



DEPARTMENT OF
ECOLOGY
State of Washington

Final Regulatory Analyses

Including the:

Final Cost-Benefit Analysis

Least-Burdensome Alternative Analysis

Administrative Procedure Act Determinations

Regulatory Fairness Act Compliance

*Chapter 173-182 WAC
Oil Spill Contingency Plan*

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For more information contact:

Spill Prevention, Preparedness, and Response Program

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-7455

Washington State Department of Ecology - www.ecology.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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- Final Cost-Benefit Analysis
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-

Chapter 173-182 WAC

Oil Spill Contingency Plan

by

Kasia Patora

and

Sam Wilson

for the

Spill Prevention, Preparedness, and Response Program
Washington State Department of Ecology
Olympia, Washington

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Acronyms

APA	Administrative Procedure Act
BAP	Best Achievable Protection
CBA	Cost-Benefit Analysis
ESSB	Engrossed Substitute Senate Bill
ERTV	Emergency Response Towing Vessel
E2SSB	Engrossed Second Substitute Senate Bill
GRP	Geographic Response Plan
ICS	Incident Command System
LBA	Least-Burdensome Alternative Analysis
NAICS	North American Industry Classification System
NWACP	Northwest Area Contingency Plan
PRC	Primary Response Contractor
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
SMT	Spill Management Team
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRSP	Wildlife Response Service Provider

Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Oil Spill Contingency Plan rule (chapter 173-182 WAC; the “rule”). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules 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 law being implemented.”

The APA also requires Ecology to “determine, after considering alternative versions of the rule...that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives” of the governing and authorizing statutes (RCW 34.05.328(1)(d)).

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination.

All determinations are based on the best available information at the time of publication. Ecology encourages feedback (including specific data) that may improve the accuracy of this analysis.

The Washington Regulatory Fairness Act (RFA; chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on businesses in an industry. It compares the relative compliance costs to small businesses to the largest businesses affected.

Reasons for the rule amendments

Ecology is proposing to amend the rule to in part implement Engrossed Second Substitute Senate Bill (E2SSB) 6269 passed in 2018. The goals of this rulemaking include:

- Establishing requirements for review and approval of Spill Management Teams (SMTs) including entities providing wildlife rehabilitation and recovery services (WRSPs).
- Enhancing requirements for readiness for spills of oils that, depending on their chemical properties, environmental factors (weathering), and method of discharge, may submerge or sink.
- Updating drill requirements to reflect legislative direction.
- Updating planning standards to align vessel and facility requirements and ensure best achievable protection is maintained in contingency plans.
- Enhancing planning standards for oiled wildlife response.

- Making other edits to address inconsistent or unclear direction in the rule, or other administrative edits.

Summary of the amendments

Part I: Purpose, applicability, authority, and definitions

- Purpose, applicability, and definitions to include Spill Management Teams (SMTs) and wildlife response service providers (WRSPs).

Part II (A): General planning, information, and timing

- Phase-in of requirements.

Part II (B): Contingency plan format and content

- Binding agreement plan submission and signatory requirements.
- Plan general content.
- Field document requirements.
- Listing of SMT personnel and timing.

Part II (C): Planning standards

- Potentially sinking oil planning standards.
- Dispersant planning standards.
- In situ burning planning standards.
- Compliance documentation requirements.
- Transfer site-planning standards.

Part II (D): Response and protection strategies for sensitive areas

- Descriptions of sensitive areas and protection.
- Shoreline sensitive areas planning standards.
- Air monitoring for human protection planning standards.
- Wildlife planning standards.

Part II (E): Plan evaluation

- Plan evaluation requirements.
- 5-year review cycle contents.
- Notice requirements.

Part III: Drill and equipment verification program

- Drill participation requirements.

- Drill type and frequency requirements.
- Drill credit allowance.

Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

- Primary Response Contractor (PRC) application and application-revision requirements.
- SMT and WRSP applications and application-revision requirements.

Costs of the amendments

The amendments are likely to result in:

- One-time plan update costs of \$1.3 million to \$1.8 million.
- 20-year present value SMT and WRSP retainer costs of \$245 million to \$368 million. (See section 3.3.2 for distributional assumptions.)
- 20-year present value drill costs of \$14.4 million to \$21.6 million.
- One-time SMT and WRSP application costs of \$49,000.

Estimated total 20-year present value costs of the amendments is approximately \$261 million to \$391 million. There is a potential additional one-time purchase cost of \$80,000 to \$250,000 for transfer site purchase of equipment to meet the four-hour planning standard, but this cost could be lowered by contracting with a PRC holding the asset in an appropriate location.

Benefits of the amendments

The amendments are likely to result in:

- Reduced present value costs or avoided impaired operations, due to phase in of requirements.
- Improved efficiencies in spill management, due to additional planning, available personnel, and contracted or owned assets. This will potentially reduce the severity of oil spill impacts, including impacts to:
 - Public health and safety:
 - Fire.
 - Air quality.
 - Toxic chemical exposure.
 - Drinking water contamination.
 - Subsistence or traditional food source contamination.
 - Evacuation.
 - Property damage and contamination.
 - Property value impacts of risk and spills.
 - Surface water quality.
 - Ground water quality.
 - Fisheries.

- Wildfire.
- Shellfisheries.
- Bird populations.
- Sea mammals.
- Endangered species.
- Animals consuming contaminated fish or shellfish.
- Recreational quality.
- Passive or non-use values for nature.
- Improved efficiency and quality of responses to oiled wildlife and non-floating oils, including impacts to:
 - Water column and sediment wildlife, including shellfish.
 - Bird populations.
 - Animals including sea mammals.
 - Fish.
 - Endangered species such as Southern Resident Killer Whales and some salmon.
 - Recreational use of shorelines.
 - Wildlife habitat surrounding the spill that may be impacted by long-term response size and duration.
 - Property values.
 - Marine transportation and infrastructure.
 - Avoided Emergency Response Towing Vessel (ERTV) drill costs.

We were unable to quantify the degree to which the amendments will improve spill preparedness and response, and so have included various illustrative values of potential impacts. See chapter 4 for full discussion. Some examples of these illustrative values are:

- Modeled spill impacts of a spill affecting the San Juan Islands, of \$142.3 to \$509.9 million.
- Annual spending in and around the Columbia River Gorge, of \$50 million (Oregon side).
- A modeled spill of regional significance in Washington waters potentially causing \$3.2 billion in lost economic activity.
- Willingness to pay for recovery of Puget Sound Chinook or over \$1 billion (ten-year present value).
- Whale watching industry values of \$65 million to \$70 million each year.
- Shoreline property value impacts of up to 80 percent (annualized) after a spill.

Least-burdensome alternative

After considering alternatives to the amended rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

Regulatory Fairness Act compliance

For the purposes of Regulatory Fairness Act (RFA) compliance, and to better reflect compliance cost burden in a competitive context, we have limited the costs examined for RFA compliance to application costs incurred by SMTs. This is because:

- Likely compliance costs differ by multiple orders of magnitude across the related, though not inter-competitive, markets affected by the amendments.
- While plan holders are likely to incur significant costs as a result of the amendments, there are no small-business plan holders covered by the amendments.
- There are no direct costs to PRCs as a result of the amendments.
- Only one potentially impacted WRSP is a private business, so costs are inherently not disproportionate for WRSPs.

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses within the SMT industry. Therefore, Ecology must include elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

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Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Oil Spill Contingency Plan rule (chapter 173-182 WAC; the “rule”). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules 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 law being implemented.” Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to “determine, after considering alternative versions of the rule...that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives” of the governing and authorizing statutes (RCW 34.05.328(1)(d)). Chapter 6 of this document describes that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination. Appendix A provides the documentation for these determinations.

All determinations are based on the best available information at the time of publication. Ecology encourages feedback (including specific data) that may improve the accuracy of this analysis.

The Washington Regulatory Fairness Act (RFA; chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on businesses in an industry. It compares the relative compliance costs to small businesses to the largest businesses affected. Chapter 7 documents that analysis, when applicable.

1.1.1 About the rule

The Oil Spill Contingency Plan rule contains contingency planning, drill, and equipment requirements for:

- Facilities (including pipelines) transporting oil
- Vessels (over 300 gross tons and involved in commerce) and tank vessels and barges transporting oil as cargo
- Primary Response Contractors (PRCs)

The intent of contingency planning and drills is to make covered facilities and vessels plan and practice with personnel, equipment, and response procedures they will use in the event of an oil spill. This includes PRC personnel and equipment. The rule intends to provide the highest level of environmental protection possible using the best achievable technologies available.

When an oil spill occurs, there are very clear rules about who pays for the direct response activities, the cost of assessing environmental damages, and implementing the necessary restoration. State and federal laws require that those responsible for the pollution pay for all costs associated with the cleanup operations.

