



DEPARTMENT OF
ECOLOGY
State of Washington

Small Business Economic Impact Statement

*Chapter 173-201A WAC
Water Quality Standards for Surface Waters
of the State of Washington*

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For more information contact:

Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6600

Washington State Department of Ecology – www.ecy.wa.gov

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Union Gap 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

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Small Business Economic Impact Statement

Chapter 173-201A WAC Water Quality Standards for Surface Waters of the State of Washington

Prepared for the
Water Quality Program, Ecology

Supporting work by

Kasia Patora
Rules and Accountability Section,
Governmental Relations, Ecology

Carrie Sessions
Rules and Accountability Section,
Governmental Relations, Ecology

Kelly Susewind
Special Assistant to the Director, Ecology

Melissa Gildersleeve
Water Quality Program, Ecology

Chad Brown
Water Quality Program, Ecology

Patrick Lizon
Water Quality Program, Ecology

Toxics Cleanup Program staff, Ecology

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Executive Summary

Based on research and analysis required by the Regulatory Fairness Act (RFA) – RCW 19.85.070 – Ecology has determined that the proposed Water Quality Standards (WQS) for Surface Waters of the State of Washington (Chapter 173-201A WAC) does not have a disproportionate impact on small business. This is because the rule is only likely to impact large businesses. (A small business is defined by the RFA as having 50 or fewer employees.) Ecology did not, therefore, include language in the proposed rule to minimize disproportionate impacts.

The proposed rule establishes human health criteria that must be met to comply with Washington's WQS. The proposed rule amendments:

- Update the scientific values for:
 - Toxicity factors – reflecting current research
 - Body weight representative of current population mean – 80kg, up from 70kg
 - Drinking water intake – 2.4 L/day
- Change the level of protectiveness:
 - Fish consumption rate – 175 g/day, up from 6.5 g/day
- Do not change polychlorinated biphenyl (PCB) criteria from current National Toxics Rule (NTR) levels
- Set the arsenic criteria to the Safe Water Drinking Act regulatory level

The proposed rule also updates implementation tools that can be used to meet Washington water quality standards:

- Removing the time limit on compliance schedules
- Allowing intake credits where there is no net addition of pollutants
- Establishes a public, technical, and timed process for variances

Ecology involved small businesses (or their representatives) and local governments and agencies in the development of this rule, during the stakeholder and public processes.

Ecology does not expect the proposed rule to result in significant net loss or gain of any jobs due to quantifiable compliance costs to private industry.

Ecology identified additional possible costs to some private dischargers and potentially in-water construction projects, but was unable to quantify these possible costs due to uncertainty about facility or project attributes and behaviors, waterbody or site attributes, and the nature of potentially resulting required actions. If additional actions are required, and private businesses incur costs as a result, the impact to net jobs in the state depends on the nature of the actions, and whether on-site, in-state, or out-of-state resources are used to complete them.

If on-site or in-state resources are used, expenditures on them are likely to support offsetting output and jobs in those industries, and Ecology does not expect significant reductions in jobs as a result of the proposed rule. If out-of-state resources are used, the model represents this as a loss in output and jobs in industries incurring costs, with no offsetting gains to the suppliers they use to take additional required actions under the proposed rule.

Section 1: Background, Baseline, and Proposed Rule

1.1 Introduction

Based on research and analysis required by the Regulatory Fairness Act (RFA) – RCW 19.85.070 – Ecology has determined that the proposed Water Quality Standards for Surface Waters of the State of Washington (Chapter 173-201A WAC) does not have a disproportionate impact on small business. This is because the rule is likely to only impact large businesses. (A small business is defined by the RFA as having 50 or fewer employees.) Ecology did not, therefore, include language in the proposed rule to minimize disproportionate impacts.

The Small Business Economic Impact Statement is intended to be read with the associated Cost-Benefit Analysis (Ecology publication #16-10-009), which contains more in-depth discussion of the analysis.

1.2 Proposed rule amendments

The proposed rule updates the levels at which toxic pollutants can be present in water and still protect human health. These levels, known as the HHC, are determined using the following Environmental Protection Agency (EPA) HHC equations:

- For Carcinogens:
 - Freshwater criterion = $(RL \times BW) / (CSF \times [DWI + (FCR \times BCF)])$
 - Marine criterion = $(RL \times BW) / (CSF \times FCR \times BCF)$
- For Non-Carcinogens:
 - Freshwater criterion = $(RfD \times RSC \times BW) / [DWI + (FCR \times BCF)]$
 - Marine criterion = $(RfD \times RSC \times BW) / (FCR \times BCF)$

For the above equations:

