PROPOSED RULE MAKING

CR-102 (December 2017)
(Implements RCW 34.05.320)
Do **NOT** use for expedited rule making

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STATE OF WASHINGTON
FILED

DATE: October 18, 2021
TIME: 2:20 PM

WSR 21-21-080

Agency: Department of Ecology AO # 19-05

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

☒ **Preproposal Statement of Inquiry was filed as WSR** 19-24-073 **; 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); or**
☐ **Proposal is exempt under RCW _____.**

Title of rule and other identifying information: (describe subject)

The Washington State Department of Ecology is considering revising chapter 173-201A WAC, Water Quality Standards for Surface Waters of the State of Washington. We are considering the following revisions in this rulemaking:

- Adding definitions to WAC 173-201A-020 Definitions
- Amending WAC 173-201A-200(1)(d), Aquatic life dissolved oxygen criteria for fresh water.
- Adding a subsection WAC 173-201A-200(1)(h) Aquatic life fine sediment narrative criterion

For more information on this rulemaking visit: https://ecology.wa.gov/SalmonHabitatRule

Hearing location(s):

Date:	**Time:**	**Location:** (be specific)	**Comment:**
December 8, 2021	5:30 p.m	Webinar https://watech.webex.com/watech/onstage/g.php?MTID=e724a8c0cb8cda600a60000e8a85c60d1	Presentation, question and answer session followed by the hearing. We are holding this hearing via webinar. This is an online meeting that you can attend from any computer using internet access. Join online and see instructions: https://watech.webex.com/watech/onstage/g.php?MTID=e724a8c0cb8cda600a60000e8a85c60d1 For audio call US Toll number 1- 415-655-0001 and enter access code 2462 183 2124.
December 9, 2021	1:30 p.m.	Webinar https://watech.webex.com/watech/onstage/g.php?MTID=e9677d0a2b2fff7eb1bc1ee483394a933	Presentation, question and answer session followed by the hearing. We are holding this hearing via webinar. This is an online meeting that you can attend from any computer using internet access. Join online and see instructions: https://watech.webex.com/watech/onstage/g.php?MTID=e9677d0a2b2fff7eb1bc1ee483394a933

			For audio call US Toll number 1-415-655-0001 and enter access code 2460 493 9912.

Date of intended adoption: 3/9/2022 (Note: This is **NOT** the **effective** date)

Submit written comments to:

Name: Susan Braley

Address: Send via US mail at:
Department of Ecology
Water Quality Program
PO Box 47600, Olympia, WA 98504-7600 (US mail).

Or,
Send parcel delivery services to:
Department of Ecology
Water Quality Program
300 Desmond Dr. SE, Lacey, WA 98503

Email: Submit comments by mail, online, or at the hearing(s).

Fax: N/A

Other: Online: https://wq.ecology.commentinput.com/?id=RFGDN

By (date) December 16, 2021

Assistance for persons with disabilities:

Contact Ecology ADA Coordinator

Phone: 360-407-6831

Fax: N/A

TTY: People with speech disability may call TTY at 877-833-6341. People with impaired hearing may call Washington Relay Service at 711.

Email: ecyADAcoordinator@ecy.wa.gov

Other: Visit https://ecology.wa.gov/accessibility for more information. /

By (date) December 3, 2021

Purpose of the proposal and its anticipated effects, including any changes in existing rules:

We are considering revisions to provide additional water quality and habitat protection for early life stages of salmonids—including salmon, steelhead, and trout—and their spawning gravels. These changes include :

- Revising the existing dissolved oxygen criteria to better protect early life stages of salmonids in gravel beds.
- Adding a dissolved oxygen requirement in freshwater gravel beds to provide a more direct measure of dissolved oxygen levels where early life stages live.
- Adding a dissolved oxygen saturation requirement to account for environmental factors that cause low dissolved oxygen levels such as high water temperature and elevation.
- Adding a narrative fine sediment criterion to provide additional protection for incubating salmonid eggs and larvae.

Reasons supporting proposal:

The goal of this rulemaking is to ensure adequate oxygen levels and habitat conditions are maintained for salmonids at critical early life stages, and to protect aquatic life under varying water conditions.