In addition to paying for cleanup costs and claims from third parties, Washington state may require you or your company to pay:

- A natural resource damage assessment.
- Reimbursement of the state's expenses to respond, assess, and investigate the incident.
- A penalty for violation of the state's law or rule.

A party responsible for a threat of a spill may still be required to reimburse the state for the cost of responding to the threat. For more information on each of these costs, review our webpage <https://ecology.wa.gov/Regulations-Permits/Reporting-requirements/Spills-If-you-spill>.

Financial responsibility refers to the verification that demonstrates a responsible party is able to pay for the costs and damages of a spill, up to a specified monetary level. Under chapter 88.40 RCW, all vessels and facilities transporting oil and hazardous substances into Washington must demonstrate financial responsibility. Chapter 88.40 RCW became state law in 1991 under Engrossed Substitute House Bill (ESHB) 1027 (ESHB 1027, Wa. 1991). In Washington, financial responsibility is based on the type of vessel or facility, and the total capacity for storage of product. For details about financial responsibility requirements see our webpage <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Financial-responsibility-for-oil-spills>

To date, Ecology has not established a regulatory level of financial responsibility for oil handling facilities nor a Certificate of Financial Responsibility Program (CFRP) to verify financial responsibility for vessel companies and oil handling facilities. In order to do this, the program would need to develop rules to establish the financial responsibility calculation for facilities. The CFRP would review existing forms of financial responsibility such as an insurance policy, Protection and Indemnity Club membership documents, surety bonds, guarantees, letters of credit, or qualification for self-insurance in order to issue certificates to demonstrate compliance. Annual evidence could be a requirement under this rule, for example.

Being financially responsible ensures a rapid response to a spill and a reduction of damages from the spill.

1.2 Summary of the rule amendments

The amendments revise the following elements of the rule. Note these are organized using the existing rule's part structure and titles.

Part I: Purpose, applicability, authority, and definitions

- Purpose, applicability, and definitions to include Spill Management Teams (SMTs) and wildlife response service providers (WRSPs).

Part II (A): General planning, information, and timing

- Phase-in of requirements.

Part II (B): Contingency plan format and content

- Binding agreement plan submission and signatory requirements.
- Plan general content.
- Field document requirements.
- Listing of SMT personnel and timing.

Part II (C): Planning standards

- Potentially sinking oil planning standards.
- Dispersant planning standards.
- In situ burning planning standards.
- Compliance documentation requirements.
- Transfer site-planning standards.

Part II (D): Response and protection strategies for sensitive areas

- Descriptions of sensitive areas and protection.
- Shoreline sensitive areas planning standards.
- Air monitoring for human protection planning standards.
- Wildlife planning standards.

Part II (E): Plan evaluation

- Plan evaluation requirements.
- 5-year review cycle contents.
- Notice requirements.

Part III: Drill and equipment verification program

- Drill participation requirements.

- Drill type and frequency requirements.
- Drill credit allowance.

Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

- Primary Response Contractor (PRC) application and application-revision requirements.
- SMT and WRSP applications and application-revision requirements.

1.3 Reasons for the rule amendments

Ecology is proposing to amend the rule to in part implement Engrossed Second Substitute Senate Bill (E2SSB) 6269 passed in 2018. The goals of this rulemaking include:

- Establishing requirements for review and approval of SMTs including entities providing wildlife rehabilitation and recovery services WRSPs.
- Enhancing requirements for readiness for spills of oils that, depending on their chemical properties, environmental factors (weathering), and method of discharge, may submerge or sink.
- Updating drill requirements to reflect legislative direction.
- Updating planning standards to align vessel and facility requirements and ensure best achievable protection is maintained in contingency plans.
- Enhancing planning standards for oiled wildlife response.
- Making other edits to address inconsistent or unclear direction in the rule, or other administrative edits.

1.4 Document organization

The remainder of this document is organized in the following chapters:

- Baseline and the rule amendments (chapter 2): Description and comparison of the baseline (what would occur in the absence of the rule amendments) and the adopted changes to rule requirements.
- Likely costs of the rule amendments (chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule amendments.
- Likely benefits of the rule amendments (chapter 4): Analysis of the types and size of benefits we expect to result from the rule amendments.
- Cost-benefit comparison and conclusions (chapter 5): Discussion of the complete implications of the CBA.
- Least-Burdensome Alternative Analysis (chapter 6): Analysis of considered alternatives to the contents of the rule amendments.
- Regulatory Fairness Act Compliance (chapter 7, when applicable): Comparison of compliance costs to small and large businesses; mitigation; impact on jobs.
- RCW 34.05.328 determinations not discussed in chapter 5 or 6 (Appendix A).

Chapter 2: Baseline and the Rule Amendments

2.1 Introduction

We analyzed the impacts of the adopted rule amendments relative to the baseline of the existing rule, within the context of all existing requirements (federal and state laws and rules). This context for comparison is called the baseline, and reflects the most likely regulatory circumstances that entities would face if the amended rule were not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

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 world with and without the rule amendments.

For this rulemaking, the baseline includes (but is not limited to):

- The existing rule, chapter 173-182 WAC, Oil spill contingency plan.
- The authorizing laws:
 - Chapter 88.46 RCW, Vessel oil spill prevention and response
 - Chapter 90.48 RCW, Water pollution control
 - Chapter 90.56 RCW, Oil and hazardous substance spill prevention and response
 - ESSB 6269, amending chapters 82.23B, 88.46, and 90.56 RCW. Relevant amendments primarily relate to planning for spills of potentially sinking oils.

2.3 Adopted rule amendments

The amendments revise the following elements of the rule. Note these are organized using the existing rule's part structure and titles.

Part I: Purpose, applicability, authority, and definitions

- Purpose, applicability, and definitions to include SMTs and WRSPs.

Part II (A): General planning, information, and timing

- Phase-in of requirements.

Part II (B): Contingency plan format and content

- Binding agreement plan submission and signatory requirements.
- Plan general content.
- Field document requirements.
- Listing of SMT personnel and timing.

Part II (C): Planning standards

- Potentially sinking oil planning standards.

- Dispersant planning standards.
- In situ burning planning standards.
- Compliance documentation requirements.
- Transfer site-planning standards.

Part II (D): Response and Protection for Sensitive Areas

- Descriptions of sensitive areas and protection.
- Shoreline sensitive areas planning standards.
- Air monitoring for human protection planning standards.
- Wildlife planning standards.

Part II (E): Plan evaluation

- Plan evaluation requirements.
- 5-year review cycle contents.
- Notice requirements.

Part III: Drill and equipment verification program

- Drill participation requirements.
- Drill type and frequency requirements.
- Drill credit allowance.

Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

- PRC application and application-revision requirements.
- SMT and WRSP application and application-revision requirements.

2.3.1 Part I: Purpose, applicability, authority, and definitions

2.3.1.1 Purpose, applicability, and definitions

Baseline

The baseline rule sets out the purpose and applicability of the rule, including covered vessel and facility oil spill contingency plans, drill and equipment verification, PRCs, recordkeeping, and compliance.

Adopted

The amendments add SMTs and WRSPs to the purpose and applicability of the rule. They also add corresponding definitions of SMT and WRSP.

Expected impact

In and of themselves, the amendments to this section do not have an impact. The impacts of including SMTs and WRSPs in the rule arise from various requirements set out in amendments to other sections of the rule, and are discussed in corresponding sections of this document.

2.3.2 Part II (A): General planning, information, and timing

2.3.2.1 Phase-in of requirements

Baseline

The baseline rule phases in requirements from previous iterations of the rule. These include phased-in compliance timing for plan updates and equipment requirements.

Adopted

The amendments replace baseline phase-in timing of requirements with new phased in timing for plan holders, SMTs, and WRSPs.

- Within six months from the rule’s effective date, SMTs and WRSPs must begin to submit applications for review and approval.
- Within 12 months from the rule’s effective date, plan holders must update their plans to comply with the following, as applicable.
 - Contingency plan general content, contractor contact information.
 - SMTs.
 - Transfer sites for covered vessels at locations where transfers occur, and for facilities with a vessel terminal.
 - Planning standards for shoreline cleanup.
 - Binding agreement.
 - Field document, notification form.
 - Type and frequency of drills, commitment to participating in the multi plan holder drill.
 - Planning standards for air monitoring to protect oil spill responders and the public.
 - Planning standards for in situ burning.
 - Planning standards for dispersants.
 - Planning standards for spills of potentially sinking oils.
 - Planning standards for wildlife response.
- Within 18 months from rule’s effective date:
 - Vessels enrolling under either an umbrella contingency plan or a multi vessel contingency plan must ensure that their enrollment includes contracted access to a state approved SMT or in-house team.
 - Plan holders must include details about benthic and seafloor resources at risk from non-floating oil spills.
- Within 24 months of the rule’s effective date, plan holders shall meet the requirements for access to enhanced wildlife rehabilitation capability.