- RL: excess cancer risk level. The maximum allowable level of excess cancer.
- BW: body weight. The representative adult body weight for the population, as based on population attributes.
- CSF: cancer slope factor. A toxic-specific number representing the risk of cancer associated with exposure to a carcinogenic or potentially carcinogenic substance. A slope factor is an upper bound, approximating a 95percent confidence limit, on the increased cancer risk from a lifetime of exposure to an agent by ingestion.
- DWI: drinking water intake. Typical drinking water intake, based on the existing National Toxics Rule (NTR) (EPA, 1992).
- FCR: fish consumption rate.
- BCF: bioconcentration factor. A chemical-specific number representing contaminant uptake.
- RfD: reference dose. A toxic-specific number representing a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

- **RSC:** relative source contribution. The RSC identifies or estimates the portion of a person's total exposure attributed to water and fish consumption and thereby accounts for potential exposure from other sources such as skin absorption, inhalation, other foods, and occupational exposures.

This rulemaking is proposing to change the human health criteria for water quality as follows:

- Updates to scientific values for:
 - Toxicity factors – reflecting current research
 - Body weight representative of current population mean – 80kg, up from 70kg
 - Drinking water intake – 2.4 L/day
- Changes to the level of protectiveness:
 - Fish consumption rate – 175 g/day, up from 6.5 g/day
- Does not change polychlorinated biphenyl (PCB) criteria from current NTR levels
- Sets the arsenic criteria to the Safe Drinking Water Act regulatory level
- Does not set methylmercury criteria or change total mercury criteria established by the NTR

The proposed rule updates implementation tools that can be used to meet all Washington water quality standards:

- Removing time limit on compliance schedules
- Allowing intake credits where there is no net addition of pollutants
- Establishing a public, technical, and timed process for variances

It is important to note that the proposed rule changes *real* cancer risk differently for different people, depending on their *real* fish consumption. The proposed rule amendments do not assume *everyone* consumes 175 g/day of fish and shellfish.

1.3 Reasons for the proposed rule amendments

The Federal Clean Water Act (CWA) directs states, with oversight by the Environmental Protection Agency (EPA), to adopt water quality standards (WQS) to protect the public health and welfare, enhance the quality of water, and serve the purposes of the CWA. Under section 303, states' water quality standards must include at a minimum:

1. Designated uses for all water bodies within their jurisdictions.
2. Water quality criteria sufficient to protect the most sensitive of the uses.
3. An antidegradation policy consistent with the regulations at 40 CFR 131.12.

States are also required to hold public hearings once every three years for the purpose of reviewing applicable WQS and, as appropriate, modifying and proposing standards. The results of this triennial review must be submitted to EPA, and EPA must approve or disapprove any new or revised standards. Section 303(c) also directs the EPA Administrator to promulgate WQS to supersede state standards that have been disapproved, or in cases where the Administrator determines that a new or revised standard is needed to meet CWA requirements.

As part of the triennial review, Ecology identified a need to adopt new HHC, based on more accurate numbers used in the EPA HHC equations for determining numeric chemical criteria. In this rulemaking, Ecology is proposing the inputs and resultant criteria necessary to protect public health, safety, and welfare. Before the proposal of these new HHC, Washington State continued to use federal standards that do not reflect current science on protection from toxic chemicals, as well as past standards for levels of protectiveness of the population.

Ecology also identified a need to update sections of the WQS that direct the implementation of the HHC and other water quality standards. The goal of revising these implementation tools is to provide clear and predictable regulatory requirements to help entities comply with regulatory requirements included in National Pollutant Discharge Elimination System (NPDES) permits, state waste discharge permits, and CWA section 401 water quality certification. The proposed implementation tools also address legislation (RCW 90.48.605) obligating Ecology to amend water quality standards to allow compliance schedules in excess of ten years under certain circumstances for permitted dischargers.

1.4 Baseline

The baseline generally consists of a collection of existing rules and laws, and their underlying assumptions. For economic analyses, the baseline necessarily also includes the implementation of those regulations, including the guidelines and policies that result in behavior and real impacts. This is what allows us to make a consistent comparison between the state of the world with or without the proposed rule amendments. For this rulemaking, we discuss the baseline below, grouped into existing:

- Rules and laws
- NTR criteria assumptions¹
- Permitting guidelines
- 303(d) listing policy
- Compliance behavior
- Growth trajectories
- Allowance for compliance schedules
- Intake credits
- Allowance for variances

1.4.1 Existing rules and laws

The underlying elements of the baseline are existing state and federal laws and rules. Relevant local regulations are included when applicable.