Salmon and steelhead populations have been declining in Washington State for more than a decade. Salmonids play a pivotal role in the structure and health of our fresh and marine water ecosystems. Chinook salmon, for example, are the primary food for the endangered Southern Resident Orca, and the decline of Chinook is one of the main factors attributed to the decline of this orca population, according to the 2018 Southern Resident Orca Task Force Final Report. Migrating salmon and steelhead bring essential nutrients from the ocean back to rivers, streams, and surrounding habitat. These nutrients are a significant part of the freshwater food web. Salmonids represent one of the most sensitive aquatic life species in Washington and therefore form the basis for protecting all aquatic life uses, as defined in the Water Quality Standards for Surface Waters of the State of Washington.

a. Salmonids need adequate dissolved oxygen and habitat conditions for spawning

Salmonid eggs and larvae incubate in freshwater gravels in lakes, rivers, and streams, and require specific dissolved oxygen levels to properly grow and develop. We are considering revising the dissolved oxygen (DO) criteria to ensure habitat conditions in gravel are optimal for salmonid spawning.

We also are considering the addition of a new criterion to limit the negative impacts of fine sediment and protect salmonid spawning gravel habitat. Fine sediments that settle over salmonid spawning gravels can prevent adequate flow of water

through the gravels, depriving eggs and larvae of the oxygen they need. Currently, the Water Quality Standards for Surface Waters of the State of Washington do not specifically address fine sediments. This rulemaking process is not associated with the Sediment Management Standards in chapter 173-204 WAC, which are managed by Ecology's Toxic Cleanup Program and are set to address toxic contaminants in sediment.

b. Ecology has received federal, tribal, and public comment on revisions to protect salmonid spawning gravels
In January 2003, we developed a discussion document and literature summary entitled Evaluating Criteria for the Protection of Aquatic Life in Washington's Surface Water Quality Standards for Fresh Water – Dissolved Oxygen (Hicks, 2002). This document proposed changes to the DO criteria as part of the 2003 rulemaking. Public comments questioned these proposed revisions and Ecology postponed changes to the DO criteria until we could gather additional information.

In 2006, Ecology revised the state's Water Quality Standards for Surface Waters of the State of Washington. We did not revise the freshwater DO criteria at that time, although much review of the criteria was done prior to finalizing the rule. EPA's final Clean Water Act approval of the revised standards included consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fishery Service under Section 7(a)(2) of the Endangered Species Act (ESA). That consultation concluded that EPA's approval action was largely beneficial and would not jeopardize the continued existence of any endangered or threatened species. As part of that consultation, conditions were set forth to minimize any adverse effects to ESA-listed species, which included an evaluation of the DO criteria to protect aquatic life.

In January 2006, EPA, USFWS, NOAA Fisheries, and Ecology met to discuss federal agency concerns about the DO criteria in the standard for protection of incubating salmonids. Ecology agreed to further study the relationship between surface water DO concentrations and intragravel dissolved oxygen (IGDO) concentrations. Ecology then established a work group to develop an IGDO study. The goal of the study was to investigate uncertainties that the current 9.5 mg/L water column criterion was sufficiently protective to meet IGDO salmonid requirements. The work group included staff from federal agencies, Tribes, and other interested parties. As a result of the work group research and discussion, Ecology published Washington State Dissolved Oxygen Standard: A Review and Discussion of Freshwater Intragravel Criteria Development (Brown and Hallock, 2009). Study conclusions include:

- A percent oxygen saturation criterion may be a more meaningful measure of oxygen conditions to protect spawning gravels than increasing the absolute dissolved oxygen criteria because it takes into account the effect of temperature on DO concentration.
- A direct measure of the DO concentration within spawning gravels is not a feasible criteria that can be effectively implemented.

This rulemaking seeks to resolve these conclusions to appropriately modify the freshwater DO criteria to better protect intragravel habitat by improving the water column DO criteria, incorporate a percent saturation element to the criteria, and protect spawning gravel substrate more directly by limiting fine sediment intrusion.

c. We agreed to address fine sediments in the surface water quality standards
Adding fine sediment criteria aligns with our agreement in the 2018 U.S. District Court Stipulated Order of Dismissal (Order) between Northwest Environmental Advocates (NWEA), EPA, and Ecology. In the Order, Ecology agreed to propose fine sediment criteria to protect salmonid nests, known as redds. We committed to completing proposed language by October 18, 2021."

Statutory authority for adoption: : RCW 90.48.035 provides clear and direct authority to Ecology to revise the Surface Water Quality Standards (SWQS). Additionally, 40 CFR 131.20 requires states and tribes with Federal Clean Water Act authority to periodically review and update the SWQS..