Expected impact

Phasing in requirements will allow plan holders, SMTs, WRSPs, and PRCs (as relied upon to meet planning requirements) additional time to meet new or altered requirements in the amendments, compared to immediate compliance at the effective date of the rule. We do not expect amendments to this section to result in costs, as compared to the baseline.

2.3.3 Part II (B): Contingency plan format and content

2.3.3.1 Binding agreement plan submission and signatory requirements

Baseline

The baseline rule requires the plan holder to submit a signed statement with contact information, binding the plan holder to:

- Verify acceptance of the plan, and commit to response.
- Commit to having an incident commander in the state within six hours of notification of a spill.
- Commit to plan implementation and personnel training.
- Commit to working in unified command within the Incident Command System (ICS).

Adopted

The amendments expand the binding agreement requirements to the plan submitter, who is not necessarily the plan holder as under the baseline. The signatory may be an authorized:

- Representative of a nonprofit corporation established to provide oil spill contingency plan coverage.
- Owner, operator, or a designee with authority to bind the owners and operators of the facilities or vessels covered by the plan.
- Resident agent of the vessel(s) submitting the plan.
- Representative(s) of a company contracted to the vessel or facility and approved by Ecology to provide containment and clean-up services.

Expected impact

These amendments are likely to result in plan update costs. They will also result in benefits arising from more options in management of contingency plans, such as improved management of response, and potential reduced overall costs for plan holders that choose external plan submitters.

2.3.3.2 Plan general content

Baseline

The baseline rule sets out requirements for the contents of all contingency plans, including:

- Reference to, and consistency with, the Northwest Area Contingency Plan (NWACP).
- Requirements intended to be met.
- Size of the worst-case spill.
- Log sheet to record revisions to the plan.
- Cross-reference table.
- PRC contact information and contract terms.
- ICS personnel commitment.
- Procedures to track and account for the entire volume of oil recovered and oily wastes generated and disposed of during spills.

There are also specific differing additional requirements for:

- Facility plans.
- Vessel plans.
- Plans covering multiple vessels with different owners.
- Umbrella plans.

Adopted

The amendments expand contact information requirements for all plans to include relevant SMT or WRSP information. The phone numbers for PRCs, SMTs, or WRSPs must be one at which they can be reached 24 hours a day.

Expected impact

These amendments are likely to result in plan update costs. They are also likely to result in improved efficiency of response, including certainty that PRCs, SMTs, and WRSPs are under contract and can be reached at any time.

2.3.3.3 Field document requirements

Baseline

The baseline rule requires a field document that lists time-critical information for the initial emergency phase of a spill and a substantial threat of a spill. This includes notification procedures and a call list.

Adopted

The amendments add a form to the field document, to document notifications.

Expected impact

The amendments are likely to result in plan update costs, as well as the benefit of ensuring responders complete notifications and document them appropriately.

2.3.3.4 Listing of Spill Management Team personnel and timing

Baseline

The baseline rule requires a listing of personnel available to manage spill response. This includes an organizational diagram, and one primary and one alternate person to lead each ICS spill management position. This may be maintained at the plan holder's office. PRCs filling roles must agree in writing, and be contracted. Positions are per the NWACP standard ICS organizational chart, including:

- Responsible Party Incident Commander
- Public Information Officer
- Liaison Officer
- Safety Officer
- Operations Section Chief
- Planning Section Chief
- Logistics Section Chief
- Finance Section Chief

The plan must also identify a primary and alternate incident commanders that could arrive at the initial command post in six hours. The baseline rule also requires descriptions of:

- Spill management positions
- The planning process
- Training
- Estimated arrival timeframes for the rest of the spill management team
- Transition processes

Adopted

The amendments require a table in the plan, listing personnel or the contracted SMT filling ICS roles. Three people trained to fill each of the following roles:

- Responsible Party Incident Commander
- Public Information Officer
- Liaison Officer
- Safety Officer
- Planning Section Chief
- Operations Section Chief

- Logistics Section Chief
- Finance Section Chief

One person capable of filling each of the roles:

- Air Operations Branch Director
- Wildlife Branch Director
- Situation Unit Leader
- Resources Unit Leader
- Documentation Unit Leader
- Environmental Unit Leader

PRCs, SMTs, or WRSPs used to fill roles must have applications on file with the state, and be contracted. A person may fill up to two roles in the table. Position and planning process descriptions in the incident management handbook may be referenced.

A combination of training and experience in drills and spills may be used to describe SMT personnel capabilities within response roles.

The plan must include a narrative description of estimated team arrival timeframes to the state.

Expected impact

The amendments will likely result in additional costs, either to the plan holder for training additional internal staff, or in the form of contracting costs to retain an external SMT and WRSP. They are also likely to result in improved response efficiency, and less potential environmental, property, or human health damage.

2.3.4 Part II (C): Planning standards

2.3.4.1 Potentially sinking oil planning standards

Baseline

The baseline rule sets out planning standards for pipelines carrying crude oils or diluted bitumen, and plan holders carrying, handling, storing, or transporting Group 5 oils.

Planning standards for pipelines carrying crude oils or diluted bitumen include a contract with a PRC with resources, equipment, and capabilities to respond to spills of oils that may weather and submerge or sink. Planning standards for plan holders dealing with Group 5 oils must have a contract with a PRC with resources capable of responding to spills of Group 5 oils. Equipment must be able to arrive at a spill within 12 hours.

ESSB 6269 also added a new section to chapter 88.461 RCW, directing Ecology to update rules for contingency plans to require:

- Covered vessels to address situations where oils, depending on their qualities, weathering, environmental factors, and method of discharge, may submerge or sink in water.

- Standards for best achievable protection for situations involving these oils.

Adopted

The amendments delete planning standards for pipelines carrying crude oils or diluted bitumen, and expand the Group 5 planning standards to all plan holders handling or transporting oils that may weather and sink.

The plan holder or contracted PRC must have capable personnel and equipment to respond to a spill of these oils within the timeframes in the table below. The plan must also detail the process for identifying if the oil handled has the potential to submerge or sink and include a description of the process for detecting, delineating, and recovering non-floating oils in the areas that may be impacted.

Table 1: Adopted planning standards for oils that may weather and sink

Time (hours)	Capability
1	Initiate an assessment and consultation regarding the potential for the spilled oil to submerge or sink.
6-12	Resources to detect and delineate the spilled oil such as side scan or multi beam sonar, divers, remotely operated vehicles, or other methods to locate the oil on the bottom or suspended in the water column could have arrived. Additionally, containment boom, sorbent boom, silt curtains, or other methods for containing the oil that may remain floating on the surface or to reduce spreading on the bottom could have arrived
12-24	Resources and equipment, such as sampling equipment, necessary to assess the impact of the spilled oil on the environment oil could have arrived. Dredges, submersible pumps, or other equipment necessary to recover oil from the bottom and shoreline could have arrived.

Expected impact

The amendments are likely to result in plan update costs, and potential costs of contracting with a PRC to meet the new required equipment and response capabilities. It is also likely to result in benefits from reduced potential damages to water column species and sediments, as well as reduced or avoided cleanup costs resulting from oils sinking.

2.3.4.2 Dispersant planning standards

Baseline

The baseline rule sets planning standards for plan holders with vessels carrying Group 2 or 3 persistent oil as a primary cargo in areas where use of dispersants is available per the NWACP. Plan holders must:

- Identify locations of dispersant stockpiles.
- Describe methods of transporting equipment and supplies to the staging area.
- Describe operational support capability.

Resources must be capable of arriving within 12 hours of spill notification.

Adopted

The amendments expand planning requirements to all plan holders carrying, handling, storing, or transporting Group 2, 3, or 4 persistent oils that are known to be dispersible.

Expected impact

The amendments are likely to result in plan update costs, as well as benefits related to appropriate use of dispersants by all plan holders and alignment with the NWACP Dispersant Policy.

2.3.4.3 In situ burning planning standards**Baseline**

Based on the NWACP, the baseline rule requires plan holders operating where in situ burning¹ has an expedited approval process, to plan for the use of in situ burning.

Adopted

The amendments add personal protective equipment to the list of equipment that must be at the locations listed in the plan. They also add personnel resources to the description of resources used to monitor equipment effectiveness.

Expected impact

The amendments are likely to result in plan update costs, as well as benefits related to preparedness for in situ burning for all oil types, and additional protection for personnel, and increased alignment with the NWACP In situ Burning Policy.