¹ The Federal Register (FR) citation for the human health criteria are from two sources. 57FR60848 is the National Toxics Rule (NTR) which was issued by EPA in 1992. 64FR61182 is a revision to the NTR that changed the PCB criteria from individual aroclors to total PCBs. The NTR can be found at 40CFR131.36.

1.4.1.1 Federal requirement

Clean Water Act 303(c)(2)(A) states, about surface water quality standards:

...Such standards shall be such as to protect the public health or welfare, enhance the quality of the water and serve the purposes of this Chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial and other purposes and also taking into consideration their use and value for navigation.

1.4.1.2 State requirements

In addition to the federal requirements the Department of Ecology is required under State Statute to “retain and secure high quality waters”, and to “vigorously exercise state power” to do so at the state level. (Author’s bolding, below.)

Water Pollution Control Act – RCW 90.48.010 Policy enunciated.

It is declared to be the public policy of the state of Washington to **maintain the highest possible standards to insure the purity of all waters of the state** consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington. Consistent with this policy, the state of Washington will exercise its powers, as fully and as effectively as possible, to retain and secure high quality for all waters of the state. The state of Washington in recognition of the federal government's interest in the quality of the navigable waters of the United States, of which certain portions thereof are within the jurisdictional limits of this state, proclaims a public policy of working cooperatively with the federal government in a joint effort to extinguish the sources of water quality degradation, **while at the same time preserving and vigorously exercising state powers to insure that present and future standards of water quality within the state shall be determined by the citizenry, through and by the efforts of state government, of the state of Washington.**

Water Pollution Control Act – RCW 90.48.035 Rule-making authority.

The department shall have the authority to, and shall promulgate, amend, or rescind such rules and regulations as it shall deem necessary to carry out the provisions of this Chapter, including but not limited to rules and regulations relating to standards of quality for waters of the state and for substances discharged therein in order to **maintain the highest possible standards of all waters of the state** in accordance with the public policy as declared in RCW 90.48.010.

Water Pollution Control Act – RCW 90.48.260 Federal Clean Water Act – Department designated as state agency, authority – Delegation of authority - Powers, duties and functions.

The Department of Ecology is hereby designated as the State Water Pollution Control Agency for all purposes of the federal clean water act as it exists on February 4, 1987, and is hereby authorized to participate fully in the programs of the act.

Water Resources Act of 1971 – RCW 90.54.020 General declaration of fundamentals for utilization and management of waters of the state.

(b) **Waters of the state shall be of high quality.** Regardless of the quality of the waters of the state, all wastes and other materials and substances proposed for entry into said waters shall be provided with all known, available, and reasonable methods of treatment prior to entry. **Notwithstanding that standards of quality established for the waters of the state would not be violated, wastes and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof,** except in those situations where it is clear that overriding considerations of the public interest will be served.

1.4.2 Previous human health criteria: the National Toxics Rule criteria assumptions

The values for inputs into the equation for NTR (40CFR131.36) criteria are listed below. These are inputs into the EPA HHC equations that calculate the human health criteria (HHC) levels for surface waters, before this proposal of an amended rule.

- Excess cancer risk level = 10^{-6} (one in one million; “RL” in EPA HHC equations below)
- Relative source contribution = 1.0 (“RSC” in EPA HHC equations below)
- Hazard quotient = 1.0 (an underlying factor of “RfD” below)
- Body weight = 70 kg (“BW” in EPA HHC equations below)
- Drinking water intake = 2 L/day (“DWI” in EPA HHC equations below)
- Fish consumption rate = 6.5 g/day for chemicals excluding mercury (“FCR” in EPA HHC equations below)
- Fish consumption rate for mercury = 18.7 g/day

The EPA HHC equations using these inputs are:

- For Carcinogens:
 - Freshwater criterion = $(RL \times BW) / (CSF \times [DWI + (FCR \times BCF)])$
 - Marine criterion = $(RL \times BW) / (CSF \times FCR \times BCF)$
- For Non-Carcinogens:
 - Freshwater criterion = $(RfD \times RSC \times BW) / [DWI + (FCR \times BCF)]$
 - Marine criterion = $(RfD \times RSC \times BW) / (FCR \times BCF)$

1.4.3 Existing permitting guidelines

Permitting guidelines help permit writers translate the requirement to meet water quality criteria for protection of human health to permittee-specific requirements. While not a legal requirement, guidance informs how HHC impact permittees who discharge effluent to water bodies.

Therefore, in describing the baseline for this analysis of the proposed rule amendments, it is

necessary to consider the permitting guidelines in the baseline and proposed scenarios, as they will contribute to the cost and benefit estimates and discussion of impacts.

