved by the department. The significance threshold should be determined by considering bed coarsening, scour, backwater, floodplain flow, and related biological and geomorphological effects typically evaluated in a reach analysis.

190(4)(d) A person must design ~~(size)~~ the bridge to account for the lateral migration expected to occur during the bridge's lifespan ~~to minimize the need for bank armoring~~. The department ~~will~~ may approve encroachment into the ~~channel migration zone~~ expected pathway of lateral migration if ~~the mitigation sequencing~~ it can be shown to avoid or minimize impacts to fish life and the ~~their~~ habitat that supports fish life populations. (WSDOT)

190(4)(f) The design must have at least three feet of clearance between the bottom of the bridge structure and the water surface at the 100-year peak flow~~. The department may grant an exception based on~~ or engineering justification ~~provided by the applicant~~ for sufficient clearance that allows for the free passage of anticipated debris. (The calculation of water surface elevation includes the main bridge span(s) plus floodplain relief structures and approach road overtopping) (WSDOT)

190(3)(g) The bridge design must minimize ~~avoid~~ the need for scour protection. Where mid-channel piers are necessary, design them so no additional scour protection is required. If scour protection is unavoidable, the design must minimize the scour protection to the amount needed to protect piers and abutments. The design must specify the size and placement of the scour protection so it withstands expected peak flows.

190(6)(a)(iii) The stream simulation culvert must be set at the same gradient as the prevailing stream gradient unless engineering justification for an alternative slope is approved by the department. (WFPA)

190(6)(a)(v) The stream simulation culvert must be countersunk a minimum of thirty percent and a maximum of fifty percent of the culvert rise, but not less than two feet. ~~In the case of box and bottomless culverts, depth of culvert fill must be adequate to accommodate~~ Alternative depths of culvert fill may be accepted with engineering justification that considers channel degradation and total scour. (WSDOT)

190(6)(b)(iii)(E)(II) The culvert will fill quickly because of the ~~frequent~~ high rate of sediment transported through the culvert and will not cause excessive cutting or slumping of the upstream channel. (WSDOT)

190(7)(c) Temporary culverts must provide unimpeded fish passage in locations where fish passage concerns exist. The department may approve a temporary culvert that does not meet all fish passage

criteria in site-specific situations. These situations may include streams where there is limited fish movement and presence, and where the use of a temporary culvert will result in lower impacts over the long-term. (WFPA)

190(13) Permanent removal of a ~~W~~ water crossing (abandonment): (WDFW)

190(13)(a) When removing a ~~W~~ water crossing ~~removal~~ without replacing it, a person must ~~be compliant~~ comply with the following provisions. In all instances a person must protect the job site from erosion and plant vegetation as necessary to restore the banks and other areas disturbed during construction or removal at the site. (WSDOT)

Amendments to Section 200 Fish passage improvement structures

200(2) Barriers can block fish from using upstream spawning and rearing habitat. The main goal is to remove 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 possible to remove a barrier, ~~fishways~~ a fish passage improvement structure may be an alternative mitigation measure. The department does not generally recommend using fish passage improvement structures ~~fishways~~ because they can be partial barriers to fish passage and generally require maintenance. Fish passage improvement structures that mainly pass one species or class of fish may unintentionally limit the passage of other species. (WDFW)

200(4)(b) The department may approve the installation of temporary ~~fishways~~ fish passage improvement structures when permanent structures are damaged or are under construction, to conduct maintenance or repair, for enhancement projects, or for seasonal water diversion structures such as irrigation diversion dams. (WDFW)

200(4)(c) Temporary fish passage improvement structures ~~fishways~~ must remain operational for the duration of the temporary obstruction and must be maintained and adjusted as needed to provide efficient passage of fish life. (WDFW)

Amendments to Section 220 Large woody material placement, repositioning and removal in freshwater areas.

220(1) (1) Description: Large woody material (LWM) is trees and tree parts larger than four inches in diameter and longer than six feet or rootwads that enter stream channels mainly from stream bank undercutting, wind throw, and slope failures. Public agencies sometimes reposition or remove large woody material to address a threat to life, the public, or property. Large woody material is also placed in streams to restore or create fish habitat. (Tribes)

220(3)(a) The department will approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. The department will require a person to place the repositioned or removed wood directly back in the channel unless it is not possible due to geological, engineering or safety

constraints. If large woody material must be removed from the channel, the department will require compensatory mitigation if the wood removal diminishes fish habitat function ~~of~~ or value. (WDFW)

Amendment to Section 270 Utility crossings in freshwater areas

270(1) Utility lines are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, and water lines from one side of a watercourse to the other. An HPA is not required for utility crossings attached to bridge structures. (WDFW)

Amendment to Section 280 Felling and yarding of timber

280(1) Timber felling includes "bucking" or cutting the felled tree into short lengths and limbing the felled tree. Yarding is the process of hauling logs from the cutting area to the landing and includes skidding (dragging the logs across the ground). There are three main kinds of yarding systems~~;~~ ground based, cable, and aerial logging. (WDFW)

Amendment to Section 320 Saltwater habitats of special concern

320(1)(vi) ~~Feeder bluffs that form and maintain forage fish spawning beaches.~~ Geomorphic processes such as sediment delivery and movement that creates and maintains habitat that supports fish life populations. (Environmental Community)

320(3)(b)(x) Macroalgae species Pacific herring use as spawning substrate. (WDFW)

320(4)(a) Hydraulic projects should be located and constructed to avoid impacts to processes that create and maintains habitat~~s~~ (geomorphic processes) that supports fish life populations in the nearshore zone. This is because impacts to geomorphic processes are difficult to mitigate.(Environmental Community)

Amendment to Section 330 Authorized work times in saltwater areas

330(3)(b) Tidal Reference Areas 1 through 17; October 15 through May 15 for projects in or adjacent to juvenile lingcod settlement and nursery areas. April 1 through December 31 for pile driving work in or adjacent to lingcod nests. (WDFW)

330(3)(e) Juvenile Salmonid Migration, Feeding and Rearing Areas Tidal Reference 4 - August 1 - February 15 for all work except dredging in all areas except Commencement Bay. September 1 - February 15 for dredging in all areas except Commencement Bay. July 15 – February 15 for all work in Commencement Bay. (Port of Tacoma)

330(3)(f) If the surf smelt spawning season for the project location is six months or longer, the department may permit work outside of the authorized work times if an intertidal forage fish spawning bed survey complies with the following~~s~~: (WDFW)

330(3)(f) (i) A department trained biologist, following the ~~depart-ment's~~ departments intertidal forage fish spawning habitat survey protocol per WAC 220-660-~~370~~ 340, conducts a spawning survey at the worksite; (WDFW)

Amendment to Section 350 Seagrass and macroalgae habitat surveys

350(3)(a)(i) Constructing a new dock, mooring buoy, wharf or other over-water structure; (Environmental Community)

350(3)(a)(iii) New dredging, trenching, filling (e.g. boat ramps and fixed breakwaters), or grading; and… (Environmental Community)

350(3)(c) The department prefers that preliminary seagrass and macroalgae survey are conducted between June 1 and October 1 because the full extent of seagrass and macroalgae distribution can be more accurately mapped. But, preliminary surveys may be conducted at any time during the year. If the preliminary survey shows that the project can be located and built without impacting seagrass or macroalgae, the preliminary survey will meet the needs for mapping the project area. However, if the project footprint potentially impacts existing seagrass or macroalgae beds, the department will require an advanced survey to quantify the extent of impact and document mitigation success. (Environmental community)

Amendments to Section 360 Common saltwater construction provisions

(360)(6)(a) Operate vessels in water deep enough to prevent impacts from grounding and propeller wash to seagrass, ~~and~~ kelp and forage fish spawning beds. (WDFW)

360 (6)(b) Do not deploy anchors or spuds in seagrass, ~~and~~ kelp and forage fish spawning beds. (WDFW)

Amendments to Section 370 Bank protection in saltwater areas

.WAC 220-660-370 Bank protection in saltwater areas. RCW 77.55.141 applies to single-family residence bank protection that will not result in a permanent loss of critical food fish and shellfish habitat. RCW 77.55.021 applies to non-single-family residence bank protection and single-family residence bank protection that does not comply with the criteria in RCW 77.55.141. The department may deny bank protection applications processed under RCW 77.55.021 that do not provide proper protection of fish life. Appropriate methods to design marine bank protection are available in the department's Marine Shoreline Design Guidelines, as well as other published manuals and guidelines. (Environmental community)

370(3)(a) If the OHWL is changed since an existing bank protection structure was built, and OHWL re-establishes landward of a bulkhead protection structure, the department will consider this re-established OHWL to be the existing OHWL for permitting purposes. If ~~repairs to the existing structure are completed~~ permits are submitted for repairs within three years of the breach, the bank protection structure may be repaired or replaced in the original footprint; (Ports)

370(c)(ii) If construction of a new~~, replacement, or repaired~~ single-family residence bulkhead or other bank protection project ~~in a saltwater area~~ , or replacement or repair of an existing single family residence bulkhead or other bank protection project waterward of the existing structure will result in the permanent loss of critical food fish or shellfish habitat, the department must instead process the application under RCW 77.55.021. However, the construction of all bulkheads or other bank protection must not result in a permanent loss of surf smelt or Pacific sand lance spawning beds. (WDFW)

370(30(d) An HPA application for a new~~, replacement, or rehabilitated~~ bulkhead or other bank protection work or the replacement or rehabilitation of a bulkhead or other bank protection structure that extends waterward of the existing structure must include a site assessment, alternatives analysis and design rationale by a qualified professional (such as a coastal geologist, geomorphologist, etc.) for the proposed project and selected technique. The department may grant an exemption depending on the scale and nature of the project. In addition, this requirement does not apply to projects processed under RCW 77.55.141. This report must include: (WDFW)

Amendments to Section 380 Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in saltwater areas.

380(1) Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings ~~that are~~ usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven or jacked into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage. (WDFW)

380(3)(b)(iii) The department ~~may~~ will require a ~~eelgrass~~ seagrass/macroalgae habitat survey for all new construction unless the department can determine the project will not impact seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. A survey is not required for replacement of an existing structure within its original footprint.

380(3)(b)(iv) If artificial nighttime lighting is used in the project, use low-intensity lights that are located and shielded to prevent light from attracting fish or disrupting fish mitigation behavior, unless there are safety constraints. (Environmental Community)

380(8)(a)(i)(A) A ~~Eelgrass~~ seagrass/macroalgae habitat survey is ~~are~~ not required if an embedment-style mooring anchor is installed. The department will require the diver/installer to locate the anchor so the mooring buoy system will not damage ~~submerged aquatic vegetation~~ seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. (WDFW)

380(8)(a)(i)(B) A ~~Eelgrass~~ seagrass/macroalgae habitat survey is ~~are~~ required if a surface style mooring anchor is installed. The surveys ~~are~~ is needed to ensure the mooring buoy system is installed at a

location where ~~submerged aquatic vegetation~~ seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate will not be damaged. (WDFW)

Amendments to Section 390

390(3)(b) The department may require a ~~eelgrass~~ seagrass/macroalgae habitat survey for all new ramp or launch construction unless the department can determine the project will not impact seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. A survey is not required for replacement of an existing structure within its original footprint.

Amendments to Section 400 Marinas and terminals in saltwater areas

~~400(3)(c)(i) Locate new marinas and terminals to avoid and minimize impacts to seagrass and kelp.~~ (Environmental community)

400(3)(b) The department will ~~may~~ require a ~~eelgrass~~ seagrass/macroalgae habitat survey for a new construction unless the department can determine the project will not impact seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. A survey is not required for replacement of an existing structure within its original footprint. (WDFW)

400(4)(b) Locate and construct new marinas to avoid ~~and minimize~~ adverse impacts to surf smelt and~~,~~ Pacific sand lance spawning beds, and seagrass~~, kelp and intertidal vascular plants~~ beds. (Environmental community)

400(4)(c) Locate and construct new marinas to avoid and minimize adverse impacts to kelp and intertidal vascular plants. (Environmental community)

400(4)(h) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from attracting fish or disrupting fish migration behavior, unless there are safety constraints.

400(5) Terminal Design: Locate and construct new terminals to avoid and minimize adverse impacts to saltwater habitats of special concern. (WDFW)

400(7)(a) Operate and anchor vessels and barges so that they do not adversely impact seagrass, kelp and other ~~or~~ macroalgae species used as herring spawning substrate.

Amendments to Section 410 Dredging in saltwater areas

WAC 220-660-410 Dredging in saltwater areas. (1) Description: Dredging includes ~~removing~~ the removal of substrate to improve vessel navigation and to maintain navigation channels. Dredging is also used to cleanup contaminated sediments. (WDFW)

410(3)(b) Design projects to avoid and minimize dredging and expansions that convert intertidal to subtidal habitat. (Ports)

410(3)(d) The department requires a seagrass/macroalgae habitat survey for all new dredging. A survey is not required for maintenance dredging or deepening the channel within ~~their~~ the original dredged footprint. (Ports)

410(3)(e) Dredging must avoid adverse impacts to seagrasses, kelp, and in herring spawning beds other macroalgae used as spawning substrate, intertidal vascular plants, and geoduck tracts.

Amendment to Section 420 Artificial aquatic habitat structures in saltwater

WAC 220-660-420 Artificial aquatic habitat structures in saltwater areas. (1) Description: An artificial aquatic habitat structure is a structure that humans design and place to provide long-term alterations to saltwater bottom habitat. The structure is designed and located to contribute to fish and shellfish management. ~~Examples include a~~ Artificial reefs are one example. (WDFW)

Amendment to Section 430 Outfall and tide and flood gate structures in saltwater areas

430(4)(b) Design and locate outfalls so that the outflow or any associated energy dissipaters ~~do not cause loss of fish and shellfish~~ to avoid and minimize impacts to saltwater habitats of special concern. The department may require that energy be dissipated using one or more of the following methods, or other effective method proposed by a person and approved by the department: (WDFW)

430(4)(e) The department may will require ~~an eelgrass~~ seagrass/macroalgae habitat survey for new construction unless the department can determine the project will not impact seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. A survey is not required for replacement of an existing structure within its original footprint. (WDFW)

Amendment to Section 440 Utility crossings in saltwater areas

WAC 220-660-440 Utility crossings in saltwater areas. (1) Description: Utility crossings are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, or water underneath waterbodies. An HPA is not required for utility crossings attached to bridge structures. (WDFW)

(4)(b) The department ~~may~~ will require a ~~eelgrass~~ seagrass/macroalgae habitat survey for new construction unless the department can determine the project will not impact seagrass, kelp and in herring spawning beds other macroalgae used as spawning substrate. A survey is not required for replacement of an existing structure within its original footprint.

Amendment to Section 450 Test boring in saltwater areas

(450)(3)(c) ~~After geotechnical or sediment information has been logged, seal the bore hole and substrate surface with the appropriate material including bentonite grout, pellets, and/or chips; and~~

~~(d)~~(c) Check drilling equipment daily for leaks and maintain it in good repair to prevent lubricants, grease, and any other deleterious materials from entering state waters. (Ports)

Section 3

Hydraulic Code Rulemaking (Chapter 220.660 WAC)- Cost/Benefit Analysis & Small Business Economic Impact Statement

E113007600

Cardno ENTRIX

Shaping the Future

Document Information

Prepared for	WDFW
Project Name	Hydraulic Code Rules -Cost/Benefit Analysis & Small Business Economic Impact Statement
Project Number	E113007600
Project Manager	Susan Burke
Date	February 5, 2014

Prepared for:

Washington State Department of Fish and Wildlife

Randi Thurston
Natural Resources Building

1111 Washington St. SE

Olympia, WA 98501

Prepared by:

Cardno ENTRIX
801 2nd Avenue

Suite 700

Seattle, WA 98104 USA

Table of Contents

Appendices

Tables

Acronyms

CBA	Cost Benefit Analysis
CCA	Copper chrome arsenic
ACZA	Ammonical copper zinc arsenate
ACQ	Ammonical copper quaternary
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DNR	Washington State Department of Natural Resources
ECY	Washington Department of Ecology
FHWA	Federal Highway Adminstration
FWS	U. S. Fish and Wildlife Service
HEC	Hydrologic Engineering Center, U.S. Army Corps of Engineers
HPA	Hydraulic Project Approval
MEA	Millenium ecosystem Assessment
NMFS	National Marine Fisheries Service
NRC	National Research Council
NWP	Nationwide Permit, U.S. Army Corps of Engineers
PEIS	Draft Programmatic Environmental Impact Statement
RCW	Revised Code of Washington
SBEIS	Small Business Economic Impact Statement
SMA	Shoreline Management Act
WAC	Washington Adminstrative Code
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington Department of Transportation

Executive Summary

The Hydraulic Code Rules, except those for mineral prospecting, were last updated in 1994. The proposed rule changes will update the requirements and make them consistent with statutory, procedural, and administrative changes and current fish science and design technology. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a baseline structure for adaptive management in response to changing science and technology and/or the results of compliance and effectiveness monitoring.

This report presents the findings of both the Cost Benefit Analysis (CBA), as directed under RCW 34.05.325, and the Small Business Economic Impact Statement (SBEIS), as directed under RCW 19.85.040 of adopting the proposed rule changes.

Costs and Benefits

The estimated annual costs of the proposed rules changes, for those that could be quantified, ranges between $290 thousand to $3.6 million. Despite the number of proposed rule changes the estimated cost of adopting the rule changes is not as large as might have been expected.

Many of the proposed rule changes are consistent with or less restrictive than existing federal (e.g. U.S. Army Corps of Engineers and National Marine Fisheries Services) and State (Shoreline Management Act) regulations. Additionally the recent United States Western District of Washington ruling, United States of America v. State of Washington – No. C70 – 9213, requires state agencies to comply with some of the proposed rule changes.

The CBA focuses only on those sections of the proposed rule changes that are *not attributable* to these other existing regulation or court ruling. Further, cost estimation, even when project specifications are known, is frequently plagued with uncertainties. In estimating costs for this analysis the project specifications are not known, creating a higher degree of uncertainty. Notwithstanding this uncertainty the costs and/or savings of the proposed rule changes were quantified where possible and qualified if not possible.

The estimated annual benefits of the proposed rule changes were qualified rather than quantified. Quantifying benefits would have necessitated an estimate of the avoided fish losses, which was not done. However, several other recently completed studies have quantified benefits of both 1) avoided fish loss and 2) the broader ecosystem services created when preserving fish habitat.

The recent ECY analysis of the Water Resources Management program for the Dungeness Portion of the Elwha-Dungeness Water Resources Inventory Area 18 **estimated the annual benefit of avoided fish loss ranges between $3.8 million and $6.8 million (**ECY 2012). Broadening the type of ecosystem goods and service benefits, beyond avoided fish loss, a recently completed report entitled Valuing the Puget Sound Basin, Revealing Our Best Investments estimates the value of **fourteen goods and services provided by nature within the Puget Sound Basin. The benefits range between $9.7 billion and $83.0 billion** (Batker et.al. 2010)

Small Business Economic Analysis

The Regulatory Fairness Act, in RCW 19.85.040, directs that

> *To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules …*

In RCW 19.85.020 (3) "Small business" is defined as

> *… any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.*

None of the proposed rule changes would have a disproportionate cost impact on small businesses.

1 Background and Scope

1.1 How the Project Started

The Hydraulic Code Rules, except those for mineral prospecting, were last updated in 1994. The proposed rule changes will update the requirements and make them consistent with statutory, procedural, and administrative changes and current fish science and design technology. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a baseline structure for adaptive management in response to changing science and technology and/or the results of compliance and effectiveness monitoring.

1.2 The HPA Rule-Making Process

The Washington Department of Fish and Wildlife (WDFW) issued the Draft Programmatic Environmental Impact Statement (PEIS) on the hydraulic code rule (Chapter 220-660) Washington Administrative Code (WAC)) changes in October 2013. The Draft PEIS for the Hydraulic Code Rule changes can be viewed online at http://wdfw.wa.gov/licensing/hpa/rulemaking/ or on WDFW's Final 2013 SEPA documents webpage. WDFW received numerous thoughtful public comments on the DPEIS during the public comment period that ended December 13, 2013. The 2014 Washington State Legislature passed amendments to Revised Code of Washington (RCW) 34.05.271 that clarify how WDFW is to identify sources of information reviewed and relied upon in preparing to take a significant agency action including changes to agency rules. In response to the public comments and amendments to RCW 34.05.271, WDFW has determined it will prepare a Supplemental Draft PEIS on the proposed rule changes

WDFW reviewed the comments received on the October 2014 Draft PEIS and draft Hydraulic Code Rules. WDFW incorporated the necessary changes into the Supplemental Draft PEIS and proposed Hydraulic Code Rules. These documents will be sent to the Fish and Wildlife Commission in July 2014 along with this cost-benefit analysis and a Small Business Economic Impact Statement (SBEIS) as part of the official rule adoption process. WDFW will review and respond to all of the comments received during the adoption process in the Final Programmatic EIS and incorporate necessary changes into the proposed Hydraulic Code Rules.

1.3 Public participation and review of proposed rules

WDFW has involved the public and stakeholders in developing the updated Hydraulic Code Rules. WDFW formed a Stakeholder Advisory Group to provide comments on an initial draft of the HPA rules. This group included eighteen representatives from the construction industry, non-governmental organizations, state and federal agencies, and tribes. This group met eight times between October 31 and the end of December, 2011, receiving presentations on and discussing issues relating to one or two specific aspects of the HPA rules at each meeting. The group engaged in policy discussions about the proposed changes and the impacts to their interests, and commented on revised rule proposals prepared by WDFW. Those rule documents were also posted on the WDFW web site for comment by any reader. Three separate drafts of the revised code rules have been posted on the WDFW website along with forms to comment on the rules. The fourth draft accompanied the September 2013 PEIS. A final draft

accompanies this supplemental draft PEIS. This draft was revised based on September 2013 PEIS comments and will be finalized concurrent with the final EIS. The Fish and Wildlife Commission will consider the final draft rules and hear public testimony prior to adopting final rules in the summer of 2014.

WDFW conducted a public scoping process for this EIS in summer 2012. The scoping notice was issued June 22, 2012 and the scoping comment period ended July 16, 2012. Scoping comments were accepted by email, through an online WDFW comment website, by fax, and by mail. WDFW received thirty-one comment documents. Generally, comments provided detailed suggestions for how rule changes should address specific problems or situations, or ways the proposals should not be changed from existing rules. Few commenters stated a preference among the alternatives presented, although a leaning towards the preferred alternative was deduced from the overall tone of the comments provided. A more detailed summary of the scoping comments is provided in Appendix A.

WDFW has met one-on-one with Tribes and interested stakeholders to discuss the rule update on an ad-hoc basis since the CR-101was filed in 2011. Stakeholders include Washington Association of Counties, Association of Washington Cities, Association of Washington Business, Washington Forest Protection Association, Ports Association, Washington Department of Transportation, Ecology, and WDNR, and the environmental community. WDFW also conducted seven public meetings, one in each of the six regions and one in Olympia, in October and November 2013. The purpose of the meetings was to answer questions and gather comment on the PEIS and draft rules.

1.4 Cost Benefit Analysis and Small Business Economic Impact Statement

Prior to adopting a rule the Revised Code of Washington (RCW) 34.05.325 directs an agency to:

> *Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented…*

In addition the Regulatory Fairness Act, in RCW 19.85.040, directs that

> *To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules …*

In RCW 19.85.020 (3) “Small business” is defined as

> *… any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.*

This report presents the findings of both the Cost Benefit Analysis (CBA), as directed under RCW 34.05.325, and the Small Business Economic Impact Statement (SBEIS), as directed under RCW 19.85.040.

2 Proposed Action and Baseline

2.1 Changes under the proposed rules

The proposed rule changes will update the requirements and make them consistent with statutory, procedural, and administrative changes and current fish science and design technology. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a structure for adaptive management in response to changing science and technology and/or the results of effectiveness monitoring.

2.2 Baseline

Defining the baseline, against which to measure potential impacts of the proposed changes to the Hydraulic Code Rules, is not as simple as comparing the existing rules, last updated in 1994, to the proposed changes. Other federal and state regulatory authorities and judicial decisions dictate the design, construction and maintenance of projects located in waters of the state. If a permittee is required to follow other, existing, rule(s), regulation(s) and (standards) that are the same or more stringent, than those proposed by WDFW, then the economic impact *attributable* to WDFW's proposed rule change would be minimized, or even eliminated. For instance, comparing a road culvert designed according to the change proposed to Chapter 220-660-190 WAC, Water Crossing Structures, to an existing culvert size might increase the cost of the design and/or construction of the culvert, but the existing culvert does not satisfy the fish passage required National Marine Fisheries Service Anadromous Salmonid Passage Facility Design (see Section 2.2.1.1, below). Therefore to assign the costs of the proposed rule changes in Chapter 220-660-190 WAC would overstate the impact of the proposed rule change.

What follows is a listing of other regulations, or the regulatory backdrop, that may overlap with the changes proposed to Chapter 220-660. Included in the listing are exemptions from those other existing, rule(s), regulation(s) and (standards).

2.2.1 Federal Regulations

2.2.1.1 National Marine Fisheries Service

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) is charged by Congress to manage, conserve, and protect living marine resources within the United States Exclusive Economic Zone. NMFS also plays a supportive and advisory role in the management of living marine resources in areas under state jurisdiction. Among these living marine resources are the Pacific anadromous salmonids (salmon and steelhead) which have tremendous economic, cultural, recreational, and symbolic importance to the Pacific Northwest (NRC 1996).

As part of NMFS's management it provides criteria for culverts and bridges for waters with endangered species (NMFS, 2011). Ecological connectivity and stream simulation provide the basis of design in a manner similar to the proposed rule change. NMFS Stream simulation culvert span criteria (1.3 times bankfull width) forms a baseline for structure cost; the "embedded pipe" design method is equivalent to the "no-slope" method in proposed Chapter 220-660-190(6)(b) WAC; a preference is expressed for crossings that span (page 68)

the stream flood plain, providing long-term dynamic channel stability, retention of existing spawning areas, maintenance of food (benthic invertebrate) production, and minimized risk of failure.

Given that the NMFS guidelines are equivalent to the proposed rule change under Chapter 220-660-190(6)(b) WAC it is assumed that there is no economic impact of this proposed rule change in cases where a proposed culvert or bridge project spans water with endangered species and where the permittee is not exempt from NMFS rules.

2.2.1.2 U.S. Fish and Wildlife Service

The Washington Fish and Wildlife Office, U. S. Fish and Wildlife Service (FWS) publish protocols and standards for fish exclusion, capture, handling, and relocation. Electroshocking guidelines and references are also included in this document. It is assumed there is no economic impact in cases where projects are meeting these protocols and standards. The proposed Chapter 220-660-120 WAC is consistent with and/or less restrictive than the protocol and standards.

2.2.1.3 U.S. Department of Transportation Federal Highway Administration

Federal Highway Administration (FHWA) engineering guidelines are used by those entities receiving federal highway funding for their water crossing projects. FHWA guidelines HEC-18 (Evaluating Scour at Bridges), HEC- 20 (Stream Stability at Highway Structures), and HDS-6 (Highways in the River Environment) were written for a national audience and do not contain specific protections for fishlife. They do, on the other hand, recommend capacity and clearance criteria similar to the proposed rule change to Chapter 220-660-190(4)(a) and (f); and a recognition of geomorphic factors in crossing design in keeping with provisions of proposed rule change to Chapter 220-660-190 (4)(b), (c), and (d).

HEC 26 (Culvert Design for Aquatic Organism Passage) promotes a biological and geomorphic basis for design similar to the basis described in proposed rule change to Chapter 220-660-190 (3)(a) and (b). The culvert design methods explored in HEC 26 (a hydraulic method) would result in a culvert that is smaller than one designed using NMFS or WDFW guidelines.

Given the overlap between the proposed rule changes to Chapter 220-660-190 (4)(a)thru(d) and (f) and to Chapter 220-660-190 (3)(a) and (b) it is assumed that there is no economic impact of this proposed rule change in cases where the permittee receives funding from the FHWA.

2.2.1.4 U.S. Army Corps of Engineers

The following U.S. Army Corps of Engineers (Corps) regulations overlap with some of the proposed changes to the hydraulic rule codes.

2.2.1.4.1 Nationwide Permits in Washington State

Pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act, the Corps, is responsible for administering a Regulatory Program that requires permits for certain activities in waters of the United States. Under Section 404, the Corps regulates the discharge of dredged or fill material into waters of the United States. Under Section 10, the Corps regulates structures and/or work in or affecting the course, condition, or capacity of navigable waters of the United States.

Activities requiring Corps authorization that are similar in nature and have minimal individual and cumulative environmental impacts may qualify for authorization by a general permit, such as a nationwide permit. On February 21, 2012, the Corps issued 50 nationwide permits (the “2012 NWPs”). On March 18, 2012, the Seattle District issued regional conditions for the 2012 NWPs (Corps, 2012).

Many of the conditions in the 2012 NWP dictate the same or similar requirements as many of WDFW’s proposed rule changes. The list below identifies the proposed rule change and the corresponding Corps conditions that are similar or the same, such that there would be no costs attributed to implementing the

proposed rule changes. Exceptions would be when a 404 permit is not required, or the permittee is exempt. Exemptions are granted to certain discharges associated with normal farming, silviculture, and ranching activities, such that costs of implementing the proposed rule change for farming and ranching activities would be attributed to the proposed rule changes.

Proposed Chapter 220-660-080, Mitigation provisions for hydraulic projects. The proposed change to the rules is needed to implement new statutes and policies and clarifies when WDFW may require compensatory mitigation and establishes the baseline for measuring impacts as the existing habitat condition. The proposed change dictates similar or the same requirements as listed in the following Corps NWPs:

- NWP Specific Terms and Condition number 31, Maintenance of Existing Flood Control Facilities states (page 48):
    - *Mitigation: The district engineer will determine any required mitigation one-time only for impacts associated with maintenance work at the same time that the maintenance baseline is approved. Such one-time mitigation will be required when necessary to ensure that adverse environmental impacts are no more than minimal, both individually and cumulatively*.
- National General NWP Condition number 23, Mitigation, includes the following statement (page 81):
    - *Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:*
        - *(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).*
        - *(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.*
        - *(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement.*

Proposed Chapter 220-660-120, Common construction provisions. The proposed rule change combines the common construction requirements that apply to many types of hydraulic projects into a single section. The construction requirements are consistent with the requirements described by the Corps' NWP conditions, the names of which adequately describe their purposes:

- National General NWP Condition number 8, Adverse Effects from Impoundments
- National General NWP Condition number 9, Management of Water Flows
- National General NWP Condition number 11, Equipment
- National General NWP Condition number 14, Proper Maintenance.
- NWP Specific Terms and Conditions number 16 Return water Return Water from Upland Contained Disposal Areas…

- NWP Specific Terms and Conditions number 25 Structural Discharges
- NWP Specific Terms and Conditions number 33 Temporary Construction, Access, and Dewatering

Proposed Chapter 220-660-110, Authorized work times in freshwater areas. The proposed rule change provides work times for all project types. The proposed language is functionally equivalent, or less restrictive, than the requirements of the following NWP conditions.

- National General NWP Condition 3, Spawning Areas states:

  Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

Proposed Chapter 220-660-130, Streambank protection and lake shoreline stabilization. There are several common bank protection techniques for which there are currently no rules. The rationale for selecting a proposed technique ensures the appropriate lake or streambank treatment is selected based on site conditions, reach conditions and habitat impacts. The proposed language is functionally equivalent, or less restrictive, than the requirements of the following Corps NWP conditions.

- National General NWP Conditions number 4, Migratory Bird Breeding Areas states (page 77):

  Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

- NWP Specific Terms and Conditions number 13, Bank Stabilization, provides a relatively long list of requirements, including the following, which summarizes a portion of the proposed change to Chapter 220-660-130 (page 27):

  No material is placed in excess of the minimum needed for erosion protection

- Seattle District Regional General Condition number 3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound states: (page 10).

  Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2) cannot be authorized by a NWP.

- Seattle District Regional General Condition number 4. Bank Stabilization provides a relatively long list of requirements, including the following, which is functionally equivalent to the proposed change to Chapter 220-660-130 (page 27):

  Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances.

Proposed Chapter 220-660-140, Residential and public recreational docks, piers, ramps, floats,, watercraft lifts, and buoys in freshwater areas. The proposed rule change provides consistent and predictable rules for pile design, steel impact driving sound attenuation, watercraft lift design, mooring buoy design and residential and public recreational dock, pier, ramp, float, watercraft lift and buoy construction projects in freshwater areas.

- NWP Specific Terms and Conditions number 10, Mooring Buoys lists requirements of both Corps and other agencies (*in SMALL CAPS*) as follows (page 22):

  To minimize impacts and to expedite Endangered Species Act review, we recommend applicants complete and follow the terms and conditions detailed in the PROGRAMMATIC CONSULTATION

SPECIFIC PROJECT INFORMATION FORM FOR MOORING BUOYS LOCATED ON SEATTLE DISTRICT'S WEB PAGE, WWW.NWS.USACE.ARMY.MIL (SELECT REGULATORY/PERMITS, THEN PERMIT GUIDEBOOK, ENDANGERED SPECIES). This includes the completion and submittal of a survey of submerged aquatic vegetation (e.g., kelp and eelgrass). The appropriate survey protocols must be undertaken. These protocols can be found at the WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE WEBSITE. In addition, the CORPS' PROGRAMMATIC ESA protocols require surveying a larger area encompassing 25 feet plus the length of the moored vessels from vegetated shallows.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES has specific guidance for installation of mooring buoys on state-owned aquatic lands entitled How Do I Authorize My Mooring Buoy? at: http://www.dnr.wa.gov/recreationeducation/howto/homeowners/pages/aqr_mooring_buoy.aspx.

- NWP Specific Terms and Conditions number 11, Temporary Recreational Structures.

Proposed Chapter 220-660-150, Boat ramps and launches in freshwater areas. The proposed rule change provides consistent and predictable rules for pile design, steel impact driving sound attenuation, watercraft lift design, mooring buoy design and residential and public recreational dock, pier, ramp, float, watercraft lift and buoy construction projects in freshwater areas. The proposed rules are similar to the follow Corps NWP conditions.

- NWP Specific Terms and Conditions number 36, Boat Ramps, lists requirements for construction that are similar to the proposed rules and lists the following with respect to siting (page 55):

  Applicants should site boat ramps to avoid impacting native woody riparian vegetation, special aquatic sites (e.g., wetlands mudflats, vegetated shallows, and riffle and pool complexes) and submerged aquatic vegetation when possible

Proposed Chapter 220-660-160, Marinas and terminals in freshwater areas. The proposed rule change provides consistent and predictable rules for marina and terminal construction projects in freshwater areas. The proposed rules are similar or less restrictive for existing marinas than to the following Corps NWP conditions.

- NWP Specific Terms and Conditions number 28, Modifications of Existing Marinas, states (page 45):

  Reconfiguration of existing docking facilities within an authorized marina area. No dredging, additional slips, dock spaces, or expansion of any kind within waters of the United States is authorized by this NWP

- NWP Specific Terms and Conditions number 35, Maintenance Dredging of Existing Basins, states (page 53):

  Excavation and removal of accumulated sediment for maintenance of existing marina basins, access channels to marinas or boat slips, and boat slips to previously authorized depths or controlling depths for ingress/egress, whichever is less, provided the dredged material is deposited at an area that has no waters of the United States site and proper siltation controls are used.

Proposed Chapter 220-660-190, Water Crossing Structures. The proposed rule generally describes design criteria that will achieve the following; provide unimpeded passage for all species of adult and juvenile fishes and maintain the physical characteristics of a natural stream channel throughout the water crossing.

As will be seen in Section 3, Data Profiles, Methods and Results, water-crossing projects comprise the majority of the types of projects for which HPAs are issued. Approximately 32.0 percent of all HPAs issued from 2008 through 2012 included provisions for a water crossing structures. As such the assumption that proposed change to section 220-660-190 is no more restrictive than the following Corps

NWP conditions (and other federal requirements) was analyzed in detail (see Attachment 1). The analysis examined eight federally-funded bridges, designed and built under existing rules, to determine if the design would comply with the proposed change to Chapter 220-660-190 WAC. In summary, seven of the eight bridges would comply. In the case were the bridge design did not comply WDFW would ask the applicant to determine if there would be measurable impacts (coarsened or scoured bed, upstream or downstream effects, and lateral constraint) from the rip rap abutments which limit lateral movement.

Despite the fact that one in eight of the bridge designs would have required additional information before an HPA was issued, the assumption that the proposed change to section 220-660-190 is no more restrictive than other federal guidelines, specifically the Corps NWP conditions, was determined to be reasonable and within a range of uncertainty regarding potential impacts of the proposed rule changes.

The proposed rule changes to Chapter 220-660-190 WAC are no more restrictive than the following Corps NWP conditions

- Seattle District Regional General Condition number 5 Crossings of Water of the U.S. (page 11).

  Note 1 If stream simulation design method is not used to design the proposed watercourse crossing, the application must include justification for utilizing a different method. The stream simulation design method can be found in the "Fish Passage Technical Assistance Design of Road Culverts for Fish Passage" which can be found at WDFW's website.

- National General NWP Condition number 2, Aquatic Life Movements states (page 77):

  No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

- National General NWP Condition number 5, Shellfish Beds states (page 77):

  No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity or is a shellfish seeding or habitat restoration activity.

- National General NWP Condition number 9, Management of Water Flows. States (page 77):

  To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities…. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course; condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

- Seattle District Regional General Condition number 4, Bank Stabilization, states (page 10):

  Each notification must … Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods.

- Seattle District Regional General Condition number 5, Crossings of Waters of the United States (page11):

  If stream simulation design method is not used to design the proposed watercourse crossing, the PCN [Pre-Construction Notification] must include justification for utilizing a different method.

  The Guide then refers the applicant to the WDFW Water Crossing Design Guidelines (WDFW 2013) for more information on culvert design.

- NWP Specific Terms and Conditions number15, Coast Guard Approved Bridges, states:

  If the proposed activity involves bank stabilization work, you must meet the requirements of Seattle District Regional General Conditions 3 and 4 for bank stabilization.

Proposed Chapter 220-660-200, Fish passage improvement structures. The primary goal of the proposed rule change is to remove fish passage barriers and to ensure unimpeded passage of fish at all life stages, as well as to maintain natural channel processes and function. The proposed language is no more restrictive than the following Corps NWP conditions:

- National General NWP Condition number 2, Aquatic Life Movements states (page 77):

  No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

- National General NWP Condition number 14, Linear Transportation Projects (page 29):

  For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

Proposed Chapter 220-660-260, Outfall structures in freshwater areas. The primary goal of the proposed rule change is to construct energy dissipation structures at the landward side of buffers, to cause discharged water to infiltrate into the soil of the buffer or to sheet flow through the buffer into the stream, and to prevent the entry of adult or juvenile fish and use bioengineering methods or other department approved methods to prevent scouring. The proposed language is no more restrictive than the following Corps NWP conditions:

- Seattle District Regional General Condition number 3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound states: (page 10).

  Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2) cannot be authorized by a NWP.

- Seattle District Regional General Condition number 4. Bank Stabilization provides a relatively long list of requirements, including the following, which is functionally equivalent to the proposed change to Chapter 220-660-260 (page 27):

  Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances.

- National General NWP Condition number 43, Stormwater Management Facilities (page 63) states:

  The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the discharge will result in minimal adverse effects.

Proposed Chapter 220-660-270, Utility crossings in freshwater areas. The primary goal of the proposed rule change is to encourage trenchless crossing methods that cause very little disturbance to the streambed and banks such as high-pressure directional drilling or punch and bore crossings. Should that not be possible then the proposed language provides design requirements that will minimize impacts to waterways. The proposed language is no more restrictive than the following Corps NWP conditions:

- National General NWP Condition number 12, Utility Line Activities (page 24) states:

  The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the discharge will result in minimal adverse effects.

Proposed Chapter 220-660-350, Seagrass and macroalgae habitat surveys. The proposed rule change requires surveys for seagrass and macroalgae habitat to ensure protection of these important habitats. The proposed language is no more restrictive than the following Corps NWP conditions:

- Nationwide permit specific terms and conditions number 10, Mooring Buoys (page 22) states:

  NOTE 2: To minimize impacts and to expedite Endangered Species Act review, we recommend … completion and submittal of a survey of submerged aquatic vegetation (e.g., kelp and eelgrass). … In addition, the Corps' programmatic ESA protocols require surveying a larger area encompassing 25 feet plus the length of the moored vessels from vegetated shallows.

Proposed Chapter 220-660-360, Bank protection in saltwater areas. The proposed rule change specifies design criteria for bulkheads and other bank protection projects that will protect the beaches where spawning, mitigation, feeding and rearing occur and the nearshore ecosystem processes that form and maintain fish habitat. The proposed language is no more restrictive than the following Corps NWP conditions:

- National General NWP Conditions number 4, Migratory Bird Breeding Areas states (page 77):

  Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

- NWP Specific Terms and Conditions number 13, Bank Stabilization, provides a relatively long list of requirements, including the following, which summarizes a portion of the proposed change to Chapter 220-660-360 (page 27):

  No material is placed in excess of the minimum needed for erosion protection

- Seattle District Regional General Condition number 3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound states: (page 10).

  Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2) cannot be authorized by a NWP.

- Seattle District Regional General Condition number 4. Bank Stabilization provides a relatively long list of requirements, including the following, which is functionally equivalent to the proposed change to Chapter 220-660-130 (page 27):

  Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances.

Proposed Chapter 220-660-380, Boat ramps and launches in saltwater areas. The proposed rule change specifies several design and maintenance criteria that reduce the disturbance or direct removal of

aquatic vegetation. The proposed language is no more restrictive than the following Corps NWP conditions:

- NWP Specific Terms and Conditions number 36, Boat Ramps, lists requirements for construction that are similar to the proposed rules and lists the following with respect to siting (page 55):

  Applicants should site boat ramps to avoid impacting native woody riparian vegetation, special aquatic sites (e.g., wetlands mudflats, vegetated shallows, and riffle and pool complexes) and submerged aquatic vegetation when possible

Proposed Chapter 220-660-390, Marinas and terminals in saltwater areas. The proposed rule change specifies several design and maintenance criteria that reduce the impacts marinas and terminals can have on the physical processes that create or maintain fish habitat such as; the light regime, hydrology, substrate conditions, and water quality.. The proposed language is no more restrictive than the following Corps NWP conditions:

- NWP Specific Terms and Conditions number 35, Maintenance Dredging of Existing Basins, states (page 53):

  Excavation and removal of accumulated sediment for maintenance of existing marina basins, access channels to marinas or boat slips, and boat slips to previously authorized depths or controlling depths for ingress/egress, whichever is less, provided the dredged material is deposited at an area that has no waters of the United States site and proper siltation controls are used.

Proposed Chapter 220-660-420, Outfall and tide and flood gate structures in saltwater areas. The proposed rule change reflects current fish science and technology measures to avoid or minimize adverse modifications to fish and shellfish habitat from outfall and tide gate structures. The proposed language is no more restrictive than the following Corps NWP conditions:

- Seattle District Regional General Condition number 4. Bank Stabilization provides a relatively long list of requirements, including the following, which is functionally equivalent to the proposed change to Chapter 220-660-420 (page 27):

  Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances.

- NWP Specific Terms and Conditions number 7, Outfall Structures and Associated Intake Structures.

- National General NWP Condition number 43, Stormwater Management Facilities

Proposed Chapter 220-660-430, Utility crossings in saltwater areas. The proposed rule change describes design and construction methods to avoid or minimize trenching through banks and the beach which alters habitat and substrate characteristics and hence their productivity. The proposed language is no more restrictive than the following Corps NWP conditions as it applies to the appropriate geographic and/or user:

- NWP Specific Terms and Conditions number 12, Utility Line Activities

- National General NWP Condition number 22. Designated Critical Resource Waters

Proposed Chapter 220-660-440, Boring. The proposed rule change reflects current fish science and technology measures to avoid or minimize adverse modifications to fish and shellfish habitat from boring activities. The proposed language is no more restrictive than the following Corps NWP conditions as it applies to the appropriate geographic and/or user:

- NWP Specific Terms and Conditions number 6, Suitable Material
- National General NWP Condition number 22. Designated Critical Resource Waters

2.2.1.4.2 Programmatic Biological Evaluation for 10 Activities in the State of Washington for Species Listed or Proposed by National Marine Fisheries Service and U.S. Fish and Wildlife Service under the Endangered Species Act

The Regulatory Branch of the U.S. Army Corps of Engineers, under its authorities pursuant to the Rivers and Harbors Act of 1899, the Federal Water Pollution Control Act, as amended (Clean Water Act), and the Marine Protection, Research, and Sanctuaries Act of 1972 (Ocean Dumping Act), evaluates applications for permits for work in waters of the U.S. [33 CFR Parts 320 through 330; 40 CFR Part 230]. Approvals or other decisions in the permit process constitute federal actions, and the Corps must ensure that its actions are in compliance with other major federal statutes and regulations. Among those is the federal Endangered Species Act of 1973, as amended. Under Section 7 of the ESA.

This Programmatic Biological Evaluation (PBE) covers 10 activities that may affect but are Not Likely to Adversely Affect (NLAA) the listed species, Distinct Population Segments (DPSs)/Evolutionarily Significant Units (ESUs) or designated critical habitat, jeopardize the continued existence of proposed species, or destroy or adversely modify proposed critical habitat and identifies measures to avoid or minimize adverse effects (Corps, 2008).

In the event that a listed species is present in the area where a project requires a hydraulic permit the Corps PBE may hold the permittee to a higher requirement that any of the following proposed changes to the hydraulic rule code.

Proposed Chapter 220-660-120, Common freshwater construction provisions

Proposed Chapter 220-660-130, Streambank protection and lake shoreline stabilization

Proposed Chapter 220-660-140, Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas (for piling replacement and mooring buoys)

Proposed Chapter 220-660-160, Marinas and terminals in freshwater areas

Proposed Chapter 220-660-180 Sand and gravel removal (stream and habitat restoration)

Proposed Chapter 220-660-190 Water crossings (stream and habitat restoration)

Proposed Chapter 220-660-200 Fish passage improvement structures (stream and habitat restoration)

Proposed Chapter 220-660-210 Channel relocation and realignment (stream and habitat restoration)

Proposed Chapter 220-660-220 Large woody material placement, repositioning, and removal in freshwater areas (stream and habitat restoration)

Proposed Chapter 220-660-250 Water diversions and intakes (stream and habitat restoration)

Proposed Chapter 220-660-360, Common construction provisions for saltwater areas

Proposed Chapter 220-660-370, Bulkheads and other bank protection in saltwater areas

Proposed Chapter 220-660-380, Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas (for piling replacement and mooring buoys)

Proposed Chapter 220-660-400, Marinas and terminals in saltwater areas

2.2.1.4.3 Approved work windows for fish protection

The Regulatory Branch of the U.S. Army Corps of Engineers (Corps) evaluates applications for permits for work in waters of the U.S. [33 CFR Parts 320 through 330; 40 CFR Part 230]. The Corps regulatory program is based on its authorities pursuant to the Rivers and Harbors Act of 1899, the Federal Water Pollution Control Act, as amended (Clean Water Act), and the Marine Protection, Research, and Sanctuaries Act of 1972 (Ocean Dumping Act). At the conclusion of the evaluation process, the Corps decides to either issue or deny the permit for the proposed work.

The Corps permit decision is considered a Federal action that must comply with the Endangered Species Act (ESA). The ESA is administered by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). NMFS has ESA jurisdiction over salmon, other marine fish, marine mammals, and marine reptiles. USFWS has ESA jurisdiction over birds, terrestrial animals, plants, amphibians, and most freshwater fish. Under Section 7 of the ESA, the Seattle District Corps must consult with the NMFS and the USFWS on its permit program on any permit application for proposed work which may affect threatened or endangered species, or their designated critical habitat. With listings of many fish species as threatened or endangered, the majority of permit applications in the state of Washington will likely involve some elements that require Section 7 evaluation. In addition to fish, other threatened and endangered plants and animals occur in various areas of the state.

In the event that a listed species is present in the area where a project requires a hydraulic permit the Corps work windows (Corps, a) may hold the permittee to a higher requirement that any of the following proposed changes to the hydraulic rule code and therefore the economic impact attributed to the proposed rule code would be minimized or zero.

Proposed Chapter 220-660-110, Authorized work times in freshwater areas.

Proposed Chapter 220-660-330, Authorized Work Times in Saltwater Areas

2.2.1.4.4 United States District Court Western District of Washington at Seattle Permanent Injunction Regarding Culvert Correction, No. C70-9213, Subproceeding No. 01-1

The injunction orders (U.S. District Court, 2013)

> *… the State of Washington, the Washington State Department of Transportation (WSDOT), the Washington State Department of Fisheries and Wildlife (WDFW), the Washington State Department of Natural Resources (DNR), and the Washington State Parks and Recreation Commission (State Parks), their agents, officers, employees, successors in interest, and all persons acting in concert or participation with any of them (Defendants), are permanently enjoined and restrained to obey, to respect, and to comply with all rulings of this Court*
>
> *…Within six months of the date of this injunction, the Defendants, in consultation with the Plaintiff Tribes and the United States, shall prepare a current list, or lists if different by agency (the List), of all culverts under state-owned roads within the Case Area existing as of the date of this injunction, that are salmon barriers. In compiling the List, the Defendants shall use the barrier assessment methodologies in the Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual (WDFW 2000) (WDFW Assessment Manual).*
>
> *…In carrying out their duties under this injunction, the Defendants shall design and build fish passage at each barrier culvert on the List in order to pass all species of salmon at all life stages at all flows where the fish would naturally seek passage …*
>
> *…Any new culvert constructed by the Defendants in the future on salmon waters within the Case Area and any future construction to provide fish passage at State barrier culverts on such waters shall be done in compliance with the standards set out in this injunction…*

…fish passage shall be achieved by (a) avoiding the necessity for the roadway to cross the stream, (b) use of a full span bridge, (c) use of the "stream simulation" methodology described in Design of Road Culverts for Fish Passage (WDFW, 2003) or Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road - Stream Crossings (U.S. Forest Service, May 2008), which the parties to this proceeding have agreed represents best science currently available for designing culverts that provide fish passage.

The injunction overlaps with the requirements of the following proposed changes to the hydraulic rule code:

Proposed Chapter 220-660-190, Water Crossing Structures. The proposed rule changes generally describe design criteria that will achieve the following; provide unimpeded passage for all species of adult and juvenile fishes and maintain the physical characteristics of a natural stream channel throughout the water crossing.

2.2.2 Washington State

2.2.2.1 Shoreline Management Act of 1971, Chapter 90.58 RCW

WAC Chapter 173-26 implements the requirements the Shoreline Management Act (SMA) of 1971 (chapter 90.58 RCW). The overarching goal of the act is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shoreline." (ECY, a). The Act applies to all 30 counties and more than 200 towns and cities that have shorelines of the state within their boundaries.

WAC Chapter 173-26 details governing principles of the guidelines and standards for implementing the SMA. Implementation of the SMA includes development of Shoreline Master Programs (SMPs) by local jurisdictions. Standards for SMPs described in Chapter 173-26 of the WAC require similar or the same provisions as many of the proposed hydraulic code rule changes and thus WDFW's proposed rule changes could have no, or a reduced, economic impact.

WDFW's proposed rule changes which are related and/or similar to SMP guideline or standard, and the specific WAC follow.

PROPOSED Chapter 220-660-080, Mitigation provisions for hydraulic projects:

WAC 173-26-201(2)(c) and (e) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-201)

(c) Master programs shall contain policies and regulations that assure, at minimum, no net loss of ecological functions necessary to sustain shoreline natural resources.

(e) Environmental impact mitigation. To assure no net loss of shoreline ecological functions, master programs shall include provisions that require proposed individual uses and developments to analyze environmental impacts of the proposal and include measures to mitigate environmental impacts not otherwise avoided or mitigated by compliance with the master program and other applicable regulations.

WAC 173-26-221(2)(a) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221):

…shoreline master programs must provide for management of critical areas designated as such … located within the shorelines of the state with policies and regulations…

PROPOSED Chapter 220-660-100, Freshwater habitats of special concern:

- WAC 173-26-201(3)(d)(ix) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-201):

  Special area planning. Some shoreline sites or areas require more focused attention than is possible in the overall master program development process due to complex shoreline ecological issues, changing uses, or other unique features or issues. In these circumstances, the local government is encouraged to undertake special area planning. Special area planning also may

be used to address: Public access, vegetation conservation, shoreline use compatibility, port development master planning, ecological restoration, or other issues best addressed on a comprehensive basis. The resultant plans may serve as the basis for facilitating state and local government coordination and permit review.

- WAC 173-26-201(2)(c) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-201):

  Master programs … should establish and apply:

  - *Environment designations with appropriate use and development standards; and*
  - *Provisions to address the impacts of specific common shoreline uses, development activities and modification actions; and*
  - *Provisions for the protection of critical areas within the shoreline; and*
  - *Provisions for mitigation measures and methods to address unanticipated impacts.*

  … the master program should ensure that development will be protective of ecological functions necessary to sustain existing shoreline natural resources and meet the standard.

- WAC 173-26-221 (2)(a)(ii) (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221) lists the principles and standards for management of critical areas.

PROPOSED Chapter 220-660-130, Streambank protection and lake shoreline stabilization

- WAC 173-26-231(3)(a) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-231):

  In order to implement RCW 90.58.100(6) and avoid or mitigate adverse impacts to shoreline ecological functions … master programs should include standards setting forth the circumstances under which alteration of the shoreline is permitted, and for the design and type of protective measures and devices.

  The WAC then proceeds to list standards to implement the principles described above.

  WAC 173-26-201(c) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-201):

  (c) Protection of ecological functions of the shorelines. This chapter implements the act's policy on protection of shoreline natural resources through protection and restoration of ecological functions necessary to sustain these natural resources….

PROPOSED Chapter 220-660-140, Residential docks, watercraft lifts, and buoys in freshwater areas and

PROPOSED Chapter 220-660-150, Boat ramps and launches in freshwater areas

- WAC 173-26-231(3)(b) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-231):

  Piers and docks, …, shall be designed and constructed to avoid or, if that is not possible, to minimize and mitigate the impacts to ecological functions, critical areas resources such as eelgrass beds and fish habitats and processes such as currents and littoral drift. … Master programs should require that structures be made of materials that have been approved by applicable state agencies.

PROPOSED Chapter 220-660-160, Marinas and terminals in freshwater areas

- WAC 173-26-231(3)(a)(iii)(F)(d) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-231):

  Breakwaters, jetties, groins, and weirs shall be designed to protect critical areas and shall provide for mitigation according to the sequence defined in WAC 173-26-201 (2)(e).

PROPOSED Chapter 220-660-170, Dredging in freshwater areas and

PROPOSED Chapter 220-660-180, Sand and gravel removal

- WAC 173-26-231(3)(a)(iii)(F)(f) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-231):

  Dredging and dredge material disposal. Dredging and dredge material disposal shall be done in a manner which avoids or minimizes significant ecological impacts and impacts which cannot be avoided should be mitigated in a manner that assures no net loss of shoreline ecological functions.

- WAC 173-26-241 states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-241):

  Master programs shall establish a comprehensive program of use regulations for shorelines and shall incorporate provisions for specific uses consistent with the following as necessary to assure consistency with the policy of the act …. [with respect to mining] …A shoreline master program …ensure that when mining or associated activities in the shoreline are authorized, those activities will be properly sited, designed, conducted, and completed so that it will cause no net loss of ecological functions of the shoreline

PROPOSED Chapter 220-660-240, Pond construction and

PROPOSED Chapter 220-660-250, Water diversions and intakes

- WAC 173-26-241 states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-241):

  Master programs shall establish a comprehensive program of use regulations for shorelines and shall incorporate provisions for specific uses consistent with the following as necessary to assure consistency with the policy of the act …. [with respect to ponds, diversions and intakes] …In-stream structures shall provide for the protection and preservation, of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. The location and planning of in-stream structures shall give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitats and species

PROPOSED Chapter 220-660-320, Saltwater habitats of special concern

- *WAC 173-26-241 states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221):*

  Master programs shall establish a comprehensive program of use regulations for shorelines and shall incorporate provisions for specific uses consistent with the following as necessary to assure consistency with the policy of the act …. [with respect to ponds, diversions and intakes] …In-stream structures shall provide for the protection and preservation, of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. The location and planning of in-stream structures shall give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitats and species

- WAC 173-26-221 (2)(a)(ii) (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221) lists the principles and standards for management of critical areas.

PROPOSED Chapter 220-660-370, Bank protection in saltwater areas and

PROPOSED Chapter 220-660-380, Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas and

PROPOSED Chapter 220-660-390, Boat ramps and launches in saltwater areas and

PROPOSED Chapter 220-660-400, Marinas and terminals in saltwater areas and

PROPOSED Chapter 220-660-410, Dredging in saltwater areas

- WAC 173-26-221(2)(c)(iii)(C) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221):

  Docks, piers, bulkheads, bridges, fill, floats, jetties, utility crossings, and other human-made structures shall not intrude into or over critical saltwater habitats except when all of the conditions below are met:
  - *The public's need for such an action or structure is clearly demonstrated and the proposal is consistent with protection of the public trust, as embodied in RCW 90.58.020;*
  - *Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible or would result in unreasonable and disproportionate cost to accomplish the same general purpose;*
  - *The project including any required mitigation will result in no net loss of ecological functions associated with critical saltwater habitat.*
  - *The project is consistent with the state's interest in resource protection and species recovery.*

- WAC 173-26-231(3)(a) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-231):

  In order to implement RCW 90.58.100(6) and avoid or mitigate adverse impacts to shoreline ecological functions … master programs should include standards setting forth the circumstances under which alteration of the shoreline is permitted, and for the design and type of protective measures and devices.

  The WAC then proceeds to list standards to implement the principles described above.

PROPOSED Chapter 220-660-440, Utility crossing in saltwater areas

- WAC 173-26-241 states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-430):

  In-stream structures shall provide for the protection and preservation, of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas.

2.2.2.2 Water Pollution Control, Chapter 90.48 RCW

WAC Chapter 173-201A implements the requirements the Water Pollution Control Act (chapter 90.48 RCW). WAC 173-201A establishes water quality standards for surface waters of the state of Washington consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife. All actions must comply with this chapter. As part of this chapter:

> (a) All surface waters are protected by numeric and narrative criteria, designated uses, and an antidegradation policy.
>
> (b) Based on the use designations, numeric and narrative criteria are assigned to a water body to protect the existing and designated uses.
>
> (c) Where multiple criteria for the same water quality parameter are assigned to a water body to protect different uses, the most stringent criteria for each parameter is to be applied.

WDFW's proposed rule changes which are related and/or similar to Water Pollution Control guideline or standard, and the specific WAC follow.

PROPOSED Chapter 220-660-080, Mitigation provisions for hydraulic projects:

- *WAC 173-26-221(c)(i)(F) states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221):*

(F) Compensatory mitigation shall be allowed only after mitigation sequencing is applied and higher priority means of mitigation are determined to be infeasible. Requirements for compensatory mitigation must include provisions for:

(I) Mitigation replacement ratios or a similar method of addressing the following:

- *The risk of failure of the compensatory mitigation action;*
- *The length of time it will take the compensatory mitigation action to adequately replace the impacted wetland functions and values;*
- *The gain or loss of the type, quality, and quantity of the ecological functions of the compensation wetland as compared with the impacted wetland.*

(II) Establishment of performance standards for evaluating the success of compensatory mitigation actions;

(III) Establishment of long-term monitoring and reporting procedures to determine if performance standards are met; and

(IV) Establishment of long-term protection and management of compensatory mitigation sites.

Credits from a certified mitigation bank may be used to compensate for unavoidable impacts.

2.2.2.3 Pollution Disclosure Act of 1971, Chapter 92.50 RCW

WAC Chapter 173-201A implements the requirements the Pollution Disclosure Act Of 1971 (chapter 90.50 RCW). The chapter sets discharge standards which represent "all known, available, and reasonable methods" of prevention, control, and treatment for domestic wastewater facilities which discharge to waters of the state.

WDFW's proposed rule changes which are related and/or similar to Pollution Disclosure Act guideline or standard, and the specific WAC follow.

PROPOSED Chapter 220-660-120, Common freshwater construction provisions

- WAC 173-201A-200 (http://apps.leg.wa.gov/wac/default.aspx?cite=173-201A-200) lists the fresh water designated uses and all management criteria.

PROPOSED Chapter 220-660-310, Tidal reference area

- WAC 173-201A-210 states (http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-210):

2.2.2.4 Aquatic Resources Mitigation, RCW 90.74

The legislature determined that the state lacked a clear policy relating to the mitigation of wetlands and aquatic habitat for infrastructure development.

WDFW's proposed rule changes which are related and/or similar to Aquatic Resources Mitigation guideline or standard, and the specific WAC follow.

PROPOSED Chapter 220-660-080, Mitigation provisions for hydraulic projects

- RCW 90.74.005 (2) and (3) state .(http://apps.leg.wa.gov/RCW/default.aspx?cite=90.74.005):

  …it is the policy of the state to authorize innovative mitigation measures by requiring state regulatory agencies to consider mitigation proposals for projects that are time, designed, and located in a manner to provide equal or better biological function and… to authorize local governments to accommodate the goals of this chapter.

2.2.2.5 Fish Passage (RCW 77.57)

Washington law has required since the nineteenth century that dams and obstructions in streams be passable to fish[1]. That law was applied to highway culverts in 1950[2]. RCW 77.57 "…a dam or other obstruction across or in a stream shall be provided with a durable and efficient fishway approved by the director." This law has been applied to culverts and all fish species.

WDFW's proposed rule changes which are related and/or similar to Aquatic Resources Mitigation guideline or standard, and the specific WAC follow:

PROPOSED Chapter 220-110-200, Fish Passage Improvement Structures

- RCW 77.57.030(1) states (http://apps.leg.wa.gov/RCW/default.aspx?cite=77.57.030):

  … a dam or other obstruction across or in a stream shall be provided with a durable and efficient fishway approved by the director. Plans and specifications shall be provided to the department prior to the director's approval. The fishway shall be maintained in an effective condition and continuously supplied with sufficient water to freely pass fish.

- WAC 173 -26-221 (c)(iv)(C)(I) states *(http://apps.leg.wa.gov/wac/default.aspx?cite=173-26-221):*

  Provide for the protection of ecological functions associated with critical freshwater habitat as necessary to assure no net loss of ecological functions.