2.3.4.4 Compliance documentation requirements**Baseline**

The baseline rule requires plan holders to describe how they meet planning standards. This includes a spreadsheet of resources intended to meet the planning standards, accounting for boom, recovery systems, storage, and personnel, by type, quantity, home base, and provider.

Adopted

The amendments remove the requirement to identify personnel by resource type, quantity, home base, and provider. The amendments add options for documentation supporting requests for alternative notification mobilization, and travel time, to include actual performance during drills or planned equipment moves. They also expand the situations for when plan holders can test alternate response times, to include training exercises and planned drills.

¹ In situ burning is a technique sometimes used by people responding to an oil spill. In situ burning involves the controlled burning of oil that has spilled from a vessel or a facility, at the location of the spill.

Expected impact

These amendments are not likely to result in costs. Ecology provides plan holders with the spreadsheet that documents compliance. There are also likely benefits from removing some documentation requirements.

2.3.4.5 Transfer site planning standards

Baseline

The baseline rule sets 6-, 12-, 24-, and 48-hour planning standards for boom, recovery, and storage.

Adopted

The amendments add:

- A two-hour planning standard for a safety assessment of the spill by trained crew and appropriate air monitoring, with 1,000 feet of boom.
- A four-hour planning standard for at least an additional 200 feet of boom and temporary storage of at least 196 barrels with the ability to collect, contain, and separate collected oil from water. The additional boom should be capable of encountering oil at advancing speeds of at least 2 knots in waves. This boom shall be of a type appropriate for the operating environment.

Expected impact

The amendments are likely to result in additional equipment costs or contracting costs (if current contracted PRC lacks required assets) and response benefits if plan holders do not have access to equipment that does not meet the planning standards.

2.3.5 Part II (D): Response and protection for sensitive areas

2.3.5.1 Descriptions of sensitive areas and protection

Baseline

The baseline rule requires plans to include descriptions of sensitive areas and strategies to protect resources, including:

- Natural resources
- Coastal and aquatic habitat types and sensitivity by season
- Breeding sites
- Presence of state or federally listed endangered or threatened species
- Presence of commercial and recreational species
- Physical geographic features

Adopted

The rule adds that identification of sensitive resources will not be limited to surface and shoreline species at risk from floating oil spills, but will also include water column and benthic species at risk from sunken, submerged, or non-floating oil spills. Non-floating oils considerations include identification of:

- Waterway depths.

- Water density.
- Sediment load.
- Sea floor or river bottom types.
- Response options based on those factors.

Expected impact

Ecology will do this through a formal Geographic Response Plan (GRP) update process. We therefore expect the amendments to result in only minor plan update costs of ensuring the plan references the appropriate GRP(s), and identifying if the plan holder can appropriately deal with non-floating oil spills. Likely benefits include more comprehensive preparedness for sunken, submerged, and non-floating oils and increased stakeholder input on the resources at risk described in GRPs.

2.3.5.2 Shoreline sensitive areas planning standards

Baseline

The baseline rule includes planning standards for shoreline sensitive areas for facilities, and for covered vessels.

The facility shoreline planning standard requires facility plan holders to identify and ensure the availability of response resources necessary to perform shoreline cleanup operations. This standard is evaluated using the criteria found in 33 C.F.R. Part 155 Appendix B and 33 C.F.R. 154 Appendix C.

The vessel shoreline planning standard requires plan holders to:

- Include procedures for identifying shoreline types that could be impacted by an oil spill and procedures to determine appropriate response tactics for the potentially impacted shorelines during spills.
- Have contracted access to one hundred trained shoreline clean-up workers. Shoreline clean-up workers must have appropriate safety and Hazwoper training and will not be counted towards other planning standards.
- Have contracted access to trained shoreline clean-up supervisors. Training for supervisors must include safety, Hazwoper, and relevant ICS courses.
- Have access to adequate equipment for passive recovery for three miles of shoreline on three tide lines.
- Have access to a shoreline clean-up mobile storage cache that can support 80 to 100 shoreline clean-up workers with personal protective equipment, hand tools, and other logistical support for three to five days.
- Describe how they will collect, manage, and transmit data.
- Describe how they will obtain additional resources necessary to support fourteen additional days of shoreline cleanup, including vendor names, contact information, resources, and approximate time frames for resources to arrive at a staging area.

Adopted

The amendments remove the facility shoreline-planning standard, and include all plan holders under the shoreline-planning standard applied to only vessels under the baseline.

Expected impact

Ecology determined that the facility shoreline planning standard requirements in the baseline are insufficient. Therefore, a facility meeting the baseline standard is not likely to have a plan that would provide best achievable protection and would not be approved. Consequently, we do not expect significant costs or benefits from these amendments, as an approvable plan would provide similar protection to what is required for vessels under the baseline. However, we do expect some benefit to come from making it more clear up-front what is necessary to include in the sensitive areas component of a plan so Ecology can approve the plan.

2.3.5.3 Air monitoring for human protection planning standards

Baseline

For pipelines, the baseline rule sets planning standards for air monitoring to protect oil spill responders and the public. These standards include narrative description of:

- How an initial safety assessment for responders will happen.
- How air monitoring will happen in the work area and community.
- Air monitoring instruments and detection limits.
- Action levels for various oil constituents (components).
- Data management protocols and reporting.
- Communication with at-risk populations.
- Evacuation zone and shelter-in-place criteria determination.

Adopted

The amendments apply the baseline requirements to all plan holders, instead of only pipelines.

Expected impact

The amendments are likely to result in plan update costs for plan holders other than pipelines (which already must meet the standard under the baseline). They are also likely to result in benefits of vessels and facilities planning for comprehensive protection for responders, at-risk populations, and nearby communities.

2.3.5.4 Wildlife planning standards

Baseline

The baseline rule requires plan holders to:

- Identify applicable requirements for wildlife rescue and rehabilitation.
- Describe the equipment, personnel, resource, and strategies for compliance with the requirements. It requires the identified resources to be able to arrive on scene within 24 hours of spill notification.

Adopted

The amendments replace the baseline requirements with a set of more specific requirements in planning to respond to and care for impacted or at-risk wildlife. This includes contact information for contracted PRCs or WRSPs that maintain the required equipment, personnel, permits, materials, and supplies, for conducting wildlife response operations. Plans must describe equipment, personnel, and resources including:

- Equipment and personnel for initial impact assessment and wildlife reconnaissance via air, land, or water in the spill area.
- Equipment and personnel for whale reconnaissance (if the plan holder operates or transits in areas where spills may impact whales).
- Contact information for providers of aircraft for reconnaissance and deterrence of whales, including Southern Resident Killer Whales.
- Contact information for persons or organizations that can identify Southern Resident Killer Whales and support field reconnaissance activities.
- Equipment and personnel for deterring wildlife in areas the plan holder operates or transits.
- Equipment and personnel for monitoring and deterrence of Southern Resident Killer Whales.
- Equipment and supplies for mobile field stabilization activities.
- Wildlife rehabilitation facilities, space, and equipment suitable to conduct wildlife rehabilitation activities, sufficient to meet Washington Department of Fish and Wildlife (WDFW) requirements in WAC 220-450-100. Plan holders must have contracted access to (within 24-hour distance):
 - A minimum of 2,400 square feet of space to house and treat wildlife, for intake, pre-wash stabilization, wash/rinse, drying, and isolation/intensive care activities as needed, with a minimum of four wash and rinse stations.
 - A minimum of 1,000 square feet of space to support rehabilitation activities, for animal food preparation, medical lab, dry storage, morgue, and necropsy.
 - Pools with a minimum of 1,200 square feet of surface area, at least three feet deep.
 - Laundry and cold/freezer storage capacity to support wildlife response.

The plan must also include a diagram of how the WRSP could configure the equipment and provide details about at least one strategic staging location for the rehabilitation facility.

Plan holders must have contracted access to a WRSP with:

- Personnel that are appropriately trained to staff and manage the wildlife response within an incident command structure. At least one person must be able to arrive in state within 12 hours of spill notification.

- Personnel to conduct and manage field aspects of a wildlife response including impact assessment, reconnaissance, deterrence, capture, stabilization, and rehabilitation. At least two people must be able to arrive within 12 hours of spill notification. An additional seven support personnel must be able to arrive within 24 hours of spill notification.

Expected impact

The amendments are likely to result in plan update costs, as well as the costs of meeting the planning standard by acquiring access to resources (either through purchase or contract with a WRSP). They are also likely to result in benefits of significantly improved and coordinated response to oiled wildlife, resulting in potential reduced mortality and illness in affected animal populations, including threatened and endangered populations.

2.3.6 Part II (E): Plan evaluation

2.3.6.1 Plan evaluation requirements

Baseline

The baseline rule allows only resources held by approved PRCs, the plan holder, or through a mutual aid agreement or letter of intent, to be counted toward planning standards.