Ecology uses the Water Quality Program Permit Writer's Manual (Ecology, 2015) for technical guidance when developing wastewater discharge permits. A general overview of the permitting process for all dischargers includes:

- Ecology receiving the permit application
- Review of the application for completeness and accuracy
- Derivation of applicable technology-based effluent limits
- Determination of whether effluent will cause, or have reasonable potential to cause or contribute to, violation of water quality standards
- If yes, derivation of human health-based effluent limits necessary to meet water quality standards
- Derivation of monitoring requirements and other special conditions
- Review process for the draft or proposed permit
- Issuance of the final permit decision

For example, within the complex process of National Permit Discharge Elimination System (NPDES) permit-writing (see Ecology, 2011, Figure II-2), a step includes determination of whether toxic pollutants are present in the effluent. Next, the permit writer must determine the best methods of controlling the levels of those toxic chemicals. Using existing technology-based guidelines, or developing them using best professional judgment, a reasonable potential determination is made based on modeling as to whether technology-based controls are sufficient to meet water quality standards. If not, water quality-based limits are developed.

The basic requirements and process for developing permits will not change under the proposed rule amendments. Extensive discussion of all of the considerations made during the permitting process can be found in Ecology, 2015.

1.4.4 Existing 303(d) impaired waterbody listing policy

The federal Clean Water Act's section 303(d) established a process to identify and clean up polluted waters. Every two years, all states are required to perform a water quality assessment of surface waters in the state, including all the rivers, lakes, and marine waters where data are available. Ecology compiles its own water quality data and Federal data, and invites other groups to submit water quality data they have collected. All data submitted must be collected using appropriate scientific methods. The assessed waters are placed in categories that describe the status of water quality. Once the assessment is complete, the public is given a chance to review it and give comments. The final assessment is formally submitted to the EPA for approval.

Waters whose beneficial uses – such as for drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants are placed in the polluted water category in the water quality assessment (303(d) list). These water bodies fall short of state surface water quality standards and are not expected to improve within the next two years. The 303(d) list, so called because the processes for developing the list and addressing the polluted waters on the list are described in section 303(d) of the federal Clean Water Act, comprises waters in the polluted water category.

Ecology's assessment of which waters to place on the 303(d) list is guided by:

- Federal laws,
- State WQS, and the
- Policy on the Washington State Water Quality Assessment (WQP Policy 1-11; revised July 2012).

The policy describes how the standards are applied, requirements for the data used, and how to prioritize Total Maximum Daily Loads (TMDL), among other issues.² In addition, even before a TMDL is completed, the inclusion of a water body on the 303(d) list can reduce the amount of pollutants allowed to be released under permits issued by Ecology.

Waters placed on the 303(d) list require the preparation of a water cleanup plan (TMDL) or other approved water quality improvement project. The improvement plan identifies how much pollution needs to be reduced or eliminated to achieve clean water, and allocates that amount of required pollution reduction among the existing sources.

Ecology periodically revises the Water Quality Assessment Policy based on new information and updates to EPA guidance. Each revision includes a public review process. Ecology submitted a revised 303(d) list to EPA in 2015 and we expect approval from the EPA in early 2016, therefore Ecology used the revised list for the analysis included in this section.

1.4.5 Past or existing compliance behavior

The baseline includes past or existing compliance behavior. This includes behavior undertaken in response to federal and state laws, rules, permits, guidance, and policies. This also includes business decisions in response to regulatory, economic, or environmental changes. Such behavior might include, but is not limited to, existing treatment technologies, production processes, and effluent volumes.

1.4.6 Past or existing growth trajectories

The proposed rules apply to existing and future dischargers, on existing and future impaired water bodies, and water bodies with TMDLs and without TMDLs, so the baseline must also account for:

- Attributes and behaviors of future dischargers.
- Future TMDLs.

The regulatory environment that current and future dischargers would encounter under the baseline would include the elements of the baseline described above, as well as any change in TMDLs.

² A TMDL is the sum of the Load Allocations and Wasteload Allocations, plus reserves for future growth and a margin of safety, which are equal to the Loading Capacity of the water body. This is a requirement of Section 303(d) of the federal Clean Water Act and is defined in 40 CFR 130.2(i). The term "TMDL" is often also applied to the process to determine a TMDL ("Ecology is doing a TMDL") and to the final documentation of the TMDL ("Ecology has submitted a TMDL").