2.2.3 Summary Baseline

Table 1 summarizes the baseline data presented above. Included in the table are the number and title of the proposed WAC, an icon indicating whether there is an economic impact and the assumption on which the economic impact is based. The icons are defined as:

⊘ **No economic impact** – the proposed rule code does not describe design, construction or maintenance standards or the standards do not represent a significant change from the existing rules

○ Economic impact but **not attributable** to proposed rule change – an existing regulation, protocol, standard, or judicial finding requires the same, or more restrictive, action as the proposed rule change. Therefore, the cost of implementing the rule change would be attributed to the existing regulation, protocol, standard or judicial finding.

◒ Economic **cost partially attributable** to proposed rule change – an existing regulation, protocol, standard, or judicial finding requires the similar, or less restrictive, action as the proposed rule change. Therefore, the cost of implementing the rule change would be attributed to the existing regulation, protocol, standard or judicial finding. Also, in cases where an applicant is exempt from obtaining a permit under existing regulations, such as the Section 4040 exemption for farming, ranching and silviculture.

● Economic **cost attributable** to proposed rule change – there is no other existing regulation, protocol, standard or judicial finding that requires the same action, therefore the entire cost of implementing the proposed changes is an economic impact caused by the rule change.

[1] Washington State (1890). Protection of Fish 1889-90 Wash. Sess. Laws Pages 107-108.

[2] Washington State (1950). 1949-51 Wash. Op. Att'y Gen., No. 304 (July 19, 1950).

⊕ Economic **savings attributable** to proposed rule change –proposed change is a cost savings.

The assumptions include: 1) the related regulation or ruling (as described in detail above) or 2) the proposed change from the existing code, if any.

Table 1. Summary of Baseline Data

Proposed WAC Sections		Econ Impact	Assumptions	Related Regulation or Ruling (a)
Number	Title			
220-660 010	Purpose	⊘	Consistent with current rules	
220-660- 020	Instructions for using chapter	⊘	Consistent with current rules	
220-660- 030	Definitions	⊘	Consistent with current rules	
220-660- 040	Applicability of hydraulic project approval requirements	⊕	**Exempts portable boat hoists and scientific measurement devices**	
220-660- 050	Procedures — hydraulic project approvals	⊕	**Allows use of a General HPA (GHPA)**	
220-660- 060	Integration of hydraulic project approvals and forest practices applications	⊘	No change to current rules	
220-660- 070	Changes to hydraulic project approval technical requirements	⊘	No change to current rules	
220-660- 080	Mitigation requirements for hydraulic projects	⊖	Consistent with other regulations **however 404 Ag exemption for ranching, farming and silviculture**	Shoreline Mgmt Act, Corps NWP
220-660- 090	Technical requirements	⊘	Consistent with current rules	
220-660- 100	Freshwater habitats of special concern	○	Consistent with other regulations	Shoreline Mgmt Act
220-660- 110	Authorized work times in freshwater areas	⊕	Consistent with and/or **less restrictive** than other regulations	Corps NWP and approved work windows
220-660- 120	Common freshwater construction provisions	⊖	Consistent with other regulations **however 404 Ag exemption for ranching, farming and silviculture and SMA does not apply to streams under 20 cfs**	Water Pollution Control Act; WSDOT Fish Exclusion Protocols and Standards; Corps NWP and NMFS Programmatic consultation
220-660- 130	Streambank protection and lake shoreline stabilization	⊖	Consistent with other regulations **however the 404 Ag exemption for ranching, farming and silviculture and SMA does not apply to streams under 20 cfs**.	Shoreline Mgmt Act; Corps NWP
220-660- 140	Residential docks, watercraft lifts, and buoys in freshwater areas	○	Consistent with other regulations	Shoreline Mgmt Act; Corps NWP and NMFS Programmatic consultation
220-660- 150	Boat ramps and launches in freshwater areas	○	Consistent with other regulations	Shoreline Mgmt Act; Corps NWP and NMFS Programmatic consultation.

Proposed WAC Sections		Econ Impact	Assumptions	Related Regulation or Ruling (a)
Number	Title			
220-660- 160	Marinas and terminals in freshwater areas	○	Consistent with other regulations	Shoreline Mgmt Act; Corps NWP and NMFS Programmatic consultation.
220-660- 170	Dredging in freshwater areas	◒	Consistent with other regulations however **requires a survey**.	Shoreline Mgmt Act; Corps NWP
220-660- 180	Sand and gravel removal	⊘	Consistent with current rules	Shoreline Mgmt Act; Corps NWP
220-660- 190	Water crossing structures	◒	Consistent with other regulations **however 404 Ag exemption for ranching, farming and silviculture**	US versus Washington State, No. C70 - 9213; Corps NWP
220-660- 200	Fish passage improvement structures	○	Consistent with other regulations	Corps NWP and NMFS Programmatic consultation
220-660- 210	Channel change/ realignment	⊘	Consistent with current rules	
220-660- 220	Large woody material placement, repositioning, and removal in freshwater areas	⊘	Consistent with current rules	
220-660- 230	Beaver dam management	⊕	New rule, **removing beaver dams can be a cost savings**	
220-660- 240	Pond construction	○	Consistent with current rules	Shoreline Mgmt Act.
220-660- 250	Water diversions and intakes	○	Consistent with other regulations	Shoreline Mgmt Act.
220-660- 260	Outfall structures in freshwater areas	○	Consistent with other regulations	Corps NWP
220-660- 270	Utility crossings in freshwater areas	○	Consistent with other regulations	Corps NWP
220-660- 280	Felling and yarding of timber	⊘	Consistent with current rules	
220-660- 290	Aquatic plant removal and control	⊘	Consistent with current rules	
220-660- 300	Mineral prospecting	⊕	**No need for individual permit**	
220-660- 310	Tidal reference areas	⊘	Consistent with current rules	
220-660- 320	Saltwater habitats of special concern	○	Consistent with other regulations	Shoreline Mgmt Act
220-660- 330	Authorized work times in saltwater areas	○	Consistent with other regulations	Corps Approved Work Windows
220-660- 340	Intertidal forage fish spawning bed surveys	⊘	Consistent with current rules	
220-660- 350	Seagrass and macroalgae habitat surveys	●	**May require a survey**.	
220-660- 360	Common saltwater construction provisions	◒	Consistent with other regulations **however 404 Ag exemption for ranching, farming and silviculture**	Shoreline Mgmt. Act; Corps programmatic consultation and Corps NWP

Proposed WAC Sections		Econ Impact	Assumptions	Related Regulation or Ruling (a)
Number	Title			
220-660- 370	Bank protection in saltwater areas	○	Consistent with other regulations	Shoreline Mgmt. Act; Corps programmatic consultation and Corps NWP
220-660- 380	Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas	○	Consistent with other regulations	Shoreline Mgmt Act; Corps NWP
220-660- 390	Boat ramps and launches in saltwater areas	○	Consistent with other regulations	Shoreline Mgmt. Act; Corps programmatic consultation and Corps NWP
220-660- 400	Marinas and terminals in saltwater areas	○	Consistent with other regulations	Shoreline Mgmt Act
220-660- 410	Dredging in saltwater areas	◒	Consistent with other regulations however **may require a survey**.	Shoreline Mgmt Act Corps NWP
220-660- 420	Artificial Aquatic Habitat Structures	⊘	New section, provides for voluntary installation of structures for restoration or recreation purposes	
220-660- 430	Outfall and tide and flood gate structures in saltwater areas	○	Consistent with other regulations	Shoreline Mgmt Act Corps NWP
220-660- 440	Utility crossings in saltwater areas	○	Consistent with other regulations	Corps NWP
220-660- 450	Test boring in saltwater areas	○	Consistent with other regulations	Corps NWP
220-660- 460	Informal appeal of adverse administrative actions	⊘	No change to current rules	
220-660- 470	Formal appeal of administrative actions	⊘	No change to current rules	
220-660- 480	Compliance	⊘	Consistent with current rules	

(a) Source of the Related Regulation or Ruling: Thurston, R., WDFW and Barnard, B, WDFW.

In the next section assumptions about both the frequency with which these types of HPA's are submitted as well as estimates of the cost of each proposed change will be reviewed.

3 Data Profile, Methods and Results

WDFW maintains a database of Hydraulic Project Approval (HPA) applications. The database contains information about individual applications including the year the application was submitted, the status of the application, the name of the company (or individual) submitting the application and categorizes the applicants into groups. The applicant groups are:

- Agriculture, including farms, timber companies and local dike, drainage and irrigation districts
- Single Family Residence
- Multiple Family Use including homeowners associations,
- Commercial/Industrial, including energy companies, land development, private marinas, etc.
- Government, including federal, tribal, state and regional
- Non-Profit Agency Public,
- Non-Profit Agency Private

The method used to estimate the probable costs of the proposed rule changes answered the following questions:

- How many HPAs will be submitted annually that have to meet the requirements of a proposed rule change for which there are no related regulations (see Table 1)?
- What is a reasonable range of estimated costs for those proposed rule changes?

Estimates of both the range of costs and the annual volume of HPAs are used to estimate a range of implementation costs of the proposed rule changes. For example if a proposed rule change is likely to increase project costs significantly but the likelihood that any project will be effected by the proposed change is low, then the expected cost of the proposed rule change could be low. Conversely, if the cost of implementing a proposed rule change on any one project is relatively low, but the proposed rule change would likely impact a relatively high percentage of projects seeking an HPA then the expected cost of the proposed rule change could be high.

In addition to understanding the potential costs and annual number of proposed rule change this analysis also answered the following:

- who (which entities) might be impacted by the proposed rule changes, e.g. federal and state agencies, tribes, commercial and industrial users, residential, etc.?

Understanding the type of entity (e.g. agriculture, government, etc.) impacted by the proposed rule changes contributes to the Small Business Economic Impact Statement, which estimates whether a small business is disproportionate affected by the proposed rule changes. Also, understanding which entity might be impacted helps estimate the number of HPAs that would be exempt from the 404 permitting requirement.

To answer two of the above three questions; 1) how many HPAs are submitted in one year and 2) which applicants might be impacted by the proposed rule change, the analysis assumed that the historical record of HPAs, that is - the types of projects that have needed permits and the types of entities that applied - represents the best estimate of future projects and applicants.

WDFW maintains a database of Hydraulic Project Approval (HPA) applications (Chapman, 2014a). **Table 2** shows the number of HPA's issued per year from 2008 through 2012. On average over 2,500 applications are issued per year.

Table 2. Number of HPAs issued per year, 2008-2012, all projects, all applicants, excluding forestry.

Year	2008	2009	2010	2011	2012	Grand Total	5-Year Average
HPA Count	2,657	2,666	2,177	2,456	2,782	12,738	2,548

Source: Barber, E. 2014.

What follows is a description of the historical record of HPAs issued over the 5-year period from 2008 to 2012, including an estimate of how many applications would have been impacted by the proposed rules had the rules been in effect during that period of time. Also, a description of the estimated costs of each HPA is described.

3.1 Who Applies for HPAs?

The WDFW HPA database contains information about individual applications including (but not limited to) the:

- year the application was submitted,
- status of the application (pending, issued, hold, etc.)
- type of application (e.g. forest practice, JARPA, public notice, etc.),
- description of the project
- name of the company (or individual) submitting the application
- applicant groups (e.g. government, agriculture, commercial/industrial, residential, etc.)

Table 3 lists the number of HPA's issued between 2008 and 2012 by applicant group. Single family residences and government are the top two applicant groups, each individually representing just over 35.0 percent of all the HPAs, for a combined total of 70 percent of the HPAs for the time period. Agricultural applicants are third in volume, with 14.0 percent of the HPAs from 2008-2012, followed by commercial/industrial applicants submitting 8.0 percent of all HPAs. The remainder of the applicant groups represent less than 6.0 percent of all HPA's for the study period.

Table 3. Total HPAs by Applicant Group, 2008 - 2012

Applicant Group	Number of HPAs		Percent of Total
	5-Year Total	5-Year Average	
Agriculture	1,737	249	14%
Commercial/Industrial	964	961	8%
Government	4,606	46	36%
Multiple Family Use	225	90	2%
Non-Profit Agency Private	419	21	3%
Non-Profit Agency Public	101	937	1%
Single Family Residence	4,686	243	37%
Grand Total	12,738	2,548	100%

Source: Source: Barber, E. 2014.

3.2 How Many HPAs Could Be Subject to the Proposed Rule Changes?

Table 4. presents an estimate of the average annual number of HPAs, issued between 2008 and 2013 that may have been subject to a proposed rule change, had the rules been in effect at the time. Note that any one HPA may be included in **Table 4** in multiple columns, as one HPA could be subject to more than one rule.

The majority of all HPAs, approximately 32.0 percent, issued between 2008 and 2013 were subject to proposed rule 220-660-190, water crossing structure. Twenty percent of all applications issued between 2008 and 2013 would have been subject to proposed rule 220-660-310, Tidal reference areas, and proposed rule 220-660-330, Authorized work times in saltwater areas. Thirteen percent of the HPAs would have been subject to five proposed rules; Freshwater habitats of special concern (220-660-100), Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas (220-660-140), Saltwater habitats of special concern (220-660-320), Intertidal forage fish spawning bed surveys (220-660-340) and Seagrass and macroalgae habitat surveys (220-660-350). The remainder of the rules would have impacted ten percent or less of the HPAs

Table 4. Estimate of the Average Annual Percent of Total HPAs by Proposed Rules, 2008-2013.

Proposed WAC Sections		Percent of Total
Number	Title	
220-660-100	Freshwater habitats of special concern	12.9%
220-660-110	Authorized work times in freshwater areas	0.0%
220-660-120	Common freshwater construction provisions	0.0%
220-660-130	Streambank protection and lake shoreline stabilization	0.0%
220-660140	Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas	12.9%
220-660-150	Boat ramps and launches in freshwater areas	0.9%
220-660160	Marinas and terminals in freshwater areas	0.3%
220-660-170	Dredging in freshwater areas	7.8%
220-660-180	Sand and gravel removal	0.3%
220-660-190	Water crossing structures	31.8%
220-660-200	Fish passage improvement structures	9.4%
220-660-210	Channel relocation and realignment	0.1%
220-660-220	Large woody material placement, repositioning, and removal in freshwater areas	7.1%
220-660-230	Beaver dam management	1.1%
220-660-240	Pond construction	0.3%
220-660-250	Water diversions and intakes	4.2%
220-660-260	Outfall structures in freshwater areas	1.8%
220-660-270	Utility crossings in freshwater areas	2.6%
220-660-280	Felling and yarding of timber	0.1%
220-660-290	Aquatic plant removal and control	0.3%

Proposed WAC Sections		Percent of Total
Number	Title	
220-660-300	Mineral prospecting	8.9%
220-660-310	Tidal reference areas	19.7%
220-660-320	Saltwater habitats of special concern	13.4%
220-660-330	Authorized work times in saltwater areas	19.7%
220-660-340	Intertidal forage fish spawning bed surveys	13.2%
220-660-350	Seagrass and macroalgae habitat surveys	13.4%
220-660-370	Bank protection in saltwater areas	5.9%
220-660380	Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas	5.2%
220-660-390	Boat ramps and launches in saltwater areas	0.7%
220-660-400	Marinas and terminals in saltwater areas	0.6%
220-660-410	Dredging in saltwater areas	0.6%
220-660-420	Artificial Aquatic Habitat Structures	0.4%

Source: Barber, E. WDFW 2014.

Table 5 shows the annual average number of HPAs assumed to be subject to the proposed rule changes by applicant group. Included in Table 5 are the proposed rules that could potentially impact greater than 5.0 percent of the annual average number of HPAs. As seen in **Table 4**, 32.0 percent of the average annual HPAs are subject to the proposed rule 220-660-190, Water crossing structures. Of those HPAs the majority, 49.0 percent, are issued to governments. Twenty percent of the HPAs subject to the Water crossing structures proposed rule are issued to Agricultural and Forestry applicants. Sixteen percent of the HPAs subject to the Water crossing structures rule are issued to Commercial and Industrial applicants.

The Single Family Residence applicant group is issued the largest number of HPAs (64.0 percent) that are subject to the proposed Tidal reference area rule (220-660-310) and proposed Authorized work times in saltwater areas rule (220-660-330). Governments are issued 21.0 percent of HPAs subject to these two proposed rules.

Governments and Single family residents continue to be the two applicant groups with the majority of the HPAs subject to the proposed rule for nearly all other proposed rules except Fish passage improvement structures (220-660-200). With Fish passage improvement structures Governments are still issued the most (37.0 percent) of all HPAs however the Commercial/Industrial and Agriculture & Forestry applicant group receive 30.0 percent and 25.0 percent of the HPAs, respectively.

Table 5. Estimated Five-Year Average Annual Number of HPAs by Rule and Applicant Group, Ordered by Volume, 2008-2012.

Proposed WAC Sections		Agri. & Forestry	Commercial /Industrial	Govt	Multiple Family Use	Non-Profit Agency		Single Family Residence	Grand Total	Percent of Total
Number	Title					Private	Public			
220-660- 190	Water crossing structures	159	133	393	9	17	4	95	810	32%
	% by applicant	*20%*	*16%*	*49%*	*1%*	*2%*	*0%*	*12%*	*100%*	
220-660-310	Tidal reference areas	7	36	104	13	19	3	319	501	20%
	% by applicant	*1%*	*7%*	*21%*	*3%*	*4%*	*1%*	*64%*	*100%*	
220-660-330	Authorized work times in saltwater areas	7	36	104	13	19	3	319	501	20%
	% by applicant	*1%*	*7%*	*21%*	*3%*	*4%*	*1%*	*64%*	*100%*	
220-660-100	Freshwater habitats of special concern	20	17	162	5	11	2	111	328	13%
	% by applicant	*6%*	*5%*	*49%*	*2%*	*3%*	*1%*	*34%*	*100%*	
220-660-140	Res. & public rec docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas	12	23	33	14	16	1	228	327	13%
	% by applicant	*4%*	*7%*	*10%*	*4%*	*5%*	*0%*	*70%*	*100%*	
220-660-320	Saltwater habitats of special concern	6	32	83	12	16	1	192	342	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*5%*	*0%*	*56%*	*100%*	
220-660-340	Intertidal forage fish spawning bed surveys	6	30	82	12	15	1	190	336	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*4%*	*0%*	*57%*	*100%*	
220-660-350	Seagrass and macroalgae habitat surveys	6	32	83	12	16	1	192	342	13%
	% by applicant	*2%*	*9%*	*24%*	*4%*	*5%*	*0%*	*56%*	*100%*	
220-660-200	Fish passage improvement structures	294	361	445	1	31	6	57	1,195	9%
	% by applicant	*25%*	*30%*	*37%*	*0%*	*3%*	*1%*	*5%*	*100%*	
220-660-300	Mineral prospecting					5	2	1,130	1,137	9%
	% by applicant	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*99%*	*100%*	
220-660-170	Dredging in freshwater areas	78	46	619	6	47	17	181	994	8%
	% by applicant	*8%*	*5%*	*62%*	*1%*	*5%*	*2%*	*18%*	*100%*	
220-660-220	Large woody material placement, repositioning, and removal in freshwater areas	63	51	479	15	92	13	191	904	7%
	% by applicant	*7%*	*6%*	*53%*	*2%*	*10%*	*1%*	*21%*	*100%*	
220-660-370	Bank protection in saltwater areas	7	34	142	13	23	3	527	749	6%
	% by applicant	*1%*	*5%*	*19%*	*2%*	*3%*	*0%*	*70%*	*100%*	

3.3 Cost Analysis

The estimated annual costs of the proposed rules changes that could be quantified ranges between $291 thousand to $3.6 million. Cost estimation, even when project specifications are known, is frequently plagued with uncertainties. In estimating costs for this analysis the project specifications are not known, creating a higher degree of uncertainty. Notwithstanding this uncertainty the costs and/or savings of the proposed rule changes were quantified where possible and qualified if not possible. The method used to estimate the costs is described below.

The first step in estimating potential costs of the proposed rule changes was to determine whether costs are best quantified or qualified for those proposed changes that were identified during the baseline analysis as having an economic impact fully or partially attributed to the proposed rule change (see **Table 1**). Secondly, for those proposed changes for which costs could be quantified, a range of possible costs impacts was obtained and an estimate of the number of HPAs that may be issued in one year was based on the number of HPAs issued from 2008 to 2013.

If project costs could be determined with some certainty, then the cost of the proposed rule changes was quantified. For example, the range of costs for Seagrass and macroalgae surveys was estimated with some degree of certain despite the fact that the cost of the survey could change depending on the geographic are of study. Also, the cost impact of common construction materials could be estimated, however given a wide range of material costs for projects requiring an HPA the best way to report an increase in construction costs was as a percent increase of existing construction materials.

If the range of costs could not be estimated with some degree of certainty, then the costs where qualified. For example, many of the provisions of the proposed changes do not contain numerical design criteria and alternatives to previously published WDFW design guidelines can be used when accepted by the Agency. Without numeric design criteria, and allowing for the flexibility to ask for Agency approval of various designs, there is little certainty on which to base a quantification of costs.

Additionally, the magnitude of the costs and/or savings incurred on potential projects under some of the proposed changes can vary widely depending on the circumstances. For example a project that falls under the proposed change to Streambank protection and lake shoreline stabilization section could vary widely depending on the length of the shoreline being stabilized, the feasible designs, etc. Additionally, in this case, the implementation costs attributable to the proposed changes would be incurred by a small subset of applicants, only those that are exempt from the Corps 404 permit (e.g. farming ranching and silviculture).

Assumptions used for the 1) cost estimate and 2) the estimated number of HPAs potentially affected for each proposed rules having potential to change costs is listed below

220-660-040 Applicability of hydraulic project approval requirements. The proposed rule exempts portable boat hoists and scientific measurement devices. WDFW's database of HPAs that have been issued does not contain the detailed information about boat hoists and scientific measurement devices. However it was assumed that the number of HPA impacted would be relatively small, so to be conservative the cost savings was not quantified.

220-660-050 Procedures — hydraulic project approvals. The proposed rule provides for the use of General HPAs (GHPAs), which are not provided for in the existing hydraulic rules. Currently WDFW issues statewide GHPAs to state agencies and regional GHPAs to cities and counties to improve efficiency and reduce permitting costs by issuing one GHPAs for multiple individual, similar projects. Since January 1, 2012 WDFW has issued 76 GHPAs (Thurston, 2014b).

The assumptions used to estimate the cost savings are:

1) the number of avoided permit applications is the difference between the number of GHPA issued to an agency and the number of individual projects completed under that GHPA. Only the statewide GHPAs were included in the estimate, to make the estimate conservative.

2) the cost savings per HPA is based on the application cost ($150/application) and does not include staff time necessary to complete the application, again creating a conservative estimate of the cost savings..

The estimated annual cost savings ranges from $11.4 thousand to $143.0 thousand dollars.

Table 6. Assumptions for Cost Savings from the General Hydraulic Project Approval.

GHPA Agency	Year	Projects	No. GHPAs	Avoided Permits	Cost Savings
WSDOT	2010	950	7	940	$141,000
WSDOT	2011	1,100	7	1,091	$163,650
WSDOT	2012	570	7	561	$84,150
WSDOT	2013	400	7	391	$58,650
DNR	2012	10	3	7	$1,050
ECY	2012	100	3	98	$14,700
Total		4,080		4,073	$463,200
Annual Average				582	$77,200
Standard Deviation				434	$65,790
Low estimate				148	$11,410
High estimate				1,016	$142,990

Source: Thurston, R. WDFW 2014b.

220-660-080 Mitigation requirements for hydraulic projects – The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry applicants ranges between 325 and 390. The potential costs of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-110 Authorized work times in freshwater areas - The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry in the Freshwater environment ranges between 250 and 350. The potential cost savings of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-120 Common freshwater construction provisions - The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry in the Freshwater environment ranges between 250 and 350. The potential cost of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-130 Streambank protection and lake shoreline stabilization - The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry applicants ranges between 325 and 390. The potential costs of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-170 Dredging in freshwater areas - - The proposed rule change is consistent with existing Corps regulations except WDFW may require a pre-project geomorphic analysis to determine potential impacts from the dredging and also may require multi-season pre- and post-dredge project bathymetric or biological surveys. The number of estimated annual number of HPA permits issued for dredging ranged between 175 and 275, or which between 10 and 25 are issued to Agriculture and Forestry applicants. The potential cost of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-190 Water crossing structures - The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry applicants ranges between 125 and 185. The potential costs of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-230 Beaver dam management – The current rules do not have a provision for beaver dam management. Managing beaver dams is expected to save applicants money as it provides them the ability to protect property. The potential costs of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-300 Mineral prospecting - The proposed rule does not require and individual permit and therefore will reduce applicants' costs. The potential number of permits and the cost savings of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

220-660-350 Seagrass and macroalgae habitat surveys – The proposed change states WDFW may require an applicant to hire a qualified, department-trained biologist to conduct an seagrass and macroalgae habitat survey for work that may impact seagrass and kelp; in herring spawning other macroalgae species . The estimated annual number of HPA permits issued to applicants that may be required to get a survey ranges between 300 and 380. The potential cost of a survey is estimated to range between $1,200 and $10,000 (Thurston 2014a,t). To be conservative the cost estimate assumes that every applicant that may have to be required to complete a survey is required to obtain one. The annual costs to implement this proposed rule change ranges between $370,000 and $3,770,000.

220-660-360 Common saltwater construction provisions - The proposed rule change is consistent with existing Corps regulations. The Corps regulation provide a 404 exemption for farming, ranching and silviculture, therefore the only applicant group considered in the cost analysis is Agriculture and Forestry. The estimated annual number of HPA permits issued to Agriculture and Forestry in the Marine environment ranges between 3 and 15. The potential cost of implementing these mitigation requirements is expected to be minimal.

220-660-410 Dredging in saltwater areas - The proposed rule change is consistent with existing Corps regulations except WDFW may require a pre-project geomorphic analysis to determine potential impacts from the dredging and also may require multi-season pre- and post-dredge project bathymetric or biological surveys. The number of estimated annual number of HPA permits issued for dredging is expected to be relatively small. The potential cost of implementing these mitigation requirements could not be estimated with any certainty and therefore is not quantified.

Table 7 presents the details of the cost analysis. The range of costs to implement the proposed changes, of the costs that have been quantified, is $291,000 to $3,594,000 annually. Many costs of proposed rule changes were not quantified but rather were qualified. Those HPAs for which the proposed cost was not estimated were generally not estimated because the range of project costs varies.

Table 7. Quantified and Qualified Estimated Costs of Implementing Proposed Rule Changes

Proposed Section Change		Est. Historical Permits	Econ. Impact	Estimated Annual HPA		Estimated Annual HPA		DRAFT Cost per HPA		DRAFT Cost Extended		Notes
Number	Title			Low	High	Low	High	Low	High	Low	High	
		(%)		(%)	(%)	(#)	(#)	($s)	($s)	($ 000s)	($ 000s)	
220-660-040	Applicability of hydraulic project approval requirements	0.0%	⊕	0.0%	0.0%	0	0	N/E	N/E	N/E	N/E	(i)
220-660-050	Procedures — hydraulic project approvals	N/E	⊕	N/E	N/E	526	1,176	-$150	-$150	-$79	-$176	(ii)
220-660-080	Mitigation requirements for hydraulic projects	N/E	◒	9.0%	15.0%	325	390	N/E	N/E	N/E	N/E	(iii)
220-660-110	Authorized work times in freshwater areas	N/E	⊕	N/E	N/E	233	350	N/E	N/E	N/E	N/E	(i)
220-660-120	Common freshwater construction provisions	80.0%	◒	72.0%	88.0%	233	264	0%	0%	$0	$0	(iv)
220-660-130	Streambank protection and lake shoreline stabilization	N/E	◒	N/E	N/E	325	390	N/E	N/E	N/E	N/E	(v)
220-660-170	Dredging in freshwater areas	7.8%	◒	7.0%	8.6%	4	4	N/E	N/E	N/E	N/E	(iv)
220-660-190	Water crossing structures	31.8%	◒	28.6%	35.0%	146	178	N/E	N/E	N/E	N/E	(iv)
220-660-230	Beaver dam management	1.1%	⊕	1.0%	1.3%	26	32	N/E	N/E	N/E	N/E	
220-660-300	Mineral prospecting	8.9%	⊕	8.0%	9.8%	205	250	N/E	N/E	N/E	N/E	
220-660-350	Seagrass and macroalgae habitat surveys	13.4%	●	12.1%	14.8%	308	377	$1,200	$10,000	$370	$3,770	(vii)
220-660-360	Common freshwater construction provisions	80.0%	◒	72.0%	88.0%	233	264	0%	0%	$0	$0	(iv)
220-660-410	Dredging in saltwater areas	0.6%	◒	0.5%	0.6%	0	0	0%	0%	$0	$0	(vi)
Total of estimated quantified impacts										**$291**	**$3,594**	

N/A = Not Applicable; N/E = Not Estimated

(i) Unable to estimate the number of HPAs, also costs savings relatively small.

(ii) Number of HPAs estimated as the difference between the GHPAs issued and the number of individual projects completed under the GHPA. Cost conservatively estimated as the cost of the permit, not including labor to prepare the permit application.

(iii) Mitigation of the HPA applicants exempt from 404 permits, the cost of mitigation is project specific.

(iv) Sources: (a) Guy, 2011; (b) Stroud, 2011; (c) Kaczmarek, 2011; (d) Fabricatros and Manufactures Association; (e) Keidle, 2011. The number of HPAs was estimated where the number of applications is only those where Project_Environ = Freshwater or Marine as appropriate and applicant group = Agric & forestry. Costs are the percent increase in construction costs for material that complies with the proposed rule.

(v) Unable to estimate the number of HPAs, also costs savings would range widely based on project specifics.

(vi) Potential impact for HPAs where applicant is exempt from a 404 permit, e.g. farming, ranching, silviculture and projects costs vary widely.

(vii) Swarts,2014, Thurston, 2014.

3.4 Benefits Included in the Analysis

The proposed rule changes are intended to "provide protection for all fish life through the development of a statewide system of consistent and predictable rules."(WDFW, 2014). Protecting fish provides direct benefits to society (e.g. food, jobs, and recreation). In addition to these direct benefits other types of ecosystem services are also created and provide a benefit (MEA 2003). Examples of ecosystem services that pertain to WDFW's proposed rule change include water quality maintenance, nutrient cycling, habitat formation, climate regulation, and biodiversity. In addition to these benefits protecting fish life may also provide human well-being benefits including material well-being, relationships with family and friends, and emotional and physical health (Plummer and Schneidler 2009).

Several recent publications (e.g., Leschine and Peterson 2007, Batker et al. 2008) have described the economic benefits of fully functioning ecosystems, with an emphasis on Puget Sound. These publications have employed economic principles—for example, estimating the least-cost engineered solution to water quality improvements as a proxy for the water filtration services provided by healthy ecosystems. Although such calculations are beyond the scope of this analysis, it is worth noting that natural ecosystem functions have values that can be described in economic terms, as well as other values that cannot described. One estimate of the value of fourteen goods and services provided by nature within the Puget Sound Basin ranges between $9.7 billion and $83.0 billion (Batker et.al. 2010)

The ongoing work of the Puget Sound Partnership's Puget Sound Science Update also supports the assertion that protection and restoration of natural resources have social and economic value that can be measured in terms of human well-being. The Puget Sound Science Update is reviewing data that can be used as indicators for the social and economic state of the region (Puget Sound Partnership 2011). Additionally, work is underway to determine "how human well-being can be … used (in principle) as an over-arching metric by which to evaluate the effectiveness and impacts of management actions" (Plummer and Schneidler 2011).

Recent work by the ECY estimates a benefit of the rule to set instream flows and thus provide more salmon habitat in the Dungeness watershed. The report uses annual estimates of the value of salmon that range between $268/adult spawner to $400/ adult fish.[3] Using these numbers and an estimate that the proposed in stream flow rule will save between 751 and 1,360 spawning fish over 20 years. The total benefit of avoided salmon losses under the rule is 3.8 million - $6.8 million.

WDFW did not estimate the number of fish which may be saved through implementation of these proposed rule changes, however the per fish value used by ECY estimate is useful in understanding the magnitude of the potential benefit.

[3] 36 Based on a University of Washington study (Layton, et al. 1999), the 20-year average between high and low status quo salmon populations give us $300 as the annual value for each adult spawner. Columbia River Initiative gave us existence values of $268 (Huppert 2003). Bonneville Power Administration gave us restoration values of $400 per adult fish. From these reports 16 year values for fish would range from $4,288 to $6,400. Ecology has chosen to use a 20-year real estimated value of $5,000 for an adult returning spawner.

4 Small Business Economic Impact Statement

The Regulatory Fairness Act, in RCW 19.85.040, directs that

> *To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules …*

In RCW 19.85.020 (3) "Small business" is defined as

> *… any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees.*

None of the proposed rule changes would have a disproportionate cost impact on small businesses. .

5 References and Resources

Barber, Eva, WDFW, personal e-mail communication between Eva Barber, WDFW and Elizabeth Harrison, Cardno ENTRIX providing output from WDFW's HPA database, dated February 12, 2014 and February 7, 2014.

Corps (U.S. Army Corps of Engineers). 2008. Programmatic Biological Evaluation for 10 Activities in the State of Washington for Species Listed or Proposed by National Marine Fisheries Service and U.S. Fish and Wildlife Service under the Endangered Species Act.

Corps (U.S. Army Corps of Engineers). 2012. User's Guide For Nationwide Permits in Washington State, Includes: National Conditions, Seattle District Regional General Conditions,401 Certification General Conditions,401 Water Quality Certifications, Coastal Zone Management Act Consistency Determinations

Corps (U.S. Army Corps of Engineers). Electronic Permit Guidebook, Lists of Approved Work Windows to protect fish species – by Waterbody Types. Accessed on the web at 6/12/2014: http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx.

ECY, a (Washington Department of Ecology) Downloaded on June 12, 2014 from http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html

ECY, a (Washington Department of Ecology) Final Cost-Benefit and Least Burdensome Alternative Analysis. Chapter 173-518-WAC. http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html

Fabricators & Manufacturers Association, Predicting the Service Life of Galvanized Steel, Website (http://www.thefabricator.com/article/metalsmaterials/predicting-the-service-life-of-galvanized-steel) accessed November 4, 2011.

Guy, Jim, Northwest Docks, Personal communication with Lee Elder, Cardno ENTRIX, November 11, 2011 and November 16, 2011.

Kaczmarek, Ryan, McNichols, Personal communication with Lee Elder, Cardno ENTRIX, November 11, 2011.

Keidle, Mike, Fibergrate, Personal communication with Lee Elder, Cardno ENTRIX, November 11, 2011.

MEA, 2003, Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: A Framework for Assessment*, Island Press.

NMFS. 2011 Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service, Northwest Region, Portland, OR.

NRC (National Research Council). 1996. Upstream: salmon and society in the Pacific Northwest. National Academy Press, Washington D.C.

Plummer, M. and M. Schneidler, 2009. Human Well-being Indicators: Background and Applications for the Puget Sound Partnership. Northwest Fisheries Science Center, NOAA Fisheries.

Stroud, Wendell, Marine Floats, Personal communication with Lee Elder, Cardno ENTRIX, November 4, 2011.

Swarts S., Personal e-mail communication from Scott Swarts, Associate, Senior Fish and Wildlife Biologist, PWS David Evans and Associates, Inc. to Randi Thurston, WDFW on 4/19/2014 describing cost of forage fish spawning surveys

Thurston, Randi, WDFW,2014a. Personal e-mail communication from Randi Thurston, WDFW to Susan Burke, Cardno ENTRIX, on 4/11/2014, providing estimates of the costs of seagrass and macroalgae and forage fish spawning surveys.

Thurston, Randi, WDFW,2014b. Personal e-mail communication from Randi Thurston, WDFW to Susan Burke, Cardno ENTRIX, on 6/27/2014, providing estimates of the number of GHPAs issued by WDFW.

United States District Court – Western District of Washington at Seattle. United States of America v. State of Washington – No. C70 - 9213 Subproceeding No. 01 - 1 Permanent Injunction Regarding Culvert Correction. March 29, 2013. Located on the web at: http://turtletalk.files.wordpress.com/2013/03/perm-injunction.pdf.

WDFW (Washington Department of Fish and Wildlife). 2014a. Water Crossing Design Guidelines located on the web at: http://wdfw.wa.gov/publications/01501

WDFW (Washington Department of Fish and Wildlife). 2014b. Hydraulic Rule code Section 220-110-010; Purpose, located on the web at: http://apps.leg.wa.gov/wac/default.aspx?cite=220-110-010

WSDOT (Washington Department of Transportation), 2013. Fish Passage Design Aids Wildlife Crossing in Washington State–State of the Practice, located on the web at: http://www.wsdot.wa.gov/NR/rdonlyres/FA755A70-D387-487E-ACC2-BC396BA471E6/0/FishPassHabConnectTRB.pdf

Appendix A Analysis of Eight Federally-Funded, County-Owned Bridges in Washington

Analysis of Eight Federally-Funded, County-Owned Bridges in Washington

Prepared by Bob Barnard, WDFW

June 27, 2014 (revised)

The following analysis examines 8 federally-funded bridges designed and built under existing rule to determine if the design would comply with the version 5 Chapter 220-660-190 WAC as currently proposed. In summary, 7 of the 8 bridges would comply (87%). One bridge was too short, although the design was negotiated after an appealed permit. One bridge had incomplete information, but it is likely that it would comply.

					Complies
No	Stream	Road	Owner	Year	w/ V.5 WACs
1	Snoqualmie R	Tolt Hill Rd	King Co.	2009	Yes
2	Sauk R	Sauk Prairie Rd.	Snohomish Co.	2006	Yes
3	NF Snoqualmie	N. Fork Rd.	King Co.	2007	Yes
4	May Ck	419th #572	Snohomish Co.	2010	Yes
5	Garrard Ck	Forrest Rd	Greys Harbor Co.	2011	Yes
6	Mormon Ditch	Hampton Rd #261	Whatcom Co.	2009	Yes
7	Xtrib. Elk R	Schmidt Rd	Greys Harbor Co.	2008	Yes*
8	Tahuya R	Belfair Tahuya Rd	Mason Co.	2010	No - too short
			*incomplete information but likely complies		

The analysis compares the design with each of the 7 provisions specifically for bridge design. These provisions are listed at the end of the report. Only the provision number is shown in each of the case studies.

Snoqualmie R. at Tolt Hill Rd in King Co., 2009 – Complies with V. 5 WAC

This bridge crosses a large river with a wide floodplain. There are two 300 ft clear spans, one over the mainstem, the other over the LB floodplain. There are three shorter spans, approx. 120 ft each, over the RB floodplain. The approach road on the right is at floodplain elevation and is inundated at peak flows. This bridge replaces a similar one whose performance was good.

(3) (b) This bridge fully spans the bankfull channel and the approach is elevated above the floodplain. The roadway that crosses the remaining portion of the floodplain is not elevated and flood waters can easily cross it. Under the circumstances river functions are relatively unaffected by the bridge at this site.

(4) (a) These are channel-spanning structures with good clearance and are assumed to pass wood (the size of transported wood is generally smaller than the bankfull channel).

(4) (b) Considering that there is common overbank flow here, the bridge elements are inside OHW. The exemption is for mid-channel piers and these piers are better positioned in the overbank area than they would be in the channel itself. The RB abutment is also in within OHW but cannot be avoided and still produce an efficient design that minimizes all impacts.

(4) (c) We did not examine hydraulic modeling for this bridge, but based on previous work on large floodplain rivers with flow over the approach road and full channel spanning structures, we do not expect that velocity will be significantly affected. It is also assume that in this designated floodway that zero rise was a design criteria and afflux is usually associated with an increase in velocity under or near the bridge.

(4) (d) The Snoqualmie is an unusually stable channel that is not likely to change laterally for decades. Additionally, there are side spans that could accommodate more flow should a change occur.

(4) (f) Bridge clearance is 6 ft.

(4) (g) This bridge is on a deep foundation and does not require scour protection. How much was actually used is not clear from the plans, but very little was visible on site.

Sauk R. at Sauk Prairie Rd. in Snohomish Co. 2006. Complies with V. 5 WAC

This bridge crosses a large, relatively confined and sediment-rich river. There is a major constraint on the left bank; a long-established lumber mill encroaches about 300 ft into the river. The bridge owner attempted to negotiate a pull back to increase the width of the river at this point but was rebuffed. The right bank is also privately owned. The bridge replaces a similar one that had poor performance, but the constraints have not changed. The crossing consists of a 265 ft span over the main channel and a 213 ft span over the RB side channel. The bankfull width is approx. 375 ft and the active channel is about 940 ft. There are clearly wood and sediment transport issues at this crossing. Wood has accumulated on the mid-channel pier and the RB channel is filling in. Erosion is occurring on the right bank.

(3) (b) This crossing significantly affects up and downstream processes but an exception was made because there are manmade features in the floodplain that are outside the control of the owner and they are unlikely to be removed.

(4) (a) Wood movement is limited, but see (4) (e).

(4) (b) The pier and left bank abutment are likely within OHW. The mid channel pier is excepted and the abutment is excepted by (4) (e).

(4) (c) I did not review the modeling for this bridge, but my guess is that it did increase velocity, depending on how far u/s and d/s the cross section were. The reach just downstream of the bridge is likely to have high V and this could skew the average prevailing conditions.

(4) (d) The river really wants to move laterally but is constrained by the lumber mill, see (4) (e).

(4) (e) The lumber mill fill confines the channel and cannot be moved by the bridge owner.

(4) (f) The bridge is high with 9 ft of clearance.

(4) (g) The bridge is on deep foundations, and has not yet required countermeasures.

NF Snoqualmie at N. Fork Rd. in King Co. 2007 - Complies with V. 5 WAC

This bridge crosses a relatively confined large river in the cascade foothills. The active channel is about 150 ft wide from aerials. Clear span is 168 ft. We do not know what the BFW is, but probably about OHWW which is about 120 ft, making the Factor of Safety about 1.3. There is some fill on the LB but it doesn't appear to constrict flow. It's hard to tell if there has been much effect on the morphology by this or the previous bridge. Very coarse bed – cobble boulder – which indicates fairly stable conditions.

(3)(b) The bridge cross section is stream-like and processes appear to be unconstrained.

(4) (a) The span is greater than active channel width so wood passage is assumed.

(4) (b) All of the bridge elements are outside OHW.

(4) (c) It stream is moderately confined with little floodplain and it is assumed that 4(b) governs span.

(4) (d) Considering the setting, we assume lateral stability, but there is a confluence just upstream that should have been considered in the bridge design.

(4) (f) Bridge clearance is 4.8 ft.

(4) (g) The bridge is founded on spread footings (assume bedrock in the vicinity). Boulders placed at abutment toe for protection. Considering the coarse bed material, these are probably low impact to habitat.

May Ck at 419th Ave in Snohomish Co. 2010. Complies with V. 5 WAC.

This 75 ft bridge crosses a medium-sized stream in rural Snohomish Co. Clear span is about 72 ft with vertical abutments. The 75 ft bridge was chosen over an “adequate” 60 ft bridge because it “fit the natural channel better” and provided better debris passage. There is no BFW measurement, but regional

regression gives about 30 ft, OHW width is from 30 – 40 ft. Channel width created in the bridge cross section is 50 ft which would give a FS of 1.1 to 1.7, depending on the actual channel width. The 100-year recurrence interval flood width is just above the re-sloped banks inside the bridge cross section. Bridge is skewed to the road and the abutments are angled similarly for good streamlines. The HEC RAS cross sections show overbank area but it is not inundated at 100 year flood. Estimated floodplain utilization ratio is 2, indicating confined, but this ratio was not specifically measured.

(3)(b) The bridge plan restored the stream cross section from the previous span of about 34 ft. No details on channel construction, bed material, etc., but it is assumed that these would adjust quickly over time to prevailing conditions.

(4) (a) The span is greater than BFW and will pass wood. The design specifically considered debris passage.

(4) (b) All of the bank elements are clear of OHW.

(4) (c) The channel is confined and this provision does not specifically apply. Nevertheless, the calculated velocity ratio very nearly 1.0.

(4) (d) Meander migration was not specifically addressed in the design. Considering the heavily vegetated banks and possible geologic controls (bedrock, coarse bed materials) this is probably not a "meandering" stream and lateral migration not anticipated unless precipitated by local scour.

(4) (f) There is 2 ft of clearance. This is less than 3, but may be acceptable under the circumstances. An engineering justification was not included in the application materials.

(4) (g) It is not clear from the drawings whether scour protection was placed, but this is on deep foundations. (AHB who visited the site remembers some rock at the base of the vertical abutment and it was clearly minimized.)

Garrard Ck. at Forrest Rd in Greys Harbor Co. 2011. Complies with V. 5 WAC

This bridge crosses a medium sized creek that is fully incised into a filled glacial valley. The surrounding ground is rarely flooded and Q100 is contained mostly within banks. Flood flows and channel morphology are largely unaffected by the crossing which spans bank to bank.

(3)(b) The channel is unaffected by crossing design and the cross section is stream-like.

(4) (a) The bridge span is from bank to from bank and debris should pass unaffected. Clearance is low at the 100-year flood elevation (see 4g) which is not ideal but acceptable.

(4) (b) All bridge elements outside OHW

(4) (c) The stream in confined and modeling indicates a velocity ratio of 1.0.

(4) (d) No lateral movement expected.

(4) (f) Clearance was carefully calculated and reduced to 1 ft because of the small size of the stream, low gradient, limited debris loading and low velocity.

(4) (g) No protection was proposed.

Mormon Ditch at Hampton Rd in Whatcom Co. 2009. Complies with V. 5 WAC

This bridge crosses a floodplain channel that carries not only stream flow but also flood water from the Nooksack River. The bridge fully spans bank to bank. The right bank ground slopes up and away from the floodplain. On the LB side the road is at the floodplain elevation and flood flow can go across it unimpeded. The approximate width of the channel is 40-50 ft, although this is an artificial channel dug to optimize farming. The clear span is about 120 ft.

(3)(b) The channel cross section is artificial and is maintained through the crossing. A more natural or alluvial channel cross section would be anomalous in the several thousand feet of maintained artificial channel that is not under the control of the crossing owner.

(4) (a) There is plenty of width for the passage of debris. Clearance is low but likelihood of debris is also low considering that there is farmland u/s.

(4) (b) All bridge elements are outside OHW.

(4) (c) The span exceeds the width from top-of-bank to top-of-bank and it is unlikely to be a significant increase in velocity given the minimal blockage cause by the bridge and the left bank approach fill.

(4) (d) This artificial channel is unlikely to move laterally.

(4) (f) Only 1 ft of clearance is provided for stream flow, but floods will flow deeply over this area. In these flood plain crossings there is a balance to be made between raising the road to increase clearance and the increase in approach fill in the floodplain.

(4) (g) No rock protection is shown on these plans.

X Elk R. at Schmidt Rd in Greys Harbor Co. 2008. Incomplete information but is likely to comply with V. 5 WAC

This 36 ft bridge crosses a highly altered system, considered a “drainage ditch from cranberry bogs.” Historically this area was wetland behind the dunes on the Pacific coast that has now been drained for residential and agricultural use. This bridge spans the artificial channel from bank to bank. Minimal information available and we have not looked further into it.

(3)(b) The project maintains the character of the artificial channel.

(4) (a) Debris is not anticipated and channel-spanning structure would likely pass what did.

(4) (b) All bridge elements landward of OHW as shown on plans.

(4) (c) The channel does not have a floodplain but the velocity ratio is likely to be close to 1.0 because the waterway area under the bridge is similar to the channel up and downstream.

(4) (d) This channel cannot move laterally.

(4) (f) The 100-year flood elevation is not shown, clearance not known. Considering the requirements of the roadway it could not be raised to allow any more clearance.

(4) (g) The bridge is pile-supported. No scour protection shown on plans.

Tahuya R. at Belfair-Tahuya RD in Mason Co. 2010. Does not comply with V.5 WAC

This is one of the permits that were denied and appealed that led to the development of the bridge guidelines and these proposed changes to the WACs. This 116 ft bridge crosses a medium sized gravel-rich river. The clear span is about 110 ft and a width between abutments of 75 ft. The BFW was measured at 110 ft, the active channel is 150 to 200 ft, and the average top width at 100-year flood from hydraulic modeling was 364 ft. From this data the floodplain utilization ratio is 3.3, which makes this river confined, but it could go also be considered unconfined (the criteria is 3.0). If this was to be designed using Water Crossing Design Guidelines (WDFW, 2013) criteria for confined channels it would be at least 35 ft longer. On the other hand, if it were to be designed using the unconfined velocity ratio, it would pass, although there is reason to doubt the model results and compliance with the criteria would be carefully reviewed.

(3)(b)This channel has a wide active width and under this provision we would expect the bridge cross section to accommodate at least part of it. The rip rap abutments are part of the cross section and would therefor limit the any lateral movement. If this bridge were to be permitted under the Version 5 provisions, we would ask the applicant to determine if there would be measurable impacts (coarsened or scoured bed, upstream or downstream effects, and lateral constraint). There is 0 skew and this bridge does not alter the main channel streamlines, so it may be difficult to determine the effects on the bed or banks.

(4) (a) There is quite a bit of wood in the Tahuya River and logs to 100 ft long were measured in a jam upstream of this crossing. The width between abutments is only 75 ft and there is potential for debris blockage.

(4) (b) The abutment protection protrudes into the OHW. The exemption doesn't apply since the channel is in the unconfined category.

(4) (c) This river does not have a wide floodplain in this reach, although the velocity ratio may apply. The left bank fill could have been removed to increase the length of the bridge and that alternative should have been evaluated in the design.

(4) (d) There is lateral movement of the banks in the Tahuya, primarily from log jams and from deposits of sediment, but not from meander migration in the pure sense. The design should have considered the active channel width in alternative analysis.

(4) (f) Clearance is 2.6 ft, which is probably adequate for this river.

(4) (g) Substantial abutment protection is used on this bridge because it constricts the channel. The foundation could have been designed to resist lateral load and the pile cap function as a vertical abutment to increase width between toes and reduced the quantity of rip rap used to protect them. This alternative could have brought this bridge into compliance with these rules without a substantial increase in cost.

V.5 WAC provisions used in this analysis

(3) PERMANENT WATER CROSSING STRUCTURES - GENERAL

b) Water crossing structure must be designed to avoid and minimize measurable impacts to the expected channel functions and processes found at the site, or mitigate for impacts to them. The department will make an exception where there are human-made features in the floodplain that are outside the control of the applicant and they are unlikely to be removed. By complying with the provisions under subsections (4) and (6) of this chapter the applicant is assumed to provide these processes and functions.

(4) BRIDGE DESIGN

a) The bridge must pass water, ice, large wood and associated woody material and (a)sediment likely to move under the bridge during the one-hundred year flood flows or the design flood flow approved by the department.

b) The waterward face of all bridge elements that may come in contact with waters of (b)the state, including but not limited to abutments, piers, pilings, sills, foundations, aprons, wing walls, and approach fill must be landward of the OHWL. The requirement excludes mid-channel piers and protection required at the toe of the embankment in confined channels.

c) A bridge over a watercourse with an active floodplain must have a span wide enough to prevent a significant increase in the main channel average velocity (a measure of encroachment). This velocity must be determined at the one hundred-year flood flow or the design flood flow approved by the department. The significance threshold should be determined by considering bed coarsening, scour, backwater, floodplain flow and related biological and geomorphological effects typically evaluated in a reach analysis.

d) A person must design the bridge to account for the lateral migration expected to occur during the bridge's lifespan. The Department may approve encroachment into the expected pathway of lateral migration if it can be shown to avoid or minimize impacts to fish and their habitat.

e) Where there are existing flood control levees at the bridge construction site, or (e)other infrastructure that is not the property of the bridge owner but would constrain the construction of a bridge,

the department may approve a shorter bridge span than would otherwise be required to meet the requirements in this section.

f) The design must have at least three feet of clearance between the bottom of the bridge structure and the water surface at the one-hundred year peak flow or engineering justification for sufficient clearance that allows for the free passage of anticipated debris.

g) The bridge design must avoid the need for scour protection. Where mid-channel piers are necessary, design them so no additional scour protection is required. If scour protection is unavoidable, the design must minimize the scour protection to the amount needed to protect piers and abutments. The design must specify the size and placement of the scour protection so it withstands expected peak flows.

Section 4

HYDRAULIC CODE RULE CHANGES

Proposed Title 220-660
Washington Administrative Code

Supplemental
DRAFT

Programmatic Environmental Impact Statement


Habitat Improvement

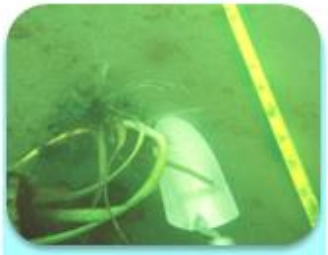

Buoys


Flood Control Devices


Bank Protection


Boat & Equipment Access


Overwater Structures


Aquatic Plant Control


Marinas


Dredging


Culverts


Fish Passage Correction


Fish Screens

Washington Department of Fish and Wildlife **July 2014**

Mission

of the

Washington Department of Fish and Wildlife

To preserve, protect and perpetuate fish, wildlife, and ecosystems
while providing sustainable fish and wildlife
recreational and commercial opportunities.

State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

July 16, 2014

Dear Interested Parties:

The Washington Department of Fish and Wildlife (WDFW) has prepared this Supplemental Draft Programmatic Environmental Impact Statement (SDPEIS) on proposed changes to the Hydraulic Code Rules in Chapter 220-110 Washington Administrative Code (WAC). The SDPEIS meets the requirements of the State Environmental Policy Act (SEPA) in Chapter 43.21C RCW, SEPA rules in Chapter 197-11 WAC, and other relevant state laws and regulations. The proposed rule changes and the SDPEIS are now available for a 30-day public comment period.

WDFW protects fish life by using its authority to provide approvals for construction projects in or near waters of the state. WDFW issues Hydraulic Project Approvals (HPAs) for projects that use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state. HPAs are issued based on the Hydraulic Code Rules. WDFW is revising the Hydraulic Code Rules to improve protections for fish and streamline the permit approval process.

The Hydraulic Code Rules, except those for mineral prospecting, were last updated in 1994 before Washington fish species were listed under the Endangered Species Act. There have also been changes to the hydraulic code (Chapter 77.55 RCW), to other regulations, and to fish science and design technology during that time. The current Hydraulic Code Rules do not reflect those changes. WDFW is rewriting and replacing the entire chapter so that the content is easier for the applicant to understand, to reflect statutory changes in procedure, and to update rules based on contemporary science and design technology.

MAJOR CONCLUSIONS

This is a non-project review proposal. The purposes of the proposed rule changes are to update the rules to better align with statutory changes, meet current fish science and design technology, and improve procedural and administrative requirements. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a structure for adaptive management that responds to changing science and technology and/or the results of effectiveness monitoring.

These actions will deliver cost and time savings for some applicants, improve the overall effectiveness of the program, eliminate inconsistencies between the statute and the rules, and enhance a transparent decision making process with our stakeholders.

AREAS OF CONTROVERSY

Areas of controversy include water crossing structures, timing windows, and changes that are necessary to implement legislation, including rules for single family bulkheads, tidegates and flood gates. Many people are concerned about the cumulative effects of HPAs issued by the agency. While the hydraulic code prevents considering issues beyond the proposed project, we can't deny that there are cumulative effects to the environment from hydraulic projects and development. WDFW's goal is to help applicants develop a project that best meets their needs while providing protection to fish life.

See Fact Sheet for details on document availability and commenting.

WDFW believes this SDPEIS will assist decision makers to identify the key environmental issues and options associated with this action. Based on comments received from agencies and interested parties during public review of this draft document and the associated proposed rule changes, WDFW plans to prepare and distribute a Final Programmatic Environmental Impact Statement in fall, 2014.

Sincerely,

Lisa Wood

Lisa Wood
SEPA/NEPA Coordinator
Agency Responsible Official
Protection Division
Habitat Program

SEPA Fact Sheet – SDPEIS 14-049

Title: Hydraulics Code Rule Changes – Supplemental Draft Programmatic Environmental Impact Statement

Description: The Washington State Department of Fish and Wildlife (WDFW) has prepared this Supplemental Draft Programmatic Environmental Impact Statement (SDPEIS) on the Hydraulic Code Rule Changes. This document was prepared in compliance with the Washington State Environmental Policy Act (SEPA).

The Hydraulic Code Rules, except those for mineral prospecting, were last updated in 1994 before Washington fish species were listed under the Endangered Species Act. The purposes of the proposed rule changes are to update the rules to better align with statutory changes, meet current fish science and design technology, and improve procedural and administrative requirements. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a structure for adaptive management that responds to changing science and technology and/or the results of effectiveness monitoring.

Location: Statewide

Proposed Date of Implementation: Fall 2014

Project Proponent:
Washington Department of Fish and Wildlife
Habitat Program, Protection Division

Project Manager:
Randi Thurston
Habitat Program, Protection Division
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501-1091
Phone: (360) 902-2602
E-mail: randall.thurston@dfw.wa.gov

Lead Agency:
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501-1091

Responsible Official:
Lisa Wood
600 Capitol Way North
Olympia, WA 98501-1091
Phone: (360) 902-2260
Email: SEPAdesk2@dfw.wa.gov

Method of Comment: Comments received through these procedures are part of the official SEPA record for this proposal. You can submit your comments or questions any **one** of the following ways:

- Email to SEPAdesk2@dfw.wa.gov
- Online at the WDFW SEPA website comment link at: http://wdfw.wa.gov/licensing/sepa/sepa_comment_docs.html
- Fax to (360) 902-2946
- Oral or written comments at the Fish and Wildlife Commission meeting scheduled for August 8, 2014
- Mail to: Lisa Wood, SEPA Responsible Official, 600 Capitol Way North, Olympia, WA 98501-1091

When you send us your comments on the SDPEIS, please include the name of the proposal and your name in the subject line of your comment, as below:

Comment on Hydraulic Code Rule Changes SDPEIS - Your Name

Permits and Licenses Required: No permits, licenses, or approvals are required for the proposed Hydraulic Code Rule Changes. Adoption of the rule changes is in compliance with Chapter 34.05 RCW (Administrative Procedure Act) Part III Rule-Making Procedures.

Authors and Principle Contributors:

WDFW: Randi Thurston, Teresa Scott, and Pat Chapman

Consultants: ESA Environmental Consultants and Cardno ENTRIX

Date of Issue: July 2014

Comments Due: Agencies, affected tribes, and members of the public are invited to review and comment on this SDPEIS. We are accepting comments on the SDPEIS beginning July 16, 2014. We must receive your comments on the SDPEIS within 30 days of the date of issuing this SDPEIS. ***This means we must receive your comments no later than 5:00 PM on Friday, August 15, 2014.***

Concurrent with SDPEIS review, we are also taking comments on the proposed rule changes, through August 15, 2014. Comments received through August 1 will be summarized and presented to the Fish and Wildlife Commission at their meeting scheduled for August 8, 2014. Public comments will also be taken at the August 8 hearing. When you send us your comments on the proposed rule changes, please include the name of the proposal and your name in the subject line of your comment, as below:

Comment on Hydraulic Code Rule Changes - Your Name

Public Participation: An opportunity for the public to testify to the Fish and Wildlife Commission with comments about the HPA rule changes and SDPEIS will occur as follows:

DATE	TIME	LOCATION
August 8, 2014	To Be Determined	Olympia, Washington

Date of Next Action and Date Final Action is Planned: WDFW anticipates releasing the Final Programmatic Environmental Impact Statement on the Hydraulic Code Rules in fall, 2014. We anticipate that final action by the Fish and Wildlife Commission to adopt the rule changes will occur on or after September 26, 2014.

Document Availability: The SDPEIS, Hydraulic Code Rule Change Proposals, Cost-Benefit Analysis and Small Business Economic Impact Statement, HPA Aquatic Habitat Guidelines and "White Papers", List of Science References, and other materials referenced in the SDPEIS are available at no charge at: http://wdfw.wa.gov/licensing/hpa/rulemaking/ or at:

Washington Department of Fish and Wildlife,
Habitat Program, Protection Division
Natural Resources Building, 5th Floor
1111 Washington Street East
Olympia, WA
[Mailing address: 600 Capital Way North, Olympia, WA 98501-1091]

These documents may be obtained in hard copy or CD by written request to the SEPA Responsible Official listed above, or by calling (360) 902-2260. Supplies are limited. To ask about the availability of these documents in a format for the visually impaired, call WDFW at 360-902-2534. Persons with hearing loss can call 711 or 1-800-833-6388 for Washington Relay Service, including TTY service. Persons with a speech disability can call 1-877-833-6341 to access a Communications Assistant with Washington's Speech-to-Speech service.

Distribution List: Notice of the availability of this SDPEIS is posted on the WDFW SEPA website: http://wdfw.wa.gov/licensing/sepa/sepa_comment_docs.html, sent to local planning departments (city and county), affected Tribes, all state and federal agencies with jurisdiction, selected environmental organizations, individuals who have already commented on draft rules or EIS scoping, and interested parties.

Acronyms and Abbreviations

BMP	best management practice
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DAHP	Department of Archaeology and Historic Preservation
DPS	Distinct Population Segment
Ecology	Washington Department of Ecology
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESSB	Engrossed Substitute Senate Bill
ESU	Evolutionarily Significant Unit
F	Fahrenheit
FPA	Forest Practices Act
GMA	Growth Management Act
HCP	Habitat Conservation Plan
HPA	Hydraulic Project Approval
JARPA	Joint Aquatic Resources Permit Application
LWD	large woody debris
LWM	large woody material
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
OHWL	ordinary high water level
OHWM	ordinary high water mark
PATON	Private Aids to Navigation
PCBs	polychlorinated biphenyls
PEIS	Programmatic Environmental Impact Statement
RCW	Revised Code of Washington
SBEIS	Small Business Economic Impact Statement
SEPA	State Environmental Policy Act
SMA	Shoreline Management Act
TMDL	Total Maximum Daily Load
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources

Table of Contents

Tables

Chapter 1 Introduction and Background

The Washington Department of Fish and Wildlife (WDFW) issued the Draft Programmatic Environmental Impact Statement (Draft PEIS) on proposed changes to the hydraulic code rule (Chapter 220-110) Washington Administrative Code (WAC) in October 2013. WDFW received numerous public comments on the DPEIS during the public comment period that ended December 13, 2013. In addition, the 2014 Washington State Legislature passed amendments to Revised Code of Washington (RCW) 34.05.271 that clarify how WDFW is required to identify sources of information reviewed and relied upon in preparing to take a significant agency action, including changes to agency rules. In response to the public comments and amendments to RCW 34.05.271, WDFW has decided to prepare a Supplemental Draft Programmatic Environmental Impact Statement (SDPEIS) on the proposed hydraulic code rule changes.