Adopted

The amendments limit resources that may be counted toward planning standards to those held by PRCs, the plan holder, or via contract, mutual aid agreement, or letter of intent.

Expected impact

The amendments are likely to result in minor plan update costs, as well as the benefit of having contractual obligations for required resources included in plans.

2.3.6.2 5-year review cycle contents

Baseline

The baseline rule requires Ecology to review planning standards on a five-year cycle to evaluate best achievable protection (BAP) based on multiple criteria, and evaluating various spills operations, tools, and technologies.

Adopted

The amendments add to the list of spills operations, tools, and technologies, by including improvements in equipment and techniques used for wildlife response.

Expected impact

We do not expect this amendment to result in immediate costs, as future improvements in equipment and techniques used for wildlife response are unknown. If and when those improved tools become available, there may be future purchasing or contract costs, and wildlife benefits associated with new requirements.

2.3.6.3 Notice requirements

Baseline

The baseline rule requires public notice, review, and comment periods for various submittal and updates.

Adopted

The amendments add a requirement for SMT and WRSP applications to undergo public notice, review, and comment periods.

Expected impact

Under the baseline, it is not possible to be an approved SMT or WRSP. We anticipate those who want to become approved SMTs and WRSPs will do so when there is a net benefit to them, including costs associated with application notice, review, and comment periods. Additionally, the prices they charge for services are likely to reflect these setup costs for approval under the amendments. The amendments are also likely to result in benefits of sufficient public review of potential personnel, structures, and assets used to respond to spills, helping determine whether they meet environmental, property, and public health protection standards held by the public.

2.3.7 Part III: Drill and equipment verification program

2.3.7.1 Drill participation requirements

Baseline

The baseline rule requires plan holders and PRCs to participate in drills and equipment verification programs.

Adopted

The amendments add SMTs and WRSPs to the parties required to participate plan holder drills and equipment verification programs.

Expected impact

The amendments are likely to result in personnel and equipment costs to SMTs and WRSPs. If these resources are held through contract, these costs are likely to be passed on to plan holders as part of retainer fees for contracts with SMTs and WRSPs. The amendments are also likely to result in benefits of SMTs and WRSPs having experience with drills and having their processes tested to ensure they are sufficiently effective and protective.

2.3.7.2 Drill type and frequency requirements

Baseline

The baseline rule sets the types and frequencies of drills, including:

- Tabletop drills – annual. These drills demonstrate a plan holder’s ability to manage a spill using the ICS.
- Deployment drills – two per year.
- Ecology-initiated unannounced drills – as necessary.
- ERTV deployment drills (for covered vessels transiting through the Strait of Juan de Fuca) – one in each three-year cycle, or as part of a large multi objective deployment drill.

- Wildlife deployment drills – one in each three-year cycle, or as part of a large multi objective deployment drill.
- Tank vessel multi plan holder deployment drills – one in each three-year cycle. This drill must be scheduled at least 60 days in advance.

Adopted

The amendments change attributes of the baseline drills:

- Tabletop drills also include SMTs.
- Ecology-initiated unannounced drills may include verification of Ecology-approved alternative vessel speeds.
- Credit for ERTV deployment drills may be achieved for an emergency call-out of the ERTV.
- Wildlife deployment drills must be separate drills.
- The tank vessel multi plan holder deployment drill is expanded to the multi plan holder large-scale equipment deployment drill. This drill must still be performed once in each three-year cycle, and may additionally involve responses to potentially non-floating oils. It may address spills of potentially non-floating oils, and Southern Resident Killer Whales monitoring and deterrence. This drill must be scheduled at least 90 days in advance.

Expected impact

The amendments are likely to result in additional costs of drills, for additional response involving SMTs, or personnel and equipment for response to threatened wildlife or non-floating oils. In the multi plan holder deployment drill, plan holders share costs rather than incur them individually. By including these elements in drills, the amendments are likely to result in benefits of effective and more-practiced and efficient response related to wildlife and non-floating oils, and in general.

Including approved alternative vessel speeds in drills ensures that those speeds are appropriate, and can confirm the alternative vessel speeds requested by plan holders.

Allowing credit for the ERTV deployment for an emergency call-out of the ERTV reduces drill costs for plan holders. In lieu of conducting a drill the entity that manages the ERTV submits an after action report on behalf of all vessel plan holders.

2.3.7.3 Drill credit allowance

Baseline

The baseline rule allows plan holders to request drill credit for response to an actual spill, if Ecology participates and evaluates spill response.

Adopted

The amendments limit how often a plan holder can use drill credits earned from response to an actual spill to once per three-year cycle, but allows plan holders to request credit for additional spill response. Ecology may grant additional credit to the plan holder if they can successfully demonstrate lessons learned or key response components.

Expected impact

We do not expect the amendments to result in significant costs or benefits, since they establish a limit of using a spill for credit to once per three-year cycle, but allow extension beyond it under certain circumstances. We consider this a clarification.

2.3.8 Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

2.3.8.1 Primary response contractor application and application-revision requirements

Baseline

The baseline rule sets application, content submittal, and review requirements for PRCs.

Adopted

The amendments specify that safety training must include a determination that *response* equipment and *personal protective* equipment are appropriate for incident conditions.

Expected impact

This amendment is primarily a clarification, since the baseline states that training must include determination that equipment is appropriate for conditions. Beyond improved clarity, we do not expect this amendment to result in significant costs or benefits.

2.3.8.2 Spill Management Team and Wildlife Response Service Provider application and application-revision requirements

Baseline

The baseline rule does not address SMT or WRSP applications.

Adopted

The amendments add requirements and processes for SMT or WRSP applications – and changes to those applications – to become state-approved SMTs and WRSPs must:

- Submit an application.
- Provide 24-hour per day contact for spill management.
- Commit to mobilize immediately or up to two hours after notification.
- Commit to an incident commander arriving within six hours of notification.
- Assist in meeting plan and drill requirements.

- Commit to implementation and use of plans to which they are contracted.
- Commit to working in unified command within the ICS.

Applications must contain:

- Personnel list and information.
- ICS form 207 Organizational Diagram.
- Description of 24-hour call-out process and estimated timeframes for arrival in the state.
- List of staff training and frequency.

WRSPs must also:

- Describe the types of wildlife response activities they provide.
- Identify personnel that hold wildlife rehabilitation permits with oiled wildlife endorsements.
- Identify personnel capable of director or other command post support roles.
- Identify field staff.
- List training relevant to key wildlife response roles and capabilities.

When Ecology receives an application, we review it to make sure it is complete. If we need more information, we notify the SMT or WRSP. As part of the application process, we inspect training records and conduct a test of call-out procedures. We review approvals every three years.

If an SMT or WRSP makes significant changes to the information they gave Ecology as part of their initial application for approval, they need to provide written notification to Ecology and plan holders with whom they have contracts, within 24 hours.

Expected impact

The amendments are likely to result in application costs for SMTs and WRSPs, as well as benefits of ensuring that approved SMTs and WRSPs are capable of providing appropriate services and equipment to meet planning standards when they are under contract to plan holders.

Chapter 3: Likely Costs of the Rule Amendments

3.1 Introduction

We estimated the likely costs associated with the adopted rule amendments, as compared to the baseline. The rule amendments and the baseline are discussed in detail in chapter 2 of this document.

3.2 Cost summary

3.2.1 Part I: Purpose, applicability, authority, and definitions

3.2.1.1 Purpose, applicability, authority, and definitions

In and of themselves, the amendments to this section do not have an impact. The impacts of including SMTs and WRSPs in the rule arise from various requirements set out in amendments to other sections of the rule, and are discussed in corresponding sections of this document.

3.2.2 Part II (A): General planning, information, and timing

3.2.2.1 Phase-in of requirements

We do not expect amendments to this section to result in costs, as compared to the baseline.

3.2.3 Part II (B): Contingency plan format and content

3.2.3.1 Binding agreement plan submission and signatory requirements

These amendments are likely to result in plan update costs. See section 3.3.1.

3.2.3.2 Plan general content

These amendments are likely to result in plan update costs. See section 3.3.1.

3.2.3.3 Field document requirements

The amendments are likely to result in plan update costs. See section 3.3.1.

3.2.3.4 Listing of SMT personnel and timing

The amendments will likely result in additional costs, either to the plan holder for training additional internal staff, or in the form of contracting costs to retain an external SMT. See section 3.3.2.

3.2.4 Part II (C): Planning standards

3.2.4.1 Potentially sinking oil planning standards

The amendments are likely to result in plan update costs, and costs of contracting with a PRC to meet the new required equipment and response capabilities. In conversations with PRCs, we identified that PRCs already have the assets necessary to meet the planning standard. As such, their current fees reflect access to these assets. Costs will therefore be limited to plan update costs. See section 3.3.1.