1.4.7 Existing allowance for compliance schedules

The baseline includes existing compliance schedules. A compliance schedule is an enforceable tool used as part of a permit, order, or directive to achieve compliance with applicable effluent standards and limitations, water quality standards, or other legally applicable requirements. Compliance schedules include a sequence of interim requirements such as actions, operations, or milestone events to achieve the stated goals. Compliance schedules are a broadly used tool for achieving compliance with state and federal regulations; compliance schedules under the Clean Water Act are defined federally at CWA 502(17) and 40 CFR Section 122.2. Under the baseline, compliance schedules may last up to ten years.

1.4.8 Existing intake credits

An intake credit is a procedure that allows permitting authorities to conclude that a permittee does not cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards when he or she returns an unaltered intake water pollutant to the body of water it was taken from under identified circumstances. In other words, when effluent has the same contaminants and concentrations as water taken in, an intake credit allows authorities to not assign responsibility for those contaminant concentrations to the discharger.

Washington's current water quality standards do not allow intake credits.

1.4.9 Existing allowance for variances

A variance is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) for a single discharger, a group of dischargers, or stretch of waters. Variances establish a set of temporary requirements that apply instead of the otherwise applicable water quality standards and related water quality criteria. A variance may be considered when the standards are expected to be attained by the end of the variance period or the attainable use cannot be reliably determined. Variances can be targeted to specific pollutants, sources, and/or stretches of waters.

The US Environmental Protection Agency (EPA) has dictated that state variance procedures, as part of state water quality standards, must be consistent with the substantive requirements of 40 CFR 131.14. EPA has approved state-adopted variances in the past and has indicated that it will continue to do so if:

- Each variance is adopted into rule as part of the water quality standard.
- The state demonstrates that meeting the standard is unattainable based on one or more of the grounds outlined in 40 CFR 131.10(g) for removing a designated use. Note: EPA's new water quality standards regulation makes this requirement only applicable to Clean Water Act 101(1)(2) uses (the "fishable/swimmable" uses of the Clean Water Act), which is Ecology's intent also. Variances for other uses must include consideration of the "use and value" of the water. (Please see 40CFR131.14 for new federal requirements.)
- The justification submitted by the state includes documentation that treatment more advanced than that required by sections 303(c)(2)(A) and (B) has been carefully considered, and that alternative effluent control strategies have been evaluated.

- The more stringent state criterion is maintained and is binding upon all other dischargers on the stream or stream segment.
- The discharger who is given a variance for one particular constituent is required to meet the applicable criteria for other constituents.
- The variance is granted for a specific period of time and can be renewed upon expiration.
- The discharger either must meet the standard upon the expiration of this time period or must make a new demonstration of "unattainability."
- Reasonable progress is being made toward meeting the standards.
- The variance was subjected to public notice, opportunity for comment, and public hearing. The public notice should contain a clear description of the impact of the variance upon achieving water quality standards in the affected stretch of waters.

Section 2: Analysis of Compliance Costs

After reviewing, filtering, and assessing real cases of existing effluent data for dischargers using existing analytical methods and permitting practices, we conclude that, based on the reasonable potential analyses using proposed HHC, the majority of facilities will not be impacted. To be impacted, a facility must have the following attributes:

- Discharge a chemical for which criteria values would change as a result of the proposed rule amendments.
- Discharge that chemical in quantities greater than the detection limits for that chemical using required test methods. If a facility uses the required sufficiently sensitive test method, a non-detect in an effluent sample generally means the discharge has no reasonable potential to violate standards.
- Currently, or under the baseline, discharge that chemical in quantities such that the concentration at the edge of the chronic mixing zone exceed the relevant proposed criteria value.
- Not be in an existing TMDL, as Ecology will not be revising TMDLs as a result of this rulemaking.
- Have samples that consistently indicate the presence of the chemical.
- Have a continuous discharge (i.e., *not* be an intermittent discharge, such as stormwater or CSO).

and potentially:

- Discharge to sediments of concern for the chemicals of concern in the discharge, at rates in excess of sediment concentrations, as this may violate nondegradation requirements.

Note that for chemicals with both baseline and proposed HHC below the quantitation limit, the proposed rule will not impose additional costs compared to the baseline.

Some facilities, however, are likely to incur costs under the proposed rule:

- Two industrial facilities may incur additional unquantifiable costs:
 - Costs of compliance actions if action required to comply with Hazardous Waste regulations was insufficient to also meet the proposed HHC.
 - Costs of compliance actions if a facility chooses to continue operations rather than curtailing them.
- Quantifiable total capital cost to 11 public and two private facilities to comply with proposed standards for phthalates: \$10.6 thousand
- Unquantifiable costs of Source Control Plan implementation, and compliance schedule or variance acquisition costs if the proposed HHC cannot be met using the Source Control Plan.
- Possible unquantifiable sampling and testing costs, as well as costs of more stringent requirements and BMPs at up to five percent of in-water construction sites seeking Section 401 Certification, if Ecology determines turbidity is not a sufficient proxy for the likelihood of contaminating the water column.
- Potential compliance costs to a hypothetical unrepresented discharger, cleanup site, or in-water construction project, to control chemicals not currently observed in samples.