WDFW protects fish life by using its authority to provide approvals for construction or work that might affect the flow or bed of waters of the state. Specifically, WDFW issues Hydraulic Project Approvals (HPAs) for 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. HPAs are issued and provisioned based on the Hydraulic Code Rules, which implement Chapter 77.55 RCW (Construction Projects in State Waters). WDFW is proposing revisions to the Hydraulic Code Rules primarily to improve protections for fish life. The Hydraulic Code Rules, except those for mineral prospecting, were last updated in 1994 before Washington fish species were listed as threatened or endangered under the Endangered Species Act (ESA). There have also been many changes to the statute, fish science, and design technology in that time. Updates to the Hydraulic Code Rules are needed to improve the consistency of the rules with statutory changes that have occurred since the last update, and incorporate more current fish science and design technology.

WDFW initially undertook revision of the Hydraulic Code Rules in 2006 as part of the process of preparing a Habitat Conservation Plan (HCP) for the Hydraulic Project Approval (HPA) Program. An HCP is a management strategy under ESA that can provide long-term certainty of ESA compliance. It can be used for a particular set of activities, such as administrative rules, while providing conservation of ESA-listed species. WDFW was developing an HCP to assure that agency permitting actions contributed to conservation and recovery of listed species and to provide federal assurances to permit holders for activities under an HPA. Updating the Hydraulic Code Rules was a centerpiece of developing the HCP. WDFW discontinued work on the HCP in 2012 when stakeholder and tribal support waned. However, WDFW has continued to work on revisions to the Hydraulic Code Rules.

WDFW intends to complete adoption of the rules in 2014. This SDPEIS is being prepared as part of the rule making process. Update of the hydraulic code rules constitutes a major overhaul of the rule language. Because of this, the updated rules would appear under a new rule section – Title 220-660 WAC. If changes to hydraulic code rules are adopted, the current rules in Title 220-110 WAC will be superseded by the new rules in Title 220-660. If no changes are adopted, Title 220-110 as it exists today will remain in effect.

Comments on the SDPEIS and proposed rules are being taken separately but concurrently.

The sections in this chapter include descriptions of:

- The purpose and need for the proposed action;
- Summary of Draft PEIS comments;
- Statutory authority for the proposed action;
- The State Environmental Policy Act (SEPA) review process;
- Related regulations and policies;
- Public involvement; and
- A guide to reading this document.

1.1 Project Purpose and Need

Several changes to hydraulic code statutes have occurred since the last comprehensive hydraulic code rule update in 1994 (more details can be found in Table 2-1). In some cases, current rules are incomplete with respect to current statute. Updating the rules to better align with current statute is one important purpose for the hydraulic code rules update.

In addition, understanding of the impacts of hydraulic projects on fish life and habitat has advanced since the last rule update; however, no modifications to rule provisions have been implemented to take advantage of those advances. The current rules also do not reflect technological advancements for constructing many hydraulic projects and the rules are inconsistent with best practices, resulting in overly restrictive provisions in some cases and overly permissive provisions in other cases. In addition, certain administrative aspects of submitting and processing applications need to be updated to reflect improved methods of filing and processing applications.

New rules will result in clear application and permit-processing procedures for applicants and WDFW, bring rules into alignment with current statute, and will enable WDFW to apply available science and technology to prevent or mitigate the impacts to fish life and habitat caused by hydraulic projects.

The purposes of the proposed rule changes are to update the hydraulic code rule provisions to respond to statutory changes, integrate current fish science and design technology, and improve procedural and administrative requirements. Specifically the rule changes will:

- Incorporate up-to-date fish science and technology;
- Simplify the permitting of certain types of projects;
- Improve procedural and administrative requirements to better align with statutory changes made since the rules were last revised; and
- Establish a baseline for adaptive management in response to changing science and technology and/or the results of effectiveness monitoring.

These actions will save time and costs for some applicants, improve the overall effectiveness of the program, better align the rules and statute, and enhance a transparent decision-making process with Tribes and stakeholders.

1.2 Summary of Draft PEIS Comments

WDFW issued the Draft Programmatic Environmental Impact Statement (Draft PEIS) on the Hydraulic Code Rule Changes in October 2013. WDFW received numerous public comments on the DPEIS during the comment period, which ended December 13, 2013. Also, during the 2014 Washington State Legislature, lawmakers passed amendments to RCW 34.05.271, which clarifies how WDFW is to identify sources of information reviewed and relied upon in preparing to take a significant agency action including changes to agency rules. In response to the public comments and amendments to RCW 34.05.271, WDFW decided to prepare a SDPEIS on the proposed rule changes.

Comments included those related to the SEPA process, the evaluation of economic impacts, and the lack of detail in some EIS sections and in some impacts analysis. Many of the comments expressed concern with how WDFW had incorporated science into the rule-making process. Many also commented on the limited array of alternatives analyzed in the EIS (only the preferred alternative and a no-action alternative were presented in the draft PEIS).

There were also several comments specific to the proposed rules. Those comments did not relate to the adequacy of the SEPA analysis, but focused on aspects of the rules that the commenters wanted WDFW to change. Upon careful consideration of the comments received, WDFW made changes to the proposed rules, and added two alternatives to the SEPA analysis.

Four main categories of comment are addressed in the supplemental draft PEIS: Incorporation of available science, evaluating additional alternatives, process and timing of the draft PEIS (with respect to the rulemaking process under the Administrative Procedures Act), and discussion of economic impacts and the timing of the Small Business Economic Impact Statement. These topics are addressed as follows.

1.2.1 Incorporation of Available Science

Comments related to incorporating available science stated that WDFW was not in compliance with RCW 34.05.271. This statute includes specific requirements for how WDFW should identify and make available the sources of information used in taking a significant agency action. The comments also stated that some of the white papers cited by WDFW in the DPEIS were not up to date and were not cited properly.

The Draft PEIS included information on the science reviewed, but it was not presented so that readers could clearly see how the science was used in developing the alternatives, assessing the impacts, and the proposed rule changes. WDFW moved the *Science Supporting the Proposed Alternative* section of the Draft PEIS (Section 2.4.4 in the DPEIS) up to the *Formulation of Alternatives* section in Chapter 2 of the Supplemental Draft PEIS. This change highlights the science that was used in formulating the alternatives and also introduces the science before the new rules are described in more detail.

1.2.2 Incorporation of Additional Alternatives

SEPA (WAC 197-11-440(5)(a)) requires that an Environmental Impact Statement (EIS) evaluate alternative courses of action to the proposal. The alternatives must be reasonable actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased

level of environmental degradation (WAC 197-11-440(5)(b)). SEPA also includes requirements for evaluating alternatives for a non-project or programmatic proposal such as adopting new rules (WAC 197-11-442).

The requirements are intended to give the lead agency more flexibility in preparing an EIS for a programmatic proposal because less detail is available than for a project-specific proposal. The SEPA rules recommend that a programmatic EIS emphasize the evaluation of alternatives and that the alternatives, including the proposed action, be analyzed at a roughly comparable level. For a programmatic analysis, lead agencies are not required to examine all conceivable policies, but may limit the EIS to a discussion of alternatives which have been formally proposed or are reasonably related to the proposed action (WAC 197-11-442(4)). According to SEPA, the discussion of alternatives must be limited to a general discussion of the impacts of alternative proposals.

In the Draft PEIS, WDFW evaluated two alternatives—the Preferred Alternative (the proposed rule changes) and the No Action Alternative. Section 2.5 of the Draft PEIS also included a discussion in of alternatives and proposed rule changes that had been presented to the public as part of scoping, but had been eliminated from further detailed study. Several comments stated that WDFW should have evaluated additional alternatives including those that were presented in scoping for the Draft PEIS.

WDFW considered three approaches the department could take to evaluate additional alternatives in the Supplemental Draft PEIS. The first approach was to provide additional analysis and explanation in Section 2.5 of why the alternatives were eliminated from consideration. The second approach was to further evaluate the alternatives presented to the public during the scoping. The third approach was to evaluate the alternatives received during the public comment period that were not included in the Preferred Alternative. WDFW chose to do two out of the three: WDFW expanded the explanations of eliminated alternatives so that the public can better understand the reasons the alternatives were not incorporated into the rule making process. WDFW also evaluated alternatives compiled from comments received during the Draft PEIS public comment period and included discussion of those additional alternatives in Chapter 4. Because changes recommended in the comments were not presented in rule-change form, the discussion of the additional alternatives is limited to a listing of the suggested provisions and general discussions of the differences in impacts between the suggestions and the no-action alternative.

1.2.3 Process and Timing of the Draft PEIS

Some comments expressed concerns about the public input process and that the Draft PEIS was issued before WDFW had finalized the proposed rule changes. Comments about public input included statements that the stakeholder group WDFW established to provide advice on the proposed rule changes did not have broad enough representation.

To address these comments, WDFW is incorporating the final proposed rule changes into the Supplemental Draft PEIS, making the proposed rule changes available for further comment as well as the Supplemental Draft PEIS. WDFW will respond to specific comments on the proposed rule changes in the Final PEIS.

1.2.4 Economic Analysis and Timing of the Small Business Economic Impact Statement

A few comments stated that the Draft PEIS did not include a cost-benefit analysis and others stated that the Draft PEIS had been released before the Small Business Economic Impact Statement (SBEIS) had been prepared. SEPA does not require a cost-benefit analysis (WAC 197-11-450). To comply with SEPA, an environmental analysis focuses on impacts to the environment; SEPA rules state that the comparison of alternatives should not be displayed as a monetary cost-benefit analysis when there are important qualitative considerations.

When an agency adopts a rule change, an economic analysis is required if the rule is expected to impose more than minor costs on businesses in an industry (RCW 19.85.030). This analysis is conducted through a SBEIS and a cost/benefit analysis that the agency files with the code reviser along with the notice required before a rule-making hearing (RCW 34.05.320). If the SBEIS determines a rule change will cause a disproportionate impact on small businesses, the agency shall, where legal and feasible in meeting the stated objectives of the rule, reduce the costs imposed on small businesses.

WDFW prepared an SBEIS economic analysis for the proposed changes to the Hydraulic Code Rules. WDFW provided the SBEIS and cost/benefit analysis when the final draft proposed rules (CR102) were filed with the Washington State code reviser.

1.3 Statutory Authority

WDFW has sole authority to implement the Hydraulic Code Rules (Chapter 220-110 WAC) under Chapter 77.55 RCW (Construction Projects in State Waters). RCW 77.55.021 (1) states "*…In the event that any person or government agency desires to undertake a hydraulic project, the person or government agency shall, before commencing work thereon, secure the approval from the department in the form of a permit …* "RCW 77.55.011(11) defines a "hydraulic project" as "*the construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or freshwater of the state.*" Although both "bed" (RCW 77.55.011(1)) and "waters of the state" (RCW 77.55.011(25)) are defined as land or waters waterward of the "ordinary high water line" (RCW 77.55.011(16)), the definition of a hydraulic project includes construction or performance of work landward of the ordinary high water line if it will use, divert, obstruct, or change the natural flow or bed waterward of the ordinary high water line.

The construction permit issued by the department is called a Hydraulic Project Approval (HPA). The sole purpose of HPA is to protect fish life from construction and other work in or near the water. The HPA has conditions a permittee must follow that mitigate impacts to fish life caused by the project. The department cannot unreasonably withhold or unreasonably condition the HPA (RCW 77.55.021(7)(a)).

The role of the HPA in context with other local, state, and federal permits and authorizations is explored further in section 1.5.7.

1.4 Environmental Policy Act Review Process

This document is prepared at a programmatic level in accordance with the State of Washington SEPA Rules (Chapter 197-11 WAC). This Supplemental Draft PEIS evaluates the adoption of the updated

Hydraulic Code Rules under WAC 197-11-704(2)(b)(i). This Supplemental Draft PEIS evaluates alternatives and the potential negative or beneficial impacts of adopting the updated rules. It does not evaluate the site-specific impacts of activities requiring an HPA. Generally, projects that require an HPA undergo site-specific SEPA review by the lead agency before WDFW issues an HPA. The Fish and Wildlife Commission (FWC) will use information from this Supplemental Draft PEIS to evaluate reasonable alternatives. These alternatives must comply with state law and be within the Commission's authority to control. Several commenters on the October 2013 Draft PEIS suggested the PEIS analyze the impacts of implementing the changes to Chapter 77.55 RCW that have occurred since 1994. Others suggested changes to existing statute. However, since statutory changes are not within the Commission's authority to control they are mentioned but not analyzed in the Supplemental Draft PEIS.

1.5 Related Regulations and Policies

This section describes the major regulations and policies that relate to hydraulic projects. These regulations and policies are implemented by a variety of entities and agencies including the Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (Corps), Washington Department of Ecology (Ecology), Washington Department of Natural Resources (WDNR), and local governments.

1.5.1 Aquatic Resources Protection Permits

The Joint Aquatic Resources Permit Application (JARPA) process is used by multiple regulatory agencies in Washington State to allow project proponents to use a single form to apply for multiple aquatic resources protection permits. Although WDFW has an online permit processing tool, the JARPA form can still be used to apply for an HPA as well as the following approvals:

- Federal: Section 10 and Section 404 permits (Corps) and Private Aids to Navigation (PATON) approvals (U.S. Coast Guard);
- State: 401 Water Quality Certification (Ecology);
- Aquatic Use Authorization (WDNR); and
- Local: Shoreline Substantial Development Permits, Shoreline Conditional Use Permits, Shoreline Variances, and Shoreline Substantial Development Exemptions, unless local governments have their own permit applications.

1.5.2 Endangered Species Act

The federal ESA was enacted by Congress in 1973 in response to concerns over the decline of a number of fish and wildlife species. The purposes of the ESA are to protect endangered or threatened species and to provide a means to conserve their habitats. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), collectively called "the Services". The USFWS has primary jurisdiction of terrestrial (land) and freshwater species, while NMFS has jurisdiction over marine species such as salmon and marine mammals.

The primary provision of the ESA that applies to hydraulic projects is Section 7 that requires proponents of projects that have a federal "nexus" to consult with the USFWS and NMFS to determine if the project would affect listed species. A federal nexus occurs if a project is located on federal land; receives federal funding; or requires a federal permit, license, or other authorization. USFWS and NMFS

designate critical habitat for listed species. Critical habitat includes the area occupied by a species at the time of its listing that is essential to conservation of the species and may require special management considerations or protection. Areas outside the area occupied by the species may also be listed if the areas are determined to be essential for conservation of the species.

Several fish and aquatic species in Washington are listed under the ESA and have designated critical habitat. Sections 3.2, 3.6, and 3.7 of this PEIS list those species. Because of the number of listed species and because hydraulic projects often include a federal nexus, many hydraulic projects require ESA consultation.

1.5.3 Clean Water Act

The federal Clean Water Act (CWA) is the principal federal law addressing surface water quality. The CWA uses a variety of regulatory and non-regulatory tools to limit direct discharge of pollutants into waterways; finance municipal wastewater treatment facilities; and manage stormwater runoff from streets, construction sites, forests, and farms. These tools are implemented to achieve the overall goal of the act, which is to restore and maintain the chemical, physical, and biological integrity of the navigable waters of the United States so they can support the protection and propagation of shellfish, fish, and wildlife.

Many provisions of the CWA are regulated by the EPA. In some cases EPA has delegated its authority to state agencies: in Washington the authority is delegated to Ecology and seven Tribes. The Corps also implements sections of the CWA. Although WDFW regulates hydraulic projects, it has no authority to administer provisions of the CWA.

The EPA's authority includes discharge of pollutants from a point source into navigable waters regulated through a National Pollutant Discharge Elimination System (NPDES) Permit in accordance with Section 402 of the CWA. NPDES permits also apply to municipal stormwater systems. EPA is also responsible for implementing Section 303 of the CWA, which includes federal water quality standards and provisions for establishing Total Maximum Daily Loads (TMDLs). Section 401 of the CWA requires issuing a Section 401 Water Quality Certification for activities that involve depositing fill or excavating in navigable waters or associated wetlands. The certification states that the project is consistent with federal discharge requirements and the aquatic protection requirement of state law. In Washington State, EPA has delegated its CWA authority to the Department of Ecology, including issuing NPDES permits and Section 401 Water Quality Certification and establishing TMDLs.

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S., which include wetlands as well as navigable waterways. The Corps implements Section 404 of the CWA.

1.5.4 Forest Practices Act

The Forest Practices Act (FPA) provides for managing public and private commercial forest lands in Washington to balance maintenance of a viable forest products industry with the need to protect natural resource attributes. These attributes include forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation, and scenic beauty (RCW 76.09.010). Forest practices include all practices related to growing, harvesting, and processing timber, including such activities as road construction and

maintenance, thinning, salvage, harvesting, reforestation, brush control, and application of fertilizers and pesticides. The FPA is administered by WDNR through the forest practice rules (Title 222 WAC).

The most recent amendment to the FPA, entitled the Forests and Fish Law, was adopted in 1999. It was developed in response to federal ESA listing of salmon and steelhead and is considered an integral part of the state's salmon recovery strategy. The Forests and Fish Law contains requirements for state lands and private forestland owners to maintain or improve salmon habitat and water quality. Among the provisions of the law are requirements for improved road culverts to facilitate fish passage, enhanced road construction practices to reduce erosion and sedimentation, and enlarged stream buffers to provide better shading. The Forests and Fish Law was also negotiated to assure compliance under the CWA, particularly in light of the many impaired listings (303(d)) on forest lands.

During the 2012 legislative session, 2ESSB 6406 amended the FPA and the Hydraulic Code Rules to integrate fish protection standards contained within the current Hydraulic Code Rules into forest practices rules. All forest practices hydraulic projects (FPHPs) are now regulated under forest practices rules.

The amended statutes also require WDFW to adopt rules establishing our own procedures for the concurrence review process. Within this process, WDFW habitat biologists are required to review and provide concurrence or non-concurrence on whether or not FPHPs meet specific criteria defined in 2ESSB 6406. The department completed the CR-102 rule-making process in 2013 and these rules were adopted by the director.

2ESSB 6406 states that when WDFW proposes changes to the Hydraulic Code Rules *"that would affect state or private forest landowners and impose restrictions or burdens on forest practices beyond those contemplated in the FFR…"*, WDFW must invoke the adaptive management process as outlined in Appendix M of the Forest and Fish Report. This provides the Forest Practices Policy Committee an opportunity to a review and comment on the proposed new Hydraulic Code Rule as part of the normal rule-making process. Once the HPA rules are adopted by the Fish and Wildlife Commission, the Forest Practices Board must incorporate changes to the FPHP fish protection standards into the Forest Practices rules.

1.5.5 Land and Shoreline Use Planning and Management

Land use planning and management in Washington is regulated through local planning and zoning regulations. The 1990 state Growth Management Act (GMA) establishes goals for land use planning and a number of mandatory planning requirements that express the state's interest in local land use planning decisions. The state's fastest growing counties, as well as cities within those counties, are required to prepare comprehensive plans consistent with the goals and mandatory requirements of the act. The provision of the GMA that most relates to hydraulic projects is the requirement that all counties and cities in the state must designate natural resource lands and critical areas within their jurisdiction (RCW 36.70A). Natural resource lands include:

- Agricultural lands that are not already characterized by urban growth and that have long-term significance for the commercial production of food or other agricultural products;

- Forest lands that are not already characterized by urban growth and that have long-term significance for the commercial production of timber; and
- Mineral lands that are not already characterized by urban growth and that have long-term significance for the extraction of minerals.

Critical areas as defined under GMA include:

- Wetlands,
- Areas with critical recharging effect on aquifers used for potable water,
- Fish and wildlife habitat conservation areas,
- Frequently flooded areas, and
- Geologically hazardous area.

The GMA requires that all counties and cities adopt development regulations to ensure conservation of natural resource lands and the protection of critical areas (RCW 36.70A.060). Counties and cities must give special consideration to conservation or protection measures needed to preserve or enhance anadromous fisheries. Typical protection measures include restricting types of development in critical areas and provisions for wetland and stream buffers to protect riparian areas.

Shorelines of the state are protected by the Shoreline Management Act (SMA) of 1971 (Chapter 90.58 RCW). The SMA applies to the following classes of waters of the state:

- All marine waters of the state,
- Streams and rivers with a mean annual flow of 20 cubic feet per second (cfs) or more,
- Lakes and reservoirs larger than 20 acres in area, and
- Wetlands and floodplains associated with the above.

The SMA also applies to upland areas extending landward for 200 feet of the ordinary high water mark (OHWM). The SMA requires cities and counties to adopt Shoreline Management Plans (SMP) that meet the requirements of its administrative rules, which were last updated in 2003 (Chapter 173-26 WAC). The new administrative rules include requirements for such hydraulic projects as shoreline stabilization; piers and docks, fill, breakwaters, jetties, groins, and weirs; dredging and dredge material disposal; and shoreline habitat and natural systems enhancement projects.

The SMA exempts public and private projects that are designed to improve fish and wildlife habitat or fish passage from the requirement to obtain a shoreline substantial development permit, if all of the following conditions are met:

- The project has been approved by WDFW;
- The project has received an HPA from WDFW; and
- The local government has determined that the project is substantially consistent with the local shoreline master program (RCW 90.58.147).

1.5.6 Cultural Resources

The State Department of Archaeology and Historic Preservation (DAHP) works with project proponents to ensure compliance with various cultural resource regulations, including Section 106 of the National Historic Preservation Act (NHPA) and the Governor's Executive Order 05-05. The NHPA requires all

projects with federal funding to identify cultural resources and obtain an opinion from DAHP on the site's significance and the impact of the project on the site. Governor's Executive Order 05-05 requires that state agencies integrate DAHP and tribes into their capital planning processes in order to protect cultural sites. Federal and state laws, including the Archaeological Resource Protection Act of 1979, Archaeological and Historic Preservation Act of 1974, Executive Order 05-05, RCW 27.44 Archaeological Sites and Resources, WAC 25-48 Archaeological Excavation and Removal Permit, and WAC 25-46 Registration of Historic Archaeological Resources on State-Owned Aquatic Lands, protect archaeological sites if inadvertently disturbed by construction activities. Hydraulic projects often include excavation and other ground-disturbing activities in riparian and marine areas, which have a higher likelihood of presence of historic and cultural resources. Thus, it is important that projects receiving hydraulic project approval from WDFW comply with regulations that protect cultural resources..

1.5.7 Role of the Hydraulic Code Authority

Local, state, and federal agencies may have jurisdiction over the same project. At each jurisdictional level, priorities and legal mandates determine the resources protected and the extent of the protection that is applied. Mitigation requirements also vary according to the agencies' protection priorities and legal mandates. As a result, regulatory efforts may share intentions or have entirely different habitat protection objectives. The Governor's Office of Regulatory Innovation and Assistance has prepared an aquatic permitting spreadsheet[1] summarizing the types of permits required from local, state, and federal jurisdictions. The spreadsheet includes the purpose of the permit, the type of activity that triggers the permit, timeline, and agency contact information.

The HPA fills a unique niche because it is the only permit issued solely to protect fish life. In many cases, the HPA is the only permit required for hydraulic projects in streams too small to be considered a shoreline of the state or navigable waters. These projects do not undergo a Critical Area Ordinance review because a shoreline or other land use application is not required by the local government. For hydraulic projects that receive a Shoreline Substantial Development Permit Exemption (SSDE) often the only permitting requirement is to obtain an HPA and perhaps a Department of Army Permit.

Ranching, farming, and silviculture activities are exempt from a Department of Army Section 404 permit. If the hydraulic project requires a Department of Army permit (Section 404 or Section 10) often the Corps will not make a final permit decision until local or state permits, including the HPA, are issued. If the hydraulic project requires a Department of Army permit, a Section 401 water quality certification is also required. In many cases, an HPA must be obtained before a Department of Ecology Section 401 certification is issued. However, this is not the case for many of the Nationwide Permits that have a pre-approved Section 401 Water Quality Certification. The Corps issues nationwide permits for fifty types of projects that are similar in nature and have minimal individual or cumulative impacts. To receive a nationwide permit, hydraulic projects must comply with the General Conditions listed in the document.[2] Usually the provisions in an HPA are more specific to the construction of a hydraulic project than the

---

[1] Aquatic Permitting Spreadsheet is available at www.ora.wa.gov/documents/ENV_011_08.pdf

[2] User's Guide for Nationwide Permit in Washington State is available at http://www.nws.usace.army.mil/Portals/27/docs/regulatory/NWPs/2012%20NWP%20Users%20Guide.pdf

general conditions in a nationwide permit. As a result, the HPA provides added fish protection especially for non-ESA-listed state priority fish and shellfish species.

In accordance with Section 7 of the ESA, the Corps must consult with the Services on any work proposed in an application including nationwide permits that may affect an ESA-listed species or its designated critical habitat. The Services will provide the Corps with conservation measures to protect federally listed fish species. However, the Services do not recommend conservation measures to the Corps to protect other state priority fish and shellfish species and their habitats. This is the unique purpose of the HPA.

1.6 Stakeholder and Public Involvement

WDFW has involved the public and stakeholders in developing the updated Hydraulic Code Rules. WDFW formed a Stakeholder Advisory Group to provide comments on an initial draft of the HPA rules. This group included eighteen representatives from the construction industry, non-governmental organizations, state and federal agencies, and tribes. This group met eight times between October 31 and the end of December, 2011, receiving presentations on and discussing issues relating to one or two specific aspects of the HPA rules at each meeting. The group engaged in policy discussions about the proposed changes and the impacts to their interests, and commented on revised rule proposals prepared by WDFW. Those rule documents were also posted on the WDFW web site for comment by any reader. Three separate drafts of the revised code rules have been posted on the WDFW website along with forms to comment on the rules. The fourth draft accompanied the September 2013 PEIS. A final draft accompanies this supplemental draft PEIS. This draft was revised based on September 2013 PEIS comments and will be finalized concurrent with the final EIS. The Fish and Wildlife Commission will consider the final draft rules and hear public testimony prior to adopting final rules in fall of 2014.

WDFW conducted a public scoping process for this EIS in summer 2012. The scoping notice was issued June 22, 2012 and the scoping comment period ended July 16, 2012. Scoping comments were accepted by email, through an online WDFW comment website, by fax, and by mail. WDFW received thirty-one comment documents. Generally, comments provided detailed suggestions for how rule changes should address specific problems or situations, or ways the proposals should not be changed from existing rules. Few commenters stated a preference among the alternatives presented, although a leaning towards the preferred alternative was deduced from the overall tone of the comments provided. A more detailed summary of the scoping comments is provided in Appendix A.

WDFW has met one-on-one with Tribes and interested stakeholders to discuss the rule update on an ad-hoc basis since the CR-101 was filed in 2011. Stakeholders include Washington Association of Counties, Association of Washington Cities, Association of Washington Business, Washington Forest Protection Association, Ports Association, Washington Department of Transportation, Ecology, and WDNR, and the environmental community. WDFW also conducted seven public meetings, one in each of the six regions and one in Olympia, in October and November 2013. The purpose of the meetings was to answer questions and gather comment on the PEIS and draft rules.

1.7 How to Read this Document

This EIS is organized into six chapters:

- Chapter 1 provides background information on the Hydraulic Code Rules update process; the purpose and need for the action; summary of comments on the Supplemental Draft PEIS, statutory authority, related permits, actions, and laws; and a description of public involvement.
- Chapter 2 presents a description of the No Action Alternative, Proposed Rule Changes Alternative, and two alternatives that reflect public comments. These alternatives are entitled "Additional Protection for the Natural Environment" and "Additional Protection for the Built Environment." The chapter also summarizes how the alternatives were developed and describes alternatives eliminated from detailed evaluation.
- Chapter 3 describes the affected environment and existing conditions.
- Chapter 4 describes the potential impacts and benefits of the four alternatives.
- Chapter 5 lists the references used in compiling this EIS.

Chapter 2 Alternatives

The purpose of the action is to update the Hydraulic Code Rules for consistency with changes to the statute, to adequately reflect evolving fish science, and to incorporate improved project design and construction technology. The diversity of tribal, stakeholder, and public concerns and interests makes it challenging to develop comprehensive rule changes that meet the purpose and need of this project. The Supplemental Draft PEIS evaluates four alternatives for changes to the Hydraulic Code Rules: Alternative 1 - No Action, consisting of the Current Rules; Alternative 2 – WDFW-proposed rule changes (preferred alternative); Alternative 3 - Increased Protection of Fish Life, which includes more restrictions to protect fish life; and Alternative 4 - Increased Protection for the Built Environment, which reduces restrictions in order to reduce project costs.

Alternative 2 (WDFW-proposed rule changes) is preferred for many reasons. This alternative represents over six years of work by WDFW and tribal/stakeholder representatives, including one-on-one and group discussions, and four rounds of draft rule review. Alternative 2 tries to balance all those competing needs and also improves alignment with the current statute. Alternatives 3 and 4 are included for Fish and Wildlife Commission consideration because they reflect the diverse array of public comments about the appropriate level of fish protection/restrictions the rules should impose on hydraulic projects.

This chapter describes the four alternatives and the process used to formulate the alternatives and includes tables that compare the alternatives. This chapter also discusses alternatives that were considered but eliminated from further study.

2.1 Formulation of Alternatives

As described in Chapter 1, WDFW began to revise the Hydraulic Code Rules in 2006 as part of developing a Habitat Conservation Plan (HCP) to provide long-term certainty of ESA compliance related to agency permitting action. Although work on the HCP ended in 2012, WDFW has remained committed to moving forward to improve HPA rules to incorporate more current scientific and technical knowledge to better protect fish life, to increase certainty for applicants, and to streamline the HPA approval process.

The Stakeholder Advisory Group assembled by WDFW provided input on how to balance protection of fish with economic impacts. The group reviewed a first draft of the revised rules in late 2011. The rule revisions evaluated in this Supplemental Draft PEIS incorporate comments from the advisory group and other public, tribal, and stakeholders on the subsequent second, third, and fourth drafts.

WDFW's participation in the *Lean Process* led to procedural improvements to HPA application processing and efficiency of implementing the Hydraulic Code Rules. The *Lean Process* is an internal review process used throughout state government to deliver essential services with innovation, efficiency, and integrity. The *Lean Process* uses a standard set of principles, methods, and tools to identify efficiencies. HPA system upgrades and efficiencies will allow WDFW staff to provide applicants with up-front and on-the-ground assistance before and during project development.

2.1.1 Bringing Hydraulic Code Rules Up To Date

Several changes to hydraulic code statutes have occurred since the last comprehensive hydraulic code rule update in 1994 (Table 2-1). In some cases, current rules are incomplete with respect to current statute. As stated in Chapter 1, updating the rules to better align with current statute is one important purpose for the hydraulic code rules update.

In addition, new information about the impacts of hydraulic projects on fish life and habitat has become available since the last rule update, and technology to address those impacts has advanced significantly. The proposed action to update the hydraulic code rules is intended to take advantage of that information and those advances.

Finally, the organization of the existing rules is not user friendly because procedural information and information relevant to a particular project type appears in several different sections. The proposed revision reorganizes the rules to follow a logical progression and to consolidate rules for each project type.

2.1.1.1 Statute and Rules

The state Legislature gave the department the responsibility to preserve, protect, and perpetuate all fish and shellfish resources of the state. To help achieve that goal, the Legislature passed a state law in 1943 called *Protection of Fish Life.* The law (now recorded in state statute, the *Revised Code of Washington*, as Chapter 77.55 RCW) has been amended since it was originally enacted; however, the basic authority has been retained. Now titled *Construction projects in state waters*, the law can be accessed at: apps.leg.wa.gov/RCW/default.aspx?cite=77.55).

The RCW also gives state agencies the authority to issue regulations to administer state laws. These regulations (the Washington Administrative Code, or WAC) represent the most fundamental level of legal requirement in Washington State. The WAC codifies these regulations and arranges them by subject and agency. Chapter 220-110 WAC *Hydraulic code rules* establishes regulations for administration of the permit program involving construction of hydraulic projects or performance of other work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state. The WAC also sets forth procedures for obtaining an HPA. This WAC chapter incorporates criteria generally used by WDFW to review and condition hydraulic projects so they are protective of fish life.

Table 2-1 details the changes to this statute since the last hydraulic code rule update in 1994. Table 2-7 details recommended rule changes received from commenters that can't be implemented by the Fish and Wildlife Commission because they are inconsistent with current statute.

Table 2-1 Changes to Hydraulic Code Statutes since 1994

Year	Bill No.	Current RCW	Topic	Changes
1995	SB 5633	77.55.081	Aquatic Plant control	The Hydraulic Code (then RCW 75.20) was amended to exempt activities conducted solely for the removal or control of spartina and the removal or control of purple loosestrife by handheld tools or equipment from the need of an HPA. The bill further instructs the department to develop a pamphlet describing means of removing or controlling aquatic noxious weeds that fall under the authority of the Hydraulic Code for which no formal HPA is required – the pamphlet serving as the department's permit.
1995	ESSB 5616	77.55.171	Watershed restoration projects — Permit processing	A new section was added to the Hydraulic Code (currently RCW 77.55.171) specifically directing the department to process applications for qualified restoration projects in compliance with the act, codified as RCW 89.08.450 through 89.08.510.
1995	ESHB 2793	77.55.191	Columbia R. anadromous fish sanctuary	This statute implements Referendum 45 by shifting the responsibility of the director relative to the Columbia River anadromous fish sanctuary to duties of the Fish and Wildlife Commission.
1996	SHB 2167	77.55.151	Permit issued to a marina or marine terminal for regular maintenance activities	2167 (1996) and 2866 (2002), taken together, affirm that regular maintenance activities for marinas and marine terminals should be covered by a renewable five-year HPA. SHB 2167 initially provided for the above for marinas; ESHB 2866 added marine terminals. "Marina" and "marine terminal" are defined.
1996	SB 6305	77.55.241,301	Off-site mitigation	This statute acknowledges that hydraulic projects might require mitigation and that such mitigation might be most beneficial if applied in locations away from the project site. The statute also provides that if an applicant proposes off-site mitigation, and the department either does not approve it or conditions it such that it is impractical, the applicant may submit the permit application to the Hydraulic Appeals Board for approval.
1997	SSB 5442	77.55.021(8),(10)	Expediting repairs during flooding emergency	This statute provides that the county legislative authority as well as the department may declare an emergency or imminent danger.
1997	SHB 1565	77.55.091	Small scale prospecting and mining	This statute directs the department to, by June 30, 1997, and in cooperation with recreational miners and other interested parties, develop

Year	Bill No.	Current RCW	Topic	Changes
				rules for small scale prospecting and mining and incorporate them into an updated Gold and Fish pamphlet. The pamphlet update was completed, and then revised in 2009.
1997	E2SHB 1866	77.55.101	Environmental excellence program	This statute directs agencies to "solicit and support" development of environmental excellence program agreements that use innovative environmental measures or strategies to achieve environmental results more effectively or efficiently than traditional methods. Such agreements would then not be subject to the environmental standards and other features of the environmental regulations that otherwise would be applied by the agreeing agency(ies). Details of such agreements are specified. It also provides that the terms and provisions of an environmental excellence program agreement under chapter RCW 43.21K supersede any standard, limitation, rule, or order of the Hydraulic Code.
1997	SSB 5327	77.55.111,121	Habitat incentives program	That portion of the act currently codified as RCW 77.55.111 provides that when evaluating an application for an HPA from an applicant who has entered into a habitat incentives agreement, the department must comply with the terms of that agreement. That portion codified as RCW 75.55.121 provides that the department and DNR shall implement a habitat incentives program to allow private landowners to enhance fish or wildlife habitat on their property and receive state regulatory certainty that future decisions relative to HPA applications will be based on the conditions present on the landowner's property at the time of the agreement.
1997	ESSB 5273	77.55.251	Mitigation plan review; Compensatory mitigation for aquatic resources	This act finds that the state lacks a clear policy for mitigation of wetlands and aquatic habitat for infrastructure projects (e.g., highways, rail lines, utility corridors, and hydroelectric facilities). It requires state regulatory agencies to consider alternative mitigation proposals for infrastructure projects that are timed, designed, and located in a manner so as to provide equal or better biological functions and values as compared to traditional on-site, in-kind mitigation. The Act further provides procedures for project proponents to propose mitigation plans for compensatory mitigation within a watershed that

Year	Bill No.	Current RCW	Topic	Changes
				guarantee long-term viability of biological functions and values, provide for long-term monitoring, and are consistent with an approved planning process. The Act provides that the department and Ecology may not require mitigation be on or near the project site if the proposed plan provides equal or better biological functions and values within the watershed or bay as compared to existing conditions for the target resources or species identified in the mitigation plan; it also lists the factors upon which this review is to be based. The plan is to be approved through Memoranda of Agreement with either the WDFW or Ecology. The Act further provides that, upon request, the department and Ecology must follow the guidance provided in this act for review of mitigation proposals. It also provides that if there are multiple requests for such mitigation proposal review, the departments may each schedule review to conform to available budgets. The Act is codified as Sections 90.74.005 through 90.74.030 and 75.55.251 RCW.
1997	ESSB 5273	77.55.271	Sediment capping and dredging and navigation and maintenance dredging	Section 5 of this act provides that the department may not require mitigation for sediment dredging or capping actions that result in a cleaner aquatic environment and equal or better habitat functions and values if the actions are taken under a state or federal cleanup action. It also provides that the act is not to be construed to require habitat mitigation for navigation and maintenance dredging of existing channels and berthing areas. This section is codified as RCW 77.55.271.
1998	ESSB 6328	77.15.300,310,320	Fish and wildlife enforcement code	This statute eliminates from what is now codified as RCW 77.57.010 (requiring that water diversions be screened) the provision that "it is unlawful to fail to comply with the section". Similarly, it eliminates from what is now RCW 77.57.030 (requiring that a dam or other stream obstruction be equipped with a fishway) a similar provision. It also eliminates from what is now RCW 77.55.021 provisions that working without an HPA or failure to follow permit conditions is a gross misdemeanor and subject to abatement. It further amends the Columbia River anadromous fish sanctuary section

Year	Bill No.	Current RCW	Topic	Changes
				(now RCW 77.55.191): (1) previously it was stated that it is unlawful to construct a dam greater than twenty-five feet high within the sanctuary. As amended, the department shall not issue an HPA to construct a dam greater than twenty-five feet high. (2) Previously, except by order of the Commission, a person was precluded from diverting water from the rivers and streams in quantities to reduce the flow below the annual average low flow. As amended, a person shall not do so (but the order is not required).
1998	SSHB 2879	77.55.181	Fish habitat enhancement project — Permit review and approval process	This statute provides a streamlined process for reviewing fish habitat enhancement projects submitted on a JARPA form that meets certain described conditions, including size or threshold tests. Within 45 days, the department must issue an HPA either with or without conditions, deny approval, or make a determination that the project does not meet all the conditions for streamlined review. Local governments are notified of the project, have 15 days to comment, and are precluded from requiring permits or charging fees. Any person aggrieved by a permit decision may appeal to the Hydraulic Appeals Board. The statute identifies eligibility requirements. The department is directed to develop size or scale threshold tests to evaluate if the scale of the project raises concerns regarding public health and safety. Further, the department is directed to continue to improve the permitting review and approval process.
2000	ESHB 2078	77.55 RCW	Fish and Wildlife	Combined HPA statutes for Departments of Wildlife and Fisheries from Title 75 to Title 77 RCW into one code; No substantive changes
2001	SSB 5961	77.55.181	Fish habitat enhancement project — Permit review and approval process	Technical corrections only to reflect a change from Title 75 to Title 77 RCW.
2002	ESHB 2866	77.55.021 & .231	Minor modifications to plans/work timing	ESHB 2866 further provides that an HPA must contain provisions allowing for minor modification to plans and specifications without requiring reissuance of the HPA (or an additional fee).

Year	Bill No.	Current RCW	Topic	Changes
2002	ESHB 2866	77.55.231	HPAs must be reasonably conditioned	Ch. 77.55 RCW had an existing provision that approvals shall not be unreasonably withheld. With ESHB 2866, the legislature finds that hydraulic project approvals should ensure that fish life is properly protected, but conditions attached to the approval of these permits must reasonably relate to the potential harm that the projects may produce. This part of ESHB 2866, now codified as RCW 77.55.231, provides that conditions must be "reasonably related to the project" and that "the department may not impose conditions that attempt to optimize conditions for fish life that are out of proportion to the impact of the proposed project."
2002	ESHB 2866	77.55.151	Permit issued to a marina or marine terminal for regular maintenance activities	ESHB 2866 added marine terminals to provisions earlier adopted for marina maintenance (1996 SHB2167).
2002	ESHB 2866	77.55.161	Storm water discharges	ESHB 2866 also restricts department authority with respect to issuing HPAs for storm water projects. If the project is in an area covered by a National Pollution Discharge Elimination System (NPDES) municipal general permit, an HPA is required only for the actual construction of the outfall and any associated structures. Secondary impacts from the discharge may not be addressed in HPA permitting. In areas not covered by a NPDES municipal general permit, the department may additionally condition HPAs with respect to discharge rates to protect fish life from the direct hydraulic impacts of the discharge under certain conditions. The department may not require changes to the project design above the ordinary high water line. The department may recommend but not specify the measures required to meet prescribed discharge rates.
2002	SSB 6513	77.55.041	Derelict fishing, crab, and other shellfish gear — Removal	This law exempts from provisions of the Hydraulic Code the removal of derelict fishing gear if removed according to guidelines that the department is directed to develop in conjunction with the DNR and the Northwest Straits Commission. These guidelines have been developed.
2002	ESSB 6594	77.55.071	Siting secure transition facilities	Expired 6/30/2009

Year	Bill No.	Current RCW	Topic	Changes
2003	E2SHB 1418	77.55.281	Fishways on certain agricultural drainage facilities	RCW 77.57.030 requires that dams or other obstructions across or in a stream be provided with a fishway. Section 1 of E2SHB 1418 defines "other obstructions" to exclude "tide gates, flood gates, and associated man-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." Section 2 of the Act precludes the department from requiring, as a condition of an HPA, a fishway on a tide gate, flood gate, or other associated man-made agricultural drainage facility if such fishway was not originally installed as part of an agricultural drainage system existing on or before the effective date of the section. Section 2 further provides that "any condition requiring a self-regulating tide gate to achieve fish passage in an existing hydraulic project approval under this section may not be enforced." The law also directs the Fish and Wildlife Commission and county legislative authorities to form a task force to develop a plan that addresses intertidal habitat goals contained in a limiting factors analysis for specific geographic areas. The process is underway in Skagit County.
2003	ESSB 5776	77.55.301	Hydraulic Appeals Board	This law reforms the process of appeal and review of final permit decisions made by state agencies and local governments for qualifying economic development projects. What is now RCW 77.55.301(6) was amended such that any person aggrieved by a permit decision under RCW 77.55.021 may appeal to the Office of Administrative Hearings or Hydraulic Appeals Board (HAB). However, the newly formed Environmental and Land Use Hearings Board hears qualifying economic development projects, in accordance with RCW 43.21L.
2005	2SHB 1346	77.55 & 77.57 RCW	RCW 77.55 reorganized and recodified	This act reorganizes and re-codifies the Hydraulic Code (77.55 RCW) and moves the statutes regarding fishways and stream obstructions to a separate chapter (RCW 77.57)
2005	2SHB 1346	77.55.201	Landscape management plan	2SHB 1346 provides that a landscape management plan approved by WDFW and DNR under RCW 76.09.350(2) shall serve as a permit for the life of the plan if fish are selected as one of the public resources for coverage

Year	Bill No.	Current RCW	Topic	Changes
				under such a plan.
2005	2SHB 1346	77.55.211	Informational brochure	WDFW, Ecology, and DNR were directed by 2SHB 1346 to jointly develop an informational brochure that describes when permits and any other authorizations are required for flood damage prevention and reduction projects, and recommends ways to best proceed through the various regulatory permitting processes.
2005	2SHB 1346	77.55.221	Flood damage repair and reduction activities — Five-year maintenance permit agreements	2SHB 1346 further directs WDFW to, at the request of a county, develop five-year maintenance permit agreements ("General permits"), consistent with comprehensive flood control management plans adopted under the authority of RCW 86.12.200, or other watershed plan approved by a county legislative authority, to allow for work on public and private property for bank stabilization, bridge repair, removal of sandbars and debris, channel maintenance, and other flood damage repair and reduction activity under agreed-upon conditions and times without obtaining permits for specific projects.
2008	SHB 2525	77.55.021	Chronic Danger HPA	Established a Chronic Danger HPA and directs WDFW to review using the Habitat Restoration Project criteria. County declares "Chronic Danger" if flooding has impacted property, structures, water supply system, septic system, or access to roads due to flooding for two consecutive years. Property located on a marine shoreline is not included under this provision. In cases of chronic danger, WDFW is directed to issue a permit, upon request, for work necessary to abate the chronic danger by removing any obstructions, repairing existing structures, restoring banks, restoring road or highway access, protecting fish resources, or protecting property. Permit requests are subject to the review process established in RCW 77.55.181(3) as if it were a fish habitat improvement project.
2012	2SHB 1346	77.55.151	Defines regular maintenance activities	2SHB 1346 made changes to several programs that provide for the protection of the state's natural resources. Relative to the Hydraulic code, definitions for Emergency, Expedited, Multiple site, Forest Practices, and Pamphlet HPAs were added, along with the provisions to implement them. The Act also defines regular maintenance activities for marinas or marine terminals.

Year	Bill No.	Current RCW	Topic	Changes
2012	E2SSB 6406	77.55.231	Application fee for a hydraulic project permit or permit modification — Projects exempt from fees — Disposition of fees. (Conditions reasonably related was in 2002, see SSB 6513)	E2SSB 6406 adds an HPA application fee and the mechanisms necessary to implement the fee.
2012	E2SSB 6406	77.55.331	Hydraulic project approval account	This is an element necessary to implement the HPA application fee.
2012	E2SSB 6406	77.55.341	Department to prepare and distribute information to the public	E2SSB 6406 directed WDFW to prepare and distribute technical and educational information to the general public to assist the public in complying with the requirements of this chapter.
2012	E2SSB 6406	77.55.351	Department to develop system to provide access to hydraulic project approval applications	E2SSB 6406 directed WDFW to develop a system to provide local governments, affected tribes, and other interested parties with access to hydraulic project approval applications. Led to development of the new online application and review system "APPS"
2012	E2SSB 6406	77.55.361	Limitations of chapter to a forest practices hydraulic project — Adoption of rules for concurrent review process — Department's duties regarding chapter 76.09 RCW	E2SSB 6406 directed WDFW and DNR to integrate the current HPA requirements for Forest Practices HPAs with the Forest Practices Rules administered by the DNR Forest Practices Board. Once integration has occurred, WDFW is permitted (“may”) review and provide comments on any forest practices application (“concurrence review”). Special timelines are applied to DNR’s approval (or disapproval) of a forest practices application that is subject to WDFW concurrence review.
2012	E2SSB 6406	77.55.371	Memorandum of agreement to implement integration of hydraulic project approvals into forest practices applications — Interagency contract	E2SSB 6406 also directed WDFW and DNR to enter into and maintain a memorandum of agreement between the two agencies that describes how to implement integration of hydraulic project approvals into forest practices applications per HPA/FPA integration.

2.1.1.2 Science Supporting the Proposed Alternative

Beginning in 1999, WDFW has reviewed over 1,900 peer-reviewed journal articles, books, symposia literature, theses/dissertations, and technical reports for information applicable to hydraulic projects. Most of the literature is incorporated into the Aquatic Habitat Guidelines (AHG) Program documents and consolidated into White Papers associated with AHG and HCP development. Because the most recent compilation of information was completed in 2008, WDFW conducted additional review of literature available after 2008 and incorporated the relevant information into the proposed rule changes. The supporting list of science references includes both the original compilation work as well as incorporation of literature made available between 2008 and development of the proposed rules. The list of scientific references can be found on the WDFW web site.

2.1.1.3 Aquatic Habitat Guidelines (AHG) Program Documents

In 1999, the Washington State Departments of Fish and Wildlife (WDFW), Ecology (Ecology), and Transportation (WSDOT) were asked to develop guidelines using an integrated approach to marine, freshwater, and riparian habitat protection and restoration. In 2001, the United States Army Corps of Engineers (ACOE) and the United States Fish and Wildlife Service (USFWS) became participating agencies in the program. The AHG steering committee includes technical and science experts from each of these agencies, as well as representatives from Washington Department of Natural Resources (DNR) and the Recreation and Conservation Office (RCO). The overarching goal of the AHG program is to develop technical assistance for proper management of activities affecting Washington's marine, freshwater, and riparian ecosystems so that fully functioning aquatic and riparian habitat can be protected and restored. The AHG Program provides technical assistance that shows people how to apply the best science and technology to design and construct several types of hydraulic projects. AHGs do not replace existing regulatory requirements; they are intended to provide technical guidance supporting regulatory consistency.

The Guidelines produced by the AHG program were issued in a series of manuals written by professional resource engineers and managers addressing many aspects of aquatic and riparian habitat protection and restoration. The target audiences include local, state, and federal agencies; elected officials; engineering consultants and designers; volunteer restoration groups; and landowners. The Guidelines facilitate the consistent application of best science and good practices for project designs, construction, and operations affecting aquatic systems.

The Guidelines include surveys of background science and literature; summary of policy and regulatory issues; site and vicinity environmental assessment procedures; project design processes, standards, and details; and case studies that highlight site-specific issues. As such, the Guidelines address ecosystem-based strategies for aquatic and riparian habitat restoration and protection. The Guidelines are intended to support salmon and other aquatic habitat restoration projects, facilitate consistency in permitting of habitat restoration projects and other in-stream projects across the state, and provide a scientific basis for any future changes to current policies or regulations governing aquatic resource and habitat management in the state. AHG guidelines completed since 1999 are listed in Table 2-2.

2.1.1.4 "White Papers"

AHG documents are based on a survey of current best science and technical practices, called "white papers." White papers are agency documents developed to compile current technology and information gleaned from a thorough review of literature on impacts to fish life from common hydraulic project types and ways to prevent or mitigate those impacts.

The white papers were written by recognized experts and built on a set of guiding principles developed by professional resource managers, engineers, and other practitioners (Nelson and Bates 2000). White papers were initially prepared to support development of the AHG, and were adapted to support development of an HCP for the HPA program. Although the papers focused on impacts to ESA-listed fish life, the white papers provide a solid scientific foundation upon which to improve the rules for protecting fish life in general. The objectives of the HCP white papers were to:

- Compile the best available scientific information related to potential impacts on fish, their habitats, and associated ecological processes resulting from constructing, operating, and maintaining fish passage structures.
- Use this scientific information to estimate the circumstances, mechanisms, and risks of harm potentially or likely to result from constructing hydraulic projects.
- Identify appropriate and practicable measures, including policy directives, conservation measures, and best management practices (BMPs), to avoid and/or minimize the risk of harm to fish life.

Five principal tasks were performed in preparing the white papers:

1. Existing WDFW rules and guidance were reviewed to identify current knowledge and practices relating to analyzing the impacts to fish life associated with HPA-permitted activities.
2. A literature review was conducted to compile information reflecting the current state of knowledge of potential impacts to fish life associated with HPA-permitted activities.
3. The compiled documents were reviewed to determine which potential pathways of impact were addressed in each document. Most of the collected documents considered impacts to salmonids or to physical habitat features, although some documents identified impacts to other fish life and their habitats.
4. Impact mechanism analyses were prepared for each of the principal impact pathways and for each principal type of HPA-permitted activity.
5. A draft version of the white paper was prepared and reviewed by technical specialists on the consultant team, then submitted to WDFW for comments. The white paper was amended based on the comments and the white paper was finalized.[3]

White papers compiled in support of the AHG are listed in Table 2-3.

[3] In some cases, white papers were not finalized because agency work leading to finalization was re-prioritized. Information provided in the white papers was used to develop AHG guidelines and recommendations regardless of the "draft" or "final" status of the white paper.

Table 2-2 Aquatic Habitat Guidelines Documents

Document Citation	Summary	Related HPA Activities	Category
Marine Shoreline Design Guidelines, 2014, by Johannessen, J., A. MacLennan, A. Blue, J. Waggoner, S. Williams, W. Gerstel, R. Barnard, R. Carman, and H. Shipman (WDFW) (available at wdfw.wa.gov/publications/01583/)	These guidelines are specific to shore armor – the construction of bulkheads and seawalls in Puget Sound. Created to inform responsible management of Puget Sound shores for the benefit of landowners and shared natural resources. Provides a comprehensive framework for site assessment and alternatives analysis to determine the need for shore protection and identify the technique that best suits the conditions at a given site. For use by project designers, planners, contractors, and landowners.	• Common saltwater construction provisions • Bank protection in saltwater areas	External peer review
Water Crossing Design Guidelines (formerly Design of road culverts for fish passage), 2013, prepared by Bob Barnard, Ken Bates, Bruce Heiner, Pat Klavas, Don Ponder, Pad Smith and Pat Powers (WDFW) (available at wdfw.wa.gov/publications/01501/)	This document promotes water crossing selection and design process intended to have the least effect on the natural processes that create and support the stream structure in which fish live and migrate. The geomorphic approach to design is generally based on readily-measured characteristics of the natural channel in the adjacent reaches. Five different water crossing design methods are covered including no-slope culverts, stream simulation culverts, bridges, temporary culverts, and hydraulic design fishways.	• Common freshwater construction requirements • Water crossing structures • Fish passage improvement structures	External peer review
Stream Habitat Restoration Guidelines, 2012, by Michelle Cramer (WDFW) (available at wdfw.wa.gov/publications/01374/)	This document includes design criteria and practical considerations for the design of stream restoration projects including site, reach, and watershed assessment, problem identification, general approaches to restoring stream and riparian habitat, factors to consider in identifying and selecting an approach, approaches to solving common restoration objectives, and stream and riparian habitat restoration techniques. Watershed processes and conditions that shape stream channels, stream ecology, geomorphology, hydrology, hydraulics, planting considerations and erosion control, and construction considerations are also presented in the main text and appendices.	• Channel relocation and realignment • Large woody material placement, repositioning, and removal in freshwater areas	External peer review
Integrated Streambank Protection Guidelines (ISPG), 2003, prepared by Michelle Cramer, P.E., and Ken Bates, P.E (WDFW) and Dale Miller; Karin Boyd; Lisa Fotherby, Ph.D., P.E.; Peter Skidmore and Todd Hoitsma, (Inter-Fluve, Inc.) (available at wdfw.wa.gov/publications/00046/)	This document includes design considerations for integrated stream bank protection: mechanisms and causes of failure (general bank erosion, scour, avulsion, mass failure, subsurface entrainment), shear, vertical distribution of shear, habitat, risk, site- and reach-based assessment, channel form, channel process (equilibrium and disequilibrium). Mitigation considerations: duration and extent of impacts (construction, lost habitat, etc.), lost opportunity, emergency bank protection. Project design includes decision-making matrices for selecting appropriate solutions.	• Common freshwater construction requirements • Streambank protection and lake shoreline stabilization	External peer review
Protecting Nearshore Habitat and Functions in Puget Sound, June 2010 Revised Edition, by EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Working Group (available at wdfw.wa.gov/publications/00047/)	This document is specific to shoreline modifications - a variety of structures and activities intended to adapt the shoreline environment for human use. Summarizes current science on important nearshore habitats and processes, data and recommendations to support avoidance and minimization of impacts and mitigating cumulative impacts.	• Common saltwater construction provisions • Bank protection in saltwater areas • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas	External peer review

Document Citation	Summary	Related HPA Activities	Category
Land Use Planning for Salmon, Steelhead and Trout: A land use planner's guide to salmonid habitat protection and recovery, October 2009, by Katie Knight (available at wdfw.wa.gov/publications/00033/)	This document provides guidance for protecting salmon habitat through GMA and SMA plans and regulations. Document translates current best available science into planning tools, including model policies and regulations to protect salmonids and prevent further degradation or loss of habitat. For use by land use planners of local jurisdictions.	• Freshwater habitats of special concern • Common freshwater construction provisions • Large woody material placement, repositioning, and removal in freshwater areas • Channel relocation and realignment • Water crossings • Saltwater habitats of special concern • Common saltwater construction provisions • Streambank protection and lake shoreline stabilization • Bank protection in saltwater areas • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas	External peer review
Fishway Guidelines for Washington State (draft), 2000, prepared by Ken Bates (WDFW) (available at wdfw.wa.gov/publications/00048/)	This document includes pre-design data requirements and considerations, design considerations for fishway entrances (entrance pool and transportation channel design), auxiliary water systems (diffuser and water supply source), fish ladders (pool and weir fishways, vertical slot fishways, roughened channels, hybrid fishways), fishway exit, tributary fish passage, upstream juvenile fish passage, flap gates, fishway flow control. Design considerations: types and applications of screen styles (drums, fixed plate, traveling, pump screens, infiltration galleries), screen design criteria, hydraulic design, fish bypass systems, debris management.	• Fish passage improvement structures	External peer review
Fish Protection Screen Guidelines for Washington State (draft), 2000, by Ken Bates (WDFW) and Bryan Nordlund (NMFS) (available at wdfw.wa.gov/publications/00050/wdfw00050.pdf)	This document provides design criteria and practical considerations for the design of fish protection screens including applications for hydroelectric facilities, irrigation, municipal, and industrial water withdrawal projects. The major objective of the fish screen guidelines is to highlight important design elements that should be considered in the design of fish screens at water diversion projects to provide the safe downstream passage of migrating juvenile salmonids.	• Common freshwater construction provisions • Water diversions and intakes	External peer review

Table 2-3 White Papers Developed in Support of Aquatic Habitat Guidelines

Document Citation	Summary	Related HPA activities	Category
White Paper - Protection of Marine Riparian Functions in Puget Sound, Washington, 2009**,** prepared by Washington Sea Grant (available at wdfw.wa.gov/publications/00693/)	This document summarizes the literature review and scientific and technical information on riparian areas and makes recommendations to help protect marine riparian functions from common human activities.	• Saltwater habitats of special concern • Common saltwater construction provisions	External peer review
White Paper - Marine and Estuarine Shoreline Modification Issues, 2001, prepared by Gregory Williams and Ronald Thom, Battelle Marine Sciences Laboratory (available at wdfw.wa.gov/publications/00054/)	This white paper provides an assessment of the literature associated with design and ecological considerations associated for hard and soft structural shoreline stabilization (bulkheads, rock revetments, groins, jetties, beach nourishment, biotechnology), non-structural stabilization (setbacks, vegetation management, and ground/surface water management), estuary and shoreline restoration, tidegates, outfalls, and artificial reefs.	• Saltwater habitats of special concern • Common saltwater construction provisions • Bank protection in saltwater areas • Artificial aquatic habitat structures • Outfall and tide and flood gate structures in saltwater areas	External peer review
White Paper - Over-water Structures: Marine Issues, 2001, prepared by Barbara Nightingale and Charles Simenstad, University of Washington, School of Aquatic and Fishery Sciences, Seattle, Washington (available at wdfw.wa.gov/publications/00051/)	This white paper examines and summarizes the literature associated with the following structures: docks, piers, floats, rafts, log rafts, boat ramps, hoists, launches, boat houses, houseboats and associated moorings, marinas, driving and removing pilings, trash booms and trash racks, work barges, and dolphins.	• Common saltwater construction provisions • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas • Marinas and terminals in saltwater areas	External peer review
White Paper - Over-water Structures: Freshwater Issues, 2001, prepared by José Carrasquero (Herrera Environmental Consultants) (available at wdfw.wa.gov/publications/00052/)	This white paper examines and summarizes the literature associated with the following structures: docks, piers, floats, rafts, log rafts, boat ramps, hoists, launches, boat houses, houseboats and associated moorings, marinas, driving and removing pilings, trash booms and trash racks, work barges, and dolphins.	• Common freshwater construction provisions • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in freshwater areas • Marinas and terminals in freshwater areas	External peer review
White Paper - Treated Wood Issues in Marine and Freshwater Environments, 2001, prepared by Ted Posten, Battelle Marine Sciences Laboratory (available at wdfw.wa.gov/publications/00053/)	This white paper examines and summarizes research on chemical contaminants in treated wood and the potential for adverse impact to fish life The assessment focused on field-oriented studies that evaluate the spatial and temporal distribution of toxic constituents used in treated wood.	• Common freshwater construction provisions • Streambank protection and lake shoreline stabilization • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in freshwater areas • Marinas and terminals in freshwater areas • Common saltwater construction provisions • Bank protection in saltwater areas • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas • Marinas and terminals in saltwater areas	External peer review

Document Citation	Summary	Related HPA activities	Category
White Paper - Channel Design, 2001, prepared by Dale Miller (Inter-Fluve, Inc.) (Available at wdfw.wa.gov/publications/00057/)	This white paper examines and summarizes the state of current knowledge and technology pertaining to channel design methods and practices including design and ecological considerations for new channels, habitat restoration and mitigation, channel relocation and realignment, channel modification for habitat and stability, placement of large woody debris (including removal and relocation), placement of boulders (including smaller rocks and substrate), off-channel ponds (rearing and other), off-channel channels (new floodplains, high-flow bypass), gradient control structures, habitat enhancement activities and structures.	• Common construction provisions in freshwater areas • Channel relocation and realignment • Large woody material placement, repositioning, and removal in freshwater areas	External peer review
White Paper - Ecological Issues in Floodplain and Riparian Corridors, 2001 prepared by Susan Bolton and Jeff Shellberg, University of Washington (available at wdfw.wa.gov/publications/00058/)	This white paper examines and summarizes the literature pertaining to the current state of knowledge on the physical and biological effects of alluvial river channelization, channel confinement, and various channel and floodplain modifications.	• Streambank protection and lake shoreline stabilization • Channel relocation and realignment • Large woody material placement, repositioning, and removal in freshwater areas	External peer review
White Paper - Dredging Activities: Marine Issues, 2001 prepared by Barbara Nightingale and Charles Simenstad, University of Washington (available at wdfw.wa.gov/publications/00055/)	This white paper examines and summarizes the literature pertaining to the current state of knowledge on the hydrologic, ecological, and biological effects (physical and chemical) of construction and maintenance dredging in saltwater areas associated with navigation channels, marinas, sediment clean-up, as well as other commercial developments.	• Dredging in saltwater areas	External peer review
Dredging and Gravel Removal in Marine and Freshwater Environments, 2002 prepared by G. Mathias Kondolf, Matt Smeltzer, and Lisa Kimball (Center for Environmental Design Research)(available at wdfw.wa.gov/publications/00056/)	This white paper examines and summarizes the literature pertaining to the current state of knowledge on the hydrologic and ecological effects of in-channel bar scalping, risks and avulsions associated with floodplain pits, freshwater dredging, instream sediment sumps and gravel pits, gravel removal.	• Dredging in freshwater areas • Sand and gravel removal	External peer review

Table 2-4 White papers and two peer review documents consolidated into the Compiled White Paper for Hydraulic Project Approval Habitat Conservation Plan

Document Citation	Summary	Related HPA activities	Category
Bank Protection and Stabilization White Paper (draft), 2006, by Jones & Stokes Associates, Anchor Environmental, L.L.C., and R2 Resource Consultants (available at wdfw.wa.gov/publications/00996/)	Compiles and summarizes existing scientific information on bank protection and stabilization projects including hard approaches, soft approaches and integrated approaches.	• Common freshwater construction provisions • Streambank protection and lake shoreline stabilization • Common saltwater construction provisions • Bank protection in saltwater areas	External peer review
Overwater Structures and Non-Structural Piling White Paper, 2006, prepared by Jones & Stokes Associates, Anchor Environmental, L.L.C., and R2 Resource Consultants (available at wdfw.wa.gov/publications/00995/)	Compiles and summarizes existing scientific information on docks, piers, floats, ramps, wharfs, ferry terminals and other structures that are supported above or float on the water. This includes all structural or supporting pilings. Non-structural pilings are individual, non-structural pilings, power poles, transmission lines, conduits, etc. Pilings are driven into the stream, lake, and ocean bed.	• Common freshwater construction provisions • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in freshwater areas • Common saltwater construction provisions • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas.	External peer review
Water Crossings White Paper, prepared for Washington Department of Fish and Wildlife by Jones & Stokes Associates, in association with Anchor Environmental, L.L.C. and R2 Resource Consultants (2006) (available at wdfw.wa.gov/publications/00994/)	Compiles and summarizes existing scientific information on water crossings and utility lines.	• Common freshwater construction provisions • Water crossings • Utility crossings in freshwater areas	External peer review
Shoreline Modifications White Paper (draft), 2007, by Herrera Environmental Consultants, Inc. (available at wdfw.wa.gov/publications/01003/)	Compiles and summarizes existing scientific information on jetties, breakwaters, groins, and bank barbs.	• Common saltwater construction provisions • Marinas and terminals in saltwater areas.	External peer review
Marinas and Shipping/Ferry Terminals White Paper (draft), 2007, by Herrera Environmental Consultants, Inc. (available at wdfw.wa.gov/publications/00997/)	Compiles and summarizes existing scientific information on marina and terminal structures and the area of alteration.	• Common freshwater construction provisions • Marinas and terminals in freshwater areas • Common saltwater construction provisions • Marinas and terminals in saltwater areas	External peer review
Fish Passage White Paper (draft), prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc. in consultation with K. Bates (Working draft 2008, not to be cited)	Compiles and summarizes existing scientific information on construction, maintenance, and operation of fish passage structures.	• Common freshwater construction provisions • Fish passage improvement structures	External peer review
Fish Screens White Paper (draft), prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc. (Working draft March 2008, not to be cited)	Compiles and summarizes existing scientific information on construction and maintenance of fish screens.	• Common freshwater construction provisions • Water diversions and intakes	External peer review

Document Citation	Summary	Related HPA activities	Category
Channel modifications (draft), 2007, prepared by Herrera Environmental Consultants, Inc. (available at wdfw.wa.gov/publications/01002/)	Compiles and summarizes existing scientific information on channel modification projects including dredging, gravel mining and scalping, sediment capping and channel creation and alignment.	• Common freshwater construction provisions • Dredging in freshwater areas • Sand and gravel removal • Channel relocation and realignment • Common saltwater construction provisions • Dredging in saltwater areas	External peer review
Flow Control Structures White paper (draft), prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc. (Working draft December 2007, not to be cited)	Compiles and summarizes existing scientific information on flow control structures.	• Common freshwater construction provisions • Outfalls in freshwater areas • Water diversions and intakes • Common saltwater construction provisions • Outfalls and tide and flood gate structures in saltwater areas	External peer review
Habitat Modifications (draft), 2007, by Herrera Environmental Consultants, Inc. (available at wdfw.wa.gov/publications/00998/)	Compiles and summarizes existing scientific information on beaver dam removal and modification, large woody debris placement, movement and removal, spawning substrate augmentation, in-channel and off-channel habitat creation and modification, riparian planting, restoration and enhancement, wetland creation, restoration and enhancement, beach nourishment, reef creation, restoration and enhancement, and eelgrass and other aquatic vegetation creation, restoration and enhancement.	• Common freshwater construction provisions • Beaver dam management • Saltwater habitats of special concern • Common saltwater construction provisions • Artificial aquatic habitat structures	External peer review
Peer Review of White Papers Prepared in 2006 for the Hydraulic Project Approval Habitat Conservation Plan: Small-Scale Mineral Prospecting, Overwater Structures and Non-Structural Pilings, Bank Protection and Stabilization, and Water Crossings, 2007, prepared by Duane Phinney, PH2 Consulting Services LLC (available at wdfw.wa.gov/publications/01005/)	Five to seven experts in each topic were selected to conduct the review. Those comments for each white paper were combined and provided to each reviewer of that white paper. A meeting was convened for each white paper after reviewers had time to review the comments of other reviewers. Discussion of important topics for each white paper at these post-review meetings elicited additional comments.	• Common freshwater construction provisions • Streambank protection and lake shoreline stabilization • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in freshwater areas • Mineral prospecting • Common saltwater construction provisions • Residential and public recreational docks, piers, ramps, floats, watercraft lifts and buoys in saltwater areas • Bank protection in saltwater areas	Not applicable

Document Citation	Summary	Related HPA activities	Category
Peer Review of White Papers Prepared in 2007 for the Hydraulic Project Approval Habitat Conservation Plan: Channel Modifications, Fish Passage, Flow Control Structures, Habitat Modifications, Fish Screens, Marinas And Shipping/Ferry Terminals, and Shoreline Modifications, 2007, prepared by Duane Phinney, PH2 Consulting Services LLC (available at wdfw.wa.gov/publications/01004/)	Three to five experts reviewed individual white papers. (Two to four Washington Department of Transportation experts reviewed five of the white papers. This is considered as one review.) Those comments for each white paper were combined by white paper section and provided to each reviewer of that white paper. The Peer Review Coordinator subsequently convened a post-review meeting for each white paper.	• Common freshwater construction provisions • Marinas and terminals in freshwater areas • Fish passage improvement structures • Water diversions and intakes • Dredging in freshwater areas • Sand and gravel removal • Channel relocation and realignment • Beaver dam management • Outfalls in freshwater areas • Common saltwater construction provisions • Saltwater habitats of special concern • Marinas and terminals in saltwater areas • Dredging in saltwater areas • Artificial aquatic habitat structures • Outfalls and tide and flood gate structures in saltwater areas	Not applicable

[Intentionally Blank]

In 2006 and 2007, WDFW contracted with Anchor Environmental, Herrera Environmental Consultants, Jones & Stokes Associates, and R2 Resource Consultants to further develop eleven "white papers" documenting the state of the science on a range of topics related to HPAs. Each of the white papers was prepared as a stand-alone document. Therefore, many of the white papers contained information specific to a particular activity as well as more general information pertinent to more than one kind of HPA-permitted activity. In 2008, WDFW staff organized, condensed, and edited the information from ten of the eleven white papers, along with comments received during peer reviews, into the *Compiled White Paper for Hydraulic Project Approval Habitat Conservation Plan* (HCP) located on the WDFW website at wdfw.wa.gov/publications/00803/. The eleventh white paper, *Small-scale mineral prospecting* (available at wdfw.wa.gov/publications/00293/), was not included in this consolidation because the Washington Administrative Code (WAC) sections covering mineral prospecting were updated independently and adopted by the Washington Fish and Wildlife Commission in 2008.