3.2.4.2 Dispersant planning standards

The amendments are likely to result in plan update costs. See section 3.3.1.

3.2.4.3 In situ burning planning standards

The amendments are likely to result in plan update costs. See section 3.3.1.

3.2.4.4 Compliance documentation requirements

These amendments are not likely to result in costs.

3.2.4.5 Transfer site planning standards

The amendments are likely to result in additional equipment costs or contracting costs if plan holders do not have access to equipment that does not meet the planning standards. See section 3.3.5.

3.2.5 Part II (D): Response and Protection for Sensitive Areas

3.2.5.1 Descriptions of sensitive areas and protection

Ecology will do this through a formal Geographic Response Plan (GRP) update process. We therefore expect the amendments to result in only minor plan update costs of ensuring the plan references the appropriate GRP(s), and identifying if the plan holder can appropriately deal with non-floating oil spills. See section 3.3.1.

3.2.5.2 Shoreline sensitive areas planning standards

Ecology determined that the facility shoreline planning standard requirements in the baseline are insufficient. Therefore, a facility meeting the baseline standard is not likely to have a plan that Ecology would approve because it would not provide best achievable protection. Consequently, we do not expect significant costs or benefits from these amendments, as an approvable plan would provide similar protection to what is required for vessels under the baseline.

3.2.5.3 Air monitoring for human protection planning standards

The amendments are likely to result in plan update costs for plan holders other than pipelines (which already must meet the standard under the baseline). See section 3.3.1.

3.2.5.4 Wildlife planning standards

The amendments are likely to result in plan update costs, as well as the costs of meeting the planning standard by acquiring access to resources (either through purchase or contract with a WRSP). See sections 3.3.1 and 3.3.2.

3.2.6 Part II (E): Plan evaluation

3.2.6.1 Plan evaluation requirements

The amendments are likely to result in minor plan update costs. See section 3.3.1.

3.2.6.2 5-year review cycle contents

We do not expect this amendment to result in immediate costs, as future improvements in equipment and techniques used for wildlife response are unknown. If and when those improved tools become available, there may be future purchasing or contract costs that would be reflected in separate rulemaking.

3.2.6.3 Notice requirements

Under the baseline, it is not possible to be an approved SMT or WRSP. We anticipate those who want to become approved SMTs and WRSPs will do so when there is a net benefit to them, including costs associated with application notice, review, and comment periods. Additionally, the prices they charge for services are likely to reflect these setup costs for approval under the amendments.

3.2.7 Part III: Drill and equipment verification program

3.2.7.1 Drill participation requirements

The amendments are likely to result in personnel and equipment costs to SMTs and WRSPs. If these resources are held through contract, these costs are likely to be passed on to plan holders as part of retainer fees for contracts with SMTs and WRSPs. See section 3.3.2.

3.2.7.2 Drill type and frequency requirements

The amendments are likely to result in additional costs of drills, for additional response involving SMTs, or personnel and equipment for response to threatened wildlife or non-floating oils. In the multi plan holder deployment drill, plan holders share in costs rather than incur them individually. See section 3.3.3.

3.2.7.3 Drill credit allowance

We do not expect the amendments to result in significant costs or benefits, since they establish a limit of using a spill for credit to one time per three-year cycle, but allow extension beyond it under certain circumstances. We consider this a clarification.

3.2.8 Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

3.2.8.1 Primary response contractor application and application-revision requirements

This amendment is primarily a clarification, since the baseline states that training must include determination that equipment is appropriate for conditions.

3.2.8.2 Spill Management Team and Wildlife Rescue Service Provider application and application-revision requirements

The amendments are likely to result in application costs for SMTs and WRSPs. See section 3.3.4.

3.3 Quantifiable costs

3.3.1 Plan update costs

Ecology anticipates that plan holders will incur costs for updates to their Oil Spill Contingency Plans. Costs for updates vary based on the risk and complexity of the covered parties operations. For example, plan updates for a small business that operates a single inland fuel terminal would be less complex than a multi-national company that operates multiple oil refineries, pipelines, and vessels. The majority of plan holders work with third-party consultants, often their SMTs, to make updates to Contingency Plans, however larger covered parties often have in-house capacity to complete the updates. Based on conversations

with planning consultants currently working with Washington plan holders, we estimate the high-end range of plan update costs to be between \$40,000 and \$55,000 each. This cost range reflects two senior-level planners and between two and three months of work. Expenditures and time consumed are likely to be significantly less for covered parties with capacity to make plan updates in-house.

Plan holders that operate in or around ecologically sensitive areas or have a possibility of disturbing sensitive areas (breeding grounds, endangered species habitat, etc.) will be required to perform additional modeling and research under the adopted language. For example, a pipeline that traversed through numerous habitats may be required to model the worst-case scenario spills in each of the habitats, accounting for species presence and resiliency and seasonality, among other factors.

If all 32 contingency plans need to be updated, at a cost of between \$40,000 and \$55,000 each, this translates to a total one-time cost of between \$1.3 million and \$1.8 million.

3.3.2 Internal and retainer costs

Plan holders will incur additional costs for training additional internal spill management staff, or retaining contracts with SMTs and WSRPs under the updated planning standards. We assume plan holders will choose the least-cost option that meets their planning and spill response needs. Currently, very few plan holders have retainer contracts with WRSPs.

Retainer fees are typically levied at a company-wide level (rather than by specific facility) and vary widely among plan holders. Retainer fees are highly variable, ranging between \$500 annually for the smallest, least complex plan holders, to over \$1.5 million annually for multi-national plan holders with complex operations.² Fees are most likely related to complexity, risk, and the potential resources required to meet that risk in a worst-case scenario. For example, a trans-state pipeline that traverses multiple ecosystems with sensitive habitats or endangered species would be required to be prepared to mitigate potential spills in each of the habitat types that it travels through. This would likely represent the higher end of retainer fees.

In general, plan holders only operating stationary facilities will likely see lower fees than those operating pipelines, vessels, or a combination of the three. However, refineries located close to marine habitats will likely be required to have a higher level of preparedness depending on where loading and offloading occurs (over water vs. land), the types of products processed, and types of adjacent habitat.

At the time of this final analysis, limited information was available about which of the 32 current plans (held across 20 companies) will require which level of WRSP retainer. Given variance across how many plans a company holds, as well as variance in complexity, risk,

² Based on conversations with current PRCs. Note that potential WRSPs are currently classified as PRCs. The PRC provided an estimate noted that wildlife-related costs are often the most expensive component of drills, spills, and planning.

potential resources, and the number and attributes of potentially affected ecosystems, we made various assumptions about the distribution of retainer fee levels:

- Using the highly simplified assumption that all plans are either simple or complex, the overall range of potential costs is between \$10,000 and \$30 million each year. This is a very large range, and is not likely to be illustrative of actual costs.
- If we assume a bi-modal distribution, in which the seven companies holding two or more plans incur high-end complex costs, while the remaining 11 companies (excluding the two large vessel plans) incur low-end simple costs, total costs would be \$10.5 million annually. Adding two large vessel plans to the complex level would increase total costs to \$13.5 million annually.
- As not all 13 companies holding one plan each are likely to incur the simplest costs, if we assume a uniform distribution of costs between \$500 and \$1.3 million across those companies, with the multi-plan holding companies still incurring high-end costs, the total annual cost rises to \$20.3 million.

The corresponding 20-year present values³ of the costs above are:

- Assuming bi-modal distribution, \$245 million.
- Assuming uniform distribution for single-plan holders, \$368 million.

We conservatively assume that all costs incurred by plan holders for PRC, SMT, and WRSP services are additive. We have, however, identified at least one provider of combined services (PRC and SMT). If there are economies of scale to combining services, including up to the level of integrating PRC, SMT, and WRSP services from a single provider, overall costs will be lower than if services are contracted separately or achieved through separate internal and external services (if response assets provided are appropriate for the plan holder's planning needs). Several larger plan holders employ internal SMTs that function at a national level. Companies with internal SMTs will incur fewer expenditures than those retaining external teams.

3.3.3 Drill costs

The amended rule includes additional requirements related to drills that will likely result in personnel and equipment costs to SMTs and WRSPs. The primary drivers of cost increases include the requirements for:

- SMTs and WRSPs to participate in drills.
- Separate wildlife deployment drills.
- Accounting for non-floating oils during drills.

Drills are conducted at least once each year as a tabletop drill, and every three years as a large deployment drill.

³ Using a historic average risk-free rate of return of 1.03 percent. US Treasury Department, 2019.