Section 3: Quantification of Cost Ratios

Based on Ecology's cost estimate results, we determined that the proposed rule does not impact small businesses (employing 50 or fewer employees, at the highest ownership level).

The smallest business likely to experience identifiable costs due to the proposed rule employs approximately 640 employees.³ It is therefore not possible to compare relative costs to small versus the largest ten percent of businesses.

Section 4: Actions taken to reduce impact of the rule on small businesses

Ecology did not take any action to reduce the impact of the proposed rule on small businesses because the proposed rule does not have a disproportionate impact on small businesses.

Public entities, such as publicly owned treatment works (POTWs), are not subject to this analysis under the RFA. They were identified by the associated Cost-Benefit Analysis as likely to incur additional costs under the proposed rule. While not required to mitigate costs to small publicly owned entities, Ecology notes that small POTWs are not required to test for the chemicals that

³ Employment data taken from individual company websites, the Northwest Pulp and Paper Association (available at: <http://nwpulpanpaper.org/about-us/member-profiles/>), and "Find the Company" website (accessed January 13, 2016 from: <http://listings.findthecompany.com/>).

would cause them to incur costs, and their costs under the proposed rule are mitigated by this exemption.

Section 5: The Involvement of Small Businesses and Local Government in the Development of the Proposed Rule

To support the rulemaking effort, in September 2012, Ecology established an extensive public process to engage stakeholders and key parties. Ecology held a series of Water Quality Policy Forums to engage and educate the public on the complex technical and policy issues involved in adopting human health criteria. Ecology also convened a Delegates' Table consisting of delegates from key stakeholder groups to discuss concerns and gain an increased understanding of the broad range of issues associated with this rulemaking.

As Ecology moves forward with rulemaking, we will continue to use our existing email ListServ and webpages to communicate to our stakeholders and interest groups along with continuing to make ourselves available to meet with people as requested.

5.1 Delegates' Table business and local government representatives

- **Chandler, Gary** - Association of Washington Business (*Alternate: Brandon Housekeeper*)
- **Hope, Bruce** - Western States Petroleum Association (*Alternate: Courtney Barnes*)
- **Johnson, Ken** - Weyerhaeuser
- **Judd, Nancy** - Association of Washington Business
- **Kibbey, Heather** - City of Everett
- **Kilroy, Sandra** - King County (*Alternate: Josh Weiss*)
- **Myrum, Tom** - Washington State Water Resources Association
- **O'Keefe, Gerry** - Washington Public Ports Association
- **Rawls, Bruce** - Spokane County (*Alternate: Josh Weiss*)
- **Schroeder, Carl** - Association of Washington Cities
- **Steele, David** - Pacific Coast Shellfish Growers (*Alternate: Margaret Barrette*)
- **Stuhlmiller, John** - Washington Farm Bureau (*Alternate: Evan Sheffels*)

5.2 Water Quality Policy Forums & Informational Meetings business and local government representatives

- **Aldrich, Nancy** (*City of Richland*)
- **Archer Parsons, Andrea** (*City of Port Orchard*)
- **Baca, Matthew** (*Earthjustice*)
- **Balliet, Jamie** (*East Columbia Basin Irrigation District*)
- **Barrette, Margaret** (*Pacific Coast Shellfish Growers Association*)
- **Bierlink, Henry** (*Whatcom Farm Friends*)