Statute being implemented: Chapter 90.48 RCW - Water Pollution Control

Is rule necessary because of a:

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

If yes, CITATION: *NWEA v. USEPA and Northwest Pulp & Paper Association*. Stipulated Order of Dismissal. No. C14-196-RSM. Filed 10/18/18.

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters: For more information, see the Technical Support Document, Ecology Publication 21-10-050, and the Preliminary Regulatory Analyses, Ecology Publication 21-10-057.

Name of proponent: (person or organization) Department of Ecology

☐ Private
☐ Public
☒ Governmental

Name of agency personnel responsible for:

	Name	Office Location	Phone
Drafting:	Bryson Finch	Headquarters - Lacey	(360) 407-7158
Implementation:	Chad Brown	Headquarters - Lacey	(360) 407-6128
Enforcement:	Vincent McGowan	Headquarters - Lacey	(360) 407-6405

Is a school district fiscal impact statement required under RCW 28A.305.135? ☐ Yes ☒ No

If yes, insert statement here:

The public may obtain a copy of the school district fiscal impact statement by contacting:
Name: N/A
Address: N/A
Phone: N/A
Fax: N/A
TTY: N/A
Email: N/A
Other: N/A

Is a cost-benefit analysis required under RCW 34.05.328?

☒ Yes: A preliminary cost-benefit analysis may be obtained by contacting:
Name: Susan Braley
Address: Department of Ecology
Water Quality Program
PO Box 47600, Olympia, WA 98504-7600
Phone: (360) 764-6563
Fax: N/A
TTY: People with speech disability may call TTY at 877-833-6341. People with impaired hearing may call Washington Relay Service at 711.
Email: swqs@ecy.wa.gov
Other:

☐ No: Please explain:

Regulatory Fairness Act Cost Considerations for a Small Business Economic Impact Statement:

This rule proposal, or portions of the proposal, **may be exempt** from requirements of the Regulatory Fairness Act (see chapter 19.85 RCW). Please check the box for any applicable exemption(s):

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.061 because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Please cite the specific federal statute or regulation this rule is being adopted to conform or comply with, and describe the consequences to the state if the rule is not adopted.
Citation and description:

☐ This rule proposal, or portions of the proposal, is exempt because the agency has completed the pilot rule process defined by RCW 34.05.313 before filing the notice of this proposed rule.

☐ This rule proposal, or portions of the proposal, is exempt under the provisions of RCW 15.65.570(2) because it was adopted by a referendum.

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(3). Check all that apply:

- ☐ RCW 34.05.310 (4)(b) (Internal government operations)
- ☐ RCW 34.05.310 (4)(c) (Incorporation by reference)
- ☐ RCW 34.05.310 (4)(d) (Correct or clarify language)
- ☐ RCW 34.05.310 (4)(e) (Dictated by statute)
- ☐ RCW 34.05.310 (4)(f) (Set or adjust fees)
- ☐ RCW 34.05.310 (4)(g) ((i) Relating to agency hearings; or (ii) process requirements for applying to an agency for a license or permit)

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(4).
Explanation of exemptions, if necessary:

COMPLETE THIS SECTION ONLY IF NO EXEMPTION APPLIES

If the proposed rule is **not exempt**, does it impose more-than-minor costs (as defined by RCW 19.85.020(2)) on businesses?

☐ No Briefly summarize the agency's analysis showing how costs were calculated. _____

☒ Yes Calculations show the rule proposal likely imposes more-than-minor cost to businesses, and a small business economic impact statement is required. Insert statement here:

WA Department of Ecology
Small Business Economic Impact Statement:
Relevant Information for State Register Publication

Proposed amendments to WAC 173-201A WAC
Water Quality Standards for Surface Waters of the State of Washington. Salmon Spawning Habitat Protection

This Small Business Economic Impact Statement (SBEIS) presents the:

- Compliance requirements of the proposed rule.
- Results of the analysis of relative compliance cost burden.
- Consideration of lost sales or revenue.
- Cost-mitigating action taken by Ecology, if required.
- Small business and local government consultation.
- Industries likely impacted by the proposed rule.
- Expected net impact on jobs statewide.

A small business is defined by the Regulatory Fairness Act (chapter 19.85 RCW) as having 50 or fewer employees. Estimated costs are determined as compared to the existing regulatory environment—the regulations in the absence of the rule. The SBEIS only considers costs to "businesses in an industry" in Washington State. This means that impacts, for this document, are not evaluated for government agencies.