High-end costs for drills could range between \$800,000 and \$1.2 million, depending on the:

- Length of the drill.
- Number and seniority of participating staff.
- Level of planning involved.
- Severity of the drill scenario.
- Disruption to normal revenue activities.
- Overhead costs, such as travel, meeting space, amenities, and potential pre-training.

Tabletop drills typically last for less than two days and cost between \$10,000 and \$100,000, depending on the:

- Number and seniority of participants.
- Amount of planning involved.
- Severity of the drill scenario.

The costs above may be to some degree reflected in updated retainer costs (see section 3.3.2). Plan holders, SMTs, PRCs, and WRSPs all incur costs when conducting drills, however these are typically passed on to the plan holders through retainer or membership fees as a part of SMT, PRC, or WRSP services. Plan holders will likely pay out-of-pocket for drill activities that are less common, such as mobilizing airplanes, ERTVs, dive teams, and remote sensing equipment.

Currently, non-floating oils aren't considered in most drills. Only facilities that produce non-floating oils conduct these drills and they are usually a tabletop exercise due to the significant costs involved. A non-floating oil drill that occurred in the field will require the deployment of significant resources. Costs related to equipment and personnel for non-floating oil drills are not currently included in retainer fees and, according to several PRCs, mobilization of such resources will double the cost of a typical drill. Ecology assumes that the new drill requirements will increase preparedness and therefore reduce costs for plan holders during an actual oil spill.

Since the amendments require that large-scale multi plan holder drills may include deployment of equipment used to respond to non-floating oils, we assumed this annual (one per year in one of the three regions, each three-year cycle) drill will double in cost. This is likely an overestimate, as only the deployment portion was identified as doubling in cost. To examine long-run flows of costs and benefits in a way that is comparable when costs or benefits happen at different times (or at different levels at different times), we use 20-year present value estimates. These estimates discount future values based on the risk-free opportunity cost of having a dollar now versus in the future. The equivalent 20-year present value cost of large-scale deployment drills that include deployment of equipment and

personnel to respond to spills of non-floating oils, is between \$14.4 million and \$21.6 million.⁴

The amended language will require separate wildlife-focused drills. Wildlife drills are nearly always tabletop exercises under current practice. Costs are largely related to staff time for one or two wildlife experts over the course of one to three days and associated travel, lodging, and food costs. Mobilizing wildlife equipment will require additional planning time, support staff, space, and resources to move the equipment. This may result in additional expenses of up to \$30,000 per drill.

Assuming an additional (separate) wildlife drill once every three-year cycle, for 32 contingency plans, the 20-year present value cost is about \$6.1 million.⁵

3.3.4 Application costs

SMTs and WRSPs will incur expenditures related to updating their applications with Ecology. We reached out to SMTs and WRSPs for input on costs, but did not receive responses in time for this analysis. As an estimate, we assumed applications take a General and Operations Manager⁶ 16 hours. At the median wage in Washington of \$60.63, this amendment will result in a one-time cost of \$970. For the identified 46 potential SMTs and four WRSPs, this total cost will be \$49,000.

3.3.5 Transfer site planning standard costs

The amendments are likely to result in additional equipment costs or contracting costs and response benefits if plan holders do not have access to equipment that does not meet the planning standards. Based on identified equipment availability, one transfer site and one planning area do not meet the 4-hour planning standard.

Access to the required additional 200 feet of boom and temporary storage of at least 196 barrels could be acquired through an existing PRC contract (if applicable), additional PRC contracting, or purchase. Purchase will likely be the most costly approach, and we expect plan holders will choose the least-cost approach. Depending on the types of equipment chosen, this could cost between \$80,000 and \$250,000. Acquisition of a NOFI Current Buster 2 system, for example, could cost \$152,000.⁷

⁴ US Treasury Department, 2019.

⁵ Ibid.

⁶ US Bureau of Labor Statistics, 2018. Job classification 11-1021 General and Operations Managers: “Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services.” May 2018 mean hourly wage updated to 2019 dollar values using the Consumer Price Index for all urban consumers. US Bureau of Labor Statistics, 2019.

⁷ <http://www.cleancaribbean.org/esg/>

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Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

We estimated the likely benefits associated with the adopted rule amendments, as compared to the baseline (both described in Chapter 2 of this document).

4.2 Benefit summary

4.2.1 Part I: Purpose, authority, applicability, and definitions

4.2.1.1 Purpose, applicability, and definitions

In and of themselves, the amendments to this section do not have an impact. The impacts of including SMTs and WRSPs in the rule arise from various requirements set out in amendments to other sections of the rule, and are discussed in corresponding sections of this document.

4.2.2 Part II (A): General planning, information, and timing

4.2.2.1 Phase-in of requirements

Phasing in requirements will allow plan holders, SMTs, WRSPs, and PRCs (as relied upon to meet planning requirements) additional time to meet new or altered requirements in the amendments, compared to immediate compliance at the effective date of the rule. See section 4.3.1.

4.2.3 Part II (B): Contingency plan format and content

4.2.3.1 Binding agreement plan submission and signatory requirements

These amendments are likely to result in benefits arising from more options in management of contingency plans, such as improved management of response, and potential reduced overall costs for plan holders that choose external plan submitters. See section 4.3.2.

4.2.3.2 Plan general content

These amendments are likely to result in improved efficiency of response, including certainty that PRCs, SMTs, and WRSPs can be reached at any time. See section 4.3.3.

4.2.3.3 Field document requirements

The amendments are likely to result the benefit of ensuring responders complete notifications and document them appropriately. See section 4.3.3.

4.2.3.4 Listing of Spill Management Team personnel and timing

The amendments will likely result in improved response efficiency, and less potential environmental, property, or human health damage. See section 4.3.3.

4.2.4 Part II (C): Planning standards

4.2.4.1 Potentially sinking oil planning standards

The amendments are likely to result reduced potential damages to water column species and sediments, as well as reduced or avoided cleanup costs resulting from oils sinking. See section 4.3.3.

4.2.4.2 Dispersant planning standards

The amendments are likely to result in benefits related to appropriate use of dispersants by all plan holders. See section 4.3.3.

4.2.4.3 In situ burning planning standards

The amendments are likely to result in benefits related to preparedness for in situ burning for all oil types, and additional protection for personnel. See section 4.3.3.

4.2.4.4 Compliance documentation requirements

These amendments may result in minor avoided documentation costs.

4.2.4.5 Transfer site planning standards

The amendments are likely to result in improved response in the case of plan holders that do not currently have access to equipment that meets the planning standard. See section 4.3.2.

4.2.5 Part II (D): Response and protection for sensitive areas

4.2.5.1 Descriptions of sensitive areas and protection

We expect the amendments to result in more comprehensive preparedness for sunken, submerged, and non-floating oils and increased stakeholder input on the resources at risk described in GRPs.

4.2.5.2 Shoreline sensitive areas planning standards

These amendments will result in more clarity up front of what is necessary to include in the sensitive areas component of a plan so Ecology can approve it.

4.2.5.3 Air monitoring for human protection planning standards

The amendments are likely to result in benefits of vessels and facilities planning for comprehensive protection for responders, at-risk populations, and nearby communities. See section 4.3.3.

4.2.5.4 Wildlife planning standards

The amendments are likely to result in benefits of significantly improved and coordinated response to oiled wildlife, resulting in potential reduced mortality and illness in affected animal populations, including threatened and endangered populations. See section 4.3.3.

4.2.6 Part II (E): Plan evaluation

4.2.6.1 Plan evaluation requirements

The amendments are likely to result in the benefit of having contractual obligations for required resources included in plans. See section 4.3.3.

4.2.6.2 5-year review cycle contents

We do not expect this amendment to result in immediate benefits, as future improvements in equipment and techniques used for wildlife response are unknown. If and when those improved tools become available, there may be future wildlife benefits associated with new requirements.

4.2.6.3 Notice requirements

The amendments are also likely to result in benefits of sufficient public review of potential personnel, structures, and assets used to respond to spills, helping determine whether they meet environmental, property, and public health protection standards held by the public. See section 4.3.3.

4.2.7 Part III: Drill and equipment verification program

4.2.7.1 Drill participation requirements

The amendments are likely to result in benefits of SMTs and WRSPs having experience with drills and having their processes tested to ensure they are sufficiently effective and protective. See section 4.3.3.

4.2.7.2 Drill type and frequency requirements

The amendments are likely to result in benefits of effective, and more-practiced and efficient response related to wildlife and non-floating oils, and in general. Including approved alternative vessel speeds in drills ensures that those speeds are appropriate, and can confirm the alternative vessel speeds requested by plan holders. See section 4.3.3.

Allowing credit for the ERTV deployment drill for an emergency call-out of the ERTV may reduce drill costs for plan holders that need to call out the ERTV in an emergency. See section 4.3.4.