- **Blair, Lori** (*The Boeing Company*)
- **Boehme, Jonathan** (*City of Port Angeles*)
- **Booth, Kevin** (*Avista Corp*)
- **Borden, Bruce** (*Lowes*)
- **Brazil, Brian** (*TansAlta*)
- **Bridges, Thomas** (*Mukilteo Water & Wastewater District*)
- **Brouillard, Elaine** (*Roza Sunnyside Board of Joint Control*)
- **Budworth, Chad** (*The Boeing Company*)
- **Butkus, Paul** (*PCA /Boise Paper*)
- **Castle, Art** (*Building Industry Association of Washington*)
- **Cave, Scott** (*City of Quincy*)
- **Chisolm, B** (*WAPG*)
- **Crowley, Allison** (*Seattle City Light*)
- **Cummings, Dano** (*City of Spokane*)
- **Daly, Brad** (*City of Walla Walla*)
- **Davis, Marcia** (*City of Spokane*)
- **Dayao, Donnelle** (*City of Sumner*)
- **Deardorff, Gary** (*City of Kennewick*)
- **Defoe, Seth** (*Kennewick Irrigation District*)
- **DeVaney, Jon** (*Yakima Valley Growers-Shippers Association*)
- **Finley, Ande** (*Fisherman Bay Sewer District*)
- **Fleming, Josh** (*Boise Paper*)
- **Gallardo, Angela** (*City of Burien*)
- **Gatchalian, Don** (*Yakima County*)
- **Gaub, Ty** (*U.S. Oil & Refining Co.*)
- **Graham, Jeremy** (*City of Olympia*)
- **Gyselinck, Craig** (*Quincy-Columbia Basin Irrigation District*)
- **Halstrom, Jim** (*Washington State Horticultural Association / WA Water Policy Alliance*)
- **Haslip, Heather** (*Port of Skagit*)
- **Hegel, Kevin** (*City of Montesano*)
- **Hermanson, Mike** (*Spokane County Water Resources*)
- **Hildebrandt, Pete** (*Alcoa & Western States Petroleum Association*)
- **Himebaugh, Jan** (*Building Industry Association of Washington*)
- **Houskeeper, Brandon** (*Association of Washington Business*)
- **Hutton-Tine, Alex** (*Recology*)
- **Iams, Karl** (*U.S. Oil & Refining Co.*)
- **Jack, Richard** (*King County Dept Natural Resources and Parks*)
- **Jarnot, Brittany** (*Everett, Fife, Issaquah, Kent, Lake Stevens, Puyallup, Redmond, Renton*)
- **Johnson, Ken** (*Weyerhaeuser*)
- **Johnson Arledge, Rebecca** (*City of Seattle*)
- **Judd, Nancy** (*Windward Environmental for AWB*)
- **Kibbey, Heather** (*City of Everett*)
- **Kilroy, Sandra** (*King County*)
- **Kook, Shirley** (*Lewis County*)
- **Kounts, John** (*Washington PUD Association*)
- **Krider, Leah** (*The Boeing Company*)
- **Loehr, Lincoln** (*City of Everett*)
- **Mauren, Lorna** (*City of Tacoma*)
- **Meehan, Maureen** (*City of Seattle, Department of Transportation*)
- **Merrill, Laura** (*Washington State Association of Counties*)
- **Morgan, Matt** (*Roza Sunnyside Board of Joint Control*)
- **Norcross, Neil** (*Tesoro Refining & Marketing Co. LLC*)
- **O'Keefe, Gerry** (*WPPA*)
- **Percynski, Beth** (*Procter & Gamble*)
- **Peterson, John** (*Clark Regional Wastewater District*)
- **Phillips, Sandra** (*Spokane Regional Health District*)
- **Plusquellec, Scott** (*City of Seattle, Office of Intergovernmental Relations*)
- **Rae, Alyson** (*Snohomish County*)
- **Ramos, C** (*Boise Paper*)
- **Ransavage, Ryan** (*Miles Sand & Gravel Company*)
- **Rhoads, Kate** (*Seattle Public Utilities*)
- **Rhodes, Brian** (*Western States Petroleum Association and Shell*)
- **Riggs, Michele** (*Cedar Grove Composting*)
- **Sackellares, Robert** (*Georgia Pacific*)
- **Saffery, Susan** (*City of Seattle, Seattle Public Utilities*)
- **Schmidt, Lynn** (*City of Spokane*)
- **Schmidtz, David** (*Phillips 66 Ferndale Refinery*)
- **Schroeder, Carl** (*Association of Washington Cities*)
- **Shopbell, Stephanie** (*South Columbia Basin Irrigation District*)
- **Sklare, Julie** (*City of Everett*)

- **Skrinde, Rolf** (*Twin City Foods*)
- **Spain, Glen** (*Pacific Coast Federation of Fishermen's Associations (PCFFA)*)
- **Steinmetz, Marcie** (*Chelan PUD*)
- **Taylor, Calvin** (*City of Tacoma*)
- **Taylor, Toni** (*Spokane County Water Resources Division*)
- **Thorpe, Ed** (*Coalition for Clean Water*)
- **Turner, Doris** (*The Boeing Company*)
- **VanderWood, Jerry** (*Associated General Contractors of Washington*)
- **VanNatta, Kathryn** (*Northwest Public Power Association*)
- **Varner, Phyllis** (*City of Bellevue*)
- **Verity, Laura** (*Ponderay Newsprint Co.*)
- **Vincent, Carla** (*Pierce County SWM*)
- **Wagner, Theresa** (*City of Seattle*)
- **Waldron, Chris** (*PIONEER Technologies Corporation*)
- **Webber, Terry** (*American Forest & Paper Association*)
- **Wendling, Peg** (*City of Bellingham*)
- **Wertz, Ingrid** (*Seattle Public Utilities*)
- **Whitaker, Brandon** (*Port of Everett*)
- **Wood, Jill** (*Island County Public Health*)
- **Wright, Jeff** (*City of Everett*)
- **Zlateff, Dana** (*City of Issaquah*)
- **Zorza, Dubber** (*Hood River Sand & Gravel*)