The existing regulatory environment is called the "baseline" in this document. It includes only existing laws and rules at federal and state levels.

COMPLIANCE REQUIREMENTS OF THE PROPOSED RULE, INCLUDING PROFESSIONAL SERVICES

The baseline for our analyses generally consists of existing rules and laws and their requirements. This is what allows us to make a consistent comparison between the state of the Washington with and without the proposed rule amendments.

For this rulemaking, the baseline includes:

- The existing rule, WAC 173-201A.
- RCW 90.48 Water Pollution Control.
- 40 CFR 131.20 Water Quality Standards - State review and revision of water quality standards; requires states and tribes (with primacy for clean water actions) to periodically review and update the water quality standards.

- 2018 U.S. District Court Stipulated Order of Dismissal.[1]

The proposed rule amendments would make the following changes:

- Revising the freshwater dissolved oxygen criteria.
  - Adding the definitions of "Intragravel dissolved oxygen" and "Spatial median".
  - Setting more stringent water column dissolved oxygen criteria.
  - Adding an intragravel dissolved oxygen component to the dissolved oxygen criteria.
  - Adding an oxygen saturation component to the dissolved oxygen criteria.
  - Clarifying the habitat type and spatial extent for sample collection when evaluating intragravel dissolved oxygen.
- Adding a narrative fine sediment criterion to all existing and designated aquatic life uses for fresh water.

Revising the freshwater dissolved oxygen criteria.

The current dissolved oxygen 303(d) listings include some listings in which temperature may be the cause or a large contributing factor of the low dissolved oxygen values. The oxygen saturation criteria is anticipated to refine the 303(d) list to identify those waters that are low in dissolved oxygen largely due to nutrients, potentially reducing the number of 303(d) listings by removing those that are solely attributed to temperature. Those changes are not likely to affect dischargers' behavior because waters will be assessed separately for compliance with temperature and dissolved oxygen criteria. Given that the updated 303(d) listings will better identify which waters are impaired due to nutrients (better detected by percent oxygen saturation) and those affected by human caused temperature increases (better identified by the temperature criteria) the actions necessary to bring the waterbody into compliance will be identified earlier in the water cleanup process. We do not anticipate more dissolved oxygen listings due to the additional compliance option of percent saturation, regardless of the dissolved oxygen concentration.

The proposed rule adds an intragravel dissolved oxygen component to the dissolved oxygen criteria. Because the rule proposes that compliance may be demonstrated through one or more of the dissolved oxygen criteria, this provides flexibility and potential cost savings (benefits) for the dischargers. A discharger would choose to monitor and report the intragravel dissolved oxygen parameter only if it expects the potential costs of the sampling to be less than the potential benefits (or cost savings) of verifying their compliance using the alternative method.

Adding a narrative fine sediment criterion to all existing and designated aquatic life uses for fresh water.

The proposed rule would create costs and benefits by requiring an evaluation of anthropogenic sources of fine sediment that may adversely affect early life stages of salmonids and result in a water body impairment.

The rule would impact point and nonpoint dischargers differently. Point dischargers are regulated through permits. If a waterbody with a current permittee discharging sediments is listed as impaired for the new narrative fine sediment criterion, that permittee could incur monitoring costs.

It is likely that permitted dischargers already have sediment discharge controls in place due to technology-based limits, or via another parameter of concern (bacteria, metals, toxics, etc.) that binds to sediment. Therefore, any discharger currently covered by the Industrial Stormwater or Construction Stormwater general permits would likely avoid investing into additional control technologies. The others, such as some with individual permits, may incur costs for sediment control actions.

COSTS OF COMPLIANCE: EQUIPMENT

Adding a narrative fine sediment criterion to all existing and designated aquatic life uses for fresh water may affect facility sites that contribute to nonpoint source pollution. To address these nonpoint sources, Ecology develops a list of best management practices (BMPs) for each of the water quality pollution sources identified. Some sites will require very basic erosion and sediment control BMPs (mulch, silt fence, etc.), while others will need extensive treatment technologies (sediment ponds, filters, etc.). Many of the BMPs address more than one of the water quality issues, such as temperature, addressing bacteria and chemical sediments, etc. Therefore, it is hard to identify which of the BMPs and costs associated with them would address the fine sediments uniquely.