A list of White Papers and peer-review comments that were consolidated into the *Compiled White Paper for Hydraulic Project Approval Habitat Conservation Plan* are in Table 2-4. WDFW used the scientific and design information in the white papers and information from a review of applicable science published since 2008 to help develop the specific standards for hydraulic projects in the proposed Hydraulic Code Rules represented in Alternative 2.

Tables 2-2, 2-3, and 2-4 provide lists of the guideline and white paper documents completed since 1999. Pursuant to RCW 34.05.271, which includes specific requirements for how WDFW should identify and make available the sources of information used in taking a significant agency action, the category for each reference is identified.

2.1.1.5 Rule Section Reorganization

The proposed rule changes represent not only changes in substance of the provisions, but also represent a reorganization of the material to help readers better find the information they need. Rules are reorganized by topic and project type. Table 2-5 shows how the material is laid out, crosswalks the old and new (proposed) WAC sections, and describes the content of each (proposed) section.

Table 2-5 Rule Section Reorganization

New WAC Section Name	New WAC Section Number	Existing WAC Number
Purpose	220-660-010	220-110-010
Purpose statement gives an overview of the intent of the rules.		
Instructions for using chapter	220-660-020	New section
Describes how an applicant would follow the common technical provisions for hydraulic projects and how the department uses the provisions to condition HPAs and also refers applicants to WDFW guidance documents for help.		
Definitions	220-660-030	220-110-020
Defines the terms used in the chapter.		

New WAC Section Name	New WAC Section Number	Existing WAC Number
Applicability of hydraulic project approval authority	220-660-040	220-110-035
Describes when an HPA is required and the activities that do not require a person to get an HPA.		
Procedures	220-660-050	220-110-030,031
Describes the procedures applicants follow to apply for an HPA. It also describes the procedures the department follows to review applications and make permit decisions. Guidance for applying for an HPA is provided on the department's website (wdfw.wa.gov).		
Integration of hydraulic projects approvals and forest practices applications	220-660-060	220-110-085
Describes the Integration of hydraulic project approvals and forest practices applications		
Changes to hydraulic project approval technical provisions	220-660-070	220-110-032
Describes the established conditions that allow the department to add, modify, or delete technical provisions in these proposed rules.		
Mitigation requirements for hydraulic projects	220-660-080	New Section
Defines how the department will apply mitigation sequencing to protect fish life.		
Technical provisions	220-660-090	220-110-040,230
Combines the introductions to the freshwater and saltwater technical provision sections into a single introduction section; no substantive changes to the existing language.		
Freshwater habitats of special concern	220-660-100	New section
Freshwater habitats of special concern provide essential functions to the developmental life histories of twenty-two priority fish species. Priority fish species include species that are listed under state and federal endangered species laws, and species of recreational, commercial, or tribal importance.		
Authorized work times in freshwater areas	220-660-110	New section
The department authorizes work during less critical times of the year to reduce the risk of impacts to fish life at certain life stages. In-water work is not allowed during critical periods of the year unless a person can implement mitigation measures to eliminate risk to fish life.		
Common freshwater construction provisions	220-660-120	New section
Common freshwater construction provisions can apply to many hydraulic projects. However, only applicable common construction provisions will be applied to a specific hydraulic project. Common construction provisions include job site access, equipment use, construction materials, sediment and erosion control containment, in-water work area isolation, fish removal, job site repair, and revegetation.		
Streambank protection and lake shoreline stabilization	220-660-130	220-110-050,223
Streambank protection and lake shoreline stabilization structures are permanent or temporary structures constructed to reduce or prevent streambank and shoreline erosion. Structural techniques armor the bank with material such as riprap, concrete, or timber. Biotechnical techniques attempt to mimic natural processes by using live plantings, rootwads, and large woody material (LWM). Biotechnical techniques usually impact fish life less than structural techniques. Some projects integrate both structural and biotechnical techniques.		

New WAC Section Name	New WAC Section Number	Existing WAC Number
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in freshwater areas	220-660-140	220-110-060
Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven, jacked, or cast vertically into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage.		
Boat ramps and launches in freshwater areas	220-660-150	220-110-224
A boat ramp or launch is a sloping, stabilized roadway or entry point constructed on the shoreline for launching boats from vehicular trailers or by hand for primitive boat launch designs. Ramps and launches extend into the water at a slope of typically twelve to fifteen percent and are typically oriented perpendicular to the shoreline. Ramp and launch widths vary with intended use, whereas the length often depends on the slope of the shoreline and seasonal water levels. Ramps and launches are usually constructed in areas protected from wind and waves with access to deep water close to shore. Construction materials commonly consist of gravel, concrete, or asphalt; they are often associated with marinas and parking lots.		
Marinas and terminals in freshwater areas	220-660-160	New section
A marina is a public or private facility providing vessel moorage space, fuel, or commercial services. Commercial services include overnight or live-aboard vessel accommodations (RCW 77.55.011(13)). A terminal is a public or private commercial wharf located in the navigable waters of the state and used, or intended to be used, as a port or facility for the storing, handling, transferring, or transporting of goods, or transporting passengers and vehicles, to and from vessels (RCW 77.55.011(14)).		
Dredging in freshwater areas	220-660-170	220-110-130
Dredging includes removing substrate or sediment from rivers and lakes to improve vessel navigation and to maintain navigational channels and sediment traps for flow conveyance. River dredging is also used for flood abatement and to clean up contaminated sediments.		
Sand and gravel removal	220-660-180	220-110-140
Sand and gravel deposited by river processes is used as construction aggregate for roads and highways (base material and asphalt), pipelines (bedding), septic systems (drain rock in leach fields), and concrete (aggregate mix) for highways and buildings. In some areas, people remove aggregate mainly from river deposits, either from pits in river floodplains and terraces, or by removing gravel directly from riverbeds with heavy equipment.		
Water crossing structures	220-660-190	220-110-070
Water crossings are structures constructed to facilitate the movement of people, animals, or materials across or over rivers and other bodies of water. These structures include bridges, culverts, fords, and conduits; this chapter covers bridges, culverts, and fords and WAC 220-660-270 covers conduits. Generally, people use bridges to cross over larger streams and rivers, or over unstable channels; they use culverts to cross over smaller streams and they use fords when other stream crossing options would result in a greater impact to fish and their habitats.		

New WAC Section Name	New WAC Section Number	Existing WAC Number
Fish passage improvement structures	220-660-200	New section
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.		
Channel change and realignment	220-660-210	220-110-080
Channel relocation may solve problems of channel encroachment and/or confinement, and foster the development of a new channel with appropriate channel morphology and healthy riparian zones. Channel relocation permanently changes the location of the channel. The new channel should be designed with bioengineered stability, rather than structural stability, so that the profile, pattern, cross-section, and bed elevation can be expected to achieve long-term natural functioning.		
Large woody material placement, repositioning and removal in freshwater areas	220-660-220	220-110-150
Large woody material (LWM) is trees and tree parts that enter stream channels mainly from streambank undercutting, wind throw, and slope failures. Public agencies sometimes reposition or remove large woody material to address a threat to life, the public, or property. Large woody material is also placed in streams to restore or create fish habitat.		
Beaver dam management	220-660-230	New section
A person may need to remove, breach, or modify a beaver dam to prevent flood damage to private and public land or infrastructure. Beaver dams are normally removed using hand tools or equipment such as backhoes. An alternative to frequent dam removal is installing a beaver exclusion device. These devices prevent beavers from building a dam at the mouth or inside of culverts that blocks water flow. Installing a water level (flow) control device may be a preferred alternative to removing an established dam that has created or maintains a wetland. A person can install a water level control device to maintain a desirable beaver wetland. These devices are installed at the intended depth, extending upstream and downstream of the dam. This preserves the pond's habitat benefits.		
Pond construction	220-660-240	220-110-180
Out-of-channel ponds may be constructed for livestock watering, irrigation, fire protection, or another purpose.		
Water diversions and intakes	220-660-250	220-110-190
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 other agricultural, hydropower, industrial, recreational, residential, municipal, and hatchery uses.		
Outfall structures in freshwaters areas	220-660-260	220-110-170
Outfalls move water from one place to another, typically to a body of water. Outfalls may convey irrigation water, stormwater, or other waste materials.		
Utility crossings in freshwater areas	220-660-270	220-110-100
Utility lines are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, and water lines from one side of a watercourse to the other.		

New WAC Section Name	New WAC Section Number	Existing WAC Number
Felling and yarding of timber	220-660-280	220-110-160
Timber felling includes "bucking" or cutting the felled tree into short lengths and limbing the felled tree. Yarding is the process of hauling logs from the cutting area to the landing and includes skidding (dragging the logs across the ground). There are three main kinds of yarding systems: ground based, cable, and aerial logging.		
Aquatic plant removal and control	220-660-290	220-110-331 through 338
Aquatic plant removal and control means the physical and mechanical methods to remove or control aquatic plants. It does not address aquatic plant control using grass carp, herbicides, or water column dye.		
Mineral prospecting	220-660-300	220-110-200 through 206
Mineral prospecting projects excavate, process, or classify aggregate using hand-held mineral prospecting tools and mineral prospecting equipment. When prospectors locate valuable minerals through prospecting, they may attempt to recover larger quantities of the minerals using a variety of machines, including suction dredges, high bankers, and heavy equipment. The rules in this section apply to the use of hand-held mineral prospecting tools and small motorized equipment.		
Tidal reference areas	220-660-310	220-110-240
The department uses the following tidal reference areas to delineate segments of the state's marine shorelines. The authorized work times in saltwater areas vary by tidal reference area.		
Saltwater habitats of special concern	220-660-320	220-110-250
Saltwater habitats of special concern provide essential functions in the developmental life history of fish life.		
Authorized work times in saltwater areas	220-660-330	220-110-271
The department applies timing windows to reduce the risk of impacts to fish life at critical life stages. In-water work is not allowed during critical periods of the year unless a person can take mitigation measures to eliminate risk during critical periods.		
Intertidal forage fish spawning bed surveys	220-660-340	New section
The department uses intertidal forage fish spawning habitat surveys to determine presence, absence, quantity, and timing of surf smelt (*Hypomesus pretiosus*) and Pacific sand lance (*Ammodytes hexapterus*) spawning. The presence of spawning may restrict project type, design, location, and timing.		
Seagrass and macroalgae habitat surveys	220-660-350	New section
The department has developed survey guidelines for seagrass and macroalgae habitat to improve protection of these important habitats in Puget Sound and coastal waters. The guidelines contain protocols for both preliminary and advanced surveys to help evaluate potential impacts to these habitats at project sites with various conditions.		
Common construction provisions for saltwater areas	220-110-360	220-660-270
Common saltwater construction provisions can apply to many hydraulic projects. However, only applicable common construction provisions will be applied to a specific hydraulic project. Common construction provisions include job site access, equipment use, construction materials, sediment and erosion control		

New WAC Section Name	New WAC Section Number	Existing WAC Number
containment, and job site repair and revegetation		
Bank protection in saltwater areas	220-660-370	220-110-280
A bank protection structure is a permanent or temporary structure constructed to protect or stabilize the bank. Bank protection methods are either hard or soft techniques. Soft approaches attempt to mimic natural processes by using biotechnical methods such as live plantings, rootwads and large woody material (LWM), and beach nourishment. Hard approaches armor the bank with material such as rock, concrete, or wood intended to prevent erosion of the bank. Some projects use both hard and soft approaches, but to be considered soft, the total area of the project must consist of at least 85% in aerial extent naturally-occurring materials used in ways that are consistent with the shore processes taking place in the vicinity of the project. The remaining 15% of the total project area must not interrupt sediment delivery to the beach (e.g., must not bulkhead a feeder bluff) and still be called soft. The total area extends cross-shore from MLLW to OHWL, and long-shore from a line perpendicular to the shoreline at the beginning of one end of construction to the other end.		
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas	220-660-380	220-110-300
Docks are structures that are fixed to the shoreline but floating upon the water. Piers are fixed, pile-supported structures. Floats (rafts) are floating structures that are moored, anchored, or otherwise secured in the water that are not directly connected to the shoreline. A ramp is a gangway that connects a pier or shoreline to a float and provides access between the two. Pilings usually associated with these structures are timber, steel, reinforced concrete, or composite posts that are driven or jacked into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a structure floating on the surface of the water that is used for private and commercial vessel moorage.		
Boat ramps and launches in saltwater areas	220-660-390	New section
A boat ramp or launch is a sloping stabilized roadway or entry point constructed on the shoreline for launching boats from vehicular trailers or by hand for primitive boat launch designs. Ramps and launches extend into the water at a slope of typically twelve to fifteen percent and are typically oriented perpendicular to the shoreline. Ramp and launch widths vary with intended use, and the length often depends on the slope of the shoreline and tidal amplitudes. Ramps and launches are usually constructed in protected areas with access to deep water close to shore. Construction materials commonly consist of gravel, concrete, or asphalt; they are often associated with marinas and parking lots. A railway-type boat launch consists of a pair of railroad tracks supported by pilings, and extends from the upland down to the beach.		
Marinas and terminals in saltwater areas	220-660-400	220-110-330
A marina is a public or private facility providing vessel moorage space, fuel, or commercial services. Commercial services include overnight or live-aboard vessel accommodations (RCW 77.55.011(13)). A marine terminal is a public or private commercial wharf located in the navigable waters of the state and used, or intended to be used, as a port or facility for the storing, handling, transferring, or transporting of goods, passengers, and vehicles to and from vessels (RCW 77.55.011(14)).		
Dredging in saltwater areas	220-660-410	220-110-320
Dredging includes removing substrate to improve vessel navigation and to maintain channels. Dredging is also used to clean up contaminated sediments.		

New WAC Section Name	New WAC Section Number	Existing WAC Number
Artificial aquatic habitat structures in saltwater areas	220-660-420	New section
An artificial aquatic habitat structure is a structure that humans design and place to provide long-term alterations to saltwater bottom habitat. The structure is designed and located to contribute to fish and shellfish management. One example is an artificial reef.		
Outfalls and tide and flood gates in saltwater areas	220-660-430	New section
Outfalls move water from one place to another, typically to a body of water. Outfalls may convey stormwater, or other waste materials. Tide and flood gates are adjustable gates used to control water flow in estuary, river, stream, or levee systems.		
Utility crossing in saltwater areas	220-660-440	220-110-310
Utility crossings are cables and pipelines that transport gas, telecommunications, fiber optics, power, sewer, oil, or water underneath waterbodies.		
Test boring in saltwater areas	220-660-450	New section
Boring is used to obtain information about the physical properties of the bed. This information is often needed to design foundations for proposed structures and to repair existing structures. Test boring is also commonly used to gather information about the contamination levels of sediment proposed for dredging.		
Informal appeal of adverse administrative actions	220-660-460	220-110-340
Describes the processes to informally appeal an HPA permit decision to the department's HPA Appeals Coordinator.		
Formal appeal of administrative actions	220-660-470	220-110-350
Describes the process to formally appeal an HPA permit decision to the Pollution Control Hearings Board.		
Compliance	220-110-480	220-110-360
Describes the civil compliance and criminal penalty processes.		

2.2 Alternatives

Table 2-6 summarizes provisions for the hydraulic project rule change alternatives. The table indicates the WAC title and section of the proposed rule, the WAC section of the existing rule, and a summary of provisions for each of the alternatives.

Alternative 1 (No-Action Alternative) is not represented on these tables because no changes are proposed.

2.2.1 No Action Alternative 1 – Current Rule

Under the No Action Alternative, WDFW would not update the Hydraulic Code Rules and would continue to implement the existing rules (Chapter 220-110 WAC). The current rules can be accessed at: apps.leg.wa.gov/wac/default.aspx?cite=220-110 . Under Alternative 1, the current rules would not be updated to better align with statutes or incorporate available fish science and technology, and the procedural and administrative requirements would not be improved.

2.2.2 Alternative 2 – WDFW-Proposed Rule Changes (Preferred Alternative)

The Preferred Alternative includes changes to existing sections of the Hydraulic Code Rules, new sections, new definitions, and new procedures for implementation. The updated rules are easier to read because they are organized by project type or topic. The updated rules also include explanations for the provisions for hydraulic projects by describing the fish life concerns for each type of project.

The provisions included in Alternative 2 represent the culmination of work to align with statutory changes, integrate current fish science and design technology, and improve procedural and administrative requirements. Changes were made to the Preferred Alternative based on comments received during the last review round.

Proposed rule changes for the Preferred Alternative are presented concurrently with this document, and comments will be taken separately on this EIS and the most recent proposed rules.

2.2.3 Alternative 3 – Increased Protection for Fish Life

A number of commenters on the September 2013 PEIS recommended that WDFW consider alternatives that are more restrictive than the WDFW-proposed rule changes. Some commenters recommended eliminating streamlined HPA permitting processes. Others recommended the rules require compensatory mitigation for cumulative impacts or to maintain structures that do not meet current standards because the maintenance work perpetuates impacts into the future. The overall approach is more precautionary and prescriptive than the approach proposed in Alternative 2.

This alternative responds to comments to provide higher levels of protection/restriction to protect fish life. Specific aspects of this alternative are based on Tribal, Environmental Coalition and other stakeholder and public comments. A few of the Alternative 3 proposals are not able to be implemented by the Fish and Wildlife Commission because the topic is regulated by statute (legislated law) not rule; these are identified in Table 2-6.

2.2.4 Alternative 4 – Increased Protection for the Built Environment

A number of commenters on the September 2013 PEIS recommended that WDFW consider alternatives that are less restrictive than the proposed rule changes. Some commenters recommended the Commissioners limit the authority that allows WDFW to issue HPAs for hydraulic projects to only those projects waterward of the ordinary high water line. Others recommended the rules provide protection only for fish and shellfish present at the work site but not their habitat. Other recommendations were made for less restrictive alternatives.

This alternative responds to comments to provide less protection/restrictions to reduce project costs. Specific recommendations in this alternative are based on comments from Federal Highway Administration, Washington State Department of Transportation, city and county public works agencies, and other stakeholders. A few of the Alternative 4 proposals are not able to be implemented by the Fish and Wildlife Commission because the topic is regulated by statute (legislated law) not rule; these are identified in Table 2-6.

Table 2-6 Summary of Alternatives to Hydraulic Project Regulations (Chapter 220-660 WAC)

Note: No changes are proposed for Alternative 1; provisions of alternative 1 are not depicted on Table 2-6.

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Technical provisions E 220-110-040 E 220-110-230 P 220-660-090	Combines the introductions to the freshwater and saltwater technical provision sections into a single introduction section; no substantive changes to the existing language.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Purpose E 220-110-010 P 220-660-010	Purpose statement intent remains the same, but narrative is restated in a more concise manner.	Same as Alt. 2 (Minor or no comments)	Amends the language to limit HPA authority to projects waterward of the ordinary high water line.
Instructions for using chapter E New section P 220-660-020	Describes how an applicant would follow the common technical provisions for hydraulic projects and how the department uses the provisions to condition HPAs; also refers applicants to WDFW guidance documents for help.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Definitions E 220-110-020 P 220-660-030	• Forty-six new definitions are added including the following: • The proposed definition of "Fish habitat" 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, that could reasonably be recovered by restoration or management and includes off-channel habitat. • The definitions of freshwater area, saltwater area, and watercourse are amended to include surface water connected wetlands that provide or maintain fish habitat. • Definitions for maintenance, repair, rehabilitation and replacement are added. These terms are used in the mitigation section to clarify when compensatory mitigation is required or when work must comply with current standards. • Unimpeded fish passage is defined. "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.	Same as Alt. 2 (Minor or no comments)	• Retains the Alternative 2 definitions except for the following changes: • Amend the definition of fish habitat to the following: "Fish habitat" means habitat, which is used by fish life at any life stage at any time of the year. • Remove "wetlands" from the definitions of "freshwater area", "saltwater area" and "watercourse". • Delete the definitions of maintenance, repair, rehabilitation and replacement and proposes all these activities should be considered maintenance. • Delete unimpeded from the "unimpeded fish passage".
Applicability of hydraulic project approval authority E 220-110-035 P 220-660-040	Outdated language transferring hydraulic code authority to DNR for forest practices hydraulic projects in non-fish waters is removed because of the integration of all hydraulic code authority in DNR forest practices. Portable boat hoists and scientific instruments are added to the list of exempt project types.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Procedures E 220-110-030 E 220-110-031 P 220-660-050	• Modifies current rules to reflect statutory and policy changes including: • Maintains ability to issue "general" or "simplified" HPAs for repair and maintenance projects because these are typically routine in nature and can be pre-conditioned, reserving limited resources for projects that pose higher risk to fish life. • Establishes procedures for applying for two new HPA types established by statute: fish habitat enhancement project (FHEP) and chronic danger HPAs. • Clarifies the procedures for applying for existing HPA types including standard, emergency, imminent danger, expedited, and pamphlet HPAs. Two new standard HPA types, "general HPAs" and "model HPAs" are proposed to streamline the permitting process for low risk hydraulic projects. • Limits multi-site HPAs to five sites, unless the department makes an exception, to ensure site visits can be conducted with the 45-day review period. • Delays issuing HPAs for a minimum of 7 days to allow the Tribes and other entities an opportunity to comment on complete HPA applications. • Allows subsequent minor modifications to an existing HPA permit provided the modifications do not adversely affect fish life. Clarifies how the department processes HPA applications.	• Retains the Alternative 2 language except for the following changes: • Remove the ability to issue "general" or "model" HPAs due to concerns that the opportunity for a meaningful and useful individual project review is removed to achieve streamlining. • Delay issuing HPAs for a minimum of 20 days to allow the Tribes and other entities an opportunity to comment on the complete HPA application. • Provide Tribes an opportunity to comment on emergency, imminent danger, expedited, and HPAs with minor modifications before they are issued. ✱ • Allow one minor modification to an existing HPA permit, provided modifications do not adversely affect fish life. • Create a pamphlet for the removal of impacted fine grained sediments and sand from spawning gravel stream beds deposited there as a result of surface water runoff discharge into streams.✱ • Eliminate the $150 application fee for restoration projects.✱ • Authorize additional types of fish habitat enhancement projects.✱	• Retains the Alternative 2 language except for the following changes: • Remove the limit on the number of sites covered in a multi-site HPA. • Add more flexibility on how an emergency, imminent danger or chronic danger is declared, and additional positions authorized to make these declarations to improve the efficiency and ease for government agencies to receive HPAs.✱
Integration of hydraulic projects approvals and forest practices applications E 220-110-085 P 220-660-060	Retains the existing section that was added in 2013 to implement SB 6406. The amendment required the integration of hydraulic code rule fish protection standards (Title 220 WAC) into the forest practices rules for hydraulic projects in fish-bearing waters on forest land. The rules stipulate how the department will work with DNR and the applicant.	Same as Alt. 2 (Minor or no comments)	The Alternative 2 language would be replaced by a new section that repeats the all of the rules applicable to forest practices.
Changes to hydraulic project approval technical provisions E 220-110-032 P 220-660-070	Retains the 1994 rule language that allows the department to add, modify and delete technical provisions when certain criteria are demonstrated. Language is also added to allow the department to modify and delete technical provision that are not possible to comply with due to geological, engineering or environmental constraints or safety concerns;	Same as Alt. 2 (Minor or no comments)	• Retains the Alternative 2 language except for the following change: • Remove this clause "loss of or injury to fish or shellfish, or the loss or permanent degradation of the habitat that supports the fish and shellfish populations" and replace it with "will be protective of fish life."
Mitigation requirements for hydraulic projects E New Section P 220-660-080	• Incorporates statutes and policies adopted since 1994 and includes the following: • Establishes the baseline for measuring impacts as the existing habitat condition. • Does not require compensatory mitigation for maintenance projects (routine, repair, rehabilitation, and replacement) unless the maintenance work caused a new impact not associated with the original work. • Requires design and construction of rehabilitation and replacement projects to comply with the proposed rules.	• Retains the Alternative 2 language except for the following changes: • Require compensatory mitigation for cumulative impacts.✱ • Require compensatory mitigation for maintaining or repairing a structure that currently diminishes habitat and/or perpetuates impacts into the future. • Require the same mitigation for rehabilitation or replacement of structurally deficient or functionally obsolete structures that is required for new structures (including mitigation).	• Retains Alternative 2 language except for the following changes: • Do not require compensatory mitigation for routine maintenance, repair, rehabilitation, or replacement of the structure even if new impacts to fish life occurred as a result of the work. • Delete the provision "mitigation must compensate for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value" because these values are difficult to quantify.

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Freshwater habitats of special concern E New section P 220-660-100	Identifies freshwater habitats of special concern for priority fish species. This habitat requires protective measures for priority fish species due to their population status or sensitivity to habitat alteration.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Authorized work times in freshwater areas E New section P 220-660-110	Specifies the criteria the department will follow to determine when work should occur. The criteria include life history stages of fish life present, the expected impact of the work, BMPs proposed by the project proponent, weather, and other conditions. Requires the department to publish the times when spawning salmonids and their eggs and fry are least likely to be in freshwaters of Washington.	• Retains Alternative 2 provisions except the following: • All in-water work would be prohibited during times of the year when spawning salmonids and their incubating eggs are likely to be present regardless of the expected impact from the work, best management practices, weather, and other conditions.	Same as Alt. 2 (Minor or no comments)
Common freshwater construction provisions E New section P 220-660-120	Combines the common construction provisions that apply to many freshwater projects into a single section. New provisions are added for staging areas, job site access, equipment use, materials, water quality protection, aquatic work area isolation, diversion pumps, fish removal and demobilization, and cleanup.	• Retains Alternative 2 provisions except for the following change: • The use of all treated wood and tires would be prohibited.	Retains Alternative 2 provisions except for the following provisions would be removed: Remove sections eight through twelve. (8) In-water work area isolation using block nets (9) In-water work area isolation using a temporary bypass (10) In-water work area isolation using a cofferdam structure (11) In-water work without a bypass or cofferdam (12) Fish removal
Streambank protection and lake shoreline stabilization E 220-110-050 E 220-110-223 P 220-660-130	New restrictions are added to the existing rules including the following: Separate provisions for design and construction to clarify when standards apply. Allows the department to require an applicant to submit a qualified professional's rationale with the HPA application for a new or replacement structure extending waterward of the existing structure or bankline. Requires the permittee to avoid or minimize adverse impacts to fish life by using the least impacting technically feasible alternative. Benchmarks must be established so the department can verify compliance with the approved plans. In cases where the bankline of a river or stream has changed as a result of meander migration or lateral erosion and a new ordinary high water line has formed landward of an existing lake bulkhead, the rule requires the current location of the new bank be maintained with some exceptions.	• Retains Alternative 2 provisions except for the following changes: • The department would always require an engineer's report that unequivocally determines bank protection or shoreline stabilization is needed to protect infrastructure before allowing any form of bulkhead or armoring work. If protection is warranted, the department would firmly require a biotechnical solution unless an engineer clearly finds that a hard bulkhead is the only option. • The placement of new and replacement structures would have to consider climate change.	Same as Alt. 2 (Minor or no comments)
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in freshwater areas E 220-110-060 P 220-660-140	• Adds new provisions for overwater structures in waterbodies where impacts to fish spawning areas and to juvenile salmonid migration corridors and feeding and rearing areas are a concern. Provisions are also added to the existing rules for the following: • Pile design • Steel impact driving sound attenuation • Watercraft lift design • Mooring buoy design • Residential and public recreational dock, pier, ramp, float, watercraft lift, and buoy construction.	• Retains Alternative 2 provisions except for the following change: • All docks, piers, ramps and floats would have 100% of the deck covered in grating.	• Retains Alternative 2 except for the following changes: • Remove all grating requirements because some research shows the sunlight penetrated through the grating on average about 10% more than traditional planked decking. • Do not specify pier height or width requirements for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern.

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Boat ramps and launches in freshwater areas E 220-110-224 P 220-660-150	New provisions are added to the existing rules for boat ramp and launch design and construction to minimize impacts to the bed including fish spawning areas, the movement of wood and sediment, and juvenile fish migration, feeding, and rearing areas.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Marinas and terminals in freshwater areas E New section P 220-660-160	A new section is added for marina and terminal design, construction, and maintenance. The maintenance provisions align with a change to the statute.	Same as Alt. 2 (Minor or no comments)	• Retains Alternative 2 except for the following change: • Acknowledge the different purposes, requirements, and constraints of bulkheads and other bank stabilization in the marina/marine terminal environment.
Dredging in freshwater areas E 220-110-130 P 220-660-170	• New provisions are added to the existing rules to allow the department to assess impacts more accurately and includes the following provisions: • The department may require quantitative analysis of the extraction rate to determine impacts to sediment transport and delivery. • The department may require multi-season pre- and post-dredge project bathymetric or biological surveys. • The department will evaluate the potential impacts of dredging and the disposal of dredged materials in eulachon spawning areas.	• Retain Alternative 2 provisions except for the following changes: • Include rules for removing gravel and debris from small streams in the proposed rule changes. • Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued.	• Retain Alternative 2 provisions except for the following changes: • Include rules for removing gravel and debris from small streams in the proposed rule changes. • Authorize dredging in fish spawning areas.
Sand and gravel removal E 220-110-140 P 220-660-180	A new provision is added to the existing rules to clarify that the department may require quantitative analysis of the extraction rate to determine impacts to sediment transport and delivery. This new provision would allow the department to assess impacts more accurately.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Water crossing structures E 220-110-070 P 220-660-190.	Retains current rule language for no-slope culvert design. Hydraulic culvert design provisions are moved to the fish passage improvement structure section. New provisions are added for design of the stream-simulation and an alternative culvert design methods. Some of the current language for bridges is retained but new provisions are added for design and construction. New provisions are added for design and construction of temporary fords.	• Retains Alternative 2 provisions except for the following changes: • Include language that requires permittees to install stream simulation culverts unless the permittee can show that stream simulation is not feasible, or that another design will provide equal or better protection of fish life. • Remove the no-slope design alternative because it is inconsistent with the recent federal court order regarding state culverts because no-slope designed culverts are often found to impede fish passage. • Move this design approach to the fish passage improvement section.	• Retains Alternative 2 provisions except for the following changes: • The culvert design standards would be removed. The designs proposed are not based on technically sound engineering practices and are not justified by significant research. • The bridge design standards would be amended because they may require the preparation of multiple designs so that the cost differential can be quantified, thus increasing the time and costs associated with all bridge projects. • Amend the rules to allow American Association of State Highway and Transportation Officials and Federal Highway Administration standards (by name) because they have been well vetted by the engineering community. • Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life. WDFW's focus should be on fish life and the channel below the OHWL. Over the course of a bridge's lifespan, the flow velocity during the 100-year flood will have less influence on the channel form than the 2-year flood. • Remove the three-feet of clearance for bridges.

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Fish passage improvement structures E New section P 220-660-200	A new section is added for design, construction, and maintenance of fish ladders, weirs constructed for fish passage, roughened channels, trap and haul operations, and hydraulic design culvert retrofits. Designs must have an engineer's approval and meet specific criteria. The structures must be inspected and maintained.	• Retains Alternative 2 provisions except for the following changes: • All structures would be temporary and a timeframe would be established in rule for a permanent solution to be implemented. • Roughened channel would be a temporary solution used only in extreme circumstances with a valid reason why a more reliable fish passage method (e.g. stream simulation or bridge) cannot be used. • Hydraulic design option culverts would have limited application in exceptional circumstances where constraints prevent the use of bridges, no-slope and stream simulation culverts.	• Retains Alternative 2 provisions except for the following change: • The department would not require compensatory mitigation if a fish passage structure cannot pass all fish species present at all mobile life stages.
Channel change and realignment E 220-110-080 P 220-660-210	○ The following new provision is added to the existing rules for channel change and realignment design: ○ A channel change may be approved if: ○ Permanent new channels are similar to the old channel in length, width, depth, flood plain configuration, and gradient, and ○ The new channel incorporates fish habitat components, bed materials, meander configuration, and native or other approved vegetation that provides better protection for fish life than that which previously existed in the old channel.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Large woody material placement, repositioning and removal in freshwater areas E 220-110-150 P 220-660-220	• The following new provisions are added to the existing rules for placement of large woody material: • The department will approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. The department will require a person to place the repositioned or removed wood directly back in the channel unless there are engineering, legal, safety, or environmental constraints. When these constraints are present, the department may approve the placement of repositioned or removed wood in the floodplain, side channels, along banks, or in the marine nearshore. If wood must be removed from the waterbody because of legal or safety constraints, the department will require compensatory mitigation if the removal of the wood diminishes fish habitat function or value. • The department will approve placing large wood back in the channel to improve fish habitat. This may include placing channel-spanning logs, creating log jams, or introducing a single large log or rootwads to the channel. Large woody material may be stabilized against buoyant forces and hydraulic drag forces that may mobilize wood during flood flows by pinning, anchoring, or burying woody material in the floodplain.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Beaver dam management E New section P 220-660-230	A new section is added for beaver dam removal, breaching, or modification and the design and construction of beaver deceivers and pond water level control devices.	• Retains Alternative 2 provisions except for the following change: • The department would require a professional determination that there is an imminent threat to property or the environment before issuing an HPA for removal of a beaver dam.	Same as Alt. 2 (Minor or no comments)
Pond construction E 220-110-180 P 220-660-240	• Retains current rules except the following provision is removed because the department cannot enforce the provision: • Pond construction activities involving a diversion of state waters shall be dependent upon first obtaining a water right.	• Retains Alternative 2 provisions except for the following change: • Applicants would be required to demonstrate they have a valid water right to apply for HPA for water diversions.	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Water diversions and intakes E 220-110-190 P 220-660-250	• Retains current rules except the following provision is removed because the department cannot enforce the provision: • The exercise of project activity associated with the diversion of state waters shall be dependent upon first obtaining a water right.	• Retains Alternative 2 provisions except for the following change: • Applicants would be required to demonstrate they have a valid water right to apply for HPA for water diversions.	Same as Alt. 2 (Minor or no comments)
Outfall structures in freshwaters areas E 220-110-170 P 220-660-260	• Retains current rules except language is added to reflect statutory changes to the department's authority to regulate stormwater including the following: • The department may not provision HPAs for storm water discharges in locations covered by a national pollution discharge elimination system municipal storm water general permit for water quality or quantity impacts. The HPA is required only for the actual construction of any storm water outfall or associated structures. • In locations not covered by a national pollution discharge elimination system municipal storm water general permit, the department may provision HPAs to protect fish life from adverse effects, such as scouring or erosion of the bed of the water body, resulting from the direct hydraulic impacts of the discharge.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Utility crossings in freshwater areas E 220-110-100 P 220-660-270	Retains current rules except language is added for utility line design and directional drilling.	• Retains Alternative 2 provisions except for the following change: • The department would require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.	Same as Alt. 2 (Minor or no comments)
Felling and yarding of timber E 220-110-160 P 220-660-280	Retains current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Aquatic plant removal and control E 220-110-331 E220-110-332 E 220-110-333 E 220-110-334 E 220-110-335 E 220-110-336 E 220-110-337 E 220-110-338 P 220-660-290	Consolidates eight sections into one section, and retains current rule provisions. The only substantial change is the addition of a new section that explains the statutory limits of our authority.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Mineral prospecting E 220-110-200 E 220-110-201 E 220-110-202 E 220-110-206 P 220-660-300	Consolidates four sections into one section and retains the current rule provisions. An additional sub-section is added to allow mineral prospecting on ocean beaches to occur under the Gold and Fish pamphlet.	Retains Alternative 2 provisions except additional timing restrictions would be added.	Retains Alternative 2 provisions except for the timing windows would be changed the 1994 timing windows.

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Tidal reference areas E 220-110-240 P 220-660-310	No change from current rules.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Saltwater habitats of special concern E 220-110-250 P 220-660-320	Retains the current rule provisions for saltwater habitats of special concern except rock sole spawning beds that are removed because rock sole are not obligate beach spawning fish. Olympia oyster settlement areas are added. Nearshore zone geomorphic processes that form and maintain habitat are also added. These include sediment supply and transport; beach erosion and sediment accretion; distributary channel migration; and tidal channel formation and maintenance.	• Retain Alternative 2 provisions except for the following change: • Rock sole spawning beds would be retained as a saltwater habitat of special concern.	• Alternative 2 provisions except the following language would be changed to read: • "The presence of saltwater habitats of special concern may restrict project type, design, location, and timing." Remove the phase "adjacent areas".
Authorized work times in saltwater areas E 220-110-271 P 220-660-330	Retains current rule work times in Pacific sand lance spawning beds and lingcod settlement and nursery areas. Reduces work times in juvenile salmonid migration corridors and feeding and rearing areas by two months. Retains work times in herring spawning beds except work times are added for two additional tidal reference areas that did not have restrictions. The work time in or adjacent to rock sole spawning beds is removed because rock sole are not obligate beach spawning fish. Where the smelt spawning season is six months or longer, adds a new requirement that work must be started within seventy-two hours of a survey.	• Retain Alternative 2 provisions except for the following changes: • Work times would apply to potential (suspected) as well as documented areas. • Apply work times regardless of the expected impact from the work. • Add work times for rock sole spawning beds.	Alternative 4 would retain the Alternative 1 authorized work times. Additional monitoring would be required for projects. This will allow work to continue as previous but will monitor where/when aquatic life is entering the project area.
Intertidal forage fish spawning bed surveys E New section P 220-660-340	This new section requires a biologist who conducts forage fish spawning surveys to complete the department's forage fish spawning beach survey training. A biologist must follow the department-approved intertidal forage fish spawning protocol and use the standard department data sheets when conducting forage fish spawning beach surveys. New WAC section	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Seagrass and macroalgae habitat surveys E New section P 220-660-350	This new section clarifies when seagrass and macroalgae habitat surveys are required, diver qualifications, and the survey protocol.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Common construction provisions for saltwater areas E 220-660-270 P 220-110-360	Retains current rule language and adds new provisions for staging areas, job site access, equipment use, vessel operation, materials, and demobilization and cleanup.	• Retain Alternative 2 provisions except for the following changes: • The use of treated wood and tires would be prohibited.	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Bank protection in saltwater areas E 220-110-280 P 220-660-370	• The non-single family and single-family residence bank protection provisions are combined into one section. The current rules are retained except for the following changes: • If a new OHWL re-establishes landward of a bulkhead protection structure because of a breach, the department will consider this re-established OHWL to be the existing OHWL if the structure isn't repaired within three years. • Design alternatives are listed from the most preferred to the least. • An HPA application for new, replacement, or rehabilitated bulkhead or other bank protection work must include a site assessment, alternatives analysis, and design rationale by a qualified professional. This only applies to non-single family bank protection structures.	• Retain alternative 2 except for the following changes for single-family residence bulkheads processed under RCW 77.55.141: • All bank protection must use the least impacting feasible bank protection design. • An HPA application for new, replacement, or rehabilitated bulkhead or other bank protection work must include a site assessment, alternatives analysis, and design rationale by a qualified professional.	Same as Alt. 2 (Minor or no comments)
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas E 220-110-300 P 220-660-380	• The current rules are retained for overwater structures except for the following changes*:* • The department will require that new structures are designed with a pier and ramp to span the intertidal beach, if possible. • Structures must be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet away from seagrass and kelp at extreme low water. • A structure must have been usable at the site within the past twelve months of the time of application submittal to be considered a replacement structure. • The replacement of more than thirty-three percent or two hundred and fifty square feet of decking or replacement of decking substructure requires installation of functional grating. • Design requirements are added to reduce impacts from shading and grounding. • Provisions are added for the design and construction of mooring buoys and watercraft lifts. • Provisions are added for removing creosote piling. • A provision is added to require sound attenuation when installing steel piling with an impact pile driver.	• Retain Alternative 2 provisions except for the following changes: • Prohibit the construction of new docks in documented herring spawning areas. • Require 100% grating of docks and floats. • Require mooring buoys to be a certain distance from seagrass and macroalgae.	Same as Alt. 2 (Minor or no comments)
Boat ramps and launches in saltwater areas E New section P 220-660-390	This new section lists design alternatives from the most preferred to the least. New design requirement to avoid and minimize impacts to bed, littoral drift cells, and saltwater habitats of special concern.	Same as Alt. 2 (Minor or no comments)	• Retain the language in Alternative 2 but delete the following provisions: • Design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern. • The department may require an eelgrass/macroalgae habitat survey for all new ramp or launch construction. A survey is not required to replace an existing structure within its original footprint. • Design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Marinas and terminals in saltwater areas E 220-110-330 P 220-660-400	• The current rules are retained for marinas and rules for marine terminals are added. • When possible, locate new marinas and terminals in areas that will minimize impacts to fish life. • Locate new marinas and terminals to avoid and minimize impacts to seagrass and kelp. • Locate new marinas and terminals in naturally deep areas to avoid or minimize dredging. • Locate new marinas and terminals in areas deep enough to avoid or minimize propeller wash impacts to the bed. • Locate new marinas and terminals in areas with existing low or impaired biological value. • Design and construct marinas and terminals so that most overwater coverage is in the deepest water possible; this is necessary to allow light penetration to the intertidal and shallow subtidal areas. • Provisions are added for removing creosote piling. • A provision is added to require sound attenuation when installing steel piling with an impact pile driver. • Provisions are added for marina and marine terminal maintenance to incorporate a statutory change.	• Retain the language in Alternative 2 but add the following provision: • New and expanded docks, wharves, piers, marinas, rafts, shipyards and terminals must be at least a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate.	• Retains Alternative 2 except for the following change: • Acknowledge the different purposes, requirements, and constraints of bulkheads and other bank stabilization in the marina/marine terminal environment.
Dredging in saltwater areas E 220-110-320 P 220-660-410	• Retains the current rule provisions for dredging in saltwater areas except the following new provisions are added: • The department may require hydrodynamic modeling for new dredging projects and expansions. • Design project to avoid dredging and expansions that convert intertidal to subtidal habitat.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Artificial aquatic habitat structures in saltwater areas E New section P 220-660-420	• This new section includes provisions for designing and constructing artificial aquatic habitat structures that must meet one or more of the following needs: • Enhance fish viewing opportunity at a specific location; • Enhance or conserve aquatic resources; or • Mitigate for impacted fish habitat.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Outfalls and tide and flood gates in saltwater areas E New section P 220-660-430	• This new section includes the statutory limits of our authority, and provisions for the design and construction of stormwater outfall and tide and floodgate projects including the following: • The department may not provision HPAs for storm water discharges in locations covered by a national pollution discharge elimination system municipal storm water general permit for water quality or quantity impacts. An HPA is required only for the actual construction of any stormwater outfall or associated structures. • In locations not covered by a national pollution discharge elimination system municipal storm water general permit, the department may issue HPAs that contain provisions to protect fish life from the direct hydraulic impacts of the discharge, such as scouring or erosion of the waterbody bed. • The department may not require a fishway on a tide gate, flood gate, or other associated human-made agricultural drainage facilities as a provision of a permit if such a fishway was not originally installed as part of an agricultural drainage system existing on or before May 20, 2003.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Utility crossing in saltwater areas E 220-110-310 P 220-660-440	• Retains the current rule provisions for utility lines except for the following change: • The department may require an eelgrass/macroalgae habitat survey for new construction.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Test boring in saltwater areas E New section P 220-660-450	This new section includes provisions to protect water quality during boring projects.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Informal appeal of adverse administrative actions E 220-110-340 P 220-660-460	Retains the current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Formal appeal of administrative actions E 220-110-350 P 220-660-470	Retains the current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Compliance E 220-110-360 P 220-110-480	• Retains the current rule provisions and adds the following language for civil enforcement: • The department will develop programs to encourage voluntary compliance by providing technical assistance consistent with statutory requirements. • The department may issue a notice of correction. • The department may issue a civil penalty provided for by law without first issuing a notice of correction only under specific circumstances: • The person has previously been subject to an enforcement action for the same or similar type of violation; or • Compliance is not achieved by the date set by the department in a previously issued notice of correction; or • The violation has a probability of placing a person in danger of death or bodily harm, has a probability of causing more than minor environmental harm, or has a probability of causing physical damage to the property of another in an amount exceeding one thousand dollars; or • The violation was committed by a business that employed fifty or more employees on at least one day in each of the preceding twelve months.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

✱ Requires Statutory change

[Intentionally Blank]

✱ Requires Statutory change

2.3 Proposed Rule Changes Eliminated from Detailed Study

As described above, development of the revised Hydraulic Code Rules has included several iterations and WDFW has evaluated several different approaches to the rule revisions. The major options considered but not carried forward are described in the following sections along with the reasons for eliminating the alternatives. Generally, alternatives were eliminated because they did not meet the purpose and need for the action; that is, the alternatives below either do not update the rules to reflect evolving fish science and design technology, or do not contribute to better alignment with GMA/SMA provisions or Hydraulic Code statutes. Several of the approaches were rejected because they did not simplify the application process or increase certainty for applicants.

2.3.1 Curtailment of work to develop a Habitat Conservation Plan

As described in Chapter 1, WDFW originally began revising the Hydraulic Code Rules as part of developing an HCP. In 2011, it became apparent to the department it would take several more years to complete the HCP process that began in 2006. The grant funding received to develop the HCP was insufficient to complete the process. If the department continued the HCP development, it would have required the reallocation of scarce field staff resources in 2013-2014 to complete the process. Also, in early 2012, National Marine Fisheries Services and U.S. Fish and Wildlife Service (the Services) indicated that several types of hydraulic projects could not be covered under the HCP because some statutes in Chapter 77.55 RCW prevented the department from meeting the Services' standards for an HCP. This led to the loss of support for HCP development and curtailment of the project.

2.3.2 "Prescriptions Only" Approach

Early in the process, WDFW considered a prescription-only alternative, which would contain only rules, as directed by RCW 77.55.081 and RCW 77.55.091 for removal or control of noxious weeds and for small scale mining and prospecting. With those two exceptions, the Hydraulic Code Rules would not include technical provisions applicable to construction activities. Instead, each proposed hydraulic project would be evaluated on a site-by-site basis. All requirements for each project, (no matter how common or routine that type of project is), would be established through an analysis of the unique conditions present at that specific site. This alternative was contained in the SEPA Scoping Notice issued in June 2012. WDFW eliminated this alternative from further consideration because the complexity and inconsistency that would result from implementing such an approach made the alternative infeasible. In addition, the approach would not provide transparency or regulatory predictability for applicants.

2.3.3 Procedural Alternative

The procedural alternative would have made changes to only the Hydraulic Code Rules that were necessary because of changes to the enabling laws, including recodifications. This approach would have ensured that the rules met statutory requirements; however, it would not incorporate available science or technology, nor would it improve protection of fish life. In addition, it would eliminate the efficiencies gained through general and model HPA permitting processes.

2.3.4 One-Activity-at-a-Time Alternative

This alternative proposed an approach similar to that used by WDFW to update the rules for mineral prospecting. The rules for only one activity at a time would be updated. While this approach could meet the project purpose for the selected activity, it would not improve the application process, would not improve readability of the hydraulic code rules, and would not ensure that the permit program as a whole meets the regulatory standard of protecting fish life.

2.3.5 Most-Commonly-Permitted Activity

This alternative would have changed only the sections of the Hydraulic Code Rules that cover the most-frequently permitted types of construction projects: water crossings, bank protection, and overwater structures. While this approach could have met the purpose and need for the selected activities, it would not improve the application processing or readability, nor ensure that the rules as a whole met the regulatory standard of protecting fish life.

2.3.6 Proposed Single-Rule Changes

In addition to alternatives that were proposed but not carried forward, WDFW received numerous suggestions for individual rule changes that were not incorporated into the proposed rules. Many of those comments were received during the comment period for the Draft PEIS dated September 2013. The comments and agency responses are summarized in Appendix A of the final PEIS.

WDFW received several suggestions for rule changes that would require a change in the statute prior to implementation in rule. Suggestions expressed by multiple stakeholders that were not included in the proposed rules changes (Alternative 2) are included in one of the added alternatives: Increased Protection of Fish Life – Alternative 3, and Increased Protection for the Built Environment – Alternative 4. As noted previously, a few of the Alternative 3 and 4 proposals are not able to be implemented by the Fish and Wildlife Commission because the topic is regulated by statute (legislated law) not rule. Rules adopted by the Fish and Wildlife Commission must be consistent with current statute.

Table 2-7 summarizes the suggested rule changes that would require legislated changes to Hydraulic Code statutes before being implemented by the Fish and Wildlife Commission in rule.

Table 2-7 Suggested Rule Changes that are Inconsistent with Current Statute

WAC Section of Proposed Change	Recommended Change	Statutory Reference
General	Hydraulic code rules should also protect marine mammals, birds, or amphibians.	RCW 77.55.021(1)
WAC 220-660-030(20)	Change the definition of “Chronic danger”.	RCW 77.55.221
WAC 220-660-030(26)	Change the definition of “County legislative authority”.	RCW 77.55.021(12)(a)

WAC Section of Proposed Change	Recommended Change	Statutory Reference
WAC 220-660-030(34)	Change how an emergency is declared and who can declare an emergency.	RCW 77.55.021(12)(a) – (d)
WAC 220-660-030(75)	Change the definition of Hydraulic Project. This is very broad and we have concerns that, with the varied interpretations of different biologists, this could reach far outside of reasonable impacts that affect fish life.	RCW 77.55.011(11)
WAC 220-660-030(78)	Change how an imminent danger is declared and who can declare an emergency.	RCW 77.55.011(12)
WAC 220-660-030(157)	If the agricultural drainage facility is in a natural watercourse that has been used as an agricultural drainage facility since before the modern HPA rules, WDFW should consider the effects of excluding from the definition of hydraulic projects maintenance of "man-made agricultural drainage facilities," whether those are in the waters of the state or not.	RCW 77.55.011(11) RCW 77.55.021(12)(c)
WAC 220-660-040(1)(b)	All hydraulic projects must comply with the applicable requirements listed in chapter 220-660 WAC. After 'all hydraulic projects' add "within waters of the state."	RCW 77.55.011(11)
WAC 220-660-040(2)	Add an (2)(l) subsection to include SEPA exemptions. RCW 119.11 is a state law for SEPA, but WDFW adopted WAC 220-100 that requires all of WAC 220 to be incorporated into all WDFW rule making.	RCW 77.55.011(11) RCW 77.55.021(1) RCW 77.55.021(2)
WAC 220-660-040(2)	Add an exemption for routine maintenance such as mowing, vegetation removal, and removal of debris relating to the levee structure and within the rights of way of any Diking District, and that is governed by regulations, ETLs, Vegetation Management Regulations and variances, under regulations and jurisdiction of the U.S. Army	RCW 77.55.021(1) RCW 77.55.131

WAC Section of Proposed Change	Recommended Change	Statutory Reference
	Corps of Engineers.	
WAC 220-660-050	Add a pamphlet for the removal of impacted fine grained sediments and sand from spawning gravel stream beds deposited there as a result of surface water runoff discharge into streams.	RCW 77.55.011(17)
WAC 220-660-050	Restoration projects should not have to pay the $150 application fee.	RCW 77.55.321
WAC 220-660-050(3) – (8)	Permit categories could be reduced to three: Standard, Expedited (incorporating common elements of emergency, imminent danger, and chronic danger), and Pamphlet.	RCW 77.55.021(12)(a)-(d) RCW 77.55.021(14) RCW 77.55.021(15)(a)-(b)
WAC 220-660-050(3)-(8)	Rules for standard, emergency, imminent danger, chronic danger, expedited HPAs are too restrictive. In addition, USACE officials are generally always on site at times of flooding, in particular in Skagit County, and are ready to take immediate action. Under these revisions, where there must be notification to the Department in writing of a Declaration of Emergency and a requirement to wait for HPA approval or even a verbal approval before work is authorized, would be in the real world, completely impractical and unworkable. In fact this would be an impediment to effective flood control and protection of life and property…	RCW 77.55.021(12)(a)-(d) RCW 77.55.021(14) RCW 77.55.021(15)(a)-(b) RCW 77.55.021(16)
WAC 220-660-050(3)(b)(i)	Seattle City Light (SCL) developed a Fish and Aquatics Management Plan in support of the relicensing of the Boundary Dam. The Plan was endorsed by settling parties, including WDFW, and describes the comprehensive protection , mitigation, and enhancement program that SCL is implementing under a new license issued by the Federal Energy Regulatory Commission (FERC) in 2013. SCL also operates three other hydroelectric facilities on the west slope of the Cascade	RCW 77.55.181

WAC Section of Proposed Change	Recommended Change	Statutory Reference
	Mountains-the Skagit River, Newhalem Creek, and South Fork Tolt River hydroelectric projects. The FERC licenses for these projects include requirements to improve fish habitat within their respective Project boundaries and watersheds for conservation purposes. Because the non-operational mainstem and tributary measures are designed to benefit native salmonid populations and their habitats, SCL requests that fish enhancement projects undertaken to meet FERC license requirements be considered eligible for a FHEP HPA.	
WAC 220-660-050(3)(b)(i)C	This requirement could preclude many if not all restoration projects if anyone comments in regards to public safety concerns. At what point do we sacrifice salmon for the lowest-skill level of river recreational users?	RCW 77.55.181
WAC 220-660-050(4)	Change how an emergency is declared and who can declare an emergency.	RCW 77.55.021(12)(a)-(d)
WAC 220-660-050(4)(a)(i)	Add "natural" and "built" before environmental at the end of the 1st sentence and throughout document. WDFW adopted WAC 220-100 that's required to be incorporated into all actions, by all WDFW rule making, by WAC 197-11-704. This definition cannot be modified.	RCW 77.55.021(12)(a)
WAC 220-660-050(5)	Change how an imminent danger is declared and who can declare an imminent danger.	RCW 77.55.021(14)
WAC 220-660-050(6)	Imminent dangers are covered under emergency permits, chronic danger permits are mere loopholes provided for chronic problems that are often a result of either poor management, lack of proper planning or inadequate infrastructure. If there is truly imminent risk the project can be addressed under an emergency permit. We request that chronic danger permits be	RCW 77.55.021(15)(a)-(b) RCW 77.55.221

WAC Section of Proposed Change	Recommended Change	Statutory Reference
	removed/deleted	
WAC 220-660-050(6)	Change how a chronic danger is declared and who can declare a chronic danger	RCW 77.55.021(15)(a)-(b) RCW 77.55.221
WAC 220-660-050(12)(b)	By law, WDFW has 45 days from the date a complete application package is received to issue or reject an HPA. The law should be updated to assume project authorization if WDFW exceeds the 45 day time period. That would be consistent with Water Quality Certifications and Coastal Zone Management Certifications issued by the Department of Ecology	RCW 77.55.021(7)(b)
WAC 220-660-050(13)(b)(iv)	At the end of the sentence, after "section" add "in non-NPDES discharges."	RCW 77.55.021(7)(b)(iv)
WAC 220-660-050(14)(a)	The imposed limitation on permit conditions that are "out of proportion to the impacts of the proposed project" itself inappropriately ignores cumulative impacts at the project site, and thereby codifies any existing habitat degradation that may be present. This codification is in itself a perpetuation of degradation, and therefore is, in fact, an impact of the project itself, which must be addressed. The language must therefore be stricken.	RCW 77.55.021(7)(a) RCW 77.55.231
WAC 220-660-050(15)(a)	Delete "may" and add "shall".	RCW 77.55.021(9)(b)
WAC 220-660-050(15)(d)(ii)	Delete "periodic floodwaters alone do not constitute a problem that requires an HPA."	RCW 77.55.021(9)(c)
WAC 220-660-080	The rules should require compensatory mitigation for cumulative impacts to fish life.	RCW 77.55.231
WAC 220-660-080(4)(h)	Do not use existing conditions as the baseline for assessing impacts to fish life from a project.	RCW 77.55.231
WAC 220-660-090	All HPAs should contain the provision that	RCW 77.55.021(9)(b)

WAC Section of Proposed Change	Recommended Change	Statutory Reference
	structures must be removed at the end of their useful life.	
WAC 220-660-180	The entire sand and gravel extraction section from rivers for purposes of collecting construction aggregate should be stricken.	RCW 77.55. This is a lawful type of hydraulic project.
WAC 220-660-380	Boat ramps replace habitat. Consider assessing cumulative impacts of more new structures as part of the decision-making process.	RCW 77.55.231
WAC 220-660-370 WAC 220-660-390	In addition to shielding artificial lights from shining on the water (220-660-140(3) and elsewhere), lights should also be shielded from shining into the sky in order to minimize adverse impacts to birds.	RCW 77.55.021(7)(a)
WAC 220-660-420	Agricultural drainage facilities are exempt but stormwater and industrial features are not. The language should be updated to include all manmade drainage facilities that are wholly created for the purpose of managing surface water.	RCW 77.55.281
WAC 420-660-420	"The department may not require changes to the project design above the mean higher high water mark of marine waters, or the ordinary high water mark of freshwaters of the state." Strike the reference to freshwaters of the state, since this section is about marine waters. More substantively, Ecology is concerned that OHWM, which establishes the landward limit of state waters, is typically 1.5 feet above MHHW (at least in the central and northern Salish Sea). Please explain the basis, rationale, statutory mandate, etc. for the proposed language outlining that WDFW cannot require design changes to outfall structures above MHHW. We think there is a real risk that aquatic resources and functions will not	RCW 77.55.161

WAC Section of Proposed Change	Recommended Change	Statutory Reference
	be adequately protected by this provision.	
WAC 220-660-470	The department should establish a stop-work provision in the enforcement and compliance section.	RCW 77.55.291
WAC 220-660-470	Limit compliance actions to current projects with an HPA.	RCW 77.55.291 RCW 77.15.300
WAC 220-660-470	The department should have higher penalties for non-compliance.	RCW 77.55.291

2.4 Adaptive Management

Adaptive management of natural resources is a process that makes possible

> *"the acquisition of additional knowledge and the utilization of that information in modifying programs and practices so as to better achieve management goals.[4]"*

The adaptive management process uses monitoring to inform decision-makers and reduce uncertainty.