5.3 Water Quality Partnership business and local government representatives

- **Archer-Parsons, Andrea** (City of Port Orchard)
- **Blair, Lori** (Boeing, Environment - Stormwater)
- **Burroughs, Blair** (Washington Association of Sewer & Water Districts)
- **Callahan, Jason** (Washington State House of Representatives)
- **Carstens, Steve** (City of Puyallup)
- **Clark, Mark** (WA State Conservation Commission)
- **Coburn, Gail** (Seattle Public Utilities)
- **Cooper, Betsy** (Department of Natural Resources and Parks)
- **Erwin, Tanyalee** (WSU Puyallup Research and Extension Center)
- **Fohn, Mindy** (Kitsap County Public Works)
- **Gordon, Jay** (Washington State Dairy Federation)
- **Harbison, Patrick** (Cowlitz County Public Works)
- **Hildebrandt, Pete** (Western States Petroleum Association)
- **Johnson, Ken** (Weyerhaeuser Company)
- **Griffin, Heather** (City of Everett Public Works)
- **Leif, Bill** (Snohomish County Department of Public Works)
- **Lewis, Teresa** (Pierce County Public Works and Utilities)
- **Mayhew, Miles** (Seattle Public Utilities)
- **McCabe, Christian** (Northwest Pulp & Paper)
- **McCart, Wes** (Stevens County Commissioner, District 1)
- **Meehan, Maureen** (City of Seattle Department of Transportation)
- **Meyer, Andy** (Association of Washington Cities)
- **Michael, Hal** (Sustainable Fisheries Foundation)
- **Navetski, Doug** (King County)

5.4 Email ListServ

Ecology also communicated with interested parties using the Water Quality information (WQInfo) mailing list (ListServ). This list includes over 1,100 recipients at public, businesses, local governments, education, military, and other interests.

Section 6: The SIC Codes of Impacted Industries

The RFA requires Ecology to list the SIC (Standard Industry Classification) codes of impacted industries. The SIC system has long been replaced by the North American Industry Classification System (NAICS).

Based on our analysis of costs, the only likely impacted NAICS code is 3221 (Pulp, Paper, and Paperboard Mills), exclusively through cleanup sites that treat groundwater and are permitted dischargers of treated groundwater to surface waters. Additional possibly impacted NAICS codes include 3221, 3313, and 4247. There are also potential costs to entities seeking Section 401 Certification, if Ecology determines that turbidity is no longer an appropriate measure of the likelihood of in-water construction impacting surface water quality with toxic chemicals in sediments.

Section 7: Impact on Jobs

We used the Washington State Office of Financial Management's Washington Input-Output Model (OFM-IO) to assess the proposed rule's impact on jobs across the state. This methodology estimates the impact as reductions or increases in spending in certain sectors of the state economy flow through to purchases, suppliers, and demand for other goods. Compliance costs incurred by an industry are entered in the OFM-IO model as a decrease in spending and investment.⁴

The OFM-IO model addresses only private sector industries, as does the SBEIS. As such, only a subset of total costs estimated and quantified by the Cost-Benefit Analysis are addressed in the jobs impact analysis. Approximately \$1.5 thousand in quantifiable costs are likely for private industry. Using the OFM-IO model, this is not likely to result in a net loss or gain of jobs in Washington.

Ecology identified additional possible costs to some private dischargers and potentially in-water construction projects, but was unable to quantify these possible costs due to uncertainty about facility or project attributes and behaviors, waterbody or site attributes, and the nature of potentially resulting required actions. If additional actions are required, and private businesses incur costs as a result, the impact to net jobs in the state depends on the nature of the actions, and whether on-site, in-state, or out-of-state resources are used to complete them.

If on-site or in-state resources are used, expenditures on them are likely to support offsetting output and jobs in those industries, and Ecology does not expect significant reductions in jobs as a result of the proposed rule. If out-of-state resources are used, the model represents this as a loss in output and jobs in industries incurring costs, with no offsetting gains to the suppliers they use to take additional required actions under the proposed rule.

⁴ For more information, see <http://www.ofm.wa.gov/economy/io/2007/default.asp>