Ecology's Water Quality Combined Funding Program estimated the average cost to complete riparian restoration – one of the most common BMPs addressing nonpoint sediments is approximately $15,500 per acre based on 33 previously funded

[1] 2018 U.S. District Court Stipulated Order of Dismissal: https://www.bdlaw.com/content/uploads/2018/10/NWEA-stip.pdf

grant agreements across the state from State Fiscal Years 2016 to 2019. Cost per acre varies based on specific site conditions and project scale. Costs range from approximately $3,500 to $35,000, depending on the extent of invasive species control, ease of access, plant stock quality, and if maintenance is included in the budget. Typically, larger scale projects have a lower cost per acre. These costs are associated with funding programs and include administrative costs, and costs tend to be higher than if landowners were implementing BMPs on their own.

If the pollutant comes from a set of diffuse sources (referred to as a nonpoint source), such as general urban, residential, farm runoff, or other land activities, that generate pollution discharges. To address these nonpoint sources, Ecology develops a list of best management practices (BMPs) for each of the water quality pollution sources identified. Nonpoint dischargers of fine sediments would incur capital and operational costs. Some would require very basic erosion and sediment control BMPs (mulch, silt fence, etc.), while others would need extensive treatment technologies (sediment ponds, filters, etc.).

COSTS OF COMPLIANCE: SUPPLIES

Compliance with the proposed rule, compared to the baseline, is not likely to impose additional costs of supplies.

COSTS OF COMPLIANCE: LABOR

If a waterbody with a current permittee discharging sediments is listed as impaired for the new narrative fine sediment criterion, that permittee could incur monitoring costs. We assume that monitoring costs would be similar to monitoring costs for turbidity or TSS. Ecology estimated these costs for sites with 1-5 acres at $1,650 per year, and at $2,721 per year for sites 5+ acres in the Small Business Economic Impact Analysis for Construction Stormwater General Permit (2021).[2] The estimated 20-year PV for fine sediments monitoring costs is between $20,271 and $33,429, depending on the size of a site.

COSTS OF COMPLIANCE: PROFESSIONAL SERVICES

Compliance with the proposed rule, compared to the baseline, is not likely to impose additional costs of professional services.

COSTS OF COMPLIANCE: ADMINISTRATIVE COSTS

Where applicable, Ecology estimates administrative costs ("overhead") as part of the cost of labor and professional services, above.

COMPARISON OF COMPLIANCE COST FOR SMALL VERSUS LARGE BUSINESSES

We calculated the estimated per-business costs to comply with the proposed rule amendments, based on the costs estimated in Chapter 3 of this document. In this section, we estimate compliance costs per employee. As we do not know what industries would be affected by the rule, we used the list of industries currently reporting the TSS and turbidity measurements. We recognize that less, more, or other industries may be affected.

We used current Employment Security Department (ESD)[3] data to estimate the average number of employees through all identified industries. Note that ESD data is collected at the facility level, not the business level of highest owner or operator. This means:

- The small business number may be underestimated
- The largest businesses number is likely significantly underestimated
- Any identified disparity may be larger than presented from the available data.

The average affected small business likely to be covered by the proposed rule amendments employs approximately 9 people. The largest ten percent of affected businesses employ an average of 855 people. Based on cost estimates in Chapter 3, we estimated the following compliance costs per employee.

We cannot make an assumption that small sites have less employees or a riparian buffer project (or other BMP) would be less complex. Therefore, we compare small and large business with small and large sites; simple and complex projects.

[2] https://apps.ecology.wa.gov/publications/documents/2010022.pdf

[3] Employment Security Department/Labor Market and Economic Analysis (LMEA), March 2020.

Table 1: Compliance costs per employee

	$ per employee, small business, small site	$ per employee, small business, large site	$ per employee, large business, small site	$ per employee, large business, large site
Monitoring	2252	3714	24	39
Livestock Exclusion Fencing	464	4639	5	49
Riparian buffer (simple)	389	3889	4	41
Riparian buffer (complex)	3889	38889	41	409

We conclude the rule amendments potentially have disproportionate impacts on small businesses, and therefore Ecology must include elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

CONSIDERATION OF LOST SALES OR REVENUE

Businesses that would incur costs could experience reduced sales or revenues if the proposed rule amendments significantly affect the prices of the goods they sell. The degree to which this could happen is strongly related to each business's production and pricing model (whether additional lump-sum costs would significantly affect marginal costs), as well as the specific attributes of the markets in which they sell goods, including the degree of influence each firm has on market prices, as well as the relative responsiveness of market demand to price changes.