The Alternative 2 WDFW-proposed rule changes represent the culmination of almost a decade's work to modernize the HPA rules' science/technology foundation. As such, adoption of Alternative 2 would establish a baseline from which changing science and technology and/or the results of effectiveness monitoring can be compared.

Development of an adaptive management program for the HPA program will commence once a decision is finalized in fall 2014 regarding proposed rule changes.

[4] (Lindenmayer and Franklin 2002:260).

Chapter 3 Affected Environment

This chapter describes environmental resources potentially affected by adoption of the revised Hydraulic Code Rules. Because the rules will be implemented statewide and the environmental landscape of Washington State varies widely from region to region, a general description of the resource categories is provided. The discussion focuses on the portions of the existing natural and built environments that will be most affected by implementing the revised Hydraulic Code Rules. Because water resources and fish will be most affected, more detail is provided on those topics. This EIS does not include descriptions of the affected environment or impacts to resources unlikely to be affected by the revised Hydraulic Code Rules.

Resources included in this Supplemental Draft PEIS are:

- Fish
- Water Resources
- Earth
- Climate
- Wildlife
- Vegetation
- Land and Shoreline Use
- Recreation
- Cultural Resources
- Social and Economic Issues

3.1 Fish

The freshwater rivers and lakes of Washington State provide habitat for a variety of fish species. The connection of these waters to Puget Sound and the Pacific Ocean provides habitat for a large number of salmon species ("salmonids"). Salmonid populations in general have experienced declines across the state, and several species are listed as threatened or endangered under the ESA or have special status listings in Washington State (See Section 3.2.5). The following sections describe fish and invertebrates found in Washington's waterbodies. A list of all federally and state listed fish and invertebrates in Washington and their status is provided in Appendix B.

3.1.1 Freshwater Resident Salmonids

Resident salmonids remain in freshwater habitat for their entire life cycle. All resident salmonids require clean, cool water to thrive. Some populations of resident salmonids in Washington State are declining. A number of factors have been attributed to the declines including the loss of suitable rearing habitat, water quality degradation, and loss of clean spawning gravels.

Resident salmonids typically feed on plankton, insects, other invertebrates, and smaller fish. Some of the most important and widespread native species of resident salmonids are rainbow trout, cutthroat trout, bull trout, and Dolly Varden. These species are discussed in more detail below. In addition, there are a number of introduced (nonnative) resident salmonid species in Washington's lakes and streams

including brown trout, golden trout, Lahontan cutthroat trout, lake trout, eastern brook trout, and tiger trout (hybrid between a brook trout and brown trout).

Rainbow Trout – Rainbow trout are widely distributed in Washington's lakes and streams and are the state's most popular game fish. Because of their popularity, natural populations are supplemented by WDFW stocking programs that add over 17 million rainbow trout each year to the state's lakes and streams. Resident rainbow trout generally grow to a length of 18-24 inches. Rainbow trout include the sub-species of concern known as the red-band trout that is native to Washington State and other parts of the Columbia River basin.

Cutthroat Trout – Resident coastal cutthroat trout are found in streams and ponds throughout much of western Washington. Although they may grow to a length of about 18 inches, in smaller bodies of water they may grow to no larger than eight or nine inches long. One group, or what is referred to as a Distinct Population Segment (DPS), of coastal cutthroat trout, the Southwestern Washington DPS, was proposed for listing as a threatened species under the ESA in 1999; however, this DPS is currently identified only as a federal species of concern. Westslope cutthroat trout, another subspecies of cutthroat trout, are more common in eastern Washington lakes and streams and WDFW stocks them in a number of high-country lakes.

Bull Trout – Although commonly considered trout, bull trout are actually members of the char subgroup of the salmon family. Scientists distinguish char from other salmonids by the absence of teeth in the roof of the mouth and the presence of light colored spots on a dark background on the body (trout and salmon have dark spots on a lighter background). Bull trout living in streams may grow to about four pounds in weight, while those living in lakes can weigh 20 pounds. Some bull trout live out their lives in areas near where they were hatched (resident); others migrate from streams to lakes and reservoirs (adfluvial), from small streams to larger river systems (fluvial), or to and from salt water bodies (amphidromous) a few weeks after emerging from the gravel. While bull trout are known to live as long as 12 years, they reach sexual maturity between four and eight years of age. They spawn in gentle stream reaches with cold, unpolluted water and gravel and cobble substrate. Spawning occurs in the fall after stream temperatures drop. Bull trout were listed as threatened by the USFWS in 2001; critical habitat was most recently identified in 2012.

Dolly Varden – As with bull trout, Dolly Varden are members of the char subgroup of the salmon family. Dolly Varden are found in many rivers and some lakes in coastal areas of Washington. The Dolly Varden is similar in appearance to bull trout, but is generally smaller. Dolly Varden populations have generally been declining, and WDFW has restricted fishing for Dolly Varden in a number of areas. In 2001, the USFWS proposed Dolly Varden for listing as endangered due to similarity of appearance with bull trout and because they occur together only within the area occupied by the Coastal-Puget Sound bull trout DPS (66 Federal Register 1628). A designation of threatened or endangered under the similarity of appearance provisions of the ESA extends the take prohibitions of Section 9 to cover the species. However, under section 4(e) of the ESA, a designation of threatened or endangered due to similarity of appearance, does not extend other protections of the ESA, such as the consultation requirements for federal agencies under section 7 of the ESA.

3.1.2 Anadromous Salmonids

Fish that hatch and rear in freshwater, spend a portion of their life in salt water, and then return to freshwater to spawn are referred to as anadromous. In Washington, the five Pacific salmon species including Chinook, coho, chum, sockeye, and pink salmon as well as steelhead exhibit this migratory life history form. Two other species native to Washington waters, coastal cutthroat trout (also called sea run cutthroat) and bull trout, exhibit a similar migratory life history form, which is termed amphidromous. Unlike strictly anadromous species such as Pacific salmon, amphidromous species often return seasonally to fresh water as subadults sometimes for several years before returning to spawn.

Salmon habitat extends from the smallest inland streams to the Pacific Ocean and is comprised of a vast network of freshwater, estuarine, and ocean habitats. Salmon use freshwater habitats for spawning, incubation, and juvenile rearing. In estuarine habitats, juvenile salmon experience rapid growth and make critical adjustments in the chemical balance of their body fluid as they transition between fresh and salt water. Salmon gain most of their adult body mass in ocean habitats before returning to rivers to spawn.

Throughout their lives, salmon feed on freshwater and marine invertebrate organisms and fishes, while being consumed in turn by a variety of parasites, predators, and scavengers. Juvenile salmon feed on salmon carcasses, eggs, and invertebrates, including invertebrates that may have previously fed on salmon carcasses such as caddis flies, stoneflies, and midges. Thus, returning salmon provide a flow of nutrients into freshwater habitats and play a critical role in the ability of watersheds to retain overall productivity of salmon runs.

Salmon populations have declined significantly over the past several decades such that many salmon stocks in Washington State are now listed by the National Marine Fisheries Service (NMFS) as either threatened or endangered under the federal ESA.

Chinook Salmon – Chinook salmon are the largest of all salmon. There are different seasonal "runs" or modes in the migration of Chinook salmon from the ocean to freshwater. These runs are usually identified as spring, summer, fall, or winter based on when the adult salmon enter freshwater to begin their spawning migration. Freshwater entry and spawning are believed to be related to local water temperature and water flow regimes. An adult female Chinook will prepare a spawning bed, called a redd, in a stream area with suitable gravel composition, water depth, and velocity. An adult female may deposit four to five "nesting pockets" within a single redd. Chinook salmon eggs will hatch 90 to 150 days after deposition and fertilization by males. Juvenile Chinook may spend from three months to two years in freshwater before migrating to estuarine waters as smolts. After a period of rapid growth, the smolts migrate to the ocean to feed and mature. Juvenile Chinook that spend a shorter amount of time in freshwater (weeks to several months) before migrating to the ocean are often referred to as "ocean maturing" as opposed to those that spend an extended amount of time in freshwater before migrating to the ocean, which are referred to as "freshwater maturing". Chinook remain in the ocean for one to six years, most commonly two to four. Chinook salmon can grow to about 40 pounds in weight; although those with long ocean residence time can sometimes weigh over 100 pounds.

Coho Salmon – Coho salmon spend approximately half of their life cycle rearing in streams and tributaries. The long freshwater rearing period makes coho salmon more dependent on flow and freshwater habitat than salmonids with shorter freshwater rearing times. The remainder of their life cycle up to the point of returning to their stream of origin to spawn and die is spent foraging in estuarine and marine waters of the Pacific Ocean. Most adult coho return as three–year-olds; however, a small number return as two-year-olds. A mature coho is usually about 2 feet in length and weighs an average of about 8 pounds.

Chum Salmon – Chum salmon are large salmon, second only to Chinook salmon in size. They spawn in the lower reaches of rivers and creeks, typically within 60 miles of the Pacific Ocean. Almost immediately after hatching, chum migrate to estuarine and ocean habitats. Thus, survival and growth of juvenile chum depends less on freshwater habitat conditions than on estuarine and marine habitat conditions. They usually arrive at their stream of origin from November to the end of December. Most chum salmon mature in three to five years. A mature chum salmon weighs between 18 to 22 pounds.

Sockeye Salmon – Sockeye salmon exhibit a variety of life history patterns that reflect varying dependency on freshwater environments. Most sockeye spawn in or near lakes where juveniles rear for one to three years before migrating to the ocean. For this reason, the major distribution and abundance of sockeye is closely related to the location of rivers that have accessible lakes in their watersheds, such as the Wenatchee River (Lake Wenatchee) and Cedar River (Lake Washington).

There are also non-anadromous forms of sockeye salmon that spend their entire life in fresh water. Occasionally, some of the juveniles in an anadromous population will remain in their rearing lake environment throughout their lives and will eventually spawn together with their anadromous siblings. In Washington State, non-anadromous sockeye are referred to as kokanee.

Pink Salmon – Pink salmon are the most abundant northwest salmon. They spawn in odd numbered years a short distance up coastal rivers. With only a two-year life cycle, they tend to be small relative to other salmon, averaging three to four pounds and seldom reaching 10 pounds (WDFW 2001).

Steelhead – Steelhead are sea-going rainbow trout. They begin their lives in freshwater rivers and creeks where they rear for two years before migrating to marine waters. Consequently, they are very dependent on flows and freshwater habitat. They reside in marine waters for one to six years (typically two to three years), then return to their home streams to spawn. Unlike salmon that die after they spawn, adult steelhead can return to the sea and repeat the cycle. Adult steelhead typically weigh from 5 to 14 pounds, although those with long ocean residence time may reach about 30 pounds.

Most steelhead spawn from mid-winter to late-spring, however two distinct “runs” of steelhead return to freshwater at different times, a winter run and a summer run. Winter-run steelhead return to Washington streams from November to the end of April. WDFW stocks hatchery winter-run steelhead in about 75 streams to enhance fish populations. Summer-run steelhead return to freshwater from April to the end of September in about 36 Washington rivers and creeks. WDFW plants summer-run hatchery stocks in approximately 45 rivers and creeks (WDFW 2001). In general, summer-run steelhead migrate longer distances to reach their spawning grounds and thus enter freshwater in an immature reproductive state. Winter steelhead, on the other hand, tend to enter streams at an advanced stage of

sexual maturity (gonads fully developed) and therefore do not have to travel as far before spawning. For example, steelhead that migrate into the upper Columbia and Snake River drainage are summer-run steelhead, while most, but not all, runs in Puget Sound drainages are winter-run steelhead.

3.1.3 Other Fish

This discussion of "other fish" is comprised of two subsections: freshwater fish and salt water fish. Some of the fish described below live at least part of their lives in estuaries or portions of rivers affected by tides that are transitional areas between freshwater and marine waters. In addition, native and non-native species, such as white sturgeon, eulachon, longfin smelt, Pacific lamprey, and American shad, are anadromous.

Freshwater Species

Approximately 70 non-salmonid fish species can be found in freshwater bodies of Washington State at some point in their life cycles. Of this number, over 30 species are introduced, including some of the more popular sport fish such as largemouth bass, smallmouth bass, walleye, crappie, yellow perch, channel catfish, tiger muskie, and bluegill. Native freshwater species include sturgeon, the largest freshwater fish species; a variety of minnows such as northern pikeminnow, redside shiner, leopard dace, and speckled dace; burbot (a member of the cod family); largescale sucker; Columbia River smelt (eulachon): and several sculpin species (WDFW 2001).

Saltwater Species

A large number of fish species are present in the marine waters of Washington State. Puget Sound alone, excluding the outer Washington Coast, is represented by 71 families of marine fish. A complete list of the marine fishes of Puget Sound can be found at: http://www.burkemuseum.org/static/FishKey/. Species of interest, primarily because of importance to recreational and commercial fisheries, include Pacific herring, Pacific cod, walleye pollock, numerous rockfish species, ling cod, and Pacific halibut. Other representative families include sharks, rays, sculpin, sablefish, and gunnels. Marine forage fish including sand lance and surf smelt utilize the intertidal areas of beaches for reproduction and are thus at an increased risk of exposure to development activities along the marine nearshore area. Protection of these and other forage fish species including Pacific herring are important because forage fish provide a source of food for many fish and wildlife species including salmon.

3.1.4 Other Aquatic Organisms

Saltwater habitats associated with Washington's marine waters support many types of invertebrates, including several recreational and commercial shellfish species. The marine waters of Puget Sound and the Washington Coast contain native and non-native organisms. The following sections briefly describe those species relevant to the Hydraulic Code Rules.

Native Aquatic Organisms

In addition to fish, Washington State is also home to crustaceans (crabs, shrimp, and crayfish), mollusks (snails, clams, and oysters), echinoderms (starfish, sea urchins, and sea cucumbers).

The Dungeness crab, red rock crab, and several species of clams and oysters are also recreationally and/or commercially harvested in Washington. The Pacific oyster, which is the largest component of the commercially harvested oysters in Washington State was introduced from Japan in the early 1900s. The Olympia oyster is native to Washington State and is also a relevant commercial species. Clams include geoducks, razor clams, native and Manila (non-native) littleneck clams, cockles, horse clams, eastern soft-shell clams, macoma clams, and blue mussels. Other invertebrates include shrimp, abalone, nudibranchs, sea stars, sea cucumbers, scallops, snails, Pacific giant octopus, squid, sea urchins, anemone, sand dollars, and polychaete worms.

Freshwater invertebrates are also present in Washington State and include freshwater mussels and snails, aquatic insects, and one native species of crayfish, the signal crayfish. Several non-native and invasive crayfish have also been documented in Washington waters. Aquatic invertebrates are an important food source for fish as well as other aquatic and terrestrial organisms. Aquatic invertebrates include the larval stage of terrestrial insects such as mayflies, stoneflies, caddis flies, dragonflies and damselflies, and mosquitoes. These organisms play a critical role in the food-web of the freshwater aquatic environment because most resident and juvenile salmonids depend on them as a food source.

Many of the native aquatic species also have special status listings either at the Washington State level or under the ESA. A list of these species is included in Appendix B.

Aquatic Invasive Organisms

"Aquatic invasive species" means nonnative species classified by the state fish and wildlife commission under RCW 77.12.020 as prohibited aquatic animal species or regulated aquatic animal species; or by the state noxious weed control board under RCW 17.10.070 as aquatic noxious weeds. Once nonnative species become established in a new environment where natural enemies, pests, or disease that kept them in check in their native environment are missing, they may spread rapidly and cause unanticipated negative biological and economic impacts. Aquatic invasive species in freshwater environments in Washington State include the New Zealand mudsnail (*Potamopyrgus antipodarum*), the Asian clam (*Corbicula fluminea*), and Eurasian water milfoil (*Myriophyllum spicatum*). Invasive species in the marine environment of Washington include the European green crab (*Carcinus maenus*), the oyster drill (*Ceratostoma inornatum*), Cordgrass (*Spartina spp*.), Japanese eelgrass (*Zostera japonica*) and several non-native tunicates including the club tunicate (*Styela clava*), transparent tunicate (Ciona savignyi), and colonial tunicate (*Didemnum vexillum*). More information on aquatic invasive species in Washington State can be found at: wdfw.wa.gov/ais/.

3.1.5 Species and Habitats with Special Status

Appendix B lists the fish species and habitats with special status designations under the federal ESA and those with special status in Washington State. Those with special status designations under the ESA include species listed as endangered, threatened, candidate species, species proposed for listing as threatened or endangered, species of concern, and those areas designated or proposed as critical habitat. Critical habitats are those areas that are essential to the conservation of the species. Those with special state status designations are those considered "species of concern" by WDFW, which includes

those species listed as State Endangered, State Threatened, State Candidate, State Sensitive, or State Monitor.

3.2 Water Resources

With approximately 50,000 miles of rivers and streams, 7,800 lakes, and 3,200 miles of coastline, water is an essential resource for the economic, social, and cultural well-being of the state of Washington. These waters provide the necessary physical, chemical, and biological elements to support the numerous fish and wildlife species that inhabit these aquatic habitats. The Washington State Hydraulic Code is intended to protect these resources specifically for the fish that depend on these systems.

3.2.1 Surface Water

The construction of hydraulic projects or any work that will use, divert, obstruct, or change the flow or bed of a watercourse is regulated under the Hydraulic Code Rules. RCW 77.55.011(11) defines "Hydraulic Project" as "*the construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or freshwaters of the state*." RCW 77.08.10 (62) defines "Waters of the state" and "state waters" as meaning "*all salt and freshwaters waterward of the ordinary high water line and within the territorial boundary of the state*." This includes freshwater rivers and streams, lakes, and marine waters and shorelines as described in the following sections.

WAC 220-110-020(105) defines "Watercourse," "river," or "stream" as "*any portion of a channel, bed, bank, or bottom waterward of the ordinary high water line of waters of the state, including areas in which fish may spawn, reside, or pass, and tributary waters with defined bed or banks that influence the quality of fish habitat downstream. This includes watercourses that flow intermittently or that fluctuate in level during the year, and applies to the entire bed of such waters whether or not the water is at peak level. This definition does not include irrigation ditches, canals, stormwater treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans.*"

A WDFW-proposed change to the definition of "watercourse" adds "*A watercourse includes all surface-water-connected wetlands that provide or maintain fish habitat*." This is intended to clarify which surface-water-connected wetlands are regulated under the HPA program.

3.2.1.1 Freshwater - Rivers and Streams

The Columbia River, the largest river in the western United States, drains the eastern and southwestern portions of Washington. Because of the large volume of water conveyed by the Columbia River and the substantial change in elevation along its course, a number of hydroelectric dams have been constructed on the river, including 11 in Washington State. As such, many reaches of the Columbia are controlled pools or artificial lakes behind dams, such as Franklin D. Roosevelt Lake behind Grand Coulee Dam. The largest tributary of the Columbia, the Snake River, is also highly developed for hydroelectric power generation with four dams operating in Washington. Other major tributaries of the Columbia River in eastern Washington, listed from upstream to downstream, include the Pend Oreille, Kettle, Colville, Spokane, Sanpoil, Okanogan, Methow, Chelan, Entiat, Wenatchee, Yakima, Walla Walla, Klickitat, and White Salmon river systems. Washington tributaries of the Columbia River in the reach flowing from the

Cascade Mountain Range Divide to the Pacific Ocean include the Wind, Washougal, Lewis, Kalama, Coweeman, Cowlitz, Elochoman, and Grays river systems. A number of large western Washington river systems discharge to Puget Sound, including, from north to south, the Nooksack, Skagit, Stillaguamish, Snohomish, Cedar, Duwamish-Green, Puyallup, Nisqually, and Deschutes. Hood Canal, the western arm of Puget Sound, receives several moderate to large river systems including the Quilcene, Dosewallips, Duckabush, Hamma Hamma, and Skokomish.

Rivers on the north end of the Coast (Olympic Mountain) Range flow into the Strait of Juan de Fuca, that connects Puget Sound with the Pacific Ocean. These rivers include the Dungeness, Elwha, Lyre, and Hoko rivers systems. Rivers on the west side of the Coast Range flow directly into the Pacific Ocean or embayments of the ocean such as Grays Harbor and Willapa Bay. These include the Sol Duc, Hoh, Queets, Quinault, Humptulips, Chehalis, and Willapa river systems.

Streamflow in the state's rivers is primarily determined by the amount and type of precipitation that falls during winter months. Precipitation that falls during the rest of the year is typically returned to the atmosphere through evaporation and transpiration by plants. Stream flows in rivers whose headwaters are at relatively low elevations and that are located in areas where winter temperatures are above freezing for most of the winter respond quickly and directly to rainfall events and generally have a strong winter peak in their annual flow pattern (hydrograph). The Chehalis River is an example of a river exhibiting this type of flow pattern.

Snow is the main form of precipitation feeding rivers whose headwaters are at relatively high elevations and/or are located in areas where temperatures are below freezing for most of the winter . Generally, flows in such rivers are low during the winter, but peak strongly in spring and early summer when snow melts. Most eastern Washington rivers, including the east-slope Cascade rivers, exhibit this flow pattern.

Rivers originating from the higher portions of the Olympic Mountains and the upper west-slopes of the Cascade Mountains have headwaters in areas where snowfall is the predominant form of winter precipitation, but temperatures are above freezing for most of the winter in the reaches below the headwaters. Flow patterns in such rivers typically show a winter peak associated with seasonal rainfall in the mid- and lower reaches as well as a spring or early summer peak associated with snowmelt in the upper reaches (Hamlet et al. 2001). However, rivers that are fed by glacial melt water, in addition to snow pack, will exhibit a different flow pattern. Glaciers can contribute a considerable amount of flow to rivers during late summer and early fall after the snow pack has melted and when precipitation is normally low.

An increase in human development has affected ecological processes in many freshwater bodies within Washington. Development has affected changes in hydrologic, hydraulic, sediment, and temperature regulation/water quality functions.

3.2.1.1.1 Hydrologic Stressors

Hydrologic alteration has occurred in many rivers and streams within Washington. Hydrologic alteration can be defined as any human-caused disruption in any of the five important characteristics of a flow regime: magnitude, frequency, duration, timing (or predictability), and the rate of change (or flashiness)

(Poff et al. 1997). Hydrologic alterations resulting from dam construction and other human activities have negatively impacted the biodiversity and ecological integrity of rivers worldwide (Dudgeon 2000; Pringle et al. 2000).

These consequences of hydrologic alteration have included habitat fragmentation, conversion of lotic (moving-water) habitat to lentic (still-water) habitat, variable flow and thermal regimes, degraded water quality, altered sediment transport processes, and changes in timing and duration of floodplain inundation (Cushman 1985; Pringle 2001). These alterations can result in adverse impacts on crucial life stages of aquatic organisms, such as reproduction, recruitment or migration, and a reduction in riparian and wetland functions. These alterations have occurred through three major pathways including: 1) modifications of the landscape, or watershed, through land-use activities, 2) surface water diversion, and 3) construction of impoundments.

Modifications to the landscape through human-caused land-use activities, including development, forestry, and farming has resulted in negative effects to all the characteristics of a flow regime. A decrease in areas with native soils and vegetation and corresponding increases in impervious surfaces reduces the infiltration, interception, and evapotranspiration of precipitation and can reduce groundwater recharge and increase surface water runoff. This in turn can result in more frequent and abnormally intense peak stream flows, reduced base flows, and other hydrologic effects.

There are currently 1,141 dams in the State of Washington, including 106 dams that are greater than 50 feet in height (Ecology 2013). Many of these dams are located on large river systems, including the Columbia River, and impound substantial quantities of water, which is used for power generation, industry, drinking water, and irrigation. Water releases from these structures often do not coincide with the natural hydrologic regime, resulting in substantial hydrologic alterations.

Similar hydrologic alterations can occur due to stream or lake diversions of water for human uses. These withdrawals alter the hydrologic regime, and can result in extremely low streamflow in the summer months. Groundwater withdrawals can also have similar effects, reducing groundwater recharge capability of streams. Lastly, land-use activities also can alter natural drainage and flood pathways, result in a loss of open channel area, and decrease surface water storage areas through loss of wetlands and floodplains.

Flood risk is a major concern for projects in proximity to the waters of Washington State. Flooding of rivers, streams, and other shorelines is a natural process that is affected by various factors and land uses occurring throughout the watershed. Past land use processes have disrupted hydrological processes and increased the rate and volume of runoff, thereby exacerbating flood hazards and reducing ecological functions.

Flood risk is regulated by local flood-damage-prevention ordinances adopted in compliance with the National Flood Insurance Program. Streambank stabilization measures, shore armoring, and flood risk reduction are regulated by the Shoreline Management Act and the Critical Areas regulations of GMA. Flood hazard reduction measures often consist of structural measures that are regulated by the hydraulic code rules, including dikes, levees, revetments, floodwalls, shore armoring, and channel

realignment. Nonstructural flood hazard reduction measures can also include hydraulic projects such as dike removal and wetland restoration.

3.2.1.1.2 Hydraulic and Sediment Stressors

Human development has also resulted in changes to natural hydraulic and sediment functions and processes. Two of the physical functions affected are slope/bank stability and sediment transport. Development has often resulted in simplified and straightened stream channels confined within levees or dikes, with hardened/armored banks, limited floodplain area or channel migration zone (CMZ), lack of bankside riparian vegetation, and limited or no channel complexity and structure. These simplified channels, which are also usually affected by changes in the hydrologic effects discussed above, can result in dramatic changes in sediment transport processes by altering natural erosion (scour) and depositional patterns and increasing stream velocities. Bank erosion can result, leading to a surplus of fine sediments that can be transported downstream and deposited. Also, altered hydrologic and hydraulic processes, coupled with alteration of riparian areas, can simplify instream structure, including channel form, stream and floodplain roughness, and debris presence and recruitment.

3.2.1.1.3 Stream Temperature and Water Quality

Changes to stream temperature and water quality can also result from human disturbance and development. Cleared riparian zones increase the amount of solar radiation reaching a waterbody, which can result in substantial increases in stream temperature in small and medium-sized waterbodies. Furthermore, when these riparian areas are developed and lack vegetation, the ability of the landscape to infiltrate and intercept chemicals in stormwater runoff is decreased, resulting in greater increases in pollutant loading.

3.2.1.2 Freshwater - Lakes

The state has numerous fresh water lakes, the largest of which is Lake Chelan, an approximately 55-mile long glacial lake in north central Washington. The state's lakes include naturally formed lakes, constructed reservoirs on rivers and streams, and natural lakes that are artificially raised and/or controlled through constructed impoundments. Lakes are typically fed by water from inflowing rivers or creeks, but may also be fed by groundwater and direct precipitation.

Increased human development around lake edges has resulted in stressors within lacustrine (lake) systems in Washington.. In addition, many lakes are dammed or the outlet otherwise restricted, affecting hydrology and water quality in some lakes.

3.2.1.3 Marine Waters and Shorelines

The major marine water features of Washington State are the Pacific Ocean, the Strait of Juan de Fuca, and Puget Sound, including Hood Canal, collectively called the Salish Sea (Figure 3-1). Additional marine water features are large coastal estuaries including Grays Harbor at the mouth of the Chehalis River, Willapa Bay at the mouth of the Willapa River, and the Columbia River estuary at the mouth of the Columbia River, as well as the straits and bays of the San Juan Archipelago. Fifteen counties have marine shorelines--Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom counties. Collectively, these counties share 2,337

miles of marine shoreline comprised of 157 miles of Pacific coastline, 144 miles of coast along the Strait of Juan de Fuca, 89 miles in Grays Harbor, 129 miles in Willapa Bay, 34 miles in the Columbia River Estuary, and 1,784 miles bordering Puget Sound and the Strait of Georgia. Approximately 73 percent of these shorelines consist of sand or pebble beaches, while 27 percent consist of rocky headlands, marshes, or other shoreline types (Ecology and NOAA 2001).

Increased human development along marine shorelines and increased use of marine waters for transportation has resulted in shoreline armoring and overwater structures (e.g., docks, bulkheads, piers), alteration of drift cell and sediment dynamics (from piers, jetties, breakwaters, and marinas), degraded water quality from stormwater runoff, and degraded nearshore conditions from loss or alteration of estuarine, wetland, and riparian habitats. The loss of estuary habitat due to placing fill and disconnecting floodplain and tidal wetlands in the estuary is also a factor limiting salmon productivity.

3.2.2 Water Quality

Ecology's most recent federal Clean Water Act section 303(d) list was approved by the U.S. Environmental Protection Agency (EPA) in December 2012. The list is part of Ecology's Water Quality Assessment, which groups waters in Washington State into five categories. Category 5 constitutes the 303(d) list, the list of impaired water bodies that generally require a total maximum daily load (TMDL) plan. The list assesses water bodies for over 100 parameters, including temperature, fecal coliform, dissolved oxygen, instream flow, bacteria, and turbidity. Ecology's 303(d) list can be accessed at: http://www.ecy.wa.gov/programs/wq/links/wq_assessments.html.

An EPA report based on 2008 monitoring lists the most prevalent causes of impairment to rivers and streams to be, in order of impact: increased water temperature, high levels of fecal coliform bacteria, low dissolved oxygen, high pH, low instream flow, and high levels of polychlorinated biphenyls (PCBs). For lakes, the most prevalent causes of impairment were high levels of PCBs, presence of invasive exotic species, increased water temperature, low dissolved oxygen, high levels of dioxin, and high levels of fecal coliform bacteria. For marine waters, the most prevalent causes of impairment were high levels of fecal coliform bacteria, low dissolved oxygen, presence of invasive exotic species, high levels of PCBs, and high levels of metals (EPA 2013).

3.2.3 Wetlands

The U.S. Army Corps of Engineers evaluates applications for permits for proposed activities in "Waters of the United States" (including wetlands) throughout the State of Washington under the authority of Section 404 of the Clean Water Act. Two state laws, the state Water Pollution Control Act and the Shoreline Management Act, give Washington Department of Ecology the authority to regulate wetlands.

Under RCW 90.58.030 (Shoreline Management Act of 1971), wetlands are defined as:

> *"Those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

Washington State's wetlands include the estuarine salt marshes of Puget Sound and the Pacific Coast, riparian wetlands adjacent to rivers and streams as an integral part of riparian habitat, potholes and vernal pools of eastern Washington, and high elevation meadows and fens. Many of the freshwater wetlands of western Washington are associated with ponds, lakes, rivers, and shorelines; however, a significant number of wetlands are "isolated" and not directly connected to other surface water bodies. Such wetlands depend on groundwater discharge and precipitation for their water source. The climate of eastern Washington creates permanent and intermittent wetlands that are typically very different from western Washington wetlands in their origin, seasonality, chemistry, and plant species distribution.

Wetlands in the state are critical to maintaining regional biodiversity. Although wetlands represent only 2.1 percent of the area of the state (Dahl 1990), over two-thirds of all terrestrial vertebrate species in Washington can be considered "wetland users" (Knutson and Naef 1997; Kaufmann et al. 2001). Wetlands also provide important habitat structure for anadromous and resident fish (Sheldon et al. 2005). Anadromous and resident fish benefit from:

- Ponded or impounded surface waters that are either seasonal or permanent and connected to streams;
- Interspersed land and water or shorelines that provide protection from wind, waves, and predators, and natural territorial boundaries;
- Varying depths of water, such as deep and shallow pools (e.g., shallow waters provide refuge for some young freshwater fish, while the deeper waters provide refuge for the larger adults);
- Overhanging vegetation that regulates water temperature;
- Vegetation cover that provides protection from predation (e.g., overhanging or submerged vegetation, submerged logs and rocks, floating debris); and
- Large woody debris that provides cover and habitat for macroinvertebrates.

Many of Washington's wetlands have been lost since the early 1900s due to development activities such as urban development, utility infrastructure construction, logging, and agriculture. Many of the remaining wetlands in the state have been degraded through alteration of hydrology, sedimentation, and removal of vegetation.

3.3 Earth

The geology of Washington State is very complex and has been shaped by a variety of geologic processes including subduction of the Pacific plate, dormant and active volcanism, and repeated glaciation. These processes have created a complex patchwork of geologic regions that are illustrated on Figure 3-1 and described below.

The far western portion of Washington State is part of the Coast Range region. The Coast Range consists of the Willapa Hills of southwest Washington and the Olympic Mountains, which extend north from the Chehalis River valley and form the Olympic Peninsula. The Puget Trough, a structural depression that extends the length of the state, lies to the east of the Coast Range. The Puget Trough is generally flat, but in places is characterized by hummocky glacial deposits. A substantial portion of the northern half of the trough is occupied by Puget Sound, a marine estuary of the Pacific Ocean.

East of the trough is the geologically complex Cascade Range. This range, which extends the entire length of the state, separates western Washington from eastern Washington. The most prominent geographic feature in the southeast portion of the state is the Columbia Plateau. The plateau is an extensive basin formed by numerous basalt flows. The Columbia and Snake Rivers flow through deeply incised trenches cut into the plateau largely as a result of the Missoula Floods that occurred during the last ice age (approximately 15,000 years ago).

The northeast portion of the state is occupied by several mountainous areas including the Okanogan Highlands, the Kettle River Range, and the Selkirk Mountains, a portion of the Rocky Mountain Range.

According to the Natural Resource Conservation Service's (NRCS) *Washington Soil Atlas*, broad variation in topography, climate, and geologic formations within the state has produced thousands of recognized soil types in the state (Hipple 2013). Common parent materials for soil in Washington include volcanic ash, glacial till, granite, schist, limestone, basalt, and tuff. Portions of southeast Washington are occupied by fertile, windblown dust called loess.

3.4 Climate

Washington's climate varies dramatically from west to east with the western part of the state having a mild, humid climate and the eastern part a more extreme and dry climate. Western Washington has frequent cloud cover and considerable fog and rain. Portions of western Washington on the west side of the Olympic Mountains receive as much as 160 inches per year of precipitation, making that area the wettest in the 48 conterminous states. Precipitation in the Puget trough is much less, typically in the range of 40 to 50 inches per year with approximately 60 to 80 percent of that total falling in the six-month period between October and March. Some areas of western Washington experience the rain shadow effect of the Olympic Mountains and receive significantly less rainfall. For example, average annual precipitation for the City of Sequim is only 16 inches.

Precipitation increases dramatically near the Cascade Mountains. Palmer, a site approximately 20 miles west of the Cascade crest, receives an annual average of 90 inches of precipitation. In an average year, Snoqualmie Pass, located at the Cascade crest, receives 104 inches of precipitation, although much of that precipitation falls in the form of snow.

Temperatures in western Washington are moderate. Typical average maximum temperatures in July are about 70°F in coastal areas, and 5 to 10 degrees warmer inland. Average minimum temperatures in July are generally in the low to mid-50s (F). Average maximum temperatures in January are in the mid-40s (F) with average minimum temperatures in the low 30s (F).

Many parts of eastern Washington receive less than 10 inches of total annual precipitation, and much of that precipitation falls in the form of snow. Total precipitation approaches 20 inches per year in areas closest to the Cascade Range and the Selkirk Mountains.

Temperature ranges in eastern Washington are more extreme than those of western Washington. Average maximum temperatures in July are in the mid-80s (F) to near 90°F. Average minimum temperatures in July are generally in the mid- to upper 50s (F). Average maximum temperatures in January are in the low to mid-30s (F), except in southeast Washington where the average maximum

temperatures are closer to 40°F. Average minimum temperatures in January are typically in the teens to mid-20s (F).

3.4.1 Climate Change

According to the *Washington Climate Change Impacts Assessment*, average annual temperatures in the Pacific Northwest are anticipated to increase by 2.0° F by the 2020s, 3.2°F by the 2040s, and 5.3°F by the 2080s. Increases in temperature are projected to reduce snowfall, resulting in decreasing snowpack in Washington by 28 percent by the 2020s, 40 percent by the 2040s, and 59 percent by the 2080s. Changes in the magnitude of snowpack and timing of snowmelt will shift stream flow timing. Stream temperatures would rise, impacting quality and extent of fish habitat. By the 2080s, periods of thermal stress for salmon would double or possibly quadruple in duration. Increases in thermal stress are projected to be greatest in the Interior Columbia River Basin and the Lake Washington Ship Canal (Climate Impacts Group 2009).

Sea level rise associated with climate change is expected to increase bluff erosion and shift coastal beaches inland. Major ports will likely be able to accommodate rising sea level at their facilities but adapting low-lying coastal transportation networks that serve port facilities (e.g., trains, highways) will be a significant challenge. Shellfish production in the state may be negatively impacted by increasing ocean temperatures and acidity, shifts in disease and growth patterns, and more frequent harmful algal blooms. (Climate Impacts Group 2009).

3.5 Wildlife

Washington's diverse wildlife species inhabit an equally diverse variety of habitats ranging from desert to rainforest in the terrestrial environment, and mountain spring to ocean in the aquatic environment. Wildlife most pertinent to the Hydraulic Code Rules includes species that use freshwater and saltwater bodies and their riparian or shoreline vegetation for nesting, breeding, foraging, and refuge. The following sections describe groups of species and particular wildlife that rely on Washington's aquatic habitats. A list of all federally and state listed wildlife in Washington and their status is provided in Appendix B.

3.5.1 Marine mammals

Three kinds of marine mammals—cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), and mustelids (sea otters)—occur within the project vicinity. All marine mammals are federally protected under the Marine Mammal Protection Act, regardless of their listing status under ESA.

Over 20 species of cetaceans are present in the marine waters of Washington State. Six of these species are federally listed under the ESA, including killer whale (orcas), gray whale, humpback whale, blue whale, sperm whale, sei whale, and Northern Pacific right whale. Many of these species such as blue whale and sei whale are relatively rare visitors to the Salish Sea and generally inhabit areas of the continental shelf where they migrate along the Pacific coast between their breeding grounds and feeding grounds. Other species such as orcas spend considerable portions of the year within the Salish Sea and inner coastal waters.

Cetaceans are either filter feeders that use their baleen to strain plankton and other tiny organisms from the water, or toothed whales that feed primarily on fish, squid, and crustaceans. Larger toothed whales also eat aquatic birds and mammals, including other cetaceans (Nowak 1999; Reeves et al. 2002).Pinnipeds found in Washington State include Northern fur, Northern elephant, and harbor seals; and California and Steller sea lions. Seals and sea lions generally feed on fish, squid, octopus, and shellfish, and crustaceans. Harbor seals are considered a non-migratory species, breeding and feeding in the same area throughout the year while other pinnipeds are migratory, moving hundreds or thousands of miles from their breeding grounds in Mexico, Canada, Oregon, and Washington. Although California and Steller sea lions do not breed in Washington waters they utilize portions of Puget Sound and the lower Columbia River, where they feed on salmon. Pinnipeds temporarily leave the water between periods of foraging along shorelines, and often congregate on haulouts such as beaches, logbooms, docks, and floats.

Sea otter, a mustelid, is also found in Washington. Previously widely distributed within the state, they now almost exclusively occupy rocky habitat along the Olympic Peninsula coast and western Strait of Juan de Fuca (Lance et al. 2004). Sea otters feed primarily on shellfish such as sea urchins, clams, crabs, and mussels.

3.5.2 Amphibians

Amphibians include frogs, toads, newts, and salamanders that inhabit a wide variety of habitats, with most species living in terrestrial or freshwater aquatic ecosystems. In Washington, most amphibian larva live in water. The young generally undergo metamorphosis from larva with gills to an adult air-breathing form with lungs. Amphibians use their skin as a secondary respiratory surface but some small terrestrial salamanders and frogs lack lungs and rely entirely upon skin. Tadpoles and aquatic amphibians utilize gills for respiration. Some amphibian species are fully aquatic throughout life, some take to the water intermittently, and some are entirely terrestrial as adults.

In Washington, several species of frogs and toads are closely associated with open water areas such as streams, lakes, and wetlands, and riparian areas (Johnson and O'Neil 2001). These include bull frog, Cascades frog, northern red-legged frog, Pacific chorus frog, Western toad and Oregon-spotted frog. Oregon spotted frog is listed as a candidate species under the ESA.

Although salamanders reproduce in Washington's freshwater streams and ponds, the adults of most salamander species are also closely associated with open water areas such as streams, lakes, wetlands, and riparian areas (Johnson and O'Neil 2001). Salamander species present within Washington include Long-toed salamander, Northwestern salamander, Pacific giant salamander, Dunn's Salamander, Van Dyke Salamander, Western Red-backed salamander, Cascade torrent salamander, and Olympic Torrent Salamander (Jones et al. 2006). The rough-skinned newt is also found in Washington. None of these species is listed under ESA, although some species of salamander are federal species of concern and/or state candidate species.

3.5.3 Reptiles

Reptiles are a class of cold-blooded egg-laying vertebrate animals with scales or scutes (bony plates). They include lizards, snakes, and turtles. Of these species, turtles are most associated with marine and

freshwater habitats. Several species of turtles inhabit aquatic and terrestrial habitats within Washington.

Sea turtles include the leatherback sea turtle, loggerhead turtle, green turtle, and Olive Ridley sea turtle. Although all of these species are known to inhabit offshore areas of the Columbia River mouth and Puget Sound, they are rare within Washington waters with no known significant nesting (breeding) locations. Only the leatherback sea turtle has been sighted in Puget Sound (Strait of Juan de Fuca). All four of these species are listed as threatened or endangered under the ESA.

Washington has only two native land-based turtles, the painted turtle and the Western pond turtle, both of which live exclusively in freshwater ponds and streams. Western pond turtle is classified as a state endangered species.

3.5.4 Birds

Hundreds of bird species are documented as spending at least a portion of their lives in Washington. The following discussion focuses on those groups of birds most closely associated with freshwater and marine aquatic habitat.

Waterfowl include swans, geese, and ducks, that are mid-sized to large birds most commonly found on or near water. Most waterfowl feed while on the water, diving or submerging their bodies to search for fish, plants, and invertebrates. Approximately 50 species of waterfowl are found in Washington State.

Loons are large, fish-eating birds with spear-shaped bills and long, thickset necks. They are expert divers, able to dive to depths of approximately 250 feet and remain underwater for long periods. All loon species nest on fresh water shores, but in winter are found most commonly on saltwater. There are only five species of loons worldwide, and all five have been seen in Washington (Seattle Audubon Society 2013).

Six species of grebes are found in Washington. Grebes are water-dwelling diving birds with thick, waterproof plumage and that consume fish, aquatic insects, and other small water creatures. During the breeding season they can be found on marshy ponds, where they build floating nests and in the winter, grebes live on open water.

Albatrosses and petrels, also known as tube-nosed seabirds, spend much of their life on the open ocean foraging from the water's surface. For most species, the nesting season is the only time of the year that they touch land. Four species of albatross, 12 species of shearwaters and petrels, and four species of storm-petrels utilize nearshore and offshore areas in Washington.

Pelicans and cormorants are aquatic, medium-sized to large birds that feed on small fish and other aquatic animals and that mostly nest in colonies. Representatives of five of the order's six families have been found in Washington, including one species of tropicbirds, two species of boobies, two species of pelican, and one species of frigate bird.

Herons and ibises are large birds with long legs and necks. Many live on or near water where they wade in search of prey and many breed in colonies. Herons and egrets are generally wading birds that generally inhabit wetlands and slow-moving waters. Nine different species of herons have been observed in Washington, as have three species of ibis, tactile feeders that generally inhabit wetlands

and use their long, often curved bills to probe in shallow water or mud for invertebrates or small vertebrates.

Rails, coots, and cranes are members of a diverse group of mostly aquatic or marsh-dwelling birds. Despite their wet habitat, members of this order do not have webbed feet, although in some groups their strong toes are slightly webbed or lobed. Coots and rails are generally omnivorous wetland dwellers that use a variety of foraging techniques. Four species of coots and rails are found in Washington on both sides of the Cascade Mountains (Seattle Audubon Society 2013). A single species of crane, the sandhill crane, is found in Washington. These cranes nest in wetlands that are surrounded by lodgepole pine, ponderosa pine, grand fir, or Douglas fir forests.

The order Charadriiformes is well represented in Washington, and includes shorebirds, gulls, and auks. Most of this group consists of water birds that feed on invertebrates or small aquatic creatures. This group include plovers (nine species in Washington State), oystercatchers (one species), stilts and avocets (two species), sandpipers and phalaropes (approximately 40 species), gulls and turns (approximately 30 species), skuas and jaegers (four species), and auks, murres, and puffins (14 species) (Seattle Audubon Society 2013).

3.5.5 Beavers

Beavers are widely distributed across Washington State along rivers, small streams, lakes, and wetlands where there is deep, calm water or adequate year-round flow. Beavers build dams across streams and other watercourses to impound water and create deep-water protection from predators, access to food supplies, and underwater entrances to dens. Beavers can have substantial effects on streams and riparian habitat. Through dam building and feeding, beavers alter hydrology, channel geomorphology, biogeochemical pathways, and community productivity (Naiman et al. 1986).

Beaver ponds and associated wetlands provide fish rearing habitat and habitat for birds and mammals (Bisson et al. 1987; Brown et al. 1996; McCall et al. 1996). Ponds also provide surface water and bank storage that can improve summer instream flow and benefit fish. Multiple studies have noted the interaction that used to exist between beavers and riparian areas and streams prior to the elimination of beaver in many locations (Naiman et al. 1986; Gurnell 1998). Changes in hydrologic regime can also affect beaver populations. For example, streams with higher and more frequent peak flows affect dam building and stability. Persistent breaching or removal of a beaver dam can increase the risk of negative impacts to fish habitat.

3.5.6 Other Species that Utilize Riparian Habitats

Throughout the state, riparian habitat occurs in areas adjacent to rivers, streams, seeps, and springs. Riparian areas provide diverse and productive habitat for wildlife because of the availability of water, moist rich soils, and a variety of plants. In addition to being essential for healthy fish populations, approximately 85 percent of the state's terrestrial (land) animals use riparian habitat for essential life activities (WDFW 1998).

Riparian habitats provide large mammals (e.g., opossum, beaver, fox, mink, otter, elk, and deer) with prey and carrion, a productive and varied plant community, reduced winter snow accumulation,

vegetation in early spring, aquatic habitat, and transportation corridors (Raedeke et al. 1988). Forested riparian habitat offers snags that provide shelter for cavity-nesting birds and mammals (e.g., woodpecker, chickadee, wren) and a food source for tree-clinging, insect eating birds (e.g., nuthatches). Amphibians, reptiles, and small mammals find shelter in or under downed trees and under dense vegetation. Large animals such as deer, elk, and moose can seek refuge from intense summer heat in relatively cool riparian zones (WDFW 1998).

The size of the riparian area and the extent of interaction between the land and the water vary with the size of the stream (Bilby 1988). Riparian habitat along smaller headwater streams is usually insufficient to support large mammals. Lowland riparian areas along large rivers once provided productive wildlife habitat, but has been highly modified by humans. Aquatic species such as otter, beaver, muskrat and mink are most affected by changes in size and composition of riparian areas (Raedeke 1988).

3.6 Vegetation

The flora associated with watercourses in Washington differs between the east and west side of the Cascade Mountain range and between fresh and salt waters. As distance from the watercourse and elevation increase, changes in soil, moisture, temperature, precipitation, and other factors combine to create conditions that are suitable for different plants.

3.6.1 Riparian Species – Native and Invasive

Riparian areas on the west side of the state are extensions of a temperate rain forest and support species such as black cottonwood, red alder, and western red cedar. A dense shrub layer is typically present (e.g., Indian plum, oceanspray, salal) and the floor of the forest has a dense coverage of ferns and mosses. East of the Cascades riparian areas are dominated by willow species, black cottonwood, and other deciduous shrubs and are adjacent to ponderosa pine forests, shrub-steppe or grassland environments. Many watercourses east of the Cascades are void of riparian vegetation due to previous land activities and development.

Riparian vegetation communities present along the shores of Puget Sound are very diverse. Some of the more common trees and shrubs are the same as those found in freshwater riparian areas such as Douglas fir, Pacific madrone, vine maple, oceanspray, and salmonberry. Alder and vine and big-leaf maple forest communities commonly occur along the shores of Puget Sound. Salt-tolerant vegetation found in the backshore of beaches or in mudflats includes saltgrass and saltweed, pickleweed, seaside arrowgrass, and dune wildrye. Marine riparian vegetation communities are particularly important because they exhibit greater biodiversity than inland vegetation communities and influence the health and integrity of marine habitats and species (Brennan 2007). Riparian areas maintain local biodiversity, and their ecological functions provide the basis for many valued fisheries, in addition to bird and other wildlife habitat (National Research Council 2002).

3.6.2 Aquatic Species – Native and Invasive

Freshwater aquatic environments support native and invasive vegetation including algae. Floating plants can have leaves on the surface and be rooted to substrates (e.g., water lilies, pondweeds); tangled mats of stems, leaves, and flowers also rooted to substrates (e.g., water primrose or purslane,

water pennywort); or entirely free floating (e.g., duckweed). Other species of pondweed, waterweed, startwort or bladderwort can grow entirely underwater at shallow depths. Several species of freshwater aquatic plants are considered invasive as they overrun habitats and crowd out native species, such as Eurasian watermilfoil.

Saltwater environments contain seagrasses, kelp, sea lettuce, and other macroalgae species. Eelgrass is rooted seagrass that spreads horizontally at shallow water depths throughout intertidal and subtidal zones. Beds of *Zostera marina* and *Z. japonica* (an invasive species) are found throughout much of the Puget Sound shoreline growing in muddy and sandy substrates (Mumford 2007). Kelp is a large seaweed present in intertidal and subtidal zones. Twenty-three species of kelp are found in Puget Sound, making it one of the most diverse kelp floras in the world (Druehl 1969). Sea lettuce (several species of the genus *Ulva*) grows in shallow bays and inlets and can grow, break off, and accumulate rapidly in thick piles driven by winds and currents during summer months. All types of seaweeds are essential components of the Puget Sound ecosystem. They provide food for several species of sea birds, fish, and other marine animals, as well as shelter for fish.

3.7 Land and Shoreline Use

Land use in Washington State is highly diverse. Portions of the Cascade Range and the Olympic Mountains are dedicated to federally owned wilderness areas, national parks, national recreation areas, and national forests. Approximately 30 percent of land in the state is federally owned. The national forests are managed for multiple uses including commercial timber production and recreation. Private forest lands are common in mountainous areas such as the coast range, Cascades, and northeast Washington. Land privately managed for timber production (e.g., Weyerhaeuser, Georgia Pacific, and Plum Creek) also accounts for 9.4 million acres (43 percent) of Washington's forest lands (Erickson and Rinehart 2005).

The lowlands of Puget Sound are heavily urbanized and include some of the state's largest cities such as Seattle, Tacoma, Everett, Bellingham, Bremerton, and Olympia. Areas around Spokane, Richland, Kennewick, Pasco, Yakima, and Wenatchee in eastern Washington are also characterized by urban-level development. These urbanized areas are home to much of the state's population, as well as its manufacturing, commercial, and service industry base.

The state is also the site of extensive agricultural development. In western Washington, agricultural development is concentrated in the major river valleys, particularly those in the Puget Sound region. Major portions of eastern Washington have been developed for agricultural production. The Yakima, Wenatchee, and Okanogan River Valleys and the Columbia Basin in the central part of eastern Washington contain large scale irrigated agriculture. Southeast Washington is extensively developed for dry- land farming of primarily wheat.

Land use in riparian areas is managed by local zoning and critical areas ordinances, the Growth Management Act (Chapter 36.70A RCW) and the Shoreline Management Act (Chapter 90.58 RCW). The Growth Management Act requires affected cities and counties to designate their rural areas and urban growth areas and to conduct capital facilities planning to ensure that adequate public facilities are provided concurrent with future growth within designated urban growth areas. The Growth

Management Act also requires all counties and cities to develop and adopt development regulations to protect critical areas such as wetlands, fish and wildlife habitat, and aquifer recharge areas. The Shoreline Management Act requires cities and counties to adopt local master programs, which must be approved by Ecology. Shoreline Master Programs are intended to protect shorelines from development and to require mitigation of impacts where appropriate. Local Shoreline Master Programs are required to include regulations for shoreline stabilization measures and in-water work. More information on land use regulations is included in Section 1.5.5 of this document.

3.8 Recreation

Waters of the State of Washington are used extensively for recreation. People enjoy sightseeing, waterfowl watching, hunting, fishing, and other water oriented activities. Water activities include swimming or wading, motor boating, water skiing, personal water craft use (e.g., jet skis), sailboating, non-motorized boating (kayaking, canoeing, or rowing), white water rafting, inner tubing, wind surfing, surfboarding, scuba diving, and beachcombing.

Water-oriented recreation in Washington often revolves around docks, piers, and marinas. Both publicly-owned and privately-owned marinas are common in Washington State. New docks are regulated by the Shoreline Management Act, which includes a policy preference for joint-use docks. However, privately-owned docks associated with single-family residential uses remain more common in the state.

Water recreation in and around smaller streams can include the construction of "play" structures along the shoreline. Some "water play" involves impounding streams (construction of "recreational dams") to enhance the depth of a swimming hole. These recreational structures can impede fish migration within the creek as flows decline into the fall months. In some cases, spawning migrations are impacted, reducing fish productivity.

Recreation that depends on healthy fish life is of major economic value in Washington, particularly in more rural areas. USFWS estimates in its 2011 report[5] that expenditures for recreational fishing in Washington top $974,615,000. Protecting fish resources is vital to the ecological health and community sustainability of Washington.

3.9 Cultural Resources

Cultural resources consist of archeological, historic, and traditional cultural places including buildings, structures, sites, districts, objects, and landscapes. The State Department of Archeology and Historic Preservation (DAHP) has recorded over 20,000 archeological and traditional cultural places and over 100,000 historic properties within the state. This information is maintained in the Washington State Inventory of Cultural Resources.

---

[5] 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation U.S. Fish and Wildlife Service publication FHW/11-WA, Issued June 2013

Under the State Environmental Policy Act, potential significant adverse impacts to historic, archeological, and traditional cultural places associated with project actions must be identified and evaluated. The DAHP is responsible for providing formal opinions to local governments and other state agencies on a site or property's significance and the potential impact of a proposed project action upon such sites or properties. Similarly, the National Historic Preservation Act requires that all federal agencies consider cultural resources as part of all licensing, permitting, and funding decisions. Governor's Executive Order 05-05 requires that Washington state agencies integrate DAHP and tribes into their capital planning processes in order to protect cultural sites.

Many of the state's rivers and other surface water bodies have cultural significance to some population groups, including Native American tribes. Rivers and their tributaries can be viewed as being analogous to the bloodstream of a watershed and have great importance on both a practical and spiritual level. For this reason, riparian and marine areas often have a higher likelihood of presence of historic and cultural resources.

3.10 Social and Economic Issues

In addition to forestry and agriculture (as discussed in Section 3.8), major industries in Washington State include computer software, aircraft, electronics, aluminum production, real estate, and retail sales. Other major industries in the state that rely on access to water include hydroelectric power generation, tourism, recreation, and importing and exporting.

The rivers, lakes, and marine waters of Washington State are central to many social and economic drivers in addition to the many businesses that depend on access or proximity to water. Single-family residences and undeveloped residential plots are often located near water. The economy of Washington also depends on its transportation infrastructure, much of which (including state and federal roads, bridges, railways, and the Washington State Ferry system) is located in or near waters regulated by the Hydraulic Code Rules.

[Intentionally Blank]

Chapter 4 Regulated Activities and Effect on the Environment

This chapter describes the impacts that may result from adopting the revised Hydraulic Code Rules. Because this is a Supplemental Draft Programmatic EIS that is evaluating the general impacts of implementing the proposed rule changes, potential impacts are discussed generally. Specific hydraulic projects that require an HPA would be evaluated under the new Hydraulic Code Rules if the changes are adopted. This chapter compares the impacts of implementing hydraulic projects under Alternative 1 - the No Action Alternative (existing rules), Alternative 2 – WDFW-Proposed Rule Changes (Preferred Alternative), Alternative 3 - Increased Protection for the Natural Environment, and Alternative 4 - Increased Protection for the Built Environment.

Because the Hydraulic Code Rules apply only to projects that affect the natural flow or bed of state waters, the resources that would be most affected are fish, earth, and water resources. Potential impacts to those resources are discussed in more detail below, with most of the foundation provided under the Fish section. Other resources that would be less affected or only indirectly affected by the proposed rule changes are discussed in less detail.

Impacts of Alternative 2, Alternative 3, and Alternative 4 are evaluated through a comparison with Alternative 1, No-Action. A detailed comparison of impacts between the four alternatives is provided in Table 4-4. In addition, tables are provided for each element that summarizes the level of risk of additional impacts for each of the proposed alternatives. Unless otherwise stated, we assume for these evaluations that the total number of individual HPA projects per year would not vary significantly among the options. Note that provisions identified in Table 2-6 as requiring statutory change are not evaluated in this section.

4.1 Fish

There have been significant gains in knowledge over the last decade with respect to how activities within our waterways affect fish life. Since the last revisions were made to the Hydraulic Code Rules, gains have been achieved in minimizing these effects by implementing specific design criteria, using avoidance measures where appropriate, implementing construction related Best Management Practices (BMP), and adhering to allowable work windows aimed at protecting all life stages of fish, primarily salmonids. The following text outlines potential impacts to fish resulting from activities regulated under the proposed changes to the Hydraulic Code Rules. The impacts discussion is based primarily on the Fish Life Concerns included for each activity in the proposed Hydraulic Code Rules, supplemented with additional information where necessary.

4.1.1 Freshwater Impacts of Hydraulic Projects on Fish

Constructing or performing work activities in or near watercourses can alter the habitat that fish and shellfish depend on. Direct damage or loss of habitat causes a direct loss of fish and shellfish production. Damaged habitat can continue to cause lost production of fish and shellfish for as long as the habitat remains altered. Work activities can also alter the physical processes that form and maintain

fish habitat such as hydrologic patterns and sediment movement. Impacts associated with hydraulic projects include:

- Alteration of light regime
- Aquatic vegetation modifications
- Alteration of fish migration patterns
- Disturbance of streambank or lake shoreline
- Direct loss of fish habitat
- Riparian vegetation modifications
- Disturbance of substrate
- Alteration of stream morphology
- Alteration of sediment delivery and movement
- Alteration of hydrologic patterns
- Alteration of beaver dams

4.1.1.1 Impacts to freshwater fish habitat

Alteration of light regime – Structures such as piers, floats, ramps, or marinas and terminals over freshwater shoreline habitats result in reduced light or shading of fish habitat, which reduces the survival of aquatic plants. Aquatic plants provide food, breeding areas, and protective nurseries for fish. Marinas and terminals have a larger impact area than residential docks and they are usually associated with heavy boat traffic and human use.

The shading and light reduction created by overwater structures may alter predator/prey relationships. Overwater structures may contribute to attracting and congregating juvenile salmon, for example, and may also provide ambush habitat for their predators, such as smallmouth and largemouth bass. Overwater structures, especially if coverage is dense along the shoreline, may reduce phytoplankton primary productivity and therefore negatively affect food-web interactions and productivity higher in the food chain.

Aquatic vegetation modifications – New structures and associated vessel activity can disturb or directly remove aquatic vegetation , which can affect fish life. Marinas and terminals have a larger impact area than residential docks and they are usually associated with heavy boat traffic and human use, which can cause fish to avoid the area.

Alteration of fish migration patterns – In-water structures can alter the movement of juvenile salmon, steelhead, and other fish species. The structure itself can physically block migration or force fish into deeper water, and changes in areas of light and dark can affect migration and increase risk of predation. Boat ramps and launches placed above bed grade can block sediment and wood movement, and alter nearshore migration of juvenile fish. Piers may increase the exposure of juvenile salmon, steelhead, and other small fish to potential predators by providing predator habitat and by changing migration patterns from shallow to deeper water. This can alter the natural predator/prey relationship.