We used the REMI E3+ model for Washington State to estimate the impact of the proposed rule amendments on directly affected markets, accounting for dynamic adjustments throughout the economy. The model accounts for: inter-industry impacts; price, wage, and population changes; and dynamic adjustment of all economic variables over time.

We cannot predict which existing dischargers would be included on updated 303(d) lists and what their TMDL would be. We also cannot predict what combination of BMPs and other technology controls an impacted discharger would use. Using the REMI E3+ model, we applied potential costs to various industries, based on current sediment monitoring data. We randomly applied cost range to one business in every identified industry (because of the high degree of the uncertainty), and combined them in one model. The higher end of the costs range where applied to "Forestry and logging" sector, which affected the results. Modeling results did not indicate significant impacts to industries. Output would decrease by $1.3 million in year 2022 over all industries in the state, which in relative indicators shows as a decrease

- 0.018% decrease from the baseline for "Forestry and logging",
- 0.004% decrease for "Support activities for agriculture and forestry", and
- 0.002% for "Other wood manufacturing" in 2022.

This is due to the capital costs associated with BPMs implementation would occur in 2021. The monitoring costs did not show any effect on output, and therefore, revenue of the industries. These results are scalable based on the number of dischargers assumed to be impacted in each industry.

MITIGATION OF DISPROPORTIONATE IMPACT

The RFA (19.85.030(2) RCW) states that:

"Based upon the extent of disproportionate impact on small business identified in the statement prepared under RCW 19.85.040, the agency shall, where legal and feasible in meeting the stated objectives of the statutes upon which the rule is

based, reduce the costs imposed by the rule on small businesses. The agency must consider, without limitation, each of the following methods of reducing the impact of the proposed rule on small businesses:

a) Reducing, modifying, or eliminating substantive regulatory requirements;
b) Simplifying, reducing, or eliminating recordkeeping and reporting requirements;
c) Reducing the frequency of inspections;
d) Delaying compliance timetables;
e) Reducing or modifying fine schedules for noncompliance; or
f) Any other mitigation techniques including those suggested by small businesses or small business advocates."

We considered all of the above options, the goals and objectives of the authorizing statutes (see Chapter 6 of PRA), and the scope of this rulemaking. We limited compliance cost-reduction methods to those that:

- Are legal and feasible.
- Meet the goals and objectives of the authorizing statute.
- Are within the scope of this rulemaking.

The scope of this rulemaking was limited to revising the freshwater dissolved oxygen criteria and adding a fine sediment criteria to all existing and designated aquatic life uses for fresh water. We could not meet legally stated goals and objectives if the proposed rule amendments included reduced or variable water quality standards, recordkeeping, or reporting.
We included the following elements in the proposed rule amendments to reduce costs to small businesses. This rulemaking is reducing, modifying, or eliminating substantive regulatory requirements by providing alternative compliance options to the existing dissolved oxygen criteria. Because the rule proposes that compliance may be demonstrated through one or more of the dissolved oxygen criteria, this provides flexibility and potential cost savings (benefits) for the dischargers. A discharger would choose to monitor and report the intragravel dissolved oxygen parameter only if it expects the potential costs of the sampling to be less than the potential benefits (or cost savings) of verifying their compliance using the alternative method.

Updated dissolved oxygen criteria would enable the refinement of the list of impaired waters. The current DO 303(d) listings include some listings in which temperature may be the cause or a large contributing factor of the low dissolved oxygen values. The alternate criteria expressed in percent saturation would help to refine the list to identify those waters that are low in dissolved oxygen largely due to nutrients, potentially reducing the number of 303(d) listings by removing those that are solely attributed to temperature.

SMALL BUSINESS AND LOCAL GOVERNMENT CONSULTATION
We involved small businesses and local governments in its development of the proposed rule amendments, using:

- Water Quality Information Listserv:
    - Voluntary membership to stay informed on the salmon spawning habitat protection rulemaking.
- Public webinars:
    - Clark Regional wastewater district, Sunnyside Valley Irrigation District, Trout Unlimited, Clean Water ATS, Puget Sound Keeper Alliance, South Columbia Basin Irrigation District, The National Council for Air and Stream Improvement (NCASI), Northwest Environmental Advocates, Washington State Water Resources Association, RE Sources, Port of Longview, Parametrix, WSP, Port of Tacoma, Dell, Chelan PUD, Avista Corp, NW Fishletter, Tupper Mack Wells PLLC, Skagit River System Cooperative, Skagit Fishereies Enhancement Group.
    - NWIFC, Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, City of Tacoma, WA Department of Natural Resources, City of Kirkland, Idaho department of environmental quality, Quileute Nation, Pierce County, , City of Spokane, City of Seattle, Lower Columbia Fish Enhancement Group, US Bureau of Reclamation, City of Federal Way, Snohomish Conservation District, Pierce Conservation District, Snohomish County, US Department of Agriculture, City of Vancouver, Tacoma-Pierce County Health Department, King County, Tulalip Tribe, Spokane Tribe, Port Gamble S'Klallam Tribe, Suquamish Tribe, Environmental Protection Agency, City of Bainbridge, City of Vancouver, Chehalis Tribe, City of Bellingham, US Corp of Engineers, Skokomish Tribe, Lewis Conservation District, Thurston County, CRITFC, City of Vancouver, Quileute Tribe, Washington Department of Fish and Wildlife, Alaska Department of Environmental Conservation, Hoh Tribe, Klickitat County, Stillaguamish Tribe.

- Science Advisory Team:
    - Ashley Coble (NCASI), Chris Frissell (Salish Kootenai College), Brian Mattax (WSP)
    - Joy Archuleta (US Forest Service), Jennifer Arthur (Seattle Public Utilities), Jordan Bauer (Ecology), Seth Book (Skokomish Tribe), Joanna Crowe Curran (US Corp of Engineers), Lindsay Guzzo (EPA), Tim Hagen (Pierce County), Kirk Krueger (WA Fish and Wildlife), Patrick Lizon (Ecology), Glen Merritt (Ecology), Cleo Nuculae (Ecology), Ted Parker (Snohomish County), Cole Provence (Ecology), Rainy Rau (City of Vancouver), Keunyea Song (Ecology), Leanne Weiss (Ecology), Angela Zeigenfuse (Ecology).

NAICS CODES OF INDUSTRIES IMPACTED BY THE PROPOSED RULE

The proposed rule amendments likely impacts the following industries, with associated NAICS codes. NAICS definitions and industry hierarchies are discussed at https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017.

- 113310 Forestry and Logging
- 321912, 321918 Wood Product Manufacturing
- 332323 Fabricated Metal Product Manufacturing
- 423310, 423930 Merchant Wholesalers, Durable Goods
- 452319 General Merchandise Stores
- 488210 Support Activities for Transportation
- 561990 Administrative and Support Services
- 811122 Repair and Maintenance

IMPACT ON JOBS

We used the REMI E3+ model for Washington State to estimate the impact of the proposed rule amendments on jobs in the state, accounting for dynamic adjustments throughout the economy.

The proposed rule amendments would result in transfers of money within and between industries, as compared to the baseline. The modeled impacts on employment are the result of multiple small increases and decreases in employment, prices, and other economic variables across all industries in the state.

We cannot predict which existing dischargers would be included on updated 303(d) lists and what their TMDL would be. We also cannot predict what combination of BMPs and other technology controls an impacted discharger would use. Using the REMI E3+ model, we applied potential costs to various industries, based on current sediment monitoring data. We randomly applied cost range to one business in every identified industry (because of the high degree of the uncertainty), and combined them in one model. The higher end of the costs range where applied to "Forestry and logging" sector, which also affected the results of impact on jobs on the particular industry.

Table 2: Impacts on jobs

Industry	Initial Jobs Impact	Jobs Impact in 20 years
Whole state	8	0.25
Forestry and Logging	1.7	0.005
Support activities for agriculture and forestry	1.4	0.005
Construction	0.8	0.007
Manufacturing	0.5	0.025
Wholesale trade	0.222	0.008
Retail trade	0.66	0.023
Transportation and warehousing	0.228	0.012

The public may obtain a copy of the small business economic impact statement or the detailed cost calculations by contacting:

Name: Susan Braley
Address: Department of Ecology
Water Quality Program
PO Box 47600, Olympia, WA 98504-7600
Phone: (360) 764-656
Fax: N/A
TTY: People with speech disability may call TTY at 877-833-6341. People with impaired hearing may call Washington Relay Service at 711. To request ADA accommodation for disabilities, or printed materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility.
Email: swqs@ecy.wa.gov
Other:

Date: 10/18/2021	**Signature:** 
Name: Heather R. Bartlett	
Title: Deputy Director	