Fishways such as ladders or weirs can impact the migration of some fish. Fish passage structures that target one species or group of species may unintentionally limit the passage of other important species.

Species selection can alter species composition and community relationships upstream of the passage barrier, with important implications for conservation of individual species and biodiversity.

Off-channel ponds created for livestock watering, irrigation, fire protection, or another purpose can provide beneficial habitat or can have detrimental effects on fish. Ponds can disrupt fish movement and also support elevated temperatures that are harmful to fish life. However, these areas can provide important refugia from high flow events and important rearing habitat in cases where off-channel habitat (areas of low energy) is limiting.

Certain activities may create physiological barriers to fish migration. For example, construction activities that create large amounts of turbidity may delay migration.

Disturbance of streambank or lake shoreline - Activities that install permanent or temporary structures for the purpose of protecting or stabilizing a streambank or lake shoreline can result in loss of habitat or alter the bed or beach and the physical processes that form and maintain fish habitat. Direct loss of habitat may include loss of cover, spawning beds, large woody material, riparian function, floodplain connectivity, and alteration to the channel/beach, any of which decreases the complexity and diversity of fish habitats.

Direct loss of fish habitat - Structures that displace river or lakebed habitat used by fish and shellfish include boat ramps or launches, marinas and terminals, water diversions and intakes, and outfall structures. Bridges and piers can also cause the loss of river or lakebed habitat. The larger the number of these structures in a given area, the greater the loss and fragmentation of habitat.

Riparian vegetation modifications - Construction along streambanks or shorelines can disturb or remove riparian habitat. For example, streambank and shoreline stabilization projects may disturb the riparian zone during construction. The installation of outfalls can cause a direct loss of bank side riparian habitat to accommodate the structure or during construction. Removing sand and gravel from the streambed may also involve extensive clearing of vegetation. These activities decrease loading of large woody material in the channel, which is important as cover for fish, and short term loss of macroinvertebrates that are food for fish. Road widening and new roads; power line corridors; residential, commercial, and industrial development; trails; utility infrastructure; agriculture; and other activities have the potential to disturb and degrade riparian conditions.

Disturbance of substrate – Activities that disturb freshwater or nearshore substrates include installing piles for piers, boat ramps, or boat launches; dredging to improve vessel navigation or moorage; sediment traps for flow conveyance and flood abatement; and dredging to clean up contaminated sediments. Dredging in lakes converts shallow-water habitats into deeper-water habitats and may create a steeper bottom transition. This may change the size and species distribution of fish in the localized environment, altering predator/prey dynamics. The effect of dredging on rivers is more complex because localized alteration of channels can lead to dynamic shifts in channel form as the system adjusts to the changed conditions. Dredging may result in a loss of spawning gravel. These effects can extend a considerable distance beyond the bounds of the original dredging project.

Alteration of stream morphology – Activities that remove sand and gravel from streambeds can change the channel shape and bed elevation and may cause flow diversion, sediment stockpiling, and

excavation of deep pits. Removing sand and gravel can also produce a local sediment shortage that can reduce spawning potential and success in gravel-starved stream reaches. Loss of gravel bar head control can create significant channel head cutting upstream of the project.

Bank protection can prevent the stream channel from naturally migrating across the floodplain. This can eliminate sources of woody material, sediment, and side channels. Natural channels evolve over time and migrate across their floodplains. When a channel naturally moves to a new alignment, it leaves behind vital habitat, such as floodplain sloughs and side channels. If the natural fluvial processes of a stream are restricted or interrupted, these side-channel habitats will diminish in productivity and be permanently lost. These habitats cannot be mitigated by the design of a project. They are lost when a channel is fixed in a specific location, regardless of the bank-protection technique.

Activities that involve changing or relocating a stream channel to restore habitat lost because of human-caused changes can result in short term impacts. Channel realignment and bank re-grading typically destroy bank and bed habitat in the active channel and will temporarily lead to elevated suspended sediment concentrations. This may result in the downstream burial of invertebrates, elevated suspended solids, and habitat destruction. In-channel work has a much greater impact on the bank and channel when compared with off-channel work.

Activities that remove, place, and relocate large woody materials in stream channels are conducted where it is necessary to address a threat to life or public or private property, or an immediate threat of serious environmental degradation, caused by streambank erosion or flooding. During construction, these activities can result in short term impacts similar to those described for channel relocation. In general, the disturbed woody material must be replaced in a location within the stream where it could not result in damage, but would continue to help create complex habitats.

Alteration of sediment delivery and movement patterns – Removing sand and gravel from an active channel bed may affect sediment movement if it disrupts the sediment balance in the river. This disruption may cause channel adjustments that extend considerable distances from the excavation site. Outfalls can increase erosion and lead to increased sediment supply to downstream reaches of rivers and streams and trap (accumulate) sediment. Overwater structures also act as groins, which affect longitudinal connectivity and sediment flow. In general, any activity that alters the channel profile by altering the slope or channel width can potentially have an adverse impact on sediment delivery.

Mineral prospecting and mining activities can alter streambed morphology and sediment movement patterns because a variety of machines, including suction dredges, high bankers, and other heavy equipment, are used to remove or sort large quantities of aggregate to separate out valuable minerals. These alterations affect the physical processes that form and maintain fish habitat.

Alteration of hydrologic patterns – Water crossing structures such as bridges or culverts can restrict the flow of streams and rivers and/or affect the movement and distribution of wood and sediment. Activities that involve surface trenching through streambanks and channels for the purpose of installing utility lines may also cause surface and subsurface flows to shift, altering stream hydrology.

Artificial lighting along docks, piers, and marinas may also result in altered predator-prey relationships by concentrating prey species and providing increased opportunities for predators. Artificial lighting may

also result in behavioral effects by interrupting normal light/darkness patterns. For example, nocturnal predators may show avoidance patterns and have reduced foraging success if prey is attracted to the light and the predator is repelled by the light.

Alteration of beaver dams – Beaver dams can be removed, breached, or modified when needed to address a threat to public or private land or infrastructure caused by flooding. Such activities are conducted when the use of water level (flow) control or beaver exclusion devices is not feasible or has not successfully controlled the threat. Breaching, notching, or removing a dam can negatively affect fish, shellfish, and their habitat by de-watering the upstream pond, stranding fish, and releasing sediment and large volumes of water (that can be devoid of oxygen) downstream. Releasing sediment can affect downstream spawning areas. Breaching or removing a beaver dam may not prevent future beaver activity in the area, and persistent breaching or removal can increase the risk of negative impacts to fish habitat.

4.1.1.2 Freshwater impacts that directly harm fish

Constructing or performing work activities in or near watercourses can kill or injure fish or shellfish directly. Impacts associated with hydraulic projects include:

- Direct injury to fish
- Entrainment and stranding
- Elevated underwater sound
- Impacts to water quality

Direct injury to fish - In addition to harming habitat, dredging within freshwater streams or lake shorelines may injure or kill fish and shellfish when dredging equipment traps fish during the uptake of sediments and water.

Mineral prospecting and mining activities can harm fish by physically disturbing eggs or fry incubating within the bed or cause mortality from passing vulnerable fish through mineral prospecting equipment.

Fish can also be harmed during fish salvage efforts (e.g., electrofishing, seining, dip netting) depending upon the method of fish removal and other environmental factors.

Sound waves generated by pile driving or blasting can injure or kill fish.

Entrainment and stranding - Removing sand and gravel from streambeds can create trenches or pits in the bed that can trap fish and lead to death. 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 other agricultural, hydropower, industrial, recreational, residential, municipal, and hatchery purposes. To protect fish, including salmon and steelhead, Washington State law (RCW 77.57.070 and RCW 77.57.010) requires that all surface water diversions be screened to prevent fish from being drawn into the diversions where they may be injured or killed.

For many projects, isolating in-water work areas within cofferdams or using other methods and then using pumps to remove the remaining water allows construction activities to occur “in the dry.” This technique is fairly common for projects such as bridge and culvert replacements. However, sometimes

fish can be missed during salvage efforts and can be sucked into pump intakes or pumped to upland areas where they die.

Elevated underwater sound – Many hydraulic projects can create excessive underwater noise and vibration in and near the construction site. Highly intensive noise-generating construction activities such as impact pile driving or blasting can negatively affect fish by resulting in direct mortality (impact and vibratory pile driving/blasting), adverse behavioral effects (reduced feeding, impaired predator avoidance), delayed spawning, and delayed migration.

Impacts to water quality - Activities that disturb substrates release suspended sediments into the water column that can affect fish by interfering with breathing and feeding. Vessel activity associated with boat ramps and launches or marinas and terminals can also increase sedimentation and diminish water quality. Using heavy machinery above and below the OHWL of any water body increases the risk of fish exposure to construction-related contaminants such as fuels, oil, grease, or hydraulic fluids, which can be toxic to fish and other aquatic life.

4.1.2 Saltwater Impacts of Hydraulic Projects on Fish

Constructing or performing work activities in or near the saltwater can alter the habitat that fish and shellfish depend on. Direct damage or loss of habitat causes a direct loss of fish and shellfish production. Damaged habitat can continue to cause lost production of fish and shellfish for as long as the habitat remains altered. Work activities can also alter the physical processes that form and maintain fish habitat such as hydrologic patterns and sediment movement. The types of impacts associated with hydraulic projects include:

- Shoreline modification
- Disturbance of substrate
- Alteration of light regime
- Aquatic vegetation modifications
- Direct loss of fish habitat

4.1.2.1 Impacts to saltwater fish habitat

Shoreline modification – Constructing bulkheads, wharves, and piers can result in the removal of marine riparian vegetation, which supplies habitat and structure for the nearshore environment, a source of terrestrial food and nutrients. These structures can also alter sediment delivery to the nearshore, which supports spawning habitat for many species and contributes to the composition and density of aquatic vegetation. These structures can also alter the slope of the marine nearshore; thus altering predator/prey relationships, current patterns, and marine vegetation composition and distribution and ultimately the productivity and composition of fish and other aquatic species in the marine nearshore.

Table 4-1 Common impacts from shoreline modification to beaches and bluffs[6]

Shoreline Modification	Effect
Alteration of erosion or wave energy and changes to supply or distribution of sediments along the shore can result in impacts such as:	○ Loss of backshore due to shoreline armoring ○ Direct loss of beach through downcutting (often caused by shoreline armoring) ○ Indirect loss of beach through armoring of updrift bluffs, the resultant loss of sediment supply followed by changes in beach substrate character and downcutting
Loss of nearshore vegetation:	○ Decreases in terrestrial food supply, shading, and protection from overhead predators due to clearing of marine riparian vegetation ○ Simplification of habitat structure due to removal of large wood and overhanging branches ○ Reduced bluff and beach stabilization, and increased erosion due to vegetation removal
Loss or change to beach substrate	○ Degrades conditions that support aquatic and riparian vegetation ○ Loss of spawning habitat for forage fish

Disturbance of substrate – Most structures constructed in the marine environment require footings or supports, such as steel pipe piles to support piers. Other structures such as boat ramps act as supports for vehicles loading and off-loading boats and other watercraft. These structures can result in disruption of foraging and migration and direct loss of forage fish spawning habitats. For example, a boat launch constructed in the nearshore could displace habitat used by sand lance and surf smelt for spawning resulting in reduced spawning success, lost productivity, and altered predator/prey relationships. Disturbance of substrates can also reduce habitat necessary to support marine vegetation such as eelgrass, which is vital to many marine species including juvenile salmonids and crustaceans. Prop wash from vessels and grounding of floats during low tide can also change substrate structure.

Alteration of fish migration patterns -Juvenile salmon have been shown to avoid moving under an overwater structure if there is an abrupt transition from light to dark. Instead, they react by migrating into deeper water and around the offshore edge of the structure. This migration pathway is in a water depth zone where predators are more likely, travel distances are greater, and currents are stronger. Construction activities that create noise and turbidity can also temporarily disrupt nearshore migration and feeding (EnviroVision 2010).

Alteration of light regime – Similar to the discussion under freshwater impacts, overwater structures such as piers and marinas can alter light transmission into the water and result in reduced growth of aquatic vegetation and destruction of existing aquatic vegetation. Loss of marine vegetation from shading impacts of boats and floats can reduce spawning, rearing, and refugia habitat available to forage fish, and alter predator/prey relationships. In addition, shading from overwater structures alters

[6] EnviroVision et al. 2010

migration patterns of juvenile salmon, leading them away from the intertidal zone and into deeper waters along the shoreline, elevating the risk of predation for many species.

Aquatic vegetation modifications – Human activities and shoreline modification can adversely affect seagrass and kelp and other aquatic vegetation through direct removal or degradation and indirectly through altering the environmental conditions that support them. Overwater structures, shoreline armoring, riparian vegetation alteration, boating, illegal harvesting, shellfish culturing, and water quality impairments all have the potential to affect the health of aquatic vegetation. These activities can alter light and nutrient levels, alter substrate composition, increase toxics and suspended sediments, or physically disturb aquatic vegetation (EnviroVision et al. 2010).

Direct loss of fish habitat – Structures that displace natural habitat with something that is man-made can be considered a direct loss of fish habitat. Similar to the discussion under freshwater, these structures include piers, floats, buoys, boat ramps. Many of these structures require installing piles or concrete forms that displace natural habitats. This can result in lost productivity at all levels of the food chain, altered predator/prey relationships, increased competition for resources, altered migration patterns, and altered physical processes.

4.1.2.2 Saltwater impacts that directly harm fish

Constructing or performing work activities in or near watercourses can kill or injure fish or shellfish directly. Impacts associated with hydraulic projects include:

- Entrainment
- Noise and vibration
- Water quality/sediment

Entrainment –In the marine environment, entrainment is most likely to occur during dredging activities. During dredging, fish, shellfish, and other aquatic invertebrates can be injured or killed if trapped within the dredging device.

Noise and vibration –Noise and vibration impacts to saltwater species would be the same as those described for freshwater species.

Water quality/sediment – Construction of facilities along or within the marine nearshore presents many challenges to fish and other aquatic organisms. Facilities such as marinas and terminals constructed along or within the marine nearshore have high levels of human traffic and a capacity to hold and store large numbers of watercraft. Potential harm or injury to fish is related to the accidental discharge of contaminants such as fuel, oil, and sewage. In industrial settings, piers, wharves and other facilities can support more high-intensity construction and related activities such as ship building and maintenance. These activities have even higher potential for introducing contaminants into the water.

4.1.3 Impacts of Hydraulic Code Rules Alternatives on Fish

Table 4-4 summarizes how proposed changes to the Hydraulic Code Rules affect fish, what impacts are caused by hydraulic projects, and compares how the proposed changes affect impacts of the hydraulic projects. Column 1 shows the hydraulic project type and Column 2 lists the potential impacts of the hydraulic project that could affect fish based on the impacts described in this section. The third, fourth,

and fifth columns list the provisions of Alternatives 2, 3, and 4 that address the potential impacts in the second column. Alternative 1 - No Action does not appear as a column in Table 4-4 because there are no changes proposed. The columns includes a brief assessment of whether the proposed rule changes under each of the alternatives will reduce, maintain, or increase the risk to impacts compared to the existing rules (Alternative 1 - No Action Alternative). Provisions of Alternatives 3 and 4 that would require statutory change are not evaluated on this table. None of the Alternative 2 proposed rule changes are expected to degrade conditions for fish.

Table 4-2 compares the impacts of the alternatives on the Fish element by summarizing the level of risk of that alternative impacting the named element – in this case, risk of impacts to fish. Reduction or increase in risk is evaluated in the context with the no-action alternative (Alternative 1).

Table 4-2 Comparison of Impacts of the Alternatives to the Fish Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Fish	No change in risk	Significant reduction in risk	Further reduction in risk	Increased risk

4.1.1 Mitigation

Alternative 2 and 3 proposed rule revisions provide a higher level of protection for fish and other aquatic species and their habitats than the existing rules. Implementing programmatic Alternatives 2 or 3 would be self-mitigating with respect to impacts to the natural environment, meaning that no additional mitigation is needed to offset potential significant adverse environmental impacts of adopting these proposed rule changes. These two alternatives differ, however, in their impacts to the built environment.

Alternative 4 proposed rule revisions represent changes in risk of impacts to the natural environment when compared with either Alternative 1 or Alternatives 2 and 3.

Individual hydraulic projects may still require mitigation.

4.2 Earth

Impacts to earth from hydraulic projects are primarily limited to disturbance at the immediate project location. As discussed in section 4.1, those impacts include increased potential for erosion, deposition, and sedimentation; disturbance to substrate and banks; and changes to contour/topography.

4.2.1 Impacts of Hydraulic Projects on Sedimentation, Erosion, and Topography

Filling, grading, and freshwater channel modifications

Changes to channel geometry include channel straightening and shortening, channel narrowing, reduced habitat complexity, channel incision, channel braiding, decreased channel migration and side channel creation, and decreased floodplain connectivity.

Changes to substrate include increased scour, increased deposition, substrate coarsening, reduced large woody debris and organic material recruitment, and reduced gravel recruitment and transport.

Project types most likely to result in these impacts include water crossings (culverts, bridges), fish passage, flow control structures, bank protection, channel modifications, habitat modifications, shoreline modifications, overwater structures (docks, floats), and marinas and marine terminals. Vessel grounding, anchoring, and prop wash (related to project construction or operation of a boat launch for example) can also impact substrate composition and geometry. Any project involving grading or filling could cause these impacts.

Saltwater modifications

Changes to marine nearshore "earth" processes and geometry related to hydraulic projects include altered sediment supply, transport, littoral drift, and altered substrate composition. Hydraulic project types primarily responsible for these impacts include flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, and overwater structures such as docks, floats, marinas, and marine terminals.

Dredging

Dredging changes bathymetry and substrate composition; alters water circulation and subsequent nutrient, prey, and habitat availability; and re-suspends contaminants. Dredging is often required for water crossings, fish passage structures, flow control structures, bank protection and shoreline modification projects, overwater structures, and for channel modification.

Mineral prospecting

None of the three alternatives propose substantive changes to mineral prospecting rules.

Table 4-3 Comparison of Impacts of the Alternatives to the Earth Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Substrate size	No change in risk	Reduction in risk	Further reduction in risk	Increased risk
Topography	No change in risk	Reduction in risk	Further reduction in risk	Increased risk

4.2.2 Mitigation for impacts to earth

The general construction requirements for hydraulic projects include provisions to minimize disturbance from construction by minimizing the size of the construction area, installing erosion protection, protecting disturbed areas from further erosion, and replacing vegetation following construction. Design standards for hydraulic projects such as boat ramps and docks also minimize impacts on earth.

Table 4-4 Regulated Project Activities, Potential Impacts, and Provisions of the Alternatives

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Purpose E 220-110-010 P 220-660-010	*Not Applicable*	**No change to risk of impacts**	No alternative	**Increases risk of impacts** *The Commission would restrict how the department could use our authority to projects conducted waterward of OHWL. This would increase the risk to fish life from bank protection, bridge, levee and dike and other projects conducted landward of the OHWL.*
Instructions for using chapter E New section P 220-660-020	*Not Applicable*	**No change to risk of impacts**	No alternative	No alternative
Definitions E 220-110-020 P 220-660-030	*Not Applicable*	**Reduces the risk of impacts** *The new and amended definitions clarify the intent of the terms as they relate to the rules. Improved understanding of the terms may lead to improved compliance with the rules.*	No alternatives	**No change to risk of impacts** *Retaining the current definitions of "freshwater area", "saltwater area" and "watercourse" and removing new definitions for "fish habitat" and "unimpeded fish passage" would not change the risk. It would just reduce clarity about how the rules are applied.*
Applicability of hydraulic project approval authority E 220-110-035 P 220-660-040	*Not Applicable*	**No change to risk of impacts** *Minimal changes are proposed to the existing rules.*	No alternative	No alternative
Procedures E 220-110-030 E 220-110-031 P 220-660-050	*Not Applicable*	**No change to risk of impacts** *The time saved on processing applications for the low-risk project types authorized in general HPAs and "model HPAs" is spent on higher risk projects. Other changes to the procedures implement changes to the statute.*	**Reduced risk of impacts** *WDFW would issue standard HPAs for the ~2000 projects authorized each year in general HPAs. The reduced risk assumes an increase in staffing to process the 2,000 additional applications.* **Increases risk of impacts** *If there is no increase in staffing, WDFW would have to use more staff resources to process low risk applications reducing the amount of time spent on medium and high risk projects.*	**No change to risk of impacts** *The limit on the number of sites that can be covered in a multi-site HPA would be removed. The number would be determined by each individual biologist based on work load.*
Integration of hydraulic projects approvals and forest practices applications E 220-110-085 P 220-660-060	*Not Applicable*	**No change to risk of impacts** *No change is proposed to the existing rules.*	No Alternative	**No change to risk of impacts** *Repeating the rules applicable to forest practices would not change the risk to fish life.*
Changes to hydraulic project approval technical provisions E 220-110-032 P 220-660-070	*Not Applicable*	**No change to risk of impacts** *Minimal changes are proposed to the existing rules.*	No alternative	**Increases risk of impacts** *This clause "loss of or injury to fish or shellfish, or the loss or permanent degradation of the habitat that supports the fish and shellfish populations" would be replaced by "will be protective of fish life." This change would be less protective than the existing language 220-110-032(4).*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Mitigation requirements for hydraulic projects E New Section P 220-660-080	*Not Applicable*	**No change to risk of impacts.** *The new WAC section clarifies how the department determines mitigation requirements to protect fish life. "Protection of fish life" means avoiding and minimizing impacts to fish life and fish habitat through mitigation sequencing.*	**Reduces risk of impacts** *Requiring compensatory mitigation for the following would reduce the risk of impacts to habitat:* • *Maintaining or repairing a structure that currently diminishes habitat and/or perpetuates impacts into the future; and* • *Rehabilitation or replacement of structurally deficient or functionally obsolete structures that is required for new structures.*	**Increases risk of impacts** *Not requiring "compensatory mitigation for all work that causes a new impact or compensation for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value" will increase the risk of impacts. This doesn't conform with the mitigation policy dated 01/08/99.*
Technical Provisions E 220-110-040 E 220-110-230 P 220-660-090	*Not Applicable*	**No change to risk of impacts**	No alternative	No alternative
Freshwater habitats of special concern E New section P 220-660-100	*Not Applicable*	**Reduces risk of impacts** *New WAC section identifies habitats that serve essential functions for twenty-two freshwater fish species. The presence of these habitats may restrict hydraulic project type, design, location, and timing.*	No alternative	No alternative
Authorized work times in freshwater areas E New section P 220-660-110	*Not Applicable*	**Reduces risk of impacts** *New WAC section describes the criteria the department will to authorize work to protect fish life during critical life stages.*	**Reduces risk of impacts** *The work times in the table "Times when spawning or incubating salmonids are least likely to be within Washington State freshwaters" would apply to all in-water projects regardless of the risk to fish life from the work.*	No alternative
Common freshwater construction provisions E New section P 220-660-120	– *Aquatic vegetation modifications* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *New WAC section has additional construction provisions for job site access, equipment use, sediment and erosion control reduce impacts to sensitive areas and water quality. New provisions for construction materials and work area isolation reduce impacts to water quality. The new work area isolation and fish removal provisions also protect fish from entrainment, stranding and handling.*	**Reduces risk of impacts** *The use of all treated wood and tires would be prohibited. This would reduce risk of water quality modifications.*	**No change to risk of impacts** *The work area isolation and fish removal provisions would not be included into the new rules. The existing provisions in the current rules would be retained.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Streambank protection and lake shoreline stabilization E 220-110-050 E 220-110-223 P 220-660-130	– *Aquatic vegetation modification* – *Alteration of fish migration patterns* – *Disturbance of streambank and lake shoreline* – *Direct loss of habitat* – *Disturbance of riparian vegetation* – *Disturbance of substrate* – *Alteration of stream morphology* – *Alteration of sediment delivery and movement patterns* – *Water quality modifications*	**Reduces risk of impacts** *A new provision would require a professional's rationale to ensure new bank protection is designed with a less impacting technically feasible alternative.* *New provisions require designs to consider the ecological and geomorphological processes. This reduces alteration of the stream morphology, sediment delivery and movement and disturbance of the substrate.* *New provisions restrict location of replacement structures once a new ordinary high water line has reestablished. This reduces alteration of the stream morphology.*	**Reduces the risk of impacts** *A new provision would always require a professional's rationale to ensure new bank protection is designed with a less impacting technically feasible alternative. This would provide a professional third party opinion to help the department determine if the least impacting option is being proposed by the applicant.* *The design and location of new and replacement structures would have to consider climate change. This would reduce the risk of future alteration of the stream morphology, sediment delivery and movement and disturbance of the substrate.*	**No change to risk of impacts** *A new provision to require a professional's rationale would not be included in the new rules. This is not in the current rules. The existing rules rely on the judgment of the department.*
Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas E 220-110-060 P 220-660-140	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *New provisions require designs to avoid and minimize impacts to freshwater habitats of special concern. This reduces the risk of impacts from alteration of the light regime, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *New pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*	**Reduces risk of impacts** *New provisions for grating would be changed to require grating to cover 100% of the deck regardless of the orientation, width and height of the structure. This will reduce the risk of impacts from alteration of the light regime, aquatic vegetation modifications, and alteration of migration patterns.*	**No change to risk of impacts** *The provisions for grating and those specifying pier height and width would be removed. These are not in the current rules.*
Boat ramps and launches in freshwater areas E 220-110-224 P 220-660-150	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns*	**Reduces risk of impacts** *New provision requires locating ramps and launches to avoid direct loss of spawning habitat.* *New design provisions reduce the risk of alteration of light regime, migration patterns, stream morphology and sediment delivery and movement.*	No alternative	No alternative

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Marinas and terminals in freshwater areas E New section P 220-660-160	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces risk of impacts** *This new WAC section requires designs to avoid impacts to fish spawning areas and juvenile salmon migration corridors, rearing and feeding areas. This reduces risk of alteration of the light regime and migration patterns.* *A provision requires new facilities to avoid and minimize impacts to aquatic vegetation.* *Several provisions require the location of facilities in areas that will reduce impacts to fish life, where possible. This reduces the risk of impacts from aquatic vegetation modifications, alteration of migration patterns, disturbance of substrate, and alteration of stream morphology and sediment movement and delivery.* *Pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*	No alternative	**No increased risk of impacts** *Provisions would be added for bulkheads and other bank stabilization in the marina/marine terminal environment instead of referring applicants to proposed WAC section 220-660-130. This would result in duplicate language.*
Dredging in freshwater areas E 220-110-130 P 220-660-170	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *A new provision requires a professional to conduct a pre-project channel survey to determine the potential channel changes from the project. This will reduce the risk of alteration to the stream morphology and sediment delivery and movement.*	**Reduces risk of impacts** *The existing rules do not have a section for removing gravel and debris from small streams so including this section will result in reduced risk. Currently each biologist provisions HPAs for this work based on their professional judgment since there are no common provisions in rule.* *Adding a provision to require scientific justification to prove that dredging will resolve flooding problems would provide a professional third party opinion to help the department determine if dredging is a proper solution given the impacts.*	**No change to risk of impacts** *A new provision to require a survey would not be included in the new rules.*
Sand and gravel removal E 220-110-140 P 220-660-180	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**No change to risk of impacts**	No alternative	No alternative

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Water crossing structures E 220-110-070 P 220-660-190	– *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement* – *Alteration to hydrologic patterns*	**Reduces risk of impacts** *The WAC section is amended. Currently, water crossing designs must provide fish passage. The amended language requires water crossing designs to also protect the stream morphology, sediment delivery and movement, movement of wood and hydrologic patterns and prevent substrate disturbance.*	**Reduces risk of impacts** *Moving the no-slope culvert option to Section 200 and requiring only stream simulation culverts unless the permittee can show that stream simulation is not feasible, will reduce risk of impacts to fish habitat. The stream-simulation method is shown to protect the stream morphology, sediment delivery and movement, movement of wood and hydrologic patterns and prevent substrate disturbance.*	**No change to risk of impacts** *Even if the culvert design standards are removed, the applicant would have to show the proposed design would meet fish protection standards. In the absence of rules this would be entirely up the judgment of biologist or WDFW engineer to determine.* *Retaining the existing bridge provisions would not increase the risk of impacts.* ***Increases risk of impacts*** *Adding guidelines by name to the rules that are outside the control of the department would increase the risk of impacts if the guidelines changed and reduced fish protection.* *Amending the rules to use a channel forming flow, such as the 2-year flood, will increase the risk of impacts. The existing rules state "The bridge shall be constructed, according to the approved design, to pass the 100-year peak flow with consideration of debris likely to be encountered…"*
Fish passage improvement structures E New section P 220-660-200	– *Alteration of light regime* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, standing and handling of fish*	**Reduces impacts to fish life** *This new WAC section includes provisions to ensure fish passage improvement structures (fish ladders, fish passage weirs, roughened channels, trap and haul operations and hydraulic design culverts) provide fish passage. This would reduce the risk of impacts to fish migration patterns and from the entrainment, stranding and handling of fish.*	**Reduces impacts to fish life** *The new WAC section would require all fish passage improvement structures be installed temporarily. The section would include timeframes for barrier correction. This would reduce the risk of impacts to fish migration patterns, alteration of stream morphology, sediment delivery and movement, and hydraulic patterns. This would also reduce the risk of impacts from entrainment, stranding and handling of fish.*	**No change to risk of impacts** *The new WAC section would not require fish ladders to have enough water to pass fish safely if target fish species are present and actively migrating. Since this provision is not in the rules now, removing it would not change the risk of impacts. The bridge shall be constructed, according to the approved design, to pass the 100-year peak flow with consideration of debris likely to be encountered. Exception shall be granted if applicant provides hydrologic or other information that supports alternative design criteria.*
Channel change/ realignment E 220-110-080 P 220-660-210	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns*	**Reduces risk of impacts** *A new provision clarifies a channel change must provide better protection of fish life than the old channel. This would reduce the risk of direct loss of habitat.*	No alternatives	No Alternatives

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Large woody material placement, repositioning and removal in freshwater areas E 220-110-150 P 220-660-220	– *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns*	**No change to risk of impacts** *The department will still approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. Compensatory mitigation will be required if the removal of wood from the channel diminishes fish habitat function or value.*	No alternative	No alternative
Beaver dam management E New section P 220-660-230	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Alteration of beaver dams* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**Reduces risk of impacts** *New WAC section allows the removal, breaching, or modification of dams and the design and construction of beaver deceivers and pond water level control devices only when it is needed to protect property and infrastructure. This reduces the risk from potential impacts.*	**Reduces risk of impacts** *A new provision would be added that would require an applicant to obtain professional determination that shows there is an imminent threat to property or the environment.*	No alternative
Pond construction E 220-110-180 P 220-660-240	– *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *The provision to require a water right is removed. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*	**No change to risk of impacts** *The provision to require a water right is retained. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*	No alternative
Water diversions and intakes E 220-110-190 P 220-660-250	– *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish*	**No change to risk of impacts** *The provision to require a water right is removed. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*	**No change to risk of impacts** *The provision to require a water right is retained. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*	*No alternative*
Outfall structures in freshwater areas E 220-110-170 P 220-660-260	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *No provisions are added to reflect statutory changes to the department's authority to regulate stormwater.*	No alternative	No alternative

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Utility crossings in freshwater areas E 220-110-100 P 220-660-270	– *Aquatic vegetation modifications* – *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Alteration to sediment delivery and movement patterns*	Retains current rules except language is added for utility line design and directional drilling	Add provision • The department would require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.	No alternatives
Felling and yarding of timber E 220-110-160 P 220-660-280	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement* – *Alteration to hydrologic patterns* – *Alteration of beaver dams* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *Retains the current rule provisions.*	No alternatives	No alternatives
Aquatic plant removal and control E 220-110-331 E220-110-332 E 220-110-333 E 220-110-334 E 220-110-335 E 220-110-336 E 220-110-337 E 220-110-338 P 220-660-290	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *Retains the current rule provisions.*	No alternatives	No alternatives
Mineral prospecting E 220-110-200 E 220-110-201 E 220-110-202 E 220-110-206 P 220-660-300	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**Reduces risk of impacts** *The changes to the work windows reduce the risk of impacts to spawning and incubating fish* **No change to risk of impacts** *The additional rules for small-scale mineral prospecting on ocean beaches will not affect the risk of impacts because the rules reflect the HPA provisions the department currently uses.*	**Reduces risk of impacts** *Additional timing restrictions supported by survey information or other science would reduce the risk of impacts.*	**Increases risk of impacts** *The reversion of the work windows back to the 1994 windows would increase the risk to fish life.*
Tidal reference areas E 220-110-240 P 220-660-310	*Not applicable*	**No change to risk of impacts** *Retains the current rule provisions.*	No alternatives	No alternatives

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Saltwater habitats of special concern E 220-110-250 P 220-660-320	*Not applicable*	**Reduces risk of impacts** *The addition of Olympia oyster and nearshore processes to the section will reduce risk of impacts from shoreline modifications.* **No change to risk of impacts** *Removing rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*	**No change to risk of impacts** *Retaining rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*	**Increases risk of impacts** *Removing the phase "adjacent areas" will increase the risk because this language is in the existing rules. WAC 220-110-250 states "In the following saltwater habitats of special concern, or areas in close proximity with similar bed materials, specific restrictions regarding project type, design, location, and timing may apply…".*
Authorized work times in saltwater areas E 220-110-271 P 220-660-330	*Not applicable*	**Reduces risk of impacts** *Reducing the work times by two months will reduce risk to juvenile salmon. Adding work times to protect herring spawning beds in two new areas and adding work times to protect lingcod nursery and settlement areas will also reduce the risk of impacts from shoreline modifications.* **No change to risk of impacts** *Removing the work time to protect rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*	**Reduces risk of impacts** *Applying work times to suspected as well as known habitat will reduce the risk to saltwater habitats of special concern that have not been mapped by the department. Applying work times regardless of the risk to the saltwater habitats of special concern will reduce the risk from unknown or unforeseen impacts.* **No change to risk of impacts** *Retaining the work time to protect rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*	**No change to risk of impacts** *The existing work times would be retained.*
Intertidal forage fish spawning habitat surveys E New section P 220-660-340	*Not applicable*	**No change to risk of impacts** *The existing rules give permittees the option of doing surveys in project locations where spawning occurs for six months or longer. The new section just codifies the method*.	No alternative	No alternative
Seagrass and macroalgae habitat surveys E New section P 220-660-350	*Not applicable*	**Reduces risk of impacts** *New WAC section clarifies when an eelgrass/macroalgae habitat survey is required*. This reduces the risk to aquatic vegetation.	No alternative	No alternative
Common construction provisions for saltwater areas E 220-660-270 P 220-110-360	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – Water quality modifications	**Reduces risk of impacts** *New provisions added for equipment use, vessel operation, sediment and erosion control reduces impacts to sensitive areas and water quality. New provisions for construction materials reduce impacts to water quality.*	**Reduces risk of impacts** *The use of all treated wood and tires would be prohibited. This would reduce risk of water quality modifications.*	No alternative
Bulkheads and other bank protection in saltwater areas E 220-110-280 P 220-660-370	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** New provisions added for re-establishment landward of a breached bulkhead, a preference for the least impacting alternative, and a site assessment, alternatives analysis, and design rationale by a qualified professional reduce impacts from shoreline modifications.	**Impact not evaluated** Requiring single-family residence bulkheads (RCW 77.55.141) to provide a site assessment, alternatives analysis, and design rationale by a qualified professional to show the least impacting feasible alternative bank protection method as proposed would reduce impacts from shoreline modifications. [would require statutory change]	No alternatives

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas E 220-110-300 P 220-660-380	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces the risk of impacts** *New provisions require designs to avoid and minimize impacts to saltwater habitats of special concern. This reduces the risk of impacts from alteration of the light regime, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *New pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*	**Reduces risk of impacts** *New provisions for grating would be changed to require grating to cover 100% of the deck regardless of the orientation, width and height of the structure. This will reduce the risk of impacts from alteration of the light regime, aquatic vegetation modifications, and alteration of migration patterns*	No alternatives
Boat ramps and launches in saltwater areas E New section P 220-660-390	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces the risk of impacts** *New WAC section lists design alternatives from the most preferred to the least. New section reduces direct loss of habitat, shoreline modification, aquatic vegetation modification and disturbance to substrate.*	No alternatives	**No change to risk of impacts** *Deleting proposed provisions would not change the risk of impact since this is a new section.*
Marinas and terminals in saltwater areas E 220-110-330 P 220-660-400	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces risk of impacts** *This section is amended to include terminals.* *Several provisions require the location of facilities in areas that will reduce impacts to fish life, where possible. This reduces the risk of impacts from shoreline modification, alteration of light regimes, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *Pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*	**Reduces risk of impact** *Adding a provision that requires new and expanded docks, wharves, piers, marinas, rafts, shipyards and terminals to a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate would reduce risk from aquatic vegetation modifications.*	**No increased risk of impacts** *Provisions would be added for bulkheads and other bank stabilization in the marina/marine terminal environment instead of referring applicants proposed WAC section 220-660-370. This would result in duplicate language.*
Dredging in saltwater areas E 220-110-320 P 220-660-410	– *Direct loss of habitat* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**Reduces risk of impacts** *New provision that requires hydrodynamic modeling will reduce risk from water quality modification.* *New provisions that require dredging to avoid converting intertidal to subtidal habitat reduce risk from direct loss of habitat.*	No alternative	No alternative

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Alternative 2 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 3 Fish Impacts to Alternative 1 – No Action	Comparison of Alternative 4 Fish Impacts to Alternative 1 – No Action
Artificial aquatic habitat structures E New section P 220-660-420	– *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** *New WAC section specifies structures must provide a net benefit to fish.*	No alternatives	No alternatives
Outfall, tide and flood gate structures in saltwater areas E New section P 220-660-430	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *No provisions are added to reflect statutory changes to the department's authority to regulate stormwater.*	No alternatives	No alternatives
Utility lines in saltwater areas E 220-110-310 P 220-660-440	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Water quality modifications*	**Reduces risk of impacts** *The new provision requiring a eelgrass/macroalgae survey, if warranted, will reduce the risk of impacts to aquatic vegetation*	No alternatives	No alternatives
Test boring in saltwater areas E New section P 220-660-450	– *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** *New WAC section will reduce the risk of impacts to water quality.*	No alternative	No alternative
Informal appeal of adverse administrative actions E 220-110-340 P 220-660-460	*Not applicable*	**No change to the risk of impacts** Retain the existing language.	No alternative	No alternative
Formal appeal of administrative actions E 220-110-350 P 220-660-470	*Not applicable*	**No change to the risk of impacts** Retains the existing language.	No alternative	No alternative
Compliance E 220-110-360 P 220-110-480	Not applicable	**No change to risk of impacts**	No alternatives	No alternatives

4.2.2.1 Mitigating Alternative 1 – No Action Alternative

The existing Hydraulic Code Rules contain provisions that protect fish life or minimize risk of impact to fish life during hydraulic project construction. Many of these measures specifically protect the earth element. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology. Because the rules would not change, we would expect no change in the type, magnitude, or distribution of effects on earth. Future effects would be expected to remain similar or identical to those occurring under existing conditions.

4.2.2.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

Alternative 2 would reduce the risk of negative environmental impacts for earth resources, as compared to Alternative 1. This is because Alternative 2 includes new provisions that avoid and/or minimize potential physical, chemical, and biological impacts from hydraulic project activities. Changes in the type, magnitude, or distribution of effects on earth resources would be expected based on proposed provisions in Alternative 2. Future outcomes are expected to be better than those expected under the no-action alternative.

Specific provisions in Alternative 2 that mitigate for impacts to littoral drift include:

- Design pile-supported structures with maximum open space between pilings to allow waves, currents, and sediment to pass beneath.
- Minimize certain impacts from floating structures placed perpendicular to shorelines, which dampen wave action and prohibit natural shoreline erosional processes, by minimizing the size of these structures.
- Use floating breakwaters or ramps instead of breakwater walls to reduce impacts to littoral drift.

Provisions relating to dredging projects include:

- Use multi-season pre- and post-dredge project biological surveys to more extensively assess impacts to animal communities;
- Require hopper dredges, scows, barges, and trucks or any other equipment used to transport dredged materials to disposal or transfer sites to completely contain the dredged material.
- Avoid projects and expansions that convert intertidal to subtidal habitat. If such conversion is unavoidable, conduct a comprehensive, large-scale risk assessment to identify the cumulative effects of site-specific changes to ecosystem dynamics.

4.2.2.3 Mitigating Alternative 3

Provisions of Alternative 3 that could affect risk of impacts to earth resources include:

- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.
- Add provisions for removing gravel and debris from small streams.

- Require permittees to install stream simulation culverts unless the permittee can show that stream simulation is not feasible, or that another design will provide equal or better protection of fish life.
- Remove the no-slope culvert design alternative.
- Require that a shorter bridge design be based on engineering constraints and not constraints caused by existing infrastructure and levee setback opportunities.
- All fish passage improvement structures would be temporary and a timeframe would be established in rule for a permanent solution to be implemented.
- Hydraulic design option culverts would have limited application in exceptional circumstances where bridges or no-slope and stream simulation culverts cannot be used.
- Before issuing an HPA to remove a beaver dam, require a professional determination that there is an imminent threat to property or the environment

4.2.2.4 Mitigating Alternative 4

Provisions of Alternative 4 that could affect risk of impacts to earth resources include:

- In the proposed rule changes, include rules for removing gravel and debris from small streams.
- Authorize dredging in fish spawning areas.
- Remove the Alternative 2 culvert design standards.
- Amend the rules to allow American Association of State Highway and Transportation Officials and Federal Highway Administration [bridge/culvert design] standards (by name)
- Amend the bridge design standards
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood event like the 100-year to evaluate how changes in flow velocity will affect fish life.
- Delete provision to design and locate a boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

4.3 Climate

Adopting the proposed Hydraulic Code Rules would not directly affect climate change; indirect effects in the form of hydrocarbon emissions are similar to those expected from any construction projects. Outcomes related to implementing the proposed rule changes would improve conditions for fish that would help them withstand the impacts of climate change.

4.3.1 Impacts of Hydraulic Projects on Climate

When addressing the topic of climate, we considered not only the impacts of projects on climate and climate change, but also how climate changes will affect hydraulic projects

Hydraulic project construction can contribute greenhouse gas emissions, but the level of emissions is not expected to differ among the various alternatives.

Known impacts of climate change on hydraulic projects include reduction in snowpack and sea level rise. Reduced snowpack affects stream flows in summer and fall; stream flows can be further impacted by hydraulic projects. These effects are discussed in the Water Resources section.

Sea level rise is a factor affecting (or that will affect) slope failures in marine areas and the need for upgraded or new hydraulic projects for slope protection. Existing docks, terminals, boat ramps and other saltwater developments might need to be upgraded to accommodate higher sea levels. The key to climate considerations is to ensure that future hydraulic projects take sea level elevation changes into account when designing new projects.

Table 4-5 Comparison of Impacts of the Alternatives to the Climate Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Climate Impacts	No change in risk	No change in risk	No change in risk	No change in risk
Climate Change Resilience	No change in risk	Reduction in risk	Reduction in risk	Increased risk

4.3.2 Mitigation

Provisions for hydraulic projects that protect fish life also contribute to climate change resilience. We do not anticipate that the differing provisions among the alternatives would change the annual number of hydraulic projects, so there would be no difference in impacts among the alternatives. Alternative 3 offers a provision that can raise awareness about climate-friendly project design.

4.3.2.1 Mitigating Alternative 1 – No Action Alternative

The existing Hydraulic Code Rules contain provisions that protect fish life, or minimize risk of impact to fish life, during hydraulic project construction. Many of these measures also minimize impacts to climate. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology. Because the rules would not change, no change in the type, magnitude, or distribution of effects on climate would be expected. Future effects would be expected to remain similar or identical to those occurring under existing conditions.

4.3.2.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

The proposed Alternative 2 Hydraulic Code Rules do not include any provisions that would affect climate change. It is anticipated that hydraulic projects that generate greenhouse gas emissions would continue at the same general rate as under current conditions. Alternative 2 includes new provisions that avoid and/or minimize potential physical, chemical, and biological impacts from hydraulic project activities. The proposed rule changes represented in Alternative 2 likely improve the health of those species and make them more resilient to climate change when compared to Alternative 1 outcomes.

4.3.2.3 Mitigating Alternative 3

The following provisions might improve awareness and/or contribute to more climate-friendly project design:

- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If bank protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.
- Require that placement of new and replacement structures consider climate change.

4.3.2.4 Mitigating Alternative 4

Provisions of Alternative 4 that could affect risk of impacts to climate include:

- Delete the provision "mitigation must compensate for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value" because these values are difficult to quantify.
- Delete provision to design and locate boat ramps and launches to avoid adverse impacts to saltwater habitats of special concern.
- Delete provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

4.4 Water Resources

As discussed in Chapter 3, water resources within Washington include streams, rivers, lakes, wetlands, estuaries, and marine areas. Key functions of aquatic natural resources include properly functioning physical and chemical processes such as natural hydrology, adequate surface and groundwater hydraulics and sediment processes, and water of sufficient quality. The level of function of such processes, in turn, directly contributes to creating and maintaining habitat for fish and wildlife.

Most changes to hydraulics project activities affected by the Alternatives would result in some direct impacts to some of the processes that support water resources, including surface water flow, groundwater, and water quality.

This section describes potential impacts to water resources that could be caused by hydraulic projects. As described in Chapter 3, WDFW does not regulate water quality, but hydraulics projects can impact water quality in several ways.

4.4.1 Surface Water Flow

This section analyses potential changes in timing and/or quantity of streamflows resulting from the four alternatives. Projects in or near water can affect the banks or bed of a channel by changing the channel itself, or through bank/bed excision or accretion during construction. Many types of hydraulic projects must divert flow away from the construction site during the construction period. All project permits contain provisions that minimize construction-related impacts, and require restoring the construction site to pre-construction conditions (or better). Post-construction monitoring is not always able to detect when site restoration (for example, replanted vegetation) has been successful.

Hydraulic project types affecting the natural flow or bed of state waters include water crossings , fish passage , flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, water crossing structures like bridges and culverts, and overwater structures like docks, floats, and marinas.

Water crossings and culverts present their own set of challenges for applicants and regulators. In many Washington streams, hydrographs are lacking or incomplete, so the "100-year recurrence interval flood flow" cannot be determined. WDFW often recommends engineering consultations for projects that affect channel and bank protection in order to provide for the reasonable protection of fish life. Allowing sufficient room for proper floodplain function benefits not only fish (increased habitat diversity and resilience) but also people (reduced out-of-channel flooding). Because greater caution/protection is often associated with higher costs, tradeoffs between design flows and cost must be balanced by regulators and the applicant.

As a result of this rigorous design consultation, most projects make the surrounding areas more resilient to high flow events than before construction of the hydraulic project. However, occasionally a project will fail to adequately protect channels and banks in high-flow events, resulting in channel degradation, bank erosion, and adjacent flooding. Extreme rain and storm events are occurring more frequently as the climate warms, so flooding might also become more frequent. Provisions in the proposed Hydraulic Code Rules will be current with the most recent science and technology; adaptive management of the program will ensure project design stays ahead of changing conditions.

Saltwater hydraulic projects can change marine nearshore processes and geometry by altering wave energy, redirecting current, changing local flow velocities, altering nearshore circulation, and changing groundwater/surface water interactions and hyporheic exchange. Saltwater hydraulic projects that can affect water resources include flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, and overwater structures like bridges, docks, marinas, and marine terminals.

4.4.2 Groundwater

Recharge means refilling of groundwater aquifers, as water from the land surface percolates downward into geologic units. Discharge refers to water leaving the groundwater system to enter surface lakes, rivers, or wetlands. Impacts to groundwater could result from changes in recharge to groundwater aquifers relating to changes in stream flows. Impacts could be significant if surface-water hydrology of a stream reach is altered enough to change the quantity or timing of groundwater recharge and discharge. Changes could affect groundwater discharge to surface water flows both in timing and volume of flow.

Some hydraulic projects that provide better habitat for fish also provide benefits through groundwater recharge. For example, projects that slow the flow of water to allow sediments to settle out of the water column benefit groundwater because there is a higher rate of percolation into groundwater, which could later manifest as higher late-summer flow volumes. These benefits must be balanced with detrimental effects; for example, slow moving water can have higher temperatures than faster flows.

Maintaining a strong adaptive management component to hydraulic project regulation can provide the flexibility for regulators and applicants to respond to new science about surface water/groundwater

continuity and incorporate measures that avoid or mitigate for project impacts on groundwater function.

4.4.3 Water Quality

Projects affecting the flow or bed of waters of the state can affect water quality by releasing suspended solids and increased turbidity; by increasing temperatures; through effects to dissolved oxygen, pH, and salinity; by altering pollutant and nutrient loading; through accidental release of fuel, oil, or other contaminants; and by introducing contaminants from treated wood. Water quality impacts are most often caused by hydraulic projects such as water crossings, fish passage, flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, water crossing structures like bridges and culverts, and overwater structures like docks, floats, marinas and marine terminals. Rainfall runoff can cause disturbed sediment at construction sites to become suspended in the water column. Vessel activity associated with boat ramps and launches or marinas and marine terminals can increase suspended sediments. Reducing riparian vegetation can expose streams to more solar radiation, increasing water temperature.

Increased water temperature can change fish behavior or metabolism. The amount of oxygen available is reduced at higher water temperatures. Changing fish metabolism can make fish more prone to disease or directly cause death. Fish migration behavior and/or spawning success can be negatively impacted when passage corridors or spawning areas are unavailable to fish because the water is too warm.

Construction activities in and near water can increase risk of contaminants spreading to the aquatic environment, which can be toxic to fish and other wildlife. Preservatives used on submerged wood can be toxic, and WDFW regulates which preservatives are acceptable for hydraulic projects. Some elements in industrial discharge and stormwater are toxic to fish, which is why these activities and facilities are subject to regulation by the Clean Water Act (CWA). Some toxic chemicals can move up through the food chain, building up in the tissues of small organisms, which are eaten by fish, which in turn are eaten by larger fish, marine mammals, and humans – harming their health. The presence of toxic substances in Washington's seafood is an important consideration as Ecology implements the CWA.

While WDFW is clearly interested in improving water quality conditions as they relate to protecting fish life, a bill passed the Washington legislature in 2002 (Engrossed Substitute House Bill 2866) that clarified WDFW's authority to condition HPAs for water quality protection. The bill distinguished WDFW's authority from the authorities of Department of Ecology or U.S. Army Corps of Engineers under CWA. Generally, HPAs address the actual construction of outfalls and any associated structures, but cannot require changes to project design above the ordinary high water line. HPAs may not address secondary impacts from the discharge (i.e. degradation to water quality) when a project is covered under a National Pollution Discharge Elimination System (NPDES) municipal general permit. In areas not covered by a NPDES municipal general permit, WDFW is allowed, under certain situations, to condition HPAs for specific discharge rates to protect fish life from the direct impacts of the discharge. WDFW may recommend, but not specify, the measures required to meet prescribed discharge rates.

4.4.4 Impacts of Hydraulic Projects to Water Resources

Several hydraulic project activities have the potential to directly affect water resources by impacting sediment processes, stream hydraulics, and water quality. The overall potential physical and chemical effects, and the resulting biological effects of the activities discussed below are presented in Table 4-4, which also documents how proposed rule changes under Alternative 2 affect the impacts of these activities.

Regulated activities likely to affect overall stream hydrology include streambank protection and lake shoreline stabilization (WAC 220-110-140), dredging in freshwater areas (WAC 220-110-180), and removing sand and gravel (WAC 220-110-190). These activities would alter the physical processes of streams and other waterbodies. Pond construction (WAC 220-110-250) could also alter the hydrologic regime.

Several freshwater project activities have the potential to affect local hydraulic functions of water resources. These are activities associated with modifying stream or river beds or banks, which may in turn affect the distribution and velocity of stream flows. In addition, any project activity that may alter hydraulics also can affect sediment dynamics, including local scour depositional patterns, which are closely related. The primary project activities that have the potential to directly affect stream hydraulics and sediment mobilization and transport are as follows:

- Residential docks, watercraft lifts, and buoys in freshwater areas (WAC 220-110-150)
- Boat ramps and launches in freshwater areas (WAC 220-110-160)
- Marinas and terminals in freshwater areas (WAC 220-110-170)
- Dredging in freshwater areas (WAC 220-110-180)
- Sand and gravel removal (WAC 220-110-190)
- Water crossing structures (WAC 220-110-200)
- Fish passage improvement structures (WAC 220-110-210)
- Channel change/ realignment (WAC 220-110-220)
- Mineral prospecting WAC (220-110-310)

The project activities listed above could also lead to potential impacts related to turbidity, which could be generated while constructing or operating all of these project types. In addition, project activities involving outfall structures in saltwater areas (WAC 220-110-430) and outfall structures in freshwater areas (WAC 220-110-270) could also increase turbidity.

Lastly, project activities that alter the marine shoreline or benthos can also result in direct changes to local drift cells and alter shoreline sediment transport dynamics. Direct effects on marine water resources could result from the following project activities (see Table 4-4 for more details):

- Bulkheads and other bank protection in saltwater areas (WAC 220-110-370)
- Residential docks (piers, ramps, and floats), buoys and other overwater structures in saltwater areas (WAC 220-110-380)
- Boat ramps and launches in saltwater areas (WAC 220-110-390)
- Marinas and terminals in saltwater areas (WAC 220-110-400)
- Dredging in saltwater areas (WAC 220-110-410)

Flooding can occur when culverts are undersized, when beavers build dams, and when large woody material is placed in streams to slow water velocities. Provisions of the Hydraulic Code Rules are intended to ensure that placement and sizing of culverts and large wood can withstand extreme conditions without failure under most foreseeable conditions. Beaver management decisions (such as a dam removal) are carefully considered so that impacts of the removal are minimized.

Table 4-6 Comparison of Impacts of the Alternatives to the Water Resources Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Water Resource Hydrology	No change in risk	Reduction in risk	Same as Alternative 2	Increased risk
Groundwater	No change in risk	Same as Alternative 1	Same as Alternative 2	Same as Alternative 2
Water Quality	No change in risk	Reduction in risk	Further reduction in risk	Increased risk

4.4.5 Mitigation for Impacts to Water Resources

The hydraulic code rules are designed to allow construction projects while providing adequate protection for fish life. Many elements of the environment, taken together, define the habitat in which fish live, and so the Hydraulic Code Rules include provisions that minimize or "mitigate" for impacts to those environmental elements.

4.4.5.1 Mitigating Alternative 1 – No Action Alternative

The existing Hydraulic Code Rules contain provisions that protect fish life, or minimize risk of impact to fish life, during hydraulic project construction. Many of these measures also protect water resources. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology. Because the rules would not change, no change in the type, magnitude, or distribution of effects on water resources would be expected. Future effects would be expected to remain similar or identical to those occurring under existing conditions.

4.4.5.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

Alternative 2 would reduce the risk of negative environmental impacts for water resources, as compared to Alternative 1. This is because Alternative 2 includes new provisions that avoid and/or minimize potential physical, chemical, and biological impacts from hydraulic project activities. Changes in the type, magnitude, or distribution of effects on water resources would be expected based on proposed provisions in Alternative 2. Future outcomes are expected to be better than those under the no-action alternative. Examples of such measures include explicit requirements for the following:

- A professional assessment of risk and justification for project;
- More robust design requirements that will minimize impacts to habitat; and

- Construction methods (e.g., vibratory versus impact pile driving) and material (e.g., specifications for type, size, and composition) requirements will minimize impacts to fish and habitat.

Alternative 2 provisions that reduce risk of impacts from freshwater hydraulic projects include:

- Set staging areas in a location and manner that prevents contaminants from entering water.
- Protect areas exposed during construction.
- Route the construction water (wastewater) from the project to an upland area above the limits of anticipated floodwater.
- Locate the structure deep enough to avoid prop wash re-suspension of sediments and contaminants.
- Prevent transporting and introducing aquatic invasive species by thoroughly cleaning vessels, equipment, boots, waders, and other gear.
- Do not use wood treated with oil-type preservative. Wood treated with waterborne preservative chemicals may be used if the Western Wood Preservers Institute has approved its use in the aquatic environment.
- Completely contain treated wood sawdust, trimmings, and drill shavings.
- Structures built of treated wood should incorporate features to prevent or minimize the abrasion of treated wood by floats, ramps, or vessels.

Alternative 2 provisions that mitigate impacts to saltwater circulation include:

- Design pile-supported structures with maximum open space between pilings to allow waves, currents, and sediment to pass beneath.
- Minimize certain impacts from floating structures placed perpendicular to shorelines, which dampen wave action and inhibit natural shoreline erosional processes, by minimizing the size of these structures.
- Use floating breakwaters or ramps instead of breakwater walls to reduce impacts to littoral drift

4.4.5.3 Mitigating Alternative 3

Alternative 3 proposals affecting water resources include provisions that could further reduce the risk of impacts to water resources over the measures provided in Alternative 2. A provision to require an applicant to demonstrate he/she has a valid water right to apply for HPA for water diversions might reduce risk to water resources.

The following provisions of Alternative 3 could reduce risk to water flow and hydrology:

- A tee diffusor outfall would be the only design method authorized in low flow situations.
- Require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.
- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If bank protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.

The following provision would reduce risk to water quality:

- The use of all treated wood and tires would be prohibited.

These Alternative 3 provisions might increase risk of flooding:

- Before issuing an HPA for removal of a beaver dam, require a professional determination that there is an imminent threat to property or the environment
- Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued.

Rule changes proposed in Alternative 3 further reduce the likelihood of water quality degradation because this alternative prohibits the use of any wood preservative for submerged wood. Alternative 3 provisions might increase the risk of flooding impacts.

4.4.5.4 Mitigating Alternative 4

Alternative 4 proposals that affect risk for water resources include:

- Remove the culvert design standards.
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life.
- Delete the provision to design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete the provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.
- Remove all grating requirements.

4.5 Wildlife

As discussed in Chapter 3, marine mammals, birds, reptiles, and amphibians utilize the riverine, marine, and wetland habitats in Washington. Some of these species spend all of their lives in or near the wetted perimeter of rivers, streams, wetlands, and oceans while many others use such areas only for specific life history stages, such as breeding, feeding, and migration. Other wildlife species utilize upland habitats where hydraulic project activities could occur.

Most changes to the hydraulic project activities regulated by Alternative 2 would not result in direct impacts to most wildlife species. This is because:

- Most of the project activities with proposed rule changes would not affect individuals directly, but affect their habitats and prey items;
- Most wildlife species are mobile and able to walk, fly, or swim away from disturbances such as noise, light, human activity, or turbidity; and
- The vast majority of hydraulics project activities occur in areas that already have some level of development and human activity, areas that would generally be avoided by many of the wildlife species discussed in Chapter 3.

Wildlife that are at risk of direct effects from hydraulics project activities include the following:

- Amphibians associated with the wetted perimeter of freshwater streams, rivers, lakes, and wetlands. The habitat range and mobility of these species are somewhat limited and amphibians and reptiles are widely distributed throughout the landscape, including areas that have some level of existing development, indicating a susceptibility to direct effects from physical harm and/or stranding of larval forms.
- Marine animals that are sensitive to in-water or in-air disturbances (particularly from noise and vibration) and that have at least moderate utilization of marine nearshore/shoreline areas. This would include pinnipeds, cetaceans, and diving birds.
- Aquatic wildlife that uses marine or lacustrine benthic habitat or riverine bed habitat for feeding or migration. Such wildlife species (e.g., diving ducks) could be injured or killed by certain hydraulic project activities, such as dredging.
- Wildlife that use streams, lakes, rivers, or the freshwater shoreline for nesting or denning. This includes beaver, muskrat, nutria, river otter, and similar wildlife species.

4.5.1 Impacts of Hydraulic Projects to Wildlife

Hydraulic project activities may directly affect some of the wildlife species in Washington. Project activities that could result in direct effects to wildlife are discussed below.

Several hydraulic project activities have potential to directly affect marine mammals and diving birds in marine habitat, due primarily to potential acoustic impacts and physical entrainment:

- Bulkheads and other bank protection in saltwater areas (WAC 220-110-360)
- Residential piers, ramps, floats, watercraft lifts, and buoys in saltwater areas (WAC 220-110-370)
- Boat ramps and launches in saltwater areas (WAC 220-110-380)
- Marinas and terminals in saltwater areas (WAC 220-110-390)
- Dredging in saltwater areas (WAC 220-110-400)
- Outfall and tide and flood gate structures in saltwater areas (WAC 220-110-420)

Likewise, some freshwater wildlife species may be exposed to direct impacts from hydraulic project activities. These impacts would result primarily from stranding and entrainment of amphibian species or effects from entrainment on benthic species. Such activities include:

- Residential docks, watercraft lifts, and buoys in freshwater areas (WAC 220-110-140)
- Boat ramps and launches in freshwater areas (WAC 220-110-150)
- Marinas and terminals in freshwater areas (WAC 220-110-160)
- Dredging in freshwater areas (WAC 220-110-170)
- Sand and gravel removal (WAC 220-110-180)
- Water crossing structures (WAC 220-110-190)
- Fish passage improvement structures (WAC 220-110-200)
- Channel change/ realignment (WAC 220-110-210)
- Mineral prospecting WAC (220-110-300)

Two hydraulic project activities could directly affect certain wildlife species or species groups. Streambank protection and lake shoreline stabilization activities (WAC 220-110-130) could result in death or injury from destruction of the primary habitats (e.g., active dens in disturbed shoreline

habitats) of bank-dwelling mammals and birds and beaver dam management activities (WAC 220-110-230) could result in similar effects on beaver.

Most of the potential effects on wildlife would be indirect effects from habitat alteration, changes to physical or biological ecological functions (e.g., water quality), or alterations on a wildlife species predator or prey (e.g., fish).

Development in general can contribute to ecosystem fragmentation, for both aquatic and terrestrial animals. Specific effects include:

- Altered longitudinal (up and down stream) connectivity
- Altered lateral connections between rivers and floodplains
- Loss of access to floodplain habitats
- Altered habitat complexity
- Loss of riparian cover

Project types most often associated with ecosystem fragmentation impacts to wildlife include water crossings, fish passage, flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, and overwater structures.

Table 4-7 Comparison of Impacts of the Alternatives to the Wildlife Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wildlife and Ecosystem Impacts	No change in risk	No change in risk	Reduction in risk	Increased risk

4.5.2 Mitigation

The rules associated with regulated hydraulic project activities are intended to avoid and minimize effects on wildlife and other natural resources.

Removing beaver dams may directly injure or kill beavers because the primary aim of this activity is to destroy beaver habitat. Although no explicit mitigation measures are specified, the proposed rule prioritizes beaver dam removal methods that would have minimal effects on other wildlife, fish, and water resources. It also requires that removal of established beaver dams be conducted only when other measures for controlling beaver damage have not been effective.

4.5.2.1 Mitigating Alternative 1 – No Action Alternative

The existing Hydraulic Code Rules contain provisions to protect fish life, or minimize risk of impact to fish life, during hydraulic project construction. Many of these measures also protect wildlife and ecosystems. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology. Because the rules would not change, no change in the type, magnitude, or distribution of effects on wildlife would be expected. Future effects including injury,

mortality, and behavioral changes, as well as effects on habitat, predators, or prey, would be expected to remain similar or identical to those occurring under existing conditions.

4.5.2.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

Alternative 2 would reduce the risk of negative environmental impacts for wildlife resources, as compared to Alternative 1. This is because Alternative 2 includes new provisions that avoid and/or minimize potential physical, chemical, and biological impacts from the individual hydraulic project activities. Changes in the type, magnitude, or distribution of effects on wildlife resources would be expected based on proposed provisions in Alternative 2. Future outcomes are expected to be better than those under the no-action alternative. General examples of such measures include explicit requirements for the following:

- A professional assessment of risk and justification for project;
- More robust design requirements that will minimize impacts to habitat;
- Construction methods (e.g., vibratory versus impact pile driving) and material (e.g., specifications for type, size, and composition) requirements will minimize impacts to fish and habitat; and
- Work windows that will minimize overlap of authorized work with presence of relevant life history stages of fish.

4.5.2.3 Mitigating Alternative 3

Provisions of Alternative 3 that could affect risk of impacts to wildlife include:

- Require mooring buoys to be a certain distance from seagrass and macroalgae.
- New and expanded docks, wharves, piers, marinas, rafts, shipyards and terminals must be at least a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate.

4.5.2.4 Mitigating Alternative 4

Provisions of Alternative 4 that could affect risk of impacts to wildlife include:

- Delete the provision "mitigation must compensate for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value".
- No pier height or width requirements would be specified for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern.
- Delete the provision to design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete the provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

4.6 Vegetation

As described in Chapter 3, the shorelines and shallow waters of the state's freshwater and marine watercourses support diverse vegetation. Many hydraulic project activities can result in direct or indirect impacts to vegetation. Vegetation that might be impacted includes:

- Riparian vegetation associated with freshwater river and stream corridors and lake shorelines. This is likely to include deciduous shrubs and/or trees and coniferous trees in some areas;
- Wetland vegetation associated with emergent, shrub, or forest wetland communities present adjacent to streams or lakes;
- Riparian vegetation associated with marine shorelines including deciduous and coniferous shrubs and trees;
- Salt-tolerant vegetation present in backshore beaches including grasses and herbaceous species;
- Submerged and floating aquatic vegetation associated with the shoreline of freshwater lakes; and
- Submerged and floating aquatic vegetation associated with shallow marine waters along shorelines and estuaries.

4.6.1 Impacts of Hydraulic Projects to Vegetation

Hydraulic project activities may directly impact some of the vegetation species associated with freshwater rivers, streams and lakes, and marine shorelines. Impacts to vegetation could occur while constructing and/or operating a project.

In terms of construction, the revised Hydraulic Code Rules contain numerous requirements and recommendations that would reduce impacts to riparian, wetland, and aquatic vegetation. Overall, the general construction requirements for all hydraulic projects include provisions to minimize disturbance from construction by avoiding to the maximum extent practicable and then minimizing disturbance to aquatic and wetland plants (except aquatic noxious weeds), riparian and wetland areas, replacing vegetation following construction, and monitoring the replaced vegetation.

Several hydraulic project activities could directly affect vegetation because they require in-water or on-land construction in areas where vegetation is typically present. Such activities include:

- Streambank protection and lake shoreline stabilization (WAC 220-110-130)
- Residential docks, watercraft lifts, and buoys in freshwater areas (WAC 220-110-140)
- Boat ramps and launches in freshwater areas (WAC 220-110-150)
- Marinas and terminals in freshwater areas (WAC 220-110-160)
- Water crossing structures (WAC 220-110-190)
- Channel change/ realignment (WAC 220-110-210)
- Outfall structures in freshwater areas (WAC 220-110-260)
- Bulkheads and other bank protection in saltwater areas (WAC 220-110-360)
- Residential piers, ramps, watercraft lifts, and buoys in saltwater areas (WAC 220-110-370)
- Boat ramps and launches in saltwater areas (WAC 220-110-380)
- Marinas and terminals in saltwater areas (WAC 220-110-390)
- Dredging in saltwater areas (WAC 220-110-400)
- Outfall and tide and flood gate structures in saltwater areas (WAC 220-110-420)

Alteration or loss of aquatic vegetation:

Impacts to aquatic vegetation ripple throughout aquatic ecosystems:

- Changes to water quality
- Loss of refugia and cover
- Altered flow pattern
- Altered nutrient cycling pattern
- Increased risk of predation
- Altered production of habitat-forming materials from off-site
- Altered habitat complexity

Alteration or loss of riparian vegetation

Alteration or loss of riparian vegetation can result in:

- Reduced shading and altered temperature regime
- Reduced streambank or shoreline stability
- Altered inputs of habitat-forming materials from off-site (including large woody material)
- Altered groundwater, surface water and hyporheic exchange
- Altered habitat complexity

Beneficial project types:

Two hydraulic project types are intended to have beneficial effects on aquatic vegetation. Aquatic plant removal and control (WAC 220-110-290) covers the physical and mechanical methods for removing aquatic noxious weeds (e.g., *Spartina* sp. and purple loosestrife) that threaten native vegetation, and fish and shellfish and their habitat. Seagrass and macroalgae habitat surveys (WAC 320-110-350) include specific guidelines for surveying seagrass and macroalgae habitats to improve protection and preservation. The proposed rule changes contain protocols for both preliminary and advanced surveys to assist in evaluating the potential impacts associated with other regulated hydraulic project activities such as new or replacement docks, mooring buoys, or other overwater structures, and new or maintenance dredging, trenching, filling or grading.

Table 4-8 Comparison of Impacts of the Alternatives to the Vegetation Element

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Aquatic and Riparian Vegetation	No change in risk	Reduction in risk	Further reduction in risk	Increased risk

4.6.2 Mitigation

The rules associated with regulated hydraulic project activities that minimize or avoid impacts to fish life also reduce risk of impacts to vegetation. Some provisions are intended specifically to avoid or minimize impacts to vegetation.

4.6.2.1 Mitigating Alternative 1 – No Action Alternative

The existing hydraulic code rules contain provisions to protect fish life, or minimize risk of impact to fish life, during hydraulic project construction. Many of these measures also protect aquatic and/or riparian

vegetation. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology. Because the rules would not change, no change in the type, magnitude, or distribution of effects on vegetation would be expected. Future effects would be expected to remain similar or identical to those occurring under existing conditions.

4.6.2.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

Alternative 2 would reduce the risk of negative environmental impacts for vegetation, as compared to Alternative 1. This is because the Preferred Alternative includes provisions to avoid and minimize impacts to vegetation during construction, provides specific guidelines to avoid and minimize impacts to vegetation for many of the hydraulic activities, and two of the regulated activities are expected to have beneficial effects on vegetation. Changes in the type, magnitude, or distribution of effects on vegetation would be expected based on proposed provisions in Alternative 2. Future outcomes are expected to be better than those under the no-action alternative.

The proposed rule changes include provisions to minimize disturbance to vegetation and are expected to reduce direct impacts to vegetation associated with the activities listed above. We expect that regulated activities that occur between the banks or waterward of shorelines could generally avoid impacts to vegetation. These activities include:

- Dredging in freshwater areas (WAC 220-110-170),
- Sand and gravel removal (WAC 220-110-180),
- Fish passage improvement structures (WAC 220-110-200),
- Water diversions and intakes (WAC 220-110-250,
- Utility crossings in freshwater areas WAC (220-110-270) and saltwater areas (WAC 220-110-430),
- Mineral prospecting (WAC 220-110-300), and
- Boring in saltwater areas (WAC 220-110-440).

Alternative 2 provisions that reduce risk to aquatic vegetation:

- Locate structures in deeper water to minimize shading and physical impacts on aquatic vegetation.
- Minimize impacts from vessels.
- Do not allow floats to ground out on low tides.
- Any walkways should be 100 percent grated; floats and docks should be at least 60 percent grating.
- Orient grating to maximize transmission of light under the structure.
- Minimize the amount of pier area that directly contacts the shoreline, to allow light penetration to the nearshore intertidal and shallow subtidal areas.

Provisions that reduce risk to riparian vegetation:

- Use existing roadways or travel paths whenever possible
- Use hand equipment rather than heavy equipment
- If using heavy equipment, use wide-track or rubberized tires

4.6.2.3 Mitigating Alternative 3

Provisions of Alternative 3 that could affect risk of impacts to vegetation include:

- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.
- Require 100% of an overwater structure's deck to be covered in grating.
- Require mooring buoys to be a certain distance from seagrass and macroalgae.
- New and expanded docks, wharves, piers, marinas, rafts, shipyards and terminals must be at least a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate.

4.6.2.4 Mitigating Alternative 4

Provisions of Alternative 4 that could affect risk of impacts to vegetation include:

- Delete the provision "mitigation must compensate for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value" because these values are difficult to quantify.
- Remove all grating requirements
- No pier height or width requirements would be specified for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern.
- Authorize dredging in fish spawning areas.
- Amend the rules to allow American Association of State Highway and Transportation Officials and Federal Highway Administration [bridge/culvert design] standards (by name)
- Remove the culvert design standards.
- Amend the bridge design standards.
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life.
- Delete the provision to design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete the provision for the department to require an eelgrass/macroalgae habitat survey for all new ramp or launch construction. A survey is not required to replace an existing structure within its original footprint.
- Delete the provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

4.7 Built Environment

The Hydraulic Code Rules provide provisions for what can be constructed on private and public property and how the projects would be constructed. The provisions have broad environmental effects because

fish habitat comprises a significant portion of freshwater and nearshore saltwater environments, which are also shared with human uses.

New design standards for some project types could increase costs of constructing such projects. Costs could also increase because the proposed new rules provide mitigation provisions that apply to most projects.

Probable significant adverse environmental impacts would be determined on a project-specific basis for hydraulic projects requiring additional environmental review. To help us think about the effects of proposed Hydraulic Code Rules on "the built environment," this section is designed to put forward some types of impacts to the built environment that might occur for particular hydraulic project types.

4.7.1 Environmental Health and Safety

Safety of people and property is an important consideration when hydraulic projects are being evaluated for permitting. Provisions in statute allow immediate permitting under emergency situations declared by WDFW or a county government. Two other types of permits, imminent danger and chronic danger, are addressed in statute. The rule change proposals incorporate procedures to improve implementation of projects under these circumstances.

In some cases, there is debate regarding the designs that would be best for both fish and people. Some proposed rule changes provide provisions for professionally-engineered designs when project proponents and permit biologists do not agree on the project design in highly sensitive locations (marine bank protection, for example). WDFW works together with the proponent and his/her design engineer to ensure that the project is protective of both human and fish needs.

Concern about flooding is a frequent discussion topic. For example, beaver dams and placement of large wood pieces are both intended to slow the natural flow of a stream, but these structures sometimes cause blockages during high flow conditions. Design technology has evolved regarding selection and placement of artificial habitat elements, and flooding at high flows is less of a problem for these types of projects now. We still can't always get beavers to cooperate with our human development plans, but provisions are proposed in the rule revisions that facilitate decisions on beaver management techniques.

Undersized culverts and road crossings can also cause local flooding during high-flow events. Existing and proposed new hydraulic project provisions help to ensure that new structures involving fish passage improvements will also provide benefits in terms of reduced risk of localized flood impacts. One of the interesting challenges of adapting to climate change is that flow patterns and volumes are changing from those we have experienced in the past. Human development has also changed hydrology in some streams. Locations that have not historically been susceptible to "flash floods" can now be affected. Rule changes represented by the proposed alternatives should reduce risk of flood impacts.

Discussions about fuel spills and toxic contaminants occur in Section 4.3 and are not repeated here.

4.7.1.1 Existing conditions (Alternative 1) that affect environmental health and safety

Under Alternative 1, impacts to environmental health and safety from hydraulic projects would remain the same as under current conditions.

4.7.1.2 Provisions of Alternative 2 that affect environmental health and safety

New construction provisions included in Alternative 2 that are intended to improve conditions for fish life probably also offer more conservative work methods and designs that improve public safety. Provisions of Alternative 2 relating to hydraulic project design potentially can decrease effects like flooding, which improves overall safety of these structures. New provisions for beaver management help people remove property impacts from beaver activity. Provisions for the type of wood preservative used for water-contact projects help improve overall environmental health. These are discussed in greater detail in the water quality section.

4.7.1.3 Provisions of Alternative 3 that affect environmental health and safety.

- Prohibit the use of all treated wood and tires.
- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.
- Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued.
- Before issuing an HPA to remove a beaver dam, require a professional determination that there is an imminent threat to property or the environment.

4.7.1.4 Provisions of Alternative 4 that affect environmental health and safety

- Remove all grating requirements.
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life.

4.7.2 Land and Shoreline Use

Hydraulic code rules do not directly affect land and shoreline use because the construction of hydraulic projects must be consistent with existing land use regulations, including zoning code restrictions, critical areas regulations, and Shoreline Management Programs. However, hydraulic projects can profoundly affect land/shoreline use because hydraulic projects are primarily construction projects intended to convert land from one use to another or to improve an existing use.

4.7.2.1 Existing conditions (Alternative 1) that affect land and shoreline use

Under Alternative 1, hydraulic projects would continue to be regulated under the existing Hydraulic Code Rules, which are inconsistent with some aspects of the Shoreline Management Act, some local critical areas ordinances, and other regulations. This inconsistency causes uncertainty among landowners about how projects should be constructed and lengthen the time required to permit a hydraulic project.

4.7.2.2 Provisions of Alternative 2 that affect land and shoreline use

The proposed rule changes increase the restrictions on hydraulic project construction beyond the existing regulations. They also further limit what can be constructed and where. For example, ponds

could no longer be constructed within a watercourse (WAC 220-110-240). In addition, the revised code limits the location of marinas and terminals (WAC 220-110-160 and 390).

4.7.2.3 Provisions of Alternative 3 that affect land and shoreline use

- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.

4.7.2.4 Provisions of Alternative 4 that affect land and shoreline use

- No pier height or width requirements would be specified for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern.
- Delete the provision to design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete the provision to design and locate freshwater boat ramps and launches to avoid and minimize excavation below the OHWL.

4.7.2.5 Mitigation

Although the proposed Hydraulic Code Rule changes in Alternative 2 impose more restrictions on locations of hydraulic projects, the new rules would provide certainty about locating the projects. Current implementation of the existing rules also places limits on project locations through project specific restrictions, but those limits are not specified in the existing rule language, which has created uncertainty for landowners/developers. The proposed rule changes will improve certainty to landowners about location requirements, which may somewhat offset the new restrictions by making it easier for project proponents to know what is required before applying for an HPA.

4.7.3 Light, Glare, Noise, and Aesthetics

Projects that generate noise include water crossings , fish passage , flow control structures, bank protection, shoreline modifications, channel modifications, habitat modifications, and overwater structures.

Projects that can affect ambient light include overwater structures, fish passage, and channel modifications. The effects of light are discussed in the sections covering Fish and Vegetation.

Aesthetics are affected by any construction project. Most projects are unattractive when under construction. Many hydraulic projects permanently alter a natural landscape to a built landscape, with the associated changes in aesthetics. However, project provisions that protect fish life also preserve or restore near-natural conditions, and so maintain or restore the natural aesthetic.

For example, bank protection structures can present unattractive built elements in the otherwise natural landscape. New provisions and considerations for bank protection projects that reduce/minimize impacts to fish life, such as use of soft-shore protection alternatives, can also produce more aesthetically pleasing designs, especially to the landowner wishing to restore the natural beach of their waterfront property.

4.7.3.1 Existing conditions (Alternative 1) that affect light, glare, noise, and aesthetics

There are currently no provisions for attenuating noise from pile driving. Current provisions for project activities within the beach area prohibit work when the project area, including the work corridor, is undated by tidal waters unless the work is occurring from a vessel or barge. Provisions relating to light penetration on docks and floats exist, but they do not reflect current design and technology improvements.

4.7.3.2 Provisions of Alternative 2 that affect light, glare, noise, and aesthetics

Alternative 2 includes the following proposed provisions, which are intended to reduce impacts to fish life but also reduce the overall risks of impact from noise.

Pile driving

- When installing steel piling, a vibratory hammer is preferred.
- If impact pile driving is needed, set the drop height to the minimum needed to drive the piling.
- Use appropriate sound attenuation to minimize harm to fish from impact steel pile-driving noise.

Equipment use

- Avoid and minimize the use of equipment below the OHWL of rivers, streams, and lakes.
- Avoid and minimize use of equipment on the beach area and confine equipment to specific access and work corridors.
- Project activities within the beach area must not occur when the project area, including the work corridor, is inundated by tidal waters unless the work is occurring from a vessel or barge.

Provisions relative to light penetration through decking are discussed in Section 4.1.

4.7.3.3 Provisions of Alternative 3 that affect light, glare, noise, and aesthetics

Provisions for Alternative 3 are the same as for Alternative 2.

4.7.3.4 Provisions of Alternative 4 that affect light, glare, noise, and aesthetics

Alternative 4 removes existing provisions relating to noise, light, and aesthetics, and deletes some provisions proposed in Alternative 2:

- Remove all grating requirements
- No specified pier height or width requirements for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern
- Delete the provision to design and locate boat ramps or launches to avoid adverse impacts to saltwater habitats of special concern

4.7.4 Recreation

Water-oriented recreation in Washington often revolves around docks, piers, boat launches and marinas. These structures are all regulated under the Hydraulic Code Rules.

4.7.4.1 Existing conditions (Alternative 1) that affect recreation

The existing Hydraulic Code Rules include provisions for constructing freshwater docks, piers, and floats and driving or removing piling (existing WAC 200-110-060); freshwater boat hoists, ramps, and launches (existing WAC 220-110-224); saltwater boat ramps and launches (existing WAC 220-110-290); saltwater piers, pilings, docks, floats, rafts, ramps, boathouses, houseboats, and associated moorings (existing WAC 220-110-300); and marinas in saltwater areas (existing WAC 220-110-330). Recreation-related hydraulic projects are also regulated site-by-site when necessary to protect fish life. These provisions currently limit locations, construction methods, and dimensions of structures built for water-oriented recreation. Under Alternative 1, impacts on recreation would remain the same as under current conditions.

4.7.4.2 Provisions of Alternative 2 that affect recreation

Hydraulic Code Rules for recreation-related structures have been significantly revised to match current fish science and design technology. Revised WACs 220-110-140 (Residential docks, watercraft lifts, and buoys in freshwater areas), 220-110-150 (Boat ramps and launches in freshwater areas), 220-110-160 (Marinas and terminals in freshwater areas), 220-110-370 (Residential piers, ramps, floats, watercraft lift and buoys in saltwater areas), 220-110-380 (Boat ramps and launches in saltwater areas) and 220-110-390 (Marinas and terminals in saltwater areas) all regulate recreation-related hydraulic projects. Changes to each section are summarized in Table 4-4.

In these sections, new regulations have been added covering activities that were not previously included in the Hydraulic Code Rules, including watercraft lifts, mooring buoys, piers, ramps, floats, grating and paint, treated wood, piling, noise and pile driving, and piling removal. Marinas and terminals in freshwater areas have been added as a regulated activity, with requirements similar to those for marinas and terminals in saltwater areas. Length, width, and grating requirements have been added for residential docks, and existing requirements have been substantially changed based on current best practices. Boat ramps and launches are no longer allowed to be located in spawning areas. Allowable dock designs have been specified for waterbodies with salmon, steelhead, and bull trout. These regulatory changes would add constraints on where and how docks, ramps, and marinas could be constructed. Added design requirements would add to the cost and time needed to construct recreational structures. Recreational development under the revised hydraulic code rules would be more constrained than under current conditions.

Changes to the Hydraulic Code Rules that protect fish species are discussed in Section 4.1. These changes would help maintain fish productivity and improve fishing opportunities. Changes to the Hydraulic Code Rules that protect water quality are discussed in Section 4.3. These changes would maintain and improve water quality for water-contact recreation (such as swimming) as well as fishing opportunities.

4.7.4.3 Provisions of Alternative 3 that affect recreation

Alternative 3 provisions are the same as for Alternative 2, except for the following:

- Require 100% of an overwater structure's deck to be covered in grating.
- Impose additional timing restrictions for mineral prospecting.

4.7.4.4 Provisions of Alternative 4 that affect Recreation

- Retain the Alternative 1 timing windows for mineral prospecting.
- Delete the provision to design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.
- Delete the provision for the department to require an eelgrass/macroalgae habitat survey for all new ramp or launch construction. A survey is not required to replace an existing structure within its original footprint.
- Delete the provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL.

4.7.4.5 Mitigation

Water-oriented recreational development and public access to water are among the prioritized uses under the Shoreline Management Act (SMA) and individual Shoreline Master Programs enacted by cities and counties in the state. The revisions to the Hydraulic Code Rules proposed in Alternative 2 bring the rules into consistency with the SMA. While new regulations for docks, launches, and marinas could increase design and construction time for these structures, procedural improvements for hydraulic permits could offset some of this increase. Additionally, including detailed regulations in the code rules instead of relying on site-by-site provisions to protect fish would help assure developers that certain recreational structures will be allowed and will minimize the need to revise designs during the permitting process.

4.7.5 Historic and Cultural Resources

As described in Section 3, there is a high probability of encountering cultural resources when hydraulic projects are constructed. Neither the existing or revised Hydraulic Code Rules include requirements to protect cultural resources; however, other state and federal regulations do require protection of those resources and those regulations would usually be triggered by hydraulic project construction.

4.7.5.1 Existing conditions (Alternative 1) that affect historic and cultural resources

Impacts to cultural resources from hydraulic projects would remain the same as under current conditions.

4.7.5.2 Provisions of Alternative 2 that affect historic and cultural resources

The revised Hydraulic Code Rules do not include requirements to protect cultural resources; therefore, protection of cultural resources would continue to be provided by other regulations (Section 1). Provisions in the proposed Hydraulic Code Rules (Alternative 2) that reduce the footprint of hydraulic projects would help reduce potential impacts to cultural resources by reducing the amount of soil disturbance.

4.7.5.3 Provisions of Alternative 3 that affect historic and cultural resources

Several provisions of Alternative 3 affect the footprint of the disturbed area during hydraulic project construction, and would therefore reduce risk of impacts to historic and cultural resources:

- Before allowing any form of bulkhead or armoring work, require an engineer's report that unequivocally determines that bank protection or shoreline stabilization is needed to protect infrastructure.
- If protection is warranted, require a biotechnical ("soft") solution unless an engineer clearly finds that a hard bulkhead is the only option.
- Add provisions for removing gravel and debris from small streams.
- Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued.
- Require permittees to install stream simulation culverts unless the permittee can show that stream simulation is not feasible, or that another design will provide equal or better protection of fish life.
- Retain the current (Alternative 1) WDFW priorities for water crossings.
- Remove the no-slope design alternative
- Require a shorter bridge design be based on engineering constraints and not constraints caused by existing infrastructure and levee setback opportunities.
- Hydraulic design option culverts would have limited application in exceptional circumstances where constraints prevent the use of bridges, no-slope, and stream simulation culverts.
- Require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.

4.7.5.4 Provisions of Alternative 4 that affect historic and cultural resources

Several provisions of Alternative 4 might affect the footprint of the disturbed area during hydraulic project construction, and might therefore affect the risk of impacts to historic and cultural resources:

- Amend the rules to allow American Association of State Highway and Transportation Officials and Federal Highway Administration [bridge/culvert design] standards (by name)
- Remove the culvert design standards
- Amend the bridge design standards.
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life
- Delete the provision to design and locate boat ramps and launches to avoid and minimize excavation below the OHWL

4.7.5.5 Mitigation

Measures that reduce project footprint or minimize disturbance to sediments could also reduce risk of impacts to cultural resources associated with those sediments.

4.7.6 Agriculture

Agricultural production is a significant contributor to economic activity in the state of Washington, and many agriculture activities occur adjacent to rivers. The effects of agriculture on adjacent aquatic environments generally present lower long-term risk to aquatic resources than residential or commercial/industrial development. However, some agricultural practices present risk to the aquatic environment. Impacts to water quality are the primary concerns, including turbidity, temperature, and the presence of fertilizer and pesticide residue. Other impacts can include stream flow and fish passage

issues related to irrigation diversions. Water quality concerns are addressed through Ecology's CWA authority.

Hydraulic Code Rules also affect aquaculture by regulating many aspects about aquaculture infrastructure design and location. However, the proposed rule changes do not include new provisions that are specific to aquaculture.

Hydraulic projects that divert water for agricultural irrigation or stock watering purposes and that involve seasonal construction or other work do not need an annual HPA. A permit for streambank stabilization projects to protect farm and agricultural land remains in effect without need for periodic renewal if the problem causing the need for the streambank stabilization occurs on an annual or more frequent basis. The permittee must notify WDFW before commencing the construction or other work within the area covered by the permit.

Hydraulic-project-related impacts that can involve agriculture are discussed in the sections about fish, earth, water resources, and vegetation. Provisions on HPA projects relating to agriculture could affect the overall costs associated with the project and could also influence the timing of the activity relative to the applicant's agricultural production sequence.

4.7.7 Transportation:

Hydraulic projects can affect traffic circulation and hazards, and hydraulic code rules directly affect construction and maintenance of transportation facilities. Many existing highway culverts are barriers to fish passage and were installed years before we understood and recognized the needs of fish. Both private water crossings and public stream crossings and culverts are regulated by the Hydraulic Code Rules.

Other transportation effects include impacts to construction or maintenance/repair of marine terminals, marinas and docks, and impacts to dredging as it relates to maintaining shipping channels.

Fish barriers and state highways

Washington State Department of Transportation (WSDOT) is required to install and maintain all culverts, fishways, and bridges to provide unrestricted fish passage as per Washington law, RCW 77.57.030. Design of fish barrier correction is based on the latest version of the Washington Department of Fish and Wildlife's (WDFW) Water Crossing Design Guidelines manual. Through use of this design guidance and in coordination between WSDOT and WDFW, we do not expect that new highway construction at stream crossings will result in additional barriers to fish passage.

Upgrading or replacing existing barriers, however, has been a financial challenge for the state. In March, 2013, the Washington State Supreme Court issued an injunction that requires the state to significantly increase its efforts to remove state-owned culverts that block habitat for salmon and steelhead. WDFW, WSDOT, and other partners are working together to plan how to accomplish this work (WSDOT 2014).

WDFW and WSDOT have been collaborating to steadily improve the HPA permitting process for transportation projects, and have improved the administrative process. Science and technology around stream crossing design and construction have also steadily improved. The proposed rule changes represented in Alternative 2 (preferred alternative) include the most up-to-date provisions for culvert

and water crossing design. However, many still disagree on the extent to which protective provisions should be included in the proposed rule changes, and differences among the interests are reflected in proposed rule changes under Alternatives 3 and 4.

4.7.7.1 Existing conditions (Alternative 1) that affect transportation

WSDOT and WDFW are committed to fixing fish barrier culverts and have been working together since 1991 to inventory and assess barriers statewide, as well as to develop the best culvert and bridge designs to use under particular conditions.

WSDOT currently removes fish barriers associated with state-managed highways one of three ways. First, WSDOT fixes many culverts through the construction of highway mobility and safety projects. Second, WSDOT operates an Environmental Retrofit program that funds standalone fish barrier removal projects that targets correction of the highest priority culverts that would otherwise not be fixed by a highway construction project anytime in the near future. And third, some limited work on fish passage barrier correction and repair is done as part of routine road maintenance or road preservation projects (WSDOT 2014).

Existing provisions that affect transportation include rules about project location, size, sediment and vegetation impact, and construction practices. No provisions would be changed under Alternative 1.

4.7.7.2 Provisions of Alternative 2 that affect transportation

A new WAC section has additional construction provisions for job site access, equipment use, and sediment and erosion control to reduce impacts to sensitive areas and water quality. New provisions for construction materials and work area isolation reduce impacts to water quality. The new work area isolation and fish removal provisions also protect fish from entrainment, stranding, and handling.

Other provisions of Alternative 2 that affect transportation include:

Fish passage improvement projects:

- Work windows will minimize overlap of authorized work with presence of sensitive life history stages of fish.
- Design must allow for upstream and downstream passage at all flows.

Overwater structure provisions:

- More robust design requirements will minimize impacts to habitat (e.g., most excavation to occur in upland).
- Construction methods and material requirements will minimize impacts to fish and habitat (e.g., treated wood can no longer be used for decking material for docks/piers and bubble curtains must be used to minimize underwater noise during pile driving activities).
- Work windows will minimize overlap of authorized work with presence of sensitive life history stages of fish.
- Restricting facility placement outside of breeding areas will minimize potential for injury and death as well as preserving breeding habitat.
- Requiring mitigation that will adequately compensate for loss of habitat and function.

Marinas and terminals in saltwater areas:

- Requirements for facility siting will minimize impacts to sensitive life history stages and habitat (e.g., facilities to be located outside of forage fish spawning areas and in areas of low or impaired biological integrity).
- More robust design requirements will minimize impacts to habitat (e.g., marina/terminal dimensions will be reduced).
- Construction methods and material requirements will minimize impacts to fish and habitat (e.g., light penetration required via adequate grating)
- Work windows will minimize overlap of authorized work with presence of sensitive life history stages of fish.
- Requiring mitigation that will adequately compensate for loss of habitat and function

Dredging in saltwater areas:

- Methods and material requirements will minimize injury to fish and shellfish (e.g., keeping suction dredge intakes at or near bottom to prevent entrainment)
- Work windows will minimize overlap of authorized work with presence of sensitive life history stages of fish.
- Dredging in forage fish spawning areas or habitats of special concern is prohibited (e.g., no dredging allowed in herring spawning habitat).
- May require hydrodynamic modeling

4.7.7.3 Provisions of Alternative 3 that affect transportation

Provisions of Alternative 3 can affect the risk of impacts to transportation:

- Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued.
- Require permittees to install stream simulation culverts unless the permittee can show that stream simulation is not feasible, or that another design will provide equal or better protection of fish life.
- Retain the current (Alternative 1) WDFW priorities for water crossings.
- Remove the no-slope design alternative
- Require a shorter bridge design be based on engineering constraints and not constraints caused by existing infrastructure and levee setback opportunities.
- Roughened channel would be a temporary fish passage improvement solution used only in extreme circumstances with a valid reason why a more reliable fish passage method (e.g. stream simulation or bridge) cannot be used.
- Hydraulic design option culverts would have limited application in exceptional circumstances where constraints prevent the use of bridges, no-slope, and stream simulation culverts.
- Require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.
- New and expanded docks, wharves, piers, marinas, rafts, shipyards, and terminals must be at least a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate.

4.7.7.4 Provisions of Alternative 4 that affect transportation

- Authorize dredging in fish spawning areas.

- Amend the rules to allow American Association of State Highway and Transportation Officials and Federal Highway Administration [bridge/culvert design] standards (by name) because they have been well vetted by the engineering community.
- Remove the culvert design standards. The designs proposed are not based on technically sound engineering practices and are not justified by significant research.
- Amend the bridge design standards because they may require the preparation of multiple designs so that the cost differential can be quantified, thus increasing the time and costs associated with all bridge projects.
- Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life.
- The department would not require compensatory mitigation if a fish passage structure cannot pass all fish species present at all mobile life stages.

4.7.8 Public Services and Utilities

This section includes impacts to public services such as fire, police, schools, and parks, and utilities/infrastructure that deliver communications, water supply, stormwater, sewer, solid waste, electricity, and natural gas. Most hydraulic projects don't adversely impact fire, police, schools and parks outside of the effects discussed under noise, light, aesthetics, recreation, and transportation. Hydraulic Code Rules do contain provisions that regulate outfall structures, utility crossings, tide- and flood-gate structures, utility lines in aquatic environments, and boring in aquatic environments.

The purpose of Hydraulic Code Rules is to protect fish life as projects are being constructed. Provisions under the hydraulic code rules could cause design delays and cost increases for public services and utility projects.

4.7.8.1 Existing conditions (Alternative 1) that affect public services and utilities

Impacts of the Hydraulic Code Rules on public services and utilities would remain the same as under current conditions.

4.7.8.2 Provisions of Alternative 2 that affect public services and utilities

A new WAC section has additional construction provisions for job site access, equipment use, sediment and erosion control to reduce impacts to sensitive areas and water quality. New provisions for construction materials and work area isolation reduce impacts to water quality. The new work area isolation and fish removal provisions also protect fish from entrainment, stranding, and handling.

Marinas and terminals in freshwater areas:

- Require designs to avoid impacts to fish spawning areas and juvenile salmon migration corridors, rearing, and feeding areas. This reduces risk of altering the light regime and migration patterns.
- Require new facilities to avoid and minimize impacts to aquatic vegetation.
- Require facilities to be located in areas that will reduce impacts to fish life, where possible. This reduces the risk of impacts from modifying aquatic vegetation, altering migration patterns, disturbing substrate, and altering stream morphology and sediment movement and delivery.
- Pile driving provisions reduce the risk of impacts from elevated sound levels.

- New provisions for removing treated wood piling reduce risk from water quality modification.

Water diversions and intakes:

- Minimize impacts by requiring screening of all diversions to prevent fish entry.
- Minimize impacts by requiring that all upstream and downstream passage be maintained at points of diversion.

Outfalls in freshwater areas:

- Recommend use of flow spreaders in buffer area rather than outfall in stream.
- Design must prevent fish entrainment.
- More robust design requirements will minimize impacts to habitat.
- Construction methods and material requirements will minimize impacts to fish and habitat.

Utility crossings in freshwater areas:

- Recommend use of less invasive techniques such as directional drilling and punch and bore drilling below scour potential of streambed.
- Locate crossings in stable areas (no meanders, no active floodplain) minimizes risk of erosion and damage to facility.
- Locate crossings outside of spawning areas.

Outfall and tide and flood gate structures in saltwater areas:

- Location of outfalls and energy dissipaters must not cause the loss of fish/shellfish habitat.
- More robust design requirements will minimize impacts to habitat .
- Construction methods and material requirements will minimize impacts to fish and habitat.

Boring in saltwater areas:

- Require construction methods and material that minimize turbidity.
- All boreholes must be sealed following construction.

Utility lines in saltwater areas:

- Construction methods and materials must minimize impacts to aquatic life and habitat.
- Lines must be located outside of saltwater habitats of special concern (e.g., forage fish spawning habitat).
- Lines must be placed during approved work windows.

4.7.8.3 Provisions of Alternative 3 that affect public services and utilities

- A tee diffusor outfall would be the only design method authorized in low flow situations.
- Require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings.
- All fish passage improvement structures would be temporary and a timeframe would be established in rule for a permanent solution to be implemented.

4.7.8.4 Provisions of Alternative 4 that affect public services and utilities

- Remove the limit on the number of sites covered in a multi-site HPA.

- Do not require compensatory mitigation for routine maintenance, repair, rehabilitation or replacement of the structure even if new impacts to fish life occurred as a result of the work.
- Eliminate need for HPA every 5 years for annual removal and reinstallation of docks to prevent storm and ice damage.
- Roughened channel would be a temporary fish passage improvement solution used only in extreme circumstances with a valid reason why a more reliable fish passage method (e.g. stream simulation or bridge) cannot be used.

Table 4-9 Comparison of Impacts of the Alternatives to the Built Environment

Element Impacted	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Built Environment	No change in risk	Some reductions in risk; Some increased risks	Increase in risk	Reduction in risk

4.7.9 Mitigation for impacts to the built environment

HPA application procedures have been streamlined, which will partially offset any increased design and construction time needed to comply with new rules and new work windows. Additionally, including detailed regulations in the proposed new rules instead of relying on site-by-site provisions to protect fish would help assure developers that certain uses will be allowed and will minimize the need to revise designs during the permitting process.

4.7.9.1 Mitigating Alternative 1 – No Action Alternative

The existing Hydraulic Code Rules contain provisions to protect fish life, or minimize risk of impact to fish life, during hydraulic project construction. Many of these measures also protect the built environment. New science and technology offer us new ways to minimize or avoid impacts. Under Alternative 1, no proposed rule changes would be adopted and the rules would remain inconsistent with newer science and design technology.

Under the current Hydraulic Code Rules, many protections for fish are included as site-by-site provisions for specific projects. This leads to uncertainty for applicants. Additionally, inefficient procedures for HPAs can lead to lengthy review times that delay projects. Though few uses are completely prohibited, complying with specific Hydraulic Code Rules in design and construction add time and cost to projects. Under Alternative 1, these impacts would remain the same as under existing conditions.

4.7.9.2 Mitigating Alternative 2 – WDFW-Proposed Rule Changes

The proposed changes to the Hydraulic Code Rules in Alternative 2 would increase the cost of compliance for applicants. The stricter design standards will likely increase the cost of constructing some hydraulic projects; for example, provisions for mooring buoys limit the type of materials that can be used for the buoys (WAC 220-110-150). Added Best Management Practices, new requirements for

maintenance and repair of in-water structures, and changes in work windows will also increase the cost of some projects.

Property owners could experience higher long-term costs from the Hydraulic Code Rule changes if they are not able to develop their property as expected. This is true of Alternative 1 as well, but as some areas of the proposed rule changes are stricter than the existing rules, there is a greater potential for property owners to experience higher development costs.

Overall, Alternative 2 would reduce the risk of negative impacts to the built environment, as compared to Alternative 1. This is because Preferred Alternative includes provisions that minimize impacts to the built environment during construction, and provide flexibility for project-specific conditions instead of the current one-size-fits-all approach. Changes in the type, magnitude, or distribution of effects on the built environment would be expected based on proposed provisions in Alternative 2. Future outcomes are expected to be better than those under the no-action alternative. No mitigation is offered to offset negative effects to the built environment.

4.7.9.3 Mitigating Alternative 3

Provisions of Alternative 3 generally increase the risk of impacts to the built environment. No mitigation is offered to offset these effects.

4.7.9.4 Mitigating Alternative 4

Provisions of Alternative 4 generally decrease the risk of impacts to the built environment.

4.8 Economic Issues

Social and economic issues are evaluated in detail in the separate Small Business Economic Impact Statement (SBEIS) document. RCW 19.85.030 (Agency rules – Small business economic impact statement – Reduction of costs imposed by rule) requires that an SBEIS be prepared when any rule change imposes more than minor costs on businesses in an industry. The SBEIS compares the cost of compliance for a small business with the cost of compliance for large businesses on a cost per employee, hour of labor, or one hundred dollars of sales basis. The SBEIS also includes a list of industries that will need to comply with the rule, and an estimate of the number of jobs created or lost as a result of the rule.

4.9 Cumulative Impacts

The State Environmental Policy Act (SEPA) does not define cumulative impacts; however, the National Environmental Policy Act (NEPA) defines them as "the effects that may result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions" (40 CFR 1508.7). This definition is generally accepted and used as a guideline by lead agencies to define cumulative impacts under SEPA. An impact can be considered cumulative if: a) effects of several actions occur in the same locale; b) effects on a particular resource are similar in nature; and c) effects are long-term in nature. Based on those three criteria, construction of individual hydraulic projects could result in adverse cumulative impacts to the aquatic environment. Hydraulic projects are often concentrated in

one area, the effects of many hydraulic projects are similar in nature, and they have the potential to result in long-term impacts.

Past development has significantly altered the aquatic environment throughout the State of Washington. This development is considered a major factor contributing to the decline of fish and aquatic species and their habitat. The decline of aquatic habitat conditions has been well documented, especially in the Puget Sound area. For example, the Puget Sound Nearshore Ecosystem Restoration Project documented historic changes to the shoreline and found that very few areas were unchanged and that the "vast majority of changes are due to human alterations" (Simenstad et al., 2011). While many of the alterations to the aquatic environment predate regulations, including the Hydraulic Code Rules, development in the aquatic environment is on-going. On-going and future development would exacerbate these past impacts to aquatic habitat.

WDFW has developed the proposed changes to the Hydraulic Code Rules in order to incorporate current knowledge about fish science and design technology for hydraulic projects. The improved design requirements and specific mitigation measures included in the proposed changes are intended to decrease the impacts associated with individual hydraulic projects. WDFW is also working with other agencies and entities throughout the state to restore aquatic habitat that has been affected by past development.

This Programmatic EIS evaluates the general impacts of changes to the Hydraulic Code Rules. It is the first step in a phased review of hydraulic projects. Potential impacts of individual hydraulic projects would be evaluated as they are proposed. WDFW would impose design and mitigation requirements for proposed projects to decrease potential impacts to the aquatic environment. As indicated in Chapter 4, the proposed rule changes are expected to result in improved or maintained conditions over the No Action Alternative. Examples of these regulations are new design requirements for docks, boat ramps and marinas that will reduce the impacts to habitat; new work windows that will minimize the overlap of work with species presence; and requirements for construction methods and materials will minimize impacts to fish and habitat.

In addition to the requirement that hydraulic projects meet the Hydraulic Code Rules, most hydraulic projects undergo additional environmental review and compliance with the requirements of local critical areas ordinances and Shoreline Management Programs, as well as federal requirements of Corps of Engineers Sections 10 and 404 of the Clean Water Act permitting and Section 7 consultation under the Endangered Species Act. These additional regulations may help further minimize and mitigate the impacts of individual projects.

While the improved design requirements and specific mitigation measures in the proposed Hydraulic Code Rules are intended to decrease the impacts associated with individual hydraulic projects, cumulative impacts will continue to occur as the number of projects constructed increases. Even with implementation of the revised Hydraulic Code Rules, there will continue to be shoreline modifications and other changes that will cause loss of habitat. However, it is important to note that the cumulative impacts of the new regulations will be to reduce overall habitat losses.

Chapter 5 Supplemental Programmatic EIS References

Following are references cited within this EIS document. Each reference is categorized for its level of peer review pursuant to Substitute House Bill 2661, which passed the Washington Legislature in 2014. A key to the review categories under SHB 2661 is provided following the reference list.

Barnard, R. J., J. Johnson, P. Brooks, K. M. Bates, B. Heiner, J. P. Klavas, D.C. Ponder, P.D. Smith, and P. D. Powers (2013), Water Crossings Design Guidelines, Washington Department of Fish and Wildlife, Olympia, Washington. ii

Bates, K. 1997. Fishway Design Guidelines for Pacific Salmon. Washington Department of Fish and Wildlife. Washington Department of Fish and Wildlife - Lands and Restoration Services Program. Olympia, Washington. ii

Beamer, E. and K. Fresh. 2012. Juvenile Salmon and Forage Fish Presence and Abundance in Shoreline Habitats of the San Juan Islands, 2008-2009: Map Applications for Selected Fish Species. Prepared for San Juan County Department of Community Development and Planning and San Juan County Marine Resources Committee, Friday Harbor, Washington, dated December 2012. iv

Bilby, R. E. 1988. Interactions between aquatic and terrestrial systems. Pages 13-43 in K. J. Raedeke, editor. Streamside Management: Riparian Wildlife and Forestry Interactions. Institute of Forest Resources Contribution No. 59 Seattle: University of Washington. viii

Bisson, P. A., Bilby, R. E., Bryant, M. D., Dolloff, C. A., Grette, G. B., House, R. A., Murphy, M. L., Koski, K. V., and Sedell, J. R. 1987. Large Woody Debris in Forested Streams in the Pacific Northwest: Past, Present and Future. Pages 143-190 in E. O. Salo and T. W. Cundy, editors. Streamside Management: Forestry and Fisheries Interactions. Institute of Forest Resources Contribution No. 57 Seattle: University of Washington. viii

Bolton, S. and J. Shellberg. 2001. Ecological issues in floodplains and riparian corridors. Submitted to Washington Department of Fish and Wildlife Washington Department of Ecology Washington Department of Transportation. viii

Brennan, J.S. 2007. Marine Riparian Vegetation Communities of Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-02. Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington. iv

Brennan, J.S., K.F. Higgins, J.R. Cordell, and V.A. Stamatiou. 2004. Juvenile Salmon Composition, Timing Distribution, and Diet in Marine Nearshore Waters of Central Puget Sound in 2001-2002. Seattle, Washington: King County Department of Natural Resources and Parks. iv

Brown, D. J., Hubert, W. A., and Anderson, S. H. 1996. Beaver ponds create wetland habitat for birds in mountains of southeastern Wyoming. Wetlands 16: 127-133. i

Carrasquero, J. Over-Water Structures: Freshwater Issues. White Paper. 2001. Herrera iv

Environmental Consultants. Prepared for: Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of Transportation. April 12.

Climate Impacts Group. 2009. Evaluating Washington's Future in a Changing Climate. The University of Washington. June 2009. viii

Cramer, M., K. Bates, D. Miller, K. Boyd, L. Fotherby, P. Skidmore, and T. Hoitsma. 2003. Integrated Streambank Protection Guidelines. Co-published by the Washington departments of Fish & Wildlife, Ecology, and Transportation. Olympia, Washington. 435 pp. iv

Dahl, T.E. 1990. Wetland Losses in the United States 1780's to 1980's. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service. viii

Druehl, L.D. 1969. The northeast Pacific rim distribution of the Laminariales. Proceedings of the International Seaweed Symposium 6:161-170. viii

Environmental Protection Agency (EPA). 2013. Washington Water Quality Assessment Report. Available online at: http://ofmpub.epa.gov/waters10/attains_state.control?p_state=WA#total_assessed_waters. Accessed June 2013. viii

EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Working Group. 2010. Protecting Nearshore Habitat and Functions in Puget Sound: June 2010 Revised Edition. 122 pp. viii

Erickson, Ara and James Rinehart. 2005. Private Forest Landownership in Washington State. University of Washington College of Forest Resources. October 24, 2005. viii

Fresh, K. 2006. Juvenile Pacific Salmon and the Nearshore Ecosystem of Puget Sound. Seattle: Puget Sound Nearshore Ecosystem Restoration Program. viii

Fresh, K. and D. Averill. 2005. Salmon in the Nearshore and Marine Waters of Puget Sound. Draft February 2005. Submitted as part of the Regional Nearshore and Marine Aspects of Salmon Recovery in Puget Sound that was delivered to Shared Strategy for inclusion in their regional salmon recovery plan. June 28, 2005. viii

Fresh, K., D. Small, H. Kim, C. Waldbillig, M. Mizell, M. Carr and L Stamatiou. 2006. Juvenile Salmon Use of Sinclair Inlet, Washington in 2001 and 2002. Washington Department of Fish and Wildlife Technical Report No. FPT 05-08, Olympia, Washington. viii

Gurnell, A. M. 1998. The hydrogeomorphological effects of beaver dam-building activity. Progress in Physical Geography 22: 167-189. i

Hamlet, A., D. Fluharty, D. Lettenmaier, N. Mantua, E. Miles, P. Mote, L. Whitley Binder. 2001. Effects of Climate Change on Water Resources in the Pacific Northwest: Impacts and Policy Implications. JISAO Climate Impacts Group, University of Washington. July 3, 2001. viii

Herrera Environmental Consultants, Inc. 2006. Simonson Place Boat Ramp and Stormwater Outfall Replacement Project: Coastal Processes Assessment. Seattle, Washington: viii

Island County Public Works.

Herrera Environmental Consultants, Inc. 2007. Channel Modifications White Paper. Prepared by Herrera Environmental Consultants, Inc., Seattle, Washington, for the Washington Department of Fish and Wildlife, Olympia, Washington. Draft, dated September 2007. viii

Herrera Environmental Consultants, Inc. 2009. Complied White Papers for Hydraulic Approval HCP. White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, March 2009. viii

Herrera Environmental Consultants, Inc. 2007. Fish Passage White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, November 2007. viii

Herrera Environmental Consultants, Inc. 2007. Fish Screens White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, November 2007. viii

Herrera Environmental Consultants, Inc. 2007. Flow Control Structures White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, September 2007. viii

Herrera Environmental Consultants, Inc. 2007. Habitat Modifications White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, August 2007. viii

Herrera Environmental Consultants, Inc. 2007. Marinas and Shipping/Ferry Terminals White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, June 2007. viii

Herrera Environmental Consultants, Inc. 2007. Shoreline Modifications White Paper. Prepared for Washington Department of Fish and Wildlife by Herrera Environmental Consultants, Inc., Seattle, Washington. Draft, July 2007. viii

Hipple, Karl W. 2013. Washington Soil Atlas. National Resource Conservation Service (NRCS) Washington. viii

Johnson, D.H. and T.A. O'Neil. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press. Corvallis, Oregon. vi

Jones, L. L. C., W. P. Leonard and D. H. Olson, eds. 2006. Amphibians of the Pacific Northwest. Seattle Audubon Society. Seattle, WA. viii

Jones and Stokes. 2006. Bank Protection/Stabilization White Paper. Prepared by Jones and Stokes Associates, in association with Anchor Environmental, L.L.C., and R2 Consultants for the Washington Department of Fish and Wildlife, Olympia, Washington. viii

Jones and Stokes. 2006. Overwater Structures and Non Structural Piling (White Paper). Prepared by Jones and Stokes Associates, in association with Anchor Environmental, viii

L.L.C., and R2 Consultants for the Washington Department of Fish and Wildlife, Olympia, Washington.

Jones and Stokes. 2006b. Water Crossings White Paper. Prepared by Jones and Stokes Associates, in association with Anchor Environmental, L.L.C., and R2 Consultants for the Washington Department of Fish and Wildlife, Olympia, Washington. viii

Kauffman, J.B., M. Mahrt, L.A. Mahrt, and W.D. Edge. 2001. Wildlife of riparian habitats. Chapter 14 (pages 361 – 388) in D.H. Johnson and T.A. O'Neil (eds.), Wildlife-Habitat Relationships in Oregon and Washington. Corvallis, OR: Oregon State University Press. viii

Knight, K. 2009. Land Use Planning for Salmon, Steelhead and Trout. Washington Department of Fish and Wildlife. Olympia, Washington. iii

Knutson, K.L. and V.L. Naef. 1997. Management Recommendations for Washington's Priority Habitats: Riparian. Olympia, WA: Washington Department of Fish and Wildlife. Report. iii

Kondolf, G.M., M. Smeltzer, and L. Kimball. 2002. White Paper–Freshwater Gravel Mining and Dredging Issues. Berkeley, California: Prepared for Washington Department of Wildlife, Washington Department of Ecology, and Washington Department of Transportation. viii

Lance, M.M., S.A. Richardson and H.L. Allen. 2004. Washington state recovery plan for the sea otter. Washington Department of Fish and Wildlife, Olympia. 91 pp. iii

McCall, T. C., Hodgman, T. P., Diefenbach, D. R., and Owen, R. B. Jr. 1996. Beaver populations and their relation to wetland habitat and breeding waterfowl in Maine. Wetlands 16: 163-172. i

Mumford, T.F. 2007. Kelp and Eelgrass in Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-05. Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington. vi

Naiman, R.J., J.M. Melillo, J.E. Hobbie. 1986. Ecosystem Alteration of Boreal Forest Streams by Beaver (Castor Canadensis) by:; Ecology, Vol. 67, No. 5. i

National Research Council. 2002. Riparian Areas: Functions and Strategies for Management. National Academy Press, Washington, D.C. 428 p. vi

Nelson, J.H. (Herrera Environmental Consultants) and K. Bates. 2000. Development of Guidelines for Salmonid Habitat Protection and Restoration. Washington Department of Fish and Wildlife. viii

Nightingale, B. and C. Simenstad. 2001a. Dredging Activities: Marine Issues. University of Washington. Prepared for the Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of Transportation. viii

Nightingale, B. and C. Simenstad. 2001b. Marine Overwater Structures: Marine Issues. University of Washington. Seattle, WA. Prepared for Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of viii

Transportation.

Nowak, R. 1999. Walker's Mammals of the World, vol. II. Baltimore and London: The Johns Hopkins University Press. viii

Poff, N.L., J.D. Allan, M.B. Bain, J.R. Karr, K.L. Prestegaard, B.D. Richter, R.E. Sparks, and J.L. Stromberg. 1997. The Natural Flow Regime. Bioscience 47(11): 769. i

Poston, T. 2001. Treated Wood Issues Associated with Overwater Structures in Marine and Freshwater Environments White Paper. Olympia, Washington: Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of Transportation. viii

R2 Resource Consultants. 2006. Small-Scale Mineral Prospecting White Paper. Prepared for Washington Department of Fish and Wildlife by R2 Resource Consultants, Redmond, Washington. December 2006. viii

Raedeke, K. J., Taber, R. D., and Paige, D. K. 1988. Ecology of large mammals in riparian systems of Pacific Northwest forests. Pages 113-132 in K. J. Raedeke, editor. Streamside Management: Riparian Wildlife and Forestry Interactions. Institute of Forest Resources, Contribution No. 59, University of Washington, Seattle, WA. viii

Reeves, R., B. Stewart, P. Clapham, J. Powell. 2002. National Audubon Society Guide to Marine Mammals of the World. New York: Alfred A. Knopf. viii

Seattle Audubon Society. 2013. Seattle Audubon's Guide to the Birds of Washington State. Available online at: http://www.birdweb.org/birdweb/ viii

Sheldon, D., T. Hruby, P. Johnson, K. Harper, A. McMillan, T. Granger, S. Stanley, and E. Stockdale. 2005. Wetlands in Washington State - Volume 1: A Synthesis of the Science. Washington State Department of Ecology. Publication #05-06-006. Olympia, WA. viii

Simenstad, C.A. et al. 2011. Historical Change of Puget Sound Shorelines: Puget Sound Nearshore Ecosystem Project Change Analysis. Puget Sound Nearshore Report No. 2011-01. Published by Washington Department of Fish and Wildlife, Olympia, Washington, and U.S. Army Corps of Engineers, Seattle, Washington. vi

United States Department of the Interior, United States Fish and Wildlife Service. 2001. Endangered and Threatened Wildlife and Plants; Proposed Rule To List the Dolly Varden as Threatened in Washington Due to Similarity of Appearance to Bull Trout. 66 Federal Register 1628. v

Washington Department of Fish and Wildlife (WDFW). 1998. Management Recommendations for Washington’s Priority Habitats: Riparian, Executive Summary. ii

Washington Department of Fish and Wildlife (WDFW). 2001. Washington State Fishing Guide. viii

Washington Department of Fish and Wildlife (WDFW). 2013. Priority Habitats and Species List. iii

Washington State Department of Ecology (Ecology). 2012. Water Quality Standards for Surface Waters of the State of Washington; Chapter 173-201A WAC. Publication No. 06-10-091. 171 pp. v

Washington State Department of Ecology (Ecology). 2013. Inventory of Dams in the State of Washington. Ecology Water Resources Program - Dam Safety Office. June 2013. Publication #94-16. viii

Washington State Department of Ecology (Ecology) and the National Oceanic and Atmospheric Administration (NOAA). 2001. Managing Washington's Coast, Washington's Coastal Zone Management Program. Publication 00-06-029. Feb. 2001. v

Washington State Department of Transportation. 2014. WSDOT web site regarding fish passage at http://www.wsdot.wa.gov/Environment/Biology/FP/fishpassage.htm Accessed June 27, 2014. v

Key to SHB 2661 Categories Relating to Level of Peer Review:

Category Code	SHB 2661 Section 1(c)
i	(i) Independent peer review: Review is overseen by an independent third party
ii	(ii) Internal peer review: Review by staff internal to the department of fish and wildlife;
iii	(iii) External peer review: Review by persons that are external to and selected by the department of fish and wildlife;
iv	(iv) Open review: Documented open public review process that is not limited to invited organizations or individuals;
v	(v) Legal and policy document: Documents related to the legal framework for the significant agency action including but not limited to: (A) Federal and state statutes; (B) Court and hearings board decisions; (C) Federal and state administrative rules and regulations; and (D) Policy and regulatory documents adopted by local governments;
vi	(vi) Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under the processes described in (c)(i), (ii), (iii), and (iv) of this subsection;
vii	(vii) Records of the best professional judgment of department of fish and wildlife employees or other individuals; or
viii	(viii) Other: Sources of information that do not fit into one of the categories identified in this subsection (1)(c).

Appendix A

COMMENTS RECEIVED ON DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT AND VERSION 4 PROPOSED HPA RULES

Appendix A Comments Received

An agency may prepare a Supplemental EIS to address new alternatives, new areas of likely significant adverse impact, or to add analysis to areas not adequately addressed in the original EIS (WAC 197-11-405(4)). A Supplemental Draft EIS does not typically include a formal response to comments that were received on the previous Draft EIS. Responses to comments received on both the Draft EIS and the Supplemental Draft EIS will be included in the Final Programmatic EIS.

Comments on September 2013 ("Version 4") Draft HPA Rules

The Final Programmatic Environmental Impact Statement will contain comments and responses about the September 2013 ("Version 4") Draft HPA rule changes.

Comments on Draft Programmatic EIS and WDFW Responses

The Final Programmatic Environmental Impact Statement will contain comments and responses about the draft programmatic environmental impact statement released for public review in September 2013.

Appendix B

SPECIES LISTED UNDER THE STATE AND FEDERAL ENDANGERED SPECIES ACTS

Appendix B Species Listed under State or Federal ESA

Table B-1 lists the federally threatened or endangered wildlife species and those that are considered "species of concern" by WDFW, which includes those species listed as State Endangered, State Threatened, State Sensitive, or State Candidate. This table does not include those species designated as State Monitor that have no federal status.

Table B-1. Listed Wildlife Species and Species of Concern

Common Name	Scientific Name	State Status	Federal Status
Marine Mammals			
Fin whale	*Baleonoptera physalus*	SE	FE
Gray whale	*Eschrichtius robustus*	SS	none
Humpback whale	*Megaptera novaeangliae*	SE	FE
Killer whale	*Orcinus orca*	SE	FE
North Pacific Right Whale	*Eubalaena japonica*	SE	FE
Pacific harbor porpoise	*Phocoena phocoena*	SC	none
Sea otter	*Enhydra lutris*	SE	FCo
Sei whale	*Baleonoptera borealis*	SE	FE
Sperm whale	*Physeter macrocephalus*	SE	FE
Steller sea lion	*Eumetopias jubatus*	ST	FT
Land Mammals			
Black-tailed jackrabbit	*Lepus californicus*	SC	none
Blue whale	*Baleonoptera musculus*	SE	FE
Cascade red fox	*Vulpes vulpes cascadensis*	SC	none
Columbian white-tailed deer	*Odocoileus virginianus leucurus*	SE	FE
Annual Report			
Fisher	*Martes pennanti*	SE	FC
Gray wolf	*Canis lupus*	SE	FE
Gray-tailed vole	*Microtus canicaudus*	SC	none
Grizzly bear	*Ursus arctos*	SE	FT
Keen's myotis	*Myotis keenii*	SC	none
Lynx	*Lynx canadensis*	ST	FT
Mazama (Western) pocket gopher	*Thomomys mazama*	ST	FC
Olympic marmot	*Marmota olympus*	SC	none
Preble's shrew	*Sorex preblei*	SC	FCo
Pygmy rabbit	*Brachylagus idahoensis*	SE	FE
Tacoma pocket gopher - Mazama	*Thomomys mazama tacomensis*	ST	FC
Townsend's big-eared bat	*Corynorhinus townsendii*	SC	FCo
Townsend's ground squirrel	*Urocitellus townsendii townsendii*	SC	FCo
Washington ground squirrel	*Urocitellus washingtoni*	SC	FC
Western gray squirrel	*Sciurus griseus*	ST	FCo
White-tailed jackrabbit	*Lepus townsendii*	SC	none
Wolverine	*Gulo gulo*	SC	FC
Woodland caribou	*Rangifer tarandus*	SE	FE
Amphibian			
Cascade torrent salamander	*Rhyacotriton cascadae*	SC	none
Columbia spotted frog	*Rana luteiventris*	SC	none
Dunn's salamander	*Plethodon dunni*	SC	none
Larch Mountain salamander	*Plethodon larselli*	SS	FCo
Northern leopard frog	*Rana pipiens*	SE	FCo
Oregon spotted frog	*Rana pretiosa*	SE	FC

Common Name	Scientific Name	State Status	Federal Status
Rocky Mountain Tailed Frog	*Ascaphus montanus*	SC	FCo
Van Dyke's salamander	*Plethodon vandykei*	SC	FCo
Western toad	*Anaxyrus boreas*	SC	FCo
Reptile			
California mountain kingsnake	*Lampropeltis zonata*	SC	none
Green sea turtle	*Chelonia mydas*	ST	FT
Leatherback sea turtle	*Dermochelys coriacea*	SE	FE
Loggerhead sea turtle	*Caretta caretta*	ST	FE
Sagebrush lizard	*Sceloporus graciosus*	SC	FCo
Sharptail snake	*Contia tenuis*	SC	FCo
Striped whipsnake	*Masticophis taeniatus*	SC	none
Western pond turtle	*Actinemys marmorata*	SE	FCo
Birds			
American white pelican	*Pelecanus erythrorhynchos*	SE	none
Bald eagle	*Haliaeetus leucocephalus*	SS	FCo
Black swift	*Cypseloides niger*	SM	FCo
Black-backed woodpecker	*Picoides arcticus*	SC	none
Brandt's cormorant	*Phalacrocorax penicillatus*	SC	none
Brown pelican	*Pelecanus occidentalis*	SE	FCo
Burrowing owl	*Athene cunicularia*	SC	FCo
Cassin's auklet	*Ptychoramphus aleuticus*	SC	FCo
Clark's grebe	*Aechmophorus clarkii*	SC	none
Columbian Sharp-tailed Grouse	*Tympanuchus phasianellus*	ST	FCo
Common loon	*Gavia immer*	SS	none
Common murre	*Uria aalge*	SC	none
Ferruginous hawk	*Buteo regalis*	ST	FCo
Flammulated owl	*Otus flammeolus*	SC	none
Golden eagle	*Aquila chrysaetos*	SC	none
Greater Sage-grouse	*Centrocercus urophasianus*	ST	FC
Lewis' woodpecker	*Melanerpes lewis*	SC	none
Loggerhead shrike	*Lanius ludovicianus*	SC	FCo
Marbled murrelet	*Brachyramphus marmoratus*	ST	FT
Northern goshawk	*Accipiter gentilis*	SC	FCo
Northern Spotted Owl	*Strix occidentalis*	SE	FT
Oregon vesper sparrow	*Pooecetes gramineus affinis*	SC	FCo
Peregrine falcon	*Falco peregrinus*	SS	FCo
Pileated woodpecker	*Dryocopus pileatus*	SC	none
Purple martin	*Progne subis*	SC	none
Sage sparrow	*Amphispiza belli*	SC	none
Sage thrasher	*Oreoscoptes montanus*	SC	none
Sandhill crane	*Grus canadensis*	SE	none
Short-tailed albatross	*Diomedea albatrus*	SC	FE
Slender-billed white-breasted nuthatch	*Sitta carolinensis aculeata*	SC	FCo
Snowy plover	*Charadrius nivosus*	SE	FT
Streaked horned lark	*Eremophila alpestris strigata*	SE	FC
Tufted puffin	*Fratercula cirrhata*	SC	FCo
Upland sandpiper	*Bartramia longicauda*	SE	none
Vaux's swift	*Chaetura vauxi*	SC	none
Western grebe	*Aechmophorus occidentalis*	SC	none
White-headed woodpecker	*Picoides albolarvatus*	SC	none
Yellow-billed cuckoo	*Coccyzus americanus*	SC	FC
Mollusk			

Common Name	Scientific Name	State Status	Federal Status
Bluegray Taildropper	*Prophysaon coeruleum*	SC	none
California floater	*Anodonta californiensis*	SC	FCo
Columbia oregonian	*Cryptomastix hendersoni*	SC	none
Columbia pebblesnail	*Fluminicola columbiana*	SC	FCo
Dalle's Sideband	*Monadenia fidelis minor*	SC	none
Giant Columbia River limpet	*Fisherola nuttalli*	SC	none
Northern abalone	*Haliotis kamtschatkana*	SC	FCo
Olympia oyster	*Ostrea lurida*	SC	none
Poplar oregonian	*Cryptomastix populi*	SC	none
Butterfly or Moth			
Chinquapin hairstreak	*Habrodais grunus herri*	SC	none
Great arctic	*Oeneis nevadensis gigas*	SC	FCo
Johnson's hairstreak	*Mitoura johnsoni*	SC	none
Juniper hairstreak	*Mitoura grynea barryi*	SC	none
Makah copper	*Lycaena mariposa charlottensis*	SC	FCo
Mardon skipper	*Polites mardon*	SE	FC
Oregon silverspot butterfly	*Speyeria zerene hippolyta*	SE	FT
Puget blue	*Plebejus icarioides blackmorei*	SC	none
Sand-verbena moth	*Copablepharon fuscum*	SC	none
Shepard's parnassian	*Parnassius clodius shepardi*	SC	none
Taylor's checkerspot	*Euphydryas editha taylori*	SE	FC
Valley silverspot	*Speyeria zerene bremnerii*	SC	FCo
Yuma skipper	*Ochlodes yuma*	SC	none
Other Insect			
Beller's ground beetle	*Agonum belleri*	SC	FCo
Bog idol leaf beetle	*Donacia idola*	SC	none
Columbia clubtail (dragonfly)	*Gomphus lynnae*	SC	FCo
Columbia River tiger beetle	*Cicindela columbica*	SC	none
Hatch's click beetle	*Eanus hatchi*	SC	FCo
Island Marble	*Euchloe ausonides*	SC	FCo
Mann's Mollusk-eating Ground Beetle	*Scaphinotus mannii*	SC	none
Pacific clubtail	*Gomphus kurilis*	SC	none
Silver-bordered fritillary	*Boloria selene atrocostalis*	SC	none

State Endangered (SE), State Threatened (ST), State Candidate (SC), State Sensitive (SS), State Monitor (SM)
Federal Endangered (FE), Proposed Endangered (FPE), Threatened (FT), Proposed Threatened (FPT), Candidate (FC), or Species of Concern (FSC).

Table B-2 lists the federally threatened or endangered fish species. and those that are considered "species of concern" by WDFW, which includes those species listed as State Endangered, State Threatened, State Sensitive, or State Candidate. This table also includes some species designated as State Monitor that have no federal status.

Table B-2. Listed Fish Species and Species of Concern with Status of Critical Habitat Designation

Common Name (ESU/DPS)	Scientific Name	State Status	Federal Status	Designated Critical Habitat
Bull trout	*Salvelinus confluentus*	SC	FT	Designated
Chinook salmon (Lower Columbia)	*Oncorhynchus tshawytscha*	SC	FT	Designated
Chinook salmon (Puget Sound)	*Oncorhynchus tshawytscha*	SC	FT	Designated
Chinook salmon (Snake R. Fall)	*Oncorhynchus tshawytscha*	SC	FT	Designated
Chinook salmon (Snake R. Sp/Su)	*Oncorhynchus tshawytscha*	SC	FT	Designated
Chinook salmon (Upper Columbia Sp)	*Oncorhynchus tshawytscha*	SC	FE	Designated
Chinook salmon (Upper Willamette)	*Oncorhynchus tshawytscha*	SC	FT	Designated
Chum salmon (Hood Canal Su)	*Oncorhynchus keta*	SC	FT	Designated
Chum salmon (Lower Columbia)	*Oncorhynchus keta*	SC	FT	Designated
Coho salmon (Lower Columbia)	*Oncorhynchus kisutch*	none	FT	Proposed
Coastal cutthroat trout (SW WA)	*Oncorhynchus clarki clarki*	none	Fco	none
Sockeye salmon (Ozette Lake)	*Oncorhynchus nerka*	SC	FT	Designated
Sockeye salmon (Snake R.)	*Oncorhynchus nerka*	SC	FE	Designated
Steelhead (Lower Columbia)	*Oncorhynchus mykiss*	SC	FT	Designated
Steelhead (Middle Columbia)	*Oncorhynchus mykiss*	SC	FT	Designated
Steelhead (Puget Sound)	*Oncorhynchus mykiss*	none	FT	Proposed
Steelhead (Snake River)	*Oncorhynchus mykiss*	SC	FT	Designated
Steelhead (Upper Columbia)	*Oncorhynchus mykiss*	SC	FT	Designated
Steelhead (Upper Willamette)	*Oncorhynchus mykiss*	SC	FT	Designated
Black rockfish	*Sebastes melanops*	SC	none	none
Bocaccio rockfish	*Sebastes paucispinis*	SC	FE	none
Brown rockfish	*Sebastes auriculatus*	SC	FCo	none
Borcaccio rockfish	*Sebastes paucispinis*		FE	Proposed
Canary rockfish	*Sebastes pinniger*	SC	FT	Proposed
China rockfish	*Sebastes nebulosus*	SC	none	none
Copper rockfish	*Sebastes caurinus*	SC	FCo	none
Eulachon	*Thaleichthys pacificus*	SC	FT	Designated
Green sturgeon	*Acipenser medirostris*	none	FT	Designated
Greenstriped rockfish	*Sebastes elongatus*	SC	none	none
Kokanee (Lk Sammamish)	*Oncorhynchus nerka*	none	FC	none
Lake chub	*Couesius plumbeus*	SC	none	none
Leopard dace	*Rhinichthys falcatus*	SC	none	none
Margined sculpin	*Cottus marginatus*	SS	FCo	none
Mountain sucker	*Catostomus platyrhynchus*	SC	none	none
Olympic mudminnow	*Novumbra hubbsi*	SS	none	none
Pacific cod (S&C Puget Sound)	*Gadus macrocephalus*	SC	FCo	none
Pacific hake (Pacific-Georgia Basin DPS)	*Merluccius productus*	SC	FCo	none
Pacific herring	*Clupea pallasi*	SC	FCo	none
Pacific Lamprey	*Entosphenus tridentatus*	SM	FCo	none
Paiute sculpin	*Cottus beldingi*	SM	none	none
Pygmy whitefish	*Prosopium coulteri*	SS	FCo	none
Quillback rockfish	*Sebastes maliger*	SC	FCo	none
Redstripe rockfish	*Sebastes proriger*	SC	none	none
Reticulate sculpin	*Cottus perplexus*	SM	none	none

Common Name (ESU/DPS)	Scientific Name	State Status	Federal Status	Designated Critical Habitat
River lamprey	*Lampetra ayresi*	SC	FCo	none
Salish sucker	*Catostomus catostomas*	SM	none	none
Sand roller	*Percopsis transmontana*	SM	none	none
Slimy sculpin	*Cottus cognatus*	SM	none	none
Tiger rockfish	*Sebastes nigrocinctus*	SC	none	none
Umatilla dace	*Rhinichthys umatilla*	SC	none	none
Walleye pollock (So. Puget Sound)	*Theragra chalcogramma*	SC	FCo	none
Widow rockfish	*Sebastes entomelas*	SC	none	none
Yelloweye rockfish	*Sebastes ruberrimus*	SC	FT	Proposed
Yellowtail rockfish	*Sebastes flavidus*	SC	none	none

State Endangered (SE), State Threatened (ST), State Candidate (SC), State Sensitive (SS), State Monitor (SM)
Federal Endangered (FE), Proposed Endangered (FPE), Threatened (FT), Proposed Threatened (FPT), Candidate (FC), or Species of Concern (FSC).

Section 5

How Proposed Rules Improve Fish Life Protection

Note: This table describes how the proposed hydraulic code changes will improve fish life protection when compared to the existing hydraulic code

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
Definitions E 220-110-020 P 220-660-030	*Not Applicable*	**Reduces the risk of impacts** *The new and amended definitions clarify the intent of the terms as they relate to the rules. Improved understanding of the terms may lead to improved compliance with the rules.*
Procedures E 220-110-030 E 220-110-031 P 220-660-050	*Not Applicable*	**No change to risk of impacts** *The time saved on processing applications for the low-risk project types authorized in general HPAs and "model HPAs" is spent on higher risk projects. Other changes to the procedures implement changes to the statute.*
Mitigation requirements for hydraulic projects E New Section P 220-660-080	*Not Applicable*	**No change to risk of impacts.** *The new WAC section clarifies how the department determines mitigation requirements to protect fish life. "Protection of fish life" means avoiding and minimizing impacts to fish life and fish habitat through mitigation sequencing.*
Freshwater habitats of special concern E New section P 220-660-100	*Not Applicable*	**Reduces risk of impacts** *New WAC section identifies habitats that serve essential functions for twenty-two freshwater fish species. The presence of these habitats may restrict hydraulic project type, design, location, and timing.*
Authorized work times in freshwater areas E New section P 220-660-110	*Not Applicable*	**Reduces risk of impacts** *New WAC section describes the criteria the department will to authorize work to protect fish life during critical life stages.*
Common freshwater construction provisions E New section P 220-660-120	– *Aquatic vegetation modifications* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *New WAC section has additional construction provisions for job site access, equipment use, sediment and erosion control reduce impacts to sensitive areas and water quality. New provisions for construction materials and work area isolation reduce impacts to water quality. The new work area isolation and fish removal provisions also protect fish from entrainment, stranding and handling.*
Streambank protection and lake shoreline stabilization E 220-110-050 E 220-110-223 P 220-660-130	– *Aquatic vegetation modification* – *Alteration of fish migration patterns* – *Disturbance of streambank and lake shoreline* – *Direct loss of habitat* – *Disturbance of riparian vegetation*	**Reduces risk of impacts** *A new provision would require a professional's rationale to ensure new bank protection is designed with a less impacting technically feasible alternative.* *New provisions require designs to consider the*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
	– *Disturbance of substrate* – *Alteration of stream morphology* – *Alteration of sediment delivery and movement patterns* – *Water quality modifications*	*ecological and geomorphological processes. This reduces alteration of the stream morphology, sediment delivery and movement and disturbance of the substrate.* *New provisions restrict location of replacement structures once a new ordinary high water line has reestablished. This reduces alteration of the stream morphology.*
Residential and public recreational docks, piers, ramps, floats, watercraft lifts, and buoys in freshwater areas E 220-110-060 P 220-660-140	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *New provisions require designs to avoid and minimize impacts to freshwater habitats of special concern. This reduces the risk of impacts from alteration of the light regime, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *New pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*
Boat ramps and launches in freshwater areas E 220-110-224 P 220-660-150	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns*	**Reduces risk of impacts** *New provision requires locating ramps and launches to avoid direct loss of spawning habitat.* *New design provisions reduce the risk of alteration of light regime, migration patterns, stream morphology and sediment delivery and movement.*
Marinas and terminals in freshwater areas E New section P 220-660-160	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces risk of impacts** *This new WAC section requires designs to avoid impacts to fish spawning areas and juvenile salmon migration corridors, rearing and feeding areas. This reduces risk of alteration of the light regime and migration patterns.* *A provision requires new facilities to avoid and minimize impacts to aquatic vegetation.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
		Several provisions require the location of facilities in areas that will reduce impacts to fish life, where possible. This reduces the risk of impacts from aquatic vegetation modifications, alteration of migration patterns, disturbance of substrate, and alteration of stream morphology and sediment movement and delivery. *Pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*
Dredging in freshwater areas E 220-110-130 P 220-660-170	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**Reduces risk of impacts** *A new provision requires a professional to conduct a pre-project channel survey to determine the potential channel changes from the project. This will reduce the risk of alteration to the stream morphology and sediment delivery and movement.*
Sand and gravel removal E 220-110-140 P 220-660-180	– *Alteration of light regime* – *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Entrainment, stranding and handling impacts to fish* – *Water quality modifications*	**No change to risk of impacts**
Water crossing structures E 220-110-070 P 220-660-190	– *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement*	**Reduces risk of impacts** *The WAC section is amended. Currently, water crossing designs must provide fish passage. The amended language requires water crossing designs to also protect the stream morphology, sediment delivery and movement, movement of wood and hydrologic patterns and prevent substrate disturbance.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
	– *Alteration to hydrologic patterns*	
Fish passage improvement structures E New section P 220-660-200	– *Alteration of light regime* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, standing and handling of fish*	**Reduces impacts to fish life** *This new WAC section includes provisions to ensure fish passage improvement structures (fish ladders, fish passage weirs, roughened channels, trap and haul operations and hydraulic design culverts) provide fish passage. This would reduce the risk of impacts to fish migration patterns and from the entrainment, stranding and handling of fish.*
Channel change/ realignment E 220-110-080 P 220-660-210	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Riparian vegetation modifications* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns*	**Reduces risk of impacts** *A new provision clarifies a channel change must provide better protection of fish life than the old channel. This would reduce the risk of direct loss of habitat.*
Large woody material placement, repositioning and removal in freshwater areas E 220-110-150 P 220-660-220	– *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns*	**No change to risk of impacts** *The department will still approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. Compensatory mitigation will be required if the removal of wood from the channel diminishes fish habitat function or value.*
Beaver dam management E New section P 220-660-230	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Alteration of beaver dams* – *Entrainment, stranding and handling of*	**Reduces risk of impacts** *New WAC section allows the removal, breaching, or modification of dams and the design and construction of beaver deceivers and pond water level control devices only when it is needed to protect property and infrastructure. This reduces the risk from potential impacts.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
	fish – *Water quality modifications*	
Pond construction E 220-110-180 P 220-660-240	– *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *The provision to require a water right is removed. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*
Water diversions and intakes E 220-110-190 P 220-660-250	– *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish*	**No change to risk of impacts** *The provision to require a water right is removed. This would not change the risk of impacts because it is the responsibility of Department of Ecology to enforce water rights.*
Outfall structures in freshwater areas E 220-110-170 P 220-660-260	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Alteration to stream morphology* – *Alteration to sediment delivery and movement patterns* – *Alteration to hydrologic patterns* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *No provisions are added to reflect statutory changes to the department's authority to regulate stormwater.*
Utility crossings in freshwater areas E 220-110-100 P 220-660-270	– *Aquatic vegetation modifications* – *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Alteration to sediment delivery and movement patterns*	**Reduces risk of Impacts** *New provisions are added for utility line design and directional drilling. This reduces the risk from potential impacts to aquatic vegetation, streambank or lake shorelines, bed substrate, and sediment delivery and movement patterns.*
Felling and yarding of timber E 220-110-160 P 220-660-280	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate*	**No change to risk of impacts** *Retains the current rule provisions.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
	– *Alteration to stream morphology* – *Alteration to sediment delivery and movement* – *Alteration to hydrologic patterns* – *Alteration of beaver dams* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	
Aquatic plant removal and control E 220-110-331 E220-110-332 E 220-110-333 E 220-110-334 E 220-110-335 E 220-110-336 E 220-110-337 E 220-110-338 P 220-660-290	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Direct loss of habitat* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *Retains the current rule provisions.*
Mineral prospecting E 220-110-200 E 220-110-201 E 220-110-202 E 220-110-206 P 220-660-300	– *Aquatic vegetation modifications* – *Alteration of fish migration patterns* – *Disturbance of streambank or lake shoreline* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**Reduces risk of impacts** *The changes to the work windows reduce the risk of impacts to spawning and incubating fish* **No change to risk of impacts** *The additional rules for small-scale mineral prospecting on ocean beaches will not affect the risk of impacts because the rules reflect the HPA provisions the department currently uses.*
Tidal reference areas E 220-110-240 P 220-660-310	*Not applicable*	**No change to risk of impacts** *Retains the current rule provisions.*
Saltwater habitats of special concern E 220-110-250 P 220-660-320	*Not applicable*	**Reduces risk of impacts** *The addition of Olympia oyster and nearshore processes to the section will reduce risk of impacts from shoreline modifications.* **No change to risk of impacts** *Removing rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*
Authorized work times in	*Not applicable*	**Reduces risk of impacts**

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
saltwater areas E 220-110-271 P 220-660-330		*Reducing the work times by two months will reduce risk to juvenile salmon. Adding work times to protect herring spawning beds in two new areas and adding work times to protect lingcod nursery and settlement areas will also reduce the risk of impacts from shoreline modifications.* **No change to risk of impacts** *Removing the work time to protect rock sole spawning beds will have no effect on risk because science gathered after 1994 show they are not obligate beach spawning fish.*
Intertidal forage fish spawning habitat surveys E New section P 220-660-340	*Not applicable*	**No change to risk of impacts** *The existing rules give permittees the option of doing surveys in project locations where spawning occurs for six months or longer. The new section just codifies the method*.
Seagrass and macroalgae habitat surveys E New section P 220-660-350	*Not applicable*	**Reduces risk of impacts** *New WAC section clarifies when an eelgrass/macroalgae habitat survey is required*. This reduces the risk to aquatic vegetation.
Common construction provisions for saltwater areas E 220-660-270 P 220-110-360	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – Water quality modifications	**Reduces risk of impacts** *New provisions added for equipment use, vessel operation, sediment and erosion control reduces impacts to sensitive areas and water quality. New provisions for construction materials reduce impacts to water quality.*
Bulkheads and other bank protection in saltwater areas E 220-110-280 P 220-660-370	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** *New provisions added for re-establishment landward of a breached bulkhead, a preference for the least impacting alternative, and a site assessment, alternatives analysis, and design rationale by a qualified professional reduce impacts from shoreline modifications.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas E 220-110-300 P 220-660-380	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces the risk of impacts** *New provisions require designs to avoid and minimize impacts to saltwater habitats of special concern. This reduces the risk of impacts from alteration of the light regime, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *New pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*
Boat ramps and launches in saltwater areas E New section P 220-660-390	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces the risk of impacts** *New WAC section lists design alternatives from the most preferred to the least. New section reduces direct loss of habitat, shoreline modification, aquatic vegetation modification and disturbance to substrate.*
Marinas and terminals in saltwater areas E 220-110-330 P 220-660-400	– *Direct loss of habitat* – *Shoreline modification* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Elevated underwater sound* – *Water quality modifications*	**Reduces risk of impacts** *This section is amended to include terminals.* *Several provisions require the location of facilities in areas that will reduce impacts to fish life, where possible. This reduces the risk of impacts from shoreline modification, alteration of light regimes, aquatic vegetation modifications, alteration of migration patterns, and disturbance of substrate.* *Pile driving provisions reduce the risk of impacts from elevated sound.* *New provisions for the removal of treated wood piling reduce risk from water quality modification.*
Dredging in saltwater areas E 220-110-320 P 220-660-410	– *Direct loss of habitat* – *Alteration of light regime* – *Alteration of fish migration patterns* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**Reduces risk of impacts** *New provision that requires hydrodynamic modeling will reduce risk from water quality modification.* *New provisions that require dredging to avoid converting intertidal to subtidal habitat reduce risk from direct loss of habitat.*

Regulated Hydraulic Projects Activity (WAC)	Potential Impacts to Fish Caused by Hydraulic Projects	Comparison of Proposed Hydraulic Code Fish Impacts to the Existing Hydraulic Code
Artificial aquatic habitat structures E New section P 220-660-420	– *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** *New WAC section specifies structures must provide a net benefit to fish.*
Outfall, tide and flood gate structures in saltwater areas E New section P 220-660-430	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Entrainment, stranding and handling of fish* – *Water quality modifications*	**No change to risk of impacts** *No provisions are added to reflect statutory changes to the department's authority to regulate stormwater.*
Utility lines in saltwater areas E 220-110-310 P 220-660-440	– *Direct loss of habitat* – *Shoreline modification* – *Aquatic vegetation modifications* – *Disturbance of substrate* – *Water quality modifications*	**Reduces risk of impacts** *The new provision requiring a eelgrass/macroalgae survey, if warranted, will reduce the risk of impacts to aquatic vegetation*
Test boring in saltwater areas E New section P 220-660-450	– *Aquatic vegetation modifications* – *Disturbance of substrate*	**Reduces risk of impacts** *New WAC section will reduce the risk of impacts to water quality.*

Section 6

Note: This Table without the staff responses is included in the Supplemental Draft Programmatic Environmental Impact Statement (Table 2-6). Alternative 1 is no changes to the existing rules; provisions of alternative 1 are not depicted on the Table. Alternative 3 and 4 are significant changes suggested by tribes and stakeholders which were not included in Alternative 2, Proposed Rule Changes. The reason for the decision not to include the change is in the staff response.

✱ Suggested changes would require an amendment to the statute.

WAC Title (E) Existing (P) Proposed	**Alternative 2 WDFW Proposed Rule Changes**	**Alternative 3 Increased Protection for the Natural Environment**	**Alternative 4 Increased Protection for the Built Environment**
Technical provisions E 220-110-040 E 220-110-230 P 220-660-090	Combines the introductions to the freshwater and saltwater technical provision sections into a single introduction section; no substantive changes to the existing language.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Purpose E 220-110-010 P 220-660-010	Purpose statement intent remains the same, but narrative is restated in a more concise manner.	Same as Alt. 2 (Minor or no comments)	Amends the language to limit HPA authority to projects waterward of the ordinary high water line. *Staff Response: This proposal would require a statutory revision because it reduces WDFW's current regulatory authority; eliminating protection of fish life above the OHWM therefore we are not recommending this proposal.*
Instructions for using chapter E New section P 220-660-020	Describes how an applicant would follow the common technical provisions for hydraulic projects and how the department uses the provisions to condition HPAs; also refers applicants to WDFW guidance documents for help.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Definitions E 220-110-020 P 220-660-030	Forty-six new definitions are added including the following: • The proposed definition of "Fish habitat" 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. • The definitions of freshwater area, saltwater area, and watercourse are amended to include surface water connected wetlands that provide or maintain fish habitat. • Definitions for maintenance, repair, rehabilitation and replacement are added. These terms are used in the mitigation section to clarify when compensatory mitigation is required or when work must comply with current standards. • Unimpeded fish passage is defined. "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.	Same as Alt. 2 (Minor or no comments)	Retains the Alternative 2 definitions except for the following changes: • Amend the definition of fish habitat to the following: "Fish habitat" means habitat, which is used by fish life at any life stage at any time of the year. *Staff Response: Alternative 2 does not expand WDFW authority because our jurisdiction is limited to regulating hydraulic projects. "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 freshwaters of the state.* • Remove "wetlands" from the definitions of "freshwater area", "saltwater area" and "watercourse". *Staff Response: The commenter recommended this change because local jurisdictions and the Army Corps of Engineers have regulatory authority for wetlands. However, local jurisdiction and Corps authority for wetland impacts do not address DFW's unique authority to protect fish life.* • Delete the definitions of maintenance, repair, rehabilitation and replacement and proposes all these activities should be considered maintenance. *Staff Response: This proposal would preclude the ability to develop appropriate mitigation for each of these activities.* • Delete unimpeded from the "unimpeded fish passage". *Staff Response: WDFW is working to secure unimpeded fish passage through implementation of SSB2251.*
Applicability of hydraulic	Outdated language transferring hydraulic code authority to DNR for forest	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
project approval authority E 220-110-035 P 220-660-040	practices hydraulic projects in non-fish waters is removed because of the integration of all hydraulic code authority in DNR forest practices. Portable boat hoists and scientific instruments are added to the list of exempt project types.		
Procedures E 220-110-030 E 220-110-031 P 220-660-050	Modifies current rules to reflect statutory and policy changes including: • Maintains ability to issue "general" or "simplified" HPAs for repair and maintenance projects because these are typically routine in nature and can be pre-conditioned, reserving limited resources for projects that pose higher risk to fish life. • Establishes procedures for applying for two new HPA types established by statute: fish habitat enhancement project (FHEP) and chronic danger HPAs. • Clarifies the procedures for applying for existing HPA types including standard, emergency, imminent danger, expedited, and pamphlet HPAs. Two new standard HPA types, "general HPAs" and "model HPAs" are proposed to streamline the permitting process for low risk hydraulic projects. • Limits multi-site HPAs to five sites, unless the department makes an exception, to ensure site visits can be conducted with the 45-day review period. • Delays issuing HPAs for a minimum of 7 days to allow the Tribes and other entities an opportunity to comment on complete HPA applications. • Allows subsequent minor modifications to an existing HPA permit provided the modifications do not adversely affect fish life. Clarifies how the department processes HPA applications.	Retains the Alternative 2 provisions except for the following changes: • Remove the ability to issue "general" or "model" HPAs due to concerns that the opportunity for a meaningful and useful individual project review is removed to achieve streamlining. *Staff Response: This proposal negates general permits as part of WDFW HPA authority. This proposal would create an unachievable workload of an additional ~2000 projects annually for repair and maintenance that WDFW deems lower risk to fish life. Model HPAs could be used for green projects or low risk projects such as construction of docks on small lakes that are stocked by the department. This negates this ability to develop the model HPA program.* • Delay issuing HPAs for a minimum of 20 days to allow the Tribes and other entities an opportunity to comment on the complete HPA application. *Staff Response: This proposal would delay issuing HPAs for 20 days, making the 45 day requirement difficult to attain.* • Provide Tribes an opportunity to comment on emergency, imminent danger, expedited, and HPAs with minor modifications before they are issued. ✱ *Staff Response: This is not achievable because the department must grant verbal approval immediately for emergency work. Imminent danger and expedited HPAs take precedence over nonemergency HPAs so they are issued within a few days of receiving the application. This proposal would require a statutory change. Biologists approve minor modifications to the work timing, plans, and specifications of the project. This does not require the biologist to reissue the HPA. Minor modifications request are often time sensitive such as request to extend the work window a couple of days.* • Allow one minor modification to an existing HPA permit, provided modifications do not adversely affect fish life. *Staff Response: The department must issue minor modifications long as the modifications do not adversely affect fish life or their habitats.* • Create a pamphlet for the removal of impacted fine grained sediments and sand from spawning gravel stream beds deposited there as a result of surface water runoff discharge into streams.✱ *Staff Response: This proposal would require a statutory change because the legislature must authorize the development of pamphlets HPAs.* • Eliminate the $150 application fee for restoration projects.✱ *Staff Response: WDFW received authorization for fees to fund the administration of the HPA program. The legislature did not exempt restoration projects from the fee. This proposal would require a statutory*	Retains the Alternative 2 provisions except for the following changes: • Remove the limit on the number of sites covered in a multi-site HPA. *Staff Response: Applications for multi-site permits often require a biologist to conduct a field review of each project site prior to issuing the permit so they can determine which site-specific provisions are required to protect fish life. The criterion in this provision is based on the department's opinion of what is practicable for a biologist to review within the 45 days review period.* • Add more flexibility on how an emergency, imminent danger or chronic danger is declared, and additional positions authorized to make these declarations to improve the efficiency and ease for government agencies to receive HPAs.✱ *Staff Response: This proposal would require a statutory change.*

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
		change. • Authorize additional types of fish habitat enhancement projects.✱ *Staff Response: This proposal would require a statutory change.*	
Integration of hydraulic projects approvals and forest practices applications E 220-110-085 P 220-660-060	Retains the existing section that was added in 2013 to implement SB 6406. The amendment required the integration of hydraulic code rule fish protection standards (Title 220 WAC) into the forest practices rules for hydraulic projects in fish-bearing waters on forest land. The rules stipulate how the department will work with DNR and the applicant.	Same as Alt. 2 (Minor or no comments)	The Alternative 2 language would be replaced by a new section that repeats the all of the rules applicable to forest practices. *Staff Response: The hydraulic code rules apply to all citizens of the state. This proposal would repeat several sections of rules for a targeted user group. DNR has integrated the current hydraulic code fish protection standards into the forest practices rule so modifying those standards to incorporate changes to the rules will be relatively straight forward.*
Changes to hydraulic project approval technical provisions E 220-110-032 P 220-660-070	Retains the 1994 rule language that allows the department to add, modify and delete technical provisions when certain criteria are demonstrated. Language is also added to allow the department to modify and delete technical provision that are not possible to comply with due to geological, engineering or environmental constraints or safety concerns;	Same as Alt. 2 (Minor or no comments)	Retains the Alternative 2 provisions except for the following change: • Remove this clause "loss of or injury to fish or shellfish, or the loss or permanent degradation of the habitat that supports the fish and shellfish populations" and replace it with "will be protective of fish life." *Staff Response: This language accurately reflects the requirement. This is the existing 1994 language. It is also the existing definition of "protection of fish life".*
Mitigation requirements for hydraulic projects E New Section P 220-660-080	Incorporates statutes and policies adopted since 1994 and includes the following: • Establishes the baseline for measuring impacts as the existing habitat condition. • Does not require compensatory mitigation for maintenance projects (routine, repair, rehabilitation, and replacement) unless the maintenance work caused a new impact not associated with the original work. • Requires design and construction of rehabilitation and replacement projects to comply with the proposed rules.	Retains the Alternative 2 provisions except for the following changes: • Require compensatory mitigation for cumulative impacts.✱ *Staff Response: This proposal requires compensatory mitigation for cumulative impacts which the department views as outside our authority.* • Require compensatory mitigation for maintaining or repairing a structure that currently diminishes habitat and/or perpetuates impacts into the future. *Staff Response: It would be difficult to determine future impacts. Instead the proposal is to have rehabilitated or replaced structures come into compliance with current fish protection rules.* • Require the same mitigation for rehabilitation or replacement of structurally deficient or functionally obsolete structures that is required for new structures (including mitigation).✱ *Staff Response: This proposal to mitigate for past practices rather than existing condition does not comply with statute which requires that conditions imposed on an HPA must be reasonably related to the project. The work is the proposed project.*	Retains the Alternative 2 provisions except for the following changes: • Do not require compensatory mitigation for routine maintenance, repair, rehabilitation, or replacement of the structure even if new impacts to fish life occurred as a result of the work. *Staff Response: This proposal ignores the intent of the hydraulic code which is to protect fish life from these impacts.* • Delete the provision "mitigation must compensate for temporal loss, uncertainty of performance, and differences in habitat functions, type, and value" because these values are difficult to quantify. *Staff Response: The department considers these factors when determining whether the proposed mitigation will compensate for unavoidable impacts to fish life.*
Freshwater habitats of special concern E New section P 220-660-100	Identifies freshwater habitats of special concern for priority fish species. This habitat requires protective measures for priority fish species due to their population status or sensitivity to habitat alteration.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Authorized work times in	Specifies the criteria the department will follow to determine when work should occur. The criteria include life history stages of fish life present, the	Retains the Alternative 2 provisions except the following: • All in-water work would be prohibited during times of the year when	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
freshwater areas E New section P 220-660-110	expected impact of the work, BMPs proposed by the project proponent, weather, and other conditions. Requires the department to publish the times when spawning salmonids and their eggs and fry are least likely to be in freshwaters of Washington.	spawning salmonids and their incubating eggs are likely to be present regardless of the expected impact from the work, best management practices, weather, and other conditions. Staff Response: *This proposal does not comply with statute which requires that conditions imposed on an HPA must be reasonably related to the project. The work is the proposed project. It would make in-water work nearly impossible given the broad timespan during which salmonids and their eggs are likely to be present*.	
Common freshwater construction provisions E New section P 220-660-120	Combines the common construction provisions that apply to many freshwater projects into a single section. New provisions are added for staging areas, job site access, equipment use, materials, water quality protection, aquatic work area isolation, diversion pumps, fish removal and demobilization, and cleanup.	Retains the Alternative 2 provisions except for the following change: • The use of all treated wood and tires would be prohibited. *Staff Response: The department has not allowed oil-based treated wood for more than a decade but we have allowed wood treated with waterborne preservative chemicals provided the western wood preservers institute has approved the waterborne chemical for use in the aquatic environment. At this time the science is not sufficient enough to warrant a ban on the use of all treated wood. The department discourages the use of whole tires in the construction of hydraulic projects but authorizes the use of products made from scrap tires that are specifically manufactured for use in the aquatic environment are allowed by the department.*	Retains the Alternative 2 provisions except for the following provisions in sections eight through twelve would be removed: (8) In-water work area isolation using block nets (9) In-water work area isolation using a temporary bypass (10) In-water work area isolation using a cofferdam structure (11) In-water work without a bypass or cofferdam (12) Fish removal *Staff Response: Improper capture and handling of fish or improper operation of electrofishing equipment during fish removal will injure or kill fish. To protect fish life persons engaged in this activity must have the proper training and follow appropriate protocol.*
Streambank protection and lake shoreline stabilization E 220-110-050 E 220-110-223 P 220-660-130	New restrictions are added to the existing rules including the following: Separate provisions for design and construction to clarify when standards apply. Allows the department to require an applicant to submit a qualified professional's rationale with the HPA application for a new or replacement structure extending waterward of the existing structure or bankline. Requires the permittee to avoid or minimize adverse impacts to fish life by using the least impacting technically feasible alternative. Benchmarks must be established so the department can verify compliance with the approved plans. In cases where the bankline of a river or stream has changed as a result of meander migration or lateral erosion and a new ordinary high water line has formed landward of an existing lake bulkhead, the rule requires the current location of the new bank be maintained with some exceptions.	Retains Alternative 2 provisions except for the following changes: • The department would always require an engineer's report that unequivocally determines bank protection or shoreline stabilization is needed to protect infrastructure before allowing any form of bulkhead or armoring work. If protection is warranted, the department would firmly require a biotechnical solution unless an engineer clearly finds that a hard bulkhead is the only option. *Staff Response: This proposal goes beyond what is reasonable. If the department does not need a report to determine if a project protects fish life we should not ask for it.* • The placement of new and replacement structures would have to consider climate change. *Staff Response: It would be difficult to determine future conditions. In addition, this would require a change to the statute which requires that conditions imposed on an HPA must be reasonably related to the project. The project is the work at the time it is proposed.*	Same as Alt. 2 (Minor or no comments)
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in freshwater areas E 220-110-060 P 220-660-140	Adds new provisions for overwater structures in waterbodies where impacts to fish spawning areas and to juvenile salmonid migration corridors and feeding and rearing areas are a concern. Provisions are also added to the existing rules for the following: • Pile design • Steel impact driving sound attenuation • Watercraft lift design • Mooring buoy design • Residential and public recreational dock, pier, ramp, float, watercraft lift,	Retains the Alternative 2 provisions except for the following change: • All docks, piers, ramps and floats would have 100% of the deck covered in grating. *Staff Response: This proposal for 100% of the deck covered in grating exceeds protection needs for fish life. At this time the science is not sufficient enough to warrant this requirement.*	Retains the Alternative 2 provisions except for the following changes: • Remove all grating requirements because some research shows the sunlight penetrated through the grating on average about 10% more than traditional planked decking. *Staff Response: The findings in the research referenced are similar to those findings in other study however this recommendation is contrary to the recommendations from the other studies that support the benefits of light penetration through grating to fish habitat and fish life.*

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
	and buoy construction.		• Do not specify pier height or width requirements for waterbodies where impacts to juvenile salmonid migration corridors and feeding and rearing areas are a concern. *Staff Response: Decreased light penetration and shading can result in and altered migration patterns and fish expending increased energy or being increasingly exposed to predation because they migrate into deeper water to avoid the sharp light to dark contrast under docks and floats. Effects on fish associated with decreased light penetration and decreased vegetation can also include reduced foraging success due to a reduction in primary productivity and associated reductions in prey species*
Boat ramps and launches in freshwater areas E 220-110-224 P 220-660-150	New provisions are added to the existing rules for boat ramp and launch design and construction to minimize impacts to the bed including fish spawning areas, the movement of wood and sediment, and juvenile fish migration, feeding, and rearing areas.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Marinas and terminals in freshwater areas E New section P 220-660-160	A new section is added for marina and terminal design, construction, and maintenance. The maintenance provisions align with a change to the statute.	Same as Alt. 2 (Minor or no comments)	Retains Alternative 2 except for the following change: • Acknowledge the different purposes, requirements, and constraints of bulkheads and other bank stabilization in the marina/marine terminal environment. *Staff Response: The bank protection provision in this section refers to the section 130 Streambank and lake shoreline stabilization. Section 130 requires an assessment and technical rationale for the chosen technique to ensure the appropriate technique is used. This analysis and rationale would include land use.*
Dredging in freshwater areas E 220-110-130 P 220-660-170	New provisions are added to the existing rules to allow the department to assess impacts more accurately and includes the following provisions: • The department may require quantitative analysis of the extraction rate to determine impacts to sediment transport and delivery. • The department may require multi-season pre- and post-dredge project bathymetric or biological surveys. • The department will evaluate the potential impacts of dredging and the disposal of dredged materials in eulachon spawning areas.	Retain Alternative 2 provisions except for the following changes: • Include rules for removing gravel and debris from small streams in the proposed rule changes. *Staff Response: Rules for gravel and debris removal from small streams will be developed with Tribes and stakeholders during the 2015 – 2017 biennium.* • Require scientific justification to prove that dredging will resolve flooding problems before any HPAs for dredging are issued. *Staff Response: River dredging used for flood abatement is often done under an emergency or imminent danger declaration. In these instances the department could not require this justification. However, the department may require a pre-project channel survey or assessment by a qualified professional to determine the root causes of a sediment deposition problem and the potential channel changes that may result from dredging.*	Retain Alternative 2 provisions except for the following changes: • Include rules for removing gravel and debris from small streams in the proposed rule changes. *Staff Response: Rules for gravel and debris removal from small streams will be developed with Tribes and stakeholders during the 2015 – 2017 biennium.* • Authorize dredging in fish spawning areas. *Staff Response: To protect fish life the department may not authorize dredging in fish spawning beds unless it creates or improves the access or quality of fish spawning beds as part of an approved restoration project.*
Sand and gravel removal E 220-110-140	A new provision is added to the existing rules to clarify that the department may require quantitative analysis of the extraction rate to determine impacts	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
P 220-660-180	to sediment transport and delivery. This new provision would allow the department to assess impacts more accurately.		
Water crossing structures E 220-110-070 P 220-660-190.	Retains current rule provisions for no-slope culvert design. Hydraulic culvert design provisions are moved to the fish passage improvement structure section. New provisions are added for design of the stream-simulation and an alternative culvert design methods. Some of the current language for bridges is retained but new provisions are added for design and construction. New provisions are added for design and construction of temporary fords.	Retains Alternative 2 provisions except for the following changes: • Include language that requires permittees to install stream simulation culverts unless the permittee can show that stream simulation is not feasible, or that another design will provide equal or better protection of fish life. *Staff Response: The science suggests that no-slope culverts and some alternative designs provide fish passage, protect of fish habitat, and maintain of expected channel processes when they are appropriate designs for the site conditions.* • Remove the no-slope design alternative because it is inconsistent with the recent federal court order regarding state culverts because no-slope designed culverts are often found to impede fish passage. *Staff Response: The specific type of crossing should be determined by the circumstances rather than mandating the use of one over the other.* • Move the no-slope design approach to the fish passage improvement section. *Staff Response: The court order applies only to state-owned fish passage barriers in the case area. The science suggests that no-slope culverts provide fish passage, protect of fish habitat, and maintain of expected channel processes when they are appropriate designs for the site conditions.*	Retains Alternative 2 provisions except for the following changes: • The culvert design standards would be removed. The designs proposed are not based on technically sound engineering practices and are not justified by significant research. *Staff Response: The protection of fishlife is one aspect of a complete water crossing design. The other studies required are the responsibility of the owner and designer and it is these studies in combination with fish protection which form a "technically sound engineering practice." We do not pretend that compliance with these rules will result in a fully engineered structure. All that is required in these rules is to provide fish passage and protect their habitat. There has been on-going research into crossing design for fish protection by WDFW, USDA Forest Service, several universities and other researchers (Barnard 2003, Inter-Fluve 2008, Robertson, Bair et al. 2011, Barnard, Yokers et al. In preparation), among others. A study is in progress by D. Cenderelli and M. Weinhold, USDA Forest Service on the physical effectiveness monitoring of channels at road-stream crossings – a statistically-based approach. Others are keenly interested in the effectiveness of water crossings for fish passage and channel processes – names and studies can be supplied. It will take some time to develop a strong scientific foundation in this area. In the meantime we are required to protect fish and we are applying conservative criteria guide designers to achieve acceptable result.* • The bridge design standards would be amended because they may require the preparation of multiple designs so that the cost differential can be quantified, thus increasing the time and costs associated with all bridge projects. *Staff Response: An alternatives analysis at the conceptual level results in a better, cheaper product. The department recommends the Federal Highway Administration (FHWA) encourage applicants who are receiving federal dollars to pursue several options in the early stages of design, but those alternatives should meet both fish and FHWA objectives.* • Amend the rules to allow American Association of State Highway and Transportation (AASHTO) Officials and FHWA standards (FHWA) because they have been well vetted by the engineering community. *Staff Response: WDFW engineers agree that the current AASHTO and FHWA guidelines when applied appropriately will protect fish habitat. However, these guidelines are national in scope and do not directly address the requirements for fish protection in Washington State. As a result, the designer must use DFW rules and guidelines in combination with other highway design guidance to form technically sound engineering practice. We specifically cite guidelines that fulfill the requirement of these rules, and that we have control of, but recognize that other guidelines could also protect fish habitat.*

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
			• Amend the rules to use a channel forming flow, such as the 2-year flood, instead of a rare flood like the 100-year to evaluate how changes in flow velocity will affect fish life. WDFW's focus should be on fish life and the channel below the OHWL. Over the course of a bridge's lifespan, the flow velocity during the 100-year flood will have less influence on the channel form than the 2-year flood. *Staff Response: The 100-year flood is a flow that truly indicates the degree of encroachment. The 2-year flood may not even be over bank, which would give us not indication of impacts at channel forming events.* • Remove the three-feet of clearance for bridges. *Staff Response: Currently, there is no height requirement in rule. WDFW looked at many standards for bridge clearance across the United States and found 3 feet to very common requirement. Since the WACs apply to everyone that seeks a permit, not just WSDOT. Private land owners, timber companies, and others who may not do much hydrology and hydraulic analysis work for their project need simple criteria, and our permit staff needs simple criteria as well. We freely admit that larger rivers need greater clearance and smaller streams less, but this is a good place to start the discussion. The final sentence of this provision says that "The department may grant an exception based on engineering justification provided by the applicant," which provides you an opportunity to submit whatever you think is appropriate. The department also allows flexibility. The proposed provision states "The department may grant an exception based on engineering justification provided by the applicant and show that such a change would have minimal impacts on fish life or habitat."*
Fish passage improvement structures E New section P 220-660-200	A new section is added for design, construction, and maintenance of fish ladders, weirs constructed for fish passage, roughened channels, trap and haul operations, and hydraulic design culvert retrofits. Designs must have an engineer's approval and meet specific criteria. The structures must be inspected and maintained.	Retains Alternative 2 provisions except for the following changes: • All structures would be temporary and a timeframe would be established in rule for a permanent solution to be implemented. *Staff Response: Some structures such as fish ladders and roughened channels may be long-term solutions to fish passage due to geological, engineering or environmental constraints.* • Roughened channel would be a temporary solution used only in extreme circumstances with a valid reason why a more reliable fish passage method (e.g. stream simulation or bridge) cannot be used. *Staff Response: The department may authorize a person to construct a roughened channel to facilitate the passage of fish around abrupt hydraulic drops, through culverts, or at diversion sites for water withdrawal.* • Hydraulic design option culverts would have limited application in exceptional circumstances where constraints prevent the use of bridges, no-slope and stream simulation culverts. *Staff Response: The hydraulic design option is used mainly to retrofit an existing culvert until it can be replaced or when another culvert method isn't possible.*	Retains Alternative 2 provisions except for the following change: • The department would not require compensatory mitigation if a fish passage structure cannot pass all fish species present at all mobile life stages. *Staff Response: Blocking fish passage even partially has an impact on fish life that would warrant compensatory mitigation.*

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment

Channel change and realignment
E 220-110-080
P 220-660-210
	The following new provision is added to the existing rules for channel change and realignment design:
	• A channel change may be approved if:
	  ○ Permanent new channels are similar to the old channel in length, width, depth, flood plain configuration, and gradient, and
	  ○ The new channel incorporates fish habitat components, bed materials, meander configuration, and native or other approved vegetation that provides better protection for fish life than that which previously existed in the old channel.
		Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

Large woody material placement, repositioning and removal in freshwater areas E 220-110-150 P 220-660-220	The following new provisions are added to the existing rules for placement of large woody material: • The department will approve the repositioning or removal of large woody material within the watercourse when needed to protect life, the public, property, or when needed to construct or mitigate for a hydraulic project. The department will require a person to place the repositioned or removed wood directly back in the channel unless there are engineering, legal, safety, or environmental constraints. When these constraints are present, the department may approve the placement of repositioned or removed wood in the floodplain, side channels, along banks, or in the marine nearshore. If wood must be removed from the waterbody because of legal or safety constraints, the department will require compensatory mitigation if the removal of the wood diminishes fish habitat function or value. • The department will approve placing large wood back in the channel to improve fish habitat. This may include placing channel-spanning logs, creating log jams, or introducing a single large log or rootwads to the channel. Large woody material may be stabilized against buoyant forces and hydraulic drag forces that may mobilize wood during flood flows by pinning, anchoring, or burying woody material in the floodplain.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Beaver dam management E New section P 220-660-230	A new section is added for beaver dam removal, breaching, or modification and the design and construction of beaver deceivers and pond water level control devices.	Retains the Alternative 2 provisions except for the following change: • The department would require a professional determination that there is an imminent threat to property or the environment before issuing an HPA for removal of a beaver dam. *Staff Response: This proposal is not warranted for the protection of fish life. The department would allow beaver dams to be removed or modified only when the continued existence of the beaver dam poses an imminent threat to the integrity of water crossing structures, other infrastructure, private and public land or in some rare cases the environment.*	Same as Alt. 2 (Minor or no comments)
Pond construction E 220-110-180 P 220-660-240	Retains the current rules except the following provision is removed because the department cannot enforce the provision: • Pond construction activities involving a diversion of state waters shall be dependent upon first obtaining a water right.	Retains the Alternative 2 provisions except for the following change: • Applicants would be required to demonstrate they have a valid water right to apply for HPA for water diversions. *Staff Response: This proposal cannot be enforced by WDFW. This is within Department of Ecology authority.*	Same as Alt. 2 (Minor or no comments)
Water diversions and	Retains the current rules except the following provision is removed because	Retains the Alternative 2 provisions except for the following change:	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
intakes E 220-110-190 P 220-660-250	the department cannot enforce the provision: • The exercise of project activity associated with the diversion of state waters shall be dependent upon first obtaining a water right.	• Applicants would be required to demonstrate they have a valid water right to apply for HPA for water diversions. *Staff Response: This proposal cannot be enforced by WDFW. This is within Department of Ecology authority.*	
Outfall structures in freshwaters areas E 220-110-170 P 220-660-260	Retains the current rules except language is added to reflect statutory changes to the department's authority to regulate stormwater including the following: • The department may not provision HPAs for storm water discharges in locations covered by a national pollution discharge elimination system municipal storm water general permit for water quality or quantity impacts. The HPA is required only for the actual construction of any storm water outfall or associated structures. • In locations not covered by a national pollution discharge elimination system municipal storm water general permit, the department may provision HPAs to protect fish life from adverse effects, such as scouring or erosion of the bed of the water body, resulting from the direct hydraulic impacts of the discharge.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Utility crossings in freshwater areas E 220-110-100 P 220-660-270	Retains current rules except language is added for utility line design and directional drilling.	Retains the Alternative 2 provisions except for the following change: • The department would require that conduit lines in watercourses would not constrict the channel or preclude future opportunities for bridges or other less-impacting approaches to water crossings. *Staff Responses: This proposal is not possible to enforce because the biologist cannot predict future conditions. Conduit lines should never restrict the channel because they are buried.*	Same as Alt. 2 (Minor or no comments)
Felling and yarding of timber E 220-110-160 P 220-660-280	Retains current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Aquatic plant removal and control E 220-110-331 E220-110-332 E 220-110-333 E 220-110-334 E 220-110-335 E 220-110-336 E 220-110-337 E 220-110-338 P 220-660-290	Consolidates eight sections into one section, and retains current rule provisions. The only substantial change is the addition of a new section that explains the statutory limits of our authority.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Mineral prospecting E 220-110-200 E 220-110-201	Consolidates four sections into one section and retains the current rule provisions. An additional sub-section is added to allow mineral prospecting on ocean beaches to occur under the Gold and Fish pamphlet.	Retains the Alternative 2 provisions except additional timing restrictions would be added. *Staff Response: The department has reviewed the science provided by those*	Retains the Alternative 2 provisions except for the timing windows would be changed the 1994 timing windows. *Staff Response: The Fish and Wildlife Commission has already heard and*

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
E 220-110-202 E 220-110-206 P 220-660-300		*requesting specific changes to the timing windows and we have made changes that the science supports.*	*ruled on this proposal.*
Tidal reference areas E 220-110-240 P 220-660-310	No change from current rules.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Saltwater habitats of special concern E 220-110-250 P 220-660-320	Retains the current rule provisions for saltwater habitats of special concern except rock sole spawning beds that are removed because rock sole are not obligate beach spawning fish. Olympia oyster settlement areas are added. Nearshore zone geomorphic processes that form and maintain habitat are also added. These include sediment supply and transport; beach erosion and sediment accretion; distributary channel migration; and tidal channel formation and maintenance.	Retains the Alternative 2 provisions except for the following change: • Rock sole spawning beds would be retained as a saltwater habitat of special concern. *Staff Response: Rock sole are not obligate beach spawning. Eggs found on the beach during forage fish surveys were washed up and not deposited there.*	Retains the Alternative 2 provisions except the following language would be changed to read: • "The presence of saltwater habitats of special concern may restrict project type, design, location, and timing." Remove the phase "adjacent areas". *Staff response: The proposed rule language is unchanged from the 1994 language. It provides additional protection to sand lance and surf smelt spawning beds.*
Authorized work times in saltwater areas E 220-110-271 P 220-660-330	Retains the current rule work times in Pacific sand lance spawning beds and lingcod settlement and nursery areas. Reduces work times in juvenile salmonid migration corridors and feeding and rearing areas by two months. Retains work times in herring spawning beds except work times are added for two additional tidal reference areas that did not have restrictions. The work time in or adjacent to rock sole spawning beds is removed because rock sole are not obligate beach spawning fish. Where the smelt spawning season is six months or longer, adds a new requirement that work must be started within seventy-two hours of a survey.	Retains the Alternative 2 provisions except for the following changes: • Work times would apply to potential (suspected) as well as documented areas. ✱ *Staff Response: This proposal does not comply with statute which requires that conditions imposed on an HPA must be reasonably related to the project. Currently, we don't have the science to support this alternative.* • Apply work times regardless of the expected impact from the work. ✱ Staff Response: This proposal does not comply with statute which requires that conditions imposed on an HPA must be reasonably related to the project. • Add work times for rock sole spawning beds. *Staff Response: Rock sole are not obligate beach spawning. Eggs found on the beach during forage fish surveys were washed up and not deposited there.*	Alternative 4 would retain the Alternative 1 (existing) authorized work times. Additional monitoring would be required for projects. This will allow work to continue as previous but will monitor where/when aquatic life is entering the project area. *Staff Response: The timing windows are based on science. The department applies timing windows to reduce the risk of impacts to fish life at critical life stages. In-water work is not allowed during critical periods of the year unless a person can take mitigation measures to eliminate risk during critical periods. The department has no science to show monitoring is as effective as work windows are in protecting fish life.*
Intertidal forage fish spawning bed surveys E New section P 220-660-340	This new section requires a biologist who conducts forage fish spawning surveys to complete the department's forage fish spawning beach survey training. A biologist must follow the department-approved intertidal forage fish spawning protocol and use the standard department data sheets when conducting forage fish spawning beach surveys. New WAC section	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Seagrass and macroalgae habitat surveys E New section P 220-660-350	This new section clarifies when seagrass and macroalgae habitat surveys are required, diver qualifications, and the survey protocol.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Common construction provisions for saltwater areas E 220-660-270 P 220-110-360	Retains the current rule language and adds new provisions for staging areas, job site access, equipment use, vessel operation, materials, and demobilization and cleanup.	Retains the Alternative 2 provisions except for the following changes: • The use of treated wood and tires would be prohibited. *Staff Response: The department has not allowed oil-based treated wood for more than a decade but we have allowed wood treated with waterborne preservative chemicals provided the western wood preservers*	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
		institute has approved the waterborne chemical for use in the aquatic environment. At this time the science is not sufficient enough to warrant a ban on the use of all treated wood. The department discourages the use of whole tires in the construction of hydraulic projects but authorizes the use of products made from scrap tires that are specifically manufactured for use in the aquatic environment are allowed by the department.	
Bank protection in saltwater areas E 220-110-280 P 220-660-370	The non-single family and single-family residence bank protection provisions are combined into one section. The current rules are retained except for the following changes: • If a new OHWL re-establishes landward of a bulkhead protection structure because of a breach, the department will consider this re-established OHWL to be the existing OHWL if the structure isn't repaired within three years. • Design alternatives are listed from the most preferred to the least. • An HPA application for new, replacement, or rehabilitated bulkhead or other bank protection work must include a site assessment, alternatives analysis, and design rationale by a qualified professional. This only applies to non-single family bank protection structures.	Retains the Alternative 2 except for the following changes for single-family residence bulkheads processed under RCW 77.55.141: • All bank protection must use the least impacting feasible bank protection design. ✱ *Staff Response: This would require a statutory change to RCW 77.55.141 which require WDFW to issue a permit with or without conditions … which authorizes commencement of construction, replacement, or repair of a marine beach front protective bulkhead or rockwall for single-family type residences or property …* • An HPA application for new, replacement, or rehabilitated bulkhead or other bank protection work must include a site assessment, alternatives analysis, and design rationale by a qualified professional. *Staff Response: This proposal goes beyond what is reasonable. If the department does not need a report to determine if a project protects fish life we should not ask for it.*	Same as Alt. 2 (Minor or no comments)
Residential and public recreational docks, piers, ramps, floats watercraft lifts, and buoys in saltwater areas E 220-110-300 P 220-660-380	The current rules are retained for overwater structures except for the following changes*:* • The department will require that new structures are designed with a pier and ramp to span the intertidal beach, if possible. • Structures must be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet away from seagrass and kelp at extreme low water. • A structure must have been usable at the site within the past twelve months of the time of application submittal to be considered a replacement structure. • The replacement of more than thirty-three percent or two hundred and fifty square feet of decking or replacement of decking substructure requires installation of functional grating. • Design requirements are added to reduce impacts from shading and grounding. • Provisions are added for the design and construction of mooring buoys and watercraft lifts. • Provisions are added for removing creosote piling. • A provision is added to require sound attenuation when installing steel piling with an impact pile driver.	Retains the Alternative 2 provisions except for the following changes: • Prohibit the construction of new docks in documented herring spawning areas. *Staff response: The rules require that in documented herring spawning areas, all structures be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet from macroalgae beds away from algae species on which herring spawn.* • *Require 100% grating of docks and floats.* *Staff Response: This proposal for 100% of the deck covered in grating exceeds protection needs for fish life. At this time the science is not sufficient enough to warrant this requirement.* • Require mooring buoys to be a certain distance from seagrass and macroalgae. *Staff response: The rules require the diver/installer to locate the anchor so the mooring buoy system will not damage submerged aquatic vegetation.*	Same as Alt. 2 (Minor or no comments)
Boat ramps and launches in saltwater areas E New section	This new section lists design alternatives from the most preferred to the least. New design requirement to avoid and minimize impacts to bed, littoral drift	Same as Alt. 2 (Minor or no comments)	Retains Alternative 2 provisions except the provisions would be deleted: • Design and locate the boat ramp or launch to avoid adverse impacts to saltwater habitats of special concern.

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
P 220-660-390	cells, and saltwater habitats of special concern.		*Staff Response: Saltwater habitats of special concern provide essential functions in the developmental life history of fish life. These habitats are provided special protection.* • The department may require an seagrass/macroalgae habitat survey for all new ramp or launch construction. A survey is not required to replace an existing structure within its original footprint. *Staff Response: A survey is necessary to determine the presence of aquatic vegetation important to fish life.* • Design and locate boat ramps and launches to avoid and minimize excavation below the OHWL. *Staff Response: This will minimize disturbance to the beach.*
Marinas and terminals in saltwater areas E 220-110-330 P 220-660-400	The current rules are retained for marinas and rules for marine terminals are added. • When possible, locate new marinas and terminals in areas that will minimize impacts to fish life. • Locate new marinas and terminals to avoid and minimize impacts to seagrass and kelp. • Locate new marinas and terminals in naturally deep areas to avoid or minimize dredging. • Locate new marinas and terminals in areas deep enough to avoid or minimize propeller wash impacts to the bed. • Locate new marinas and terminals in areas with existing low or impaired biological value. • Design and construct marinas and terminals so that most overwater coverage is in the deepest water possible; this is necessary to allow light penetration to the intertidal and shallow subtidal areas. • Provisions are added for removing creosote piling. • A provision is added to require sound attenuation when installing steel piling with an impact pile driver. • Provisions are added for marina and marine terminal maintenance to incorporate a statutory change.	Retains the Alternative 2 provisions but add the following provision: • New and expanded docks, wharves, piers, marinas, rafts, shipyards and terminals must be at least a specified buffer distance from existing native aquatic vegetation attached to or rooted in substrate. *Staff Response: The department requires new marina and marine terminal construction be located to avoid and minimize impacts to aquatic vegetation. New Marinas and marine terminals typically span the nearshore to reach deeper water, but due to the size of the development they often cannot avoid all aquatic vegetation so they have to compensate for the impacts. A buffer may not be possible in many cases.*	Retains Alternative 2 except for the following change: • Acknowledge the different purposes, requirements, and constraints of bulkheads and other bank stabilization in the marina/marine terminal environment. *Staff Response: The bank protection provision in this section refers to the section 370 Bank protection in saltwater areas. Section 370 requires an assessment and technical rationale for the chosen technique to ensure the appropriate technique is used. This analysis and rationale would include land use.*
Dredging in saltwater areas E 220-110-320 P 220-660-410	• Retains the current rule provisions for dredging in saltwater areas except the following new provisions are added: • The department may require hydrodynamic modeling for new dredging projects and expansions. • Design project to avoid dredging and expansions that convert intertidal to subtidal habitat.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Artificial aquatic habitat structures in saltwater areas E New section P 220-660-420	• This new section includes provisions for designing and constructing artificial aquatic habitat structures that must meet one or more of the following needs: • Enhance fish viewing opportunity at a specific location; • Enhance or conserve aquatic resources; or • Mitigate for impacted fish habitat.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
Outfalls and tide and flood gates in saltwater areas E New section P 220-660-430	• This new section includes the statutory limits of our authority, and provisions for the design and construction of stormwater outfall and tide and floodgate projects including the following: • The department may not provision HPAs for storm water discharges in locations covered by a national pollution discharge elimination system municipal storm water general permit for water quality or quantity impacts. An HPA is required only for the actual construction of any stormwater outfall or associated structures. • In locations not covered by a national pollution discharge elimination system municipal storm water general permit, the department may issue HPAs that contain provisions to protect fish life from the direct hydraulic impacts of the discharge, such as scouring or erosion of the waterbody bed. • The department may not require a fishway on a tide gate, flood gate, or other associated human-made agricultural drainage facilities as a provision of a permit if such a fishway was not originally installed as part of an agricultural drainage system existing on or before May 20, 2003.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Utility crossing in saltwater areas E 220-110-310 P 220-660-440	• Retains the current rule provisions for utility lines except for the following change: • The department may require an eelgrass/macroalgae habitat survey for new construction.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Test boring in saltwater areas E New section P 220-660-450	This new section includes provisions to protect water quality during boring projects.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Informal appeal of adverse administrative actions E 220-110-340 P 220-660-460	Retains the current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Formal appeal of administrative actions E 220-110-350 P 220-660-470	Retains the current rule provisions.	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)
Compliance E 220-110-360 P 220-110-480	• Retains the current rule provisions and adds the following language for civil enforcement: • The department will develop programs to encourage voluntary compliance by providing technical assistance consistent with statutory requirements. • The department may issue a notice of correction. • The department may issue a civil penalty provided for by law without first issuing a notice of correction only under specific circumstances:	Same as Alt. 2 (Minor or no comments)	Same as Alt. 2 (Minor or no comments)

WAC Title (E) Existing (P) Proposed	Alternative 2 WDFW Proposed Rule Changes	Alternative 3 Increased Protection for the Natural Environment	Alternative 4 Increased Protection for the Built Environment
	• The person has previously been subject to an enforcement action for the same or similar type of violation; or • Compliance is not achieved by the date set by the department in a previously issued notice of correction; or • The violation has a probability of placing a person in danger of death or bodily harm, has a probability of causing more than minor environmental harm, or has a probability of causing physical damage to the property of another in an amount exceeding one thousand dollars; or • The violation was committed by a business that employed fifty or more employees on at least one day in each of the preceding twelve months.		

[Intentionally Blank]