4.2.7.3 Drill credit allowance

We do not expect the amendments to result in significant costs or benefits, since they establish a limit of using a spill for credit to one time per three-year cycle, but allow extension beyond it under certain circumstances. We consider this a clarification.

4.2.8 Part IV: Primary response contractor, spill management team, and wildlife response service provider standards

4.2.8.1 Primary response contractor application and application-revision requirements

This amendment is primarily a clarification, since the baseline states that training must include determination that equipment is appropriate for conditions. Beyond improved clarity, we do not expect this amendment to result in significant costs or benefits.

4.2.8.2 Spill Management Team and Wildlife Response Service Provider application and application-revision requirements

The amendments are likely to result in benefits of ensuring that approved SMTs and WRSPs are capable of providing appropriate services and equipment to meet planning standards when they are under contract to plan holders. See section 4.3.3.

4.3 Quantifiable and illustrative benefits

4.3.1 Benefits of phased-in requirements

Phasing in requirements allows plan holders, SMTs, WRSPs, and PRCs time to determine what they must do to comply, as well as gather resources, and potentially put off expenditures. If expenditures are delayed, there is a present-value gain, depending on the discount rate used, and the amount of expenditure delayed. Ecology compares costs incurred

at different times using a risk-free annual discount rate of 1.03 percent.⁸ Under phased-in requirements, delaying immediate cost saves the amounts shown below.

Table 2: Present-value cost savings of phase in

Phase-in	Present-Value Savings per \$1,000
6 months	\$5.11
9 months	\$10.19
18 months	\$15.25

Because of the complex nature of requirements that potentially require plan holders to train staff, acquire response assets, or complete contracting processes, we expect these expenditures will be phased in over the course of phasing in period, resulting in less proportional savings than shown in the table above. Instead, the additional time is likely to afford plan holders time to continue operating in compliance, avoiding interruptions in service and operations, or penalties.

4.3.2 Potential efficiencies in spill management

The additional planning and available personnel to manage and participate in improved spill response are likely to result in benefits of better and more comprehensive spill response. Requirements for Ecology-approved SMTs, and more-detailed knowledge and retention of SMTs and contractors providers increase certainty of appropriate and comprehensive expertise and management being available to respond to oil spills.

Types of reduced or avoided impact

While the amendments are intended to improve the effectiveness, efficiency, and speed of spill response, we could not quantify this incremental benefit in terms of reduced impact to:

- Public health and safety:
 - Fire
 - Air quality
 - Toxic chemical exposure
 - Drinking water contamination
 - Subsistence or traditional food source contamination
 - Evacuation
 - Property damage and contamination
 - Property value impacts of risk and spills
- Surface water quality.
- Groundwater quality.
- Fisheries.
- Areas prone to wildfire.

⁸ US Treasury Department, 2019.

- Shellfisheries.
- Bird populations.
- Sea mammals.
- Endangered species.
- Animals consuming contaminated fish or shellfish.
- Recreational quality.
- Marine transportation and infrastructure.
- Passive or non-use values for nature.

Amendments that improve overall effectiveness of spill response are likely to reduce impacts to all of the above types of value, by improving on existing planning requirements.

Values of avoiding or reducing the severity of spill impacts

The amendments will not prevent spills entirely. They will serve, however, to reduce the degree to which spills could affect the environment and their severity and the degree of response and ongoing cleanup necessary.

Value of immediate spill cleanup

A 1995 case study of willingness to pay to prevent spills on the California coast indicates the value placed on prevention at \$76.45 per household.⁹ The spills described in the study oiled 10 miles of coast and killed 12,000 birds. By comparison, the scenarios studied for these rules involve only the central coastline of California whereas the amendments affect all Washington waters, including:

- The Pacific coast.
- Strait of Juan de Fuca.
- Puget Sound.
- Rivers.
- Lakes
- Other waterbodies throughout the state.

The California scenario involved prevention and immediate response using a tug escort. Thus, the case study assumed 100 percent of spills would be immediately addressed for a ten-year period. Therefore, the losses for the California study may be more appropriate for the smaller, more frequent spills than for the worst case spills that Ecology is required to prepare

⁹Carson, RT, et al., 2004. This value must be indexed for inflation. There were a variety of exclusions. E.g. if the 15 percent of the respondents who objected that the oil companies should pay for the tug and not the citizens were excluded the results would have been \$8.74 higher.

for in Washington law.¹⁰ For the 2.8 million households in Washington, the collective willingness to pay would be \$211 million for ten-year protection, or \$401 million in 20-year present value for two payments ten years apart.¹¹

Worst case spill in Washington

In 2004, Ecology funded extensive modeling of potential spills in Washington.¹² Costs included:

- Operating costs
- Business interest
- Lost wages
- Marina income and damages
- Shellfish kills
- Shellfishery closures
- Fish kills
- Commercial fishing losses
- Damages to commercial fishing equipment
- Lost state and national park use
- Lost state and national park income
- Recreational boating losses
- Recreational fishing losses
- Lost wildlife viewing expenditures
- Lost hunting expenditures (including waterfowl)
- Lost tourism expenditures

Taking the average of all of these losses, and adjusting for inflation, a large oil spill (a spill of national significance, necessitating state and federal response) in Washington could result in losses of nearly \$13 billion in 2019-dollars.¹³ Even in the case of a smaller spill, using the same data, a spill of regional significance could result in an average cost of \$3.2 billion. These values excludes non-use values such as existence, animal welfare, and existence values for affected species (including potential impacts to endangered Southern Resident Killer

¹⁰ RCW 90.56.010 Definitions. RCW 90.56.210 Contingency plans. RCW 88.46.010 Definitions. RCW 88.46.060 Contingency plans. RCW 90.56.060 Statewide master oil and hazardous substance spill prevention and contingency plan--Evaluation and revision or elimination of advisory committees.

¹¹ US Census Bureau, 2019.

¹² Environmental Research Consulting, 2004.

¹³ US Bureau of Labor Statistics, 2019. Inflation calculator multiplier between 2004 and 2019, of 1.382786177.

Whales) and values for public wellbeing in oiled areas. Potential improvements in response coordination and efficiency could reduce some of these losses.

A spill near the San Juan Islands

Vessel traffic surrounding the San Juan Islands is significant as tanker, cargo, and passenger vessels travel via Haro Strait, Boundary Pass, and Rosario Strait. In 2018, well over 3,000 vessels passed through the waters surrounding the San Juan Islands.¹⁴ Many of the vessels traveling around the San Juan Islands are heading towards The Port of Vancouver, Canada’s largest port. Tanker vessels often transit between and among Washington oil refineries and terminals and Canadian ports and terminals through Rosario Strait. Although a major spill in or around the San Juan Islands is unlikely, such an event would have significant, long-lasting, economic, ecological, and social impacts on the area.

In 2017, the following vessel transits occurred in the Salish Sea.

Table 3: Vessel transits in the Salish Sea, 2017¹⁵

Number of Vessels	Type(s) of vessel and location(s)
4,302	Cargo and passenger vessels entering transits to Washington and Canadian ports via the Strait of Juan de Fuca
633	Cargo and passenger vessels entering transits to Washington via the Strait of Georgia, Haro Strait, and Rosario Strait
534	Tank ships entering transits to Washington and Canadian ports via the Strait of Juan de Fuca
53	Tank ships entering transits to Washington via the Strait of Georgia, Haro Strait, and Rosario Strait
234	Tank barges entering transits to Washington ports via the Strait of Juan de Fuca and Rosario Strait. This is a subset of the 3,451 total tank barge transits in Puget Sound
266	Articulated tug barges (ATBs) entering transits to Washington ports via the Strait of Juan de Fuca, Strait of Georgia, Haro Strait, and Rosario Strait. This is a subset of the 872 total ATB transits in Puget Sound

In 2018, the annual sales volume for the real estate market in San Juan County surpassed \$300 million, a significant figure for a county with just under 17,000 full time residents.¹⁶ Tourism is the most significant economic driver in San Juan County, with over one-quarter

¹⁴ Washington State Department of Ecology, 2019.

¹⁵ Washington State Department of Ecology, 2018.

¹⁶ <http://www.sanjuanislands.com/PDF/realestatenewslettermerriannsimonson.pdf>

of private sector jobs involved in leisure and hospitality.¹⁷ A large oil spill would significantly harm both real estate values and tourism in the county.

A recent hypothetical analysis of a four million gallon potentially sinking oil spill northwest of San Juan Island (with sea oiling potentially extending to Island, Jefferson, and Clallam counties and Vancouver Island) estimates losses of between \$142.3 million and \$509.9 million in San Juan County alone.¹⁸ In the same analysis, a smaller one million gallon spill of heavy fuel oil with a similar trajectory was estimated to cost between \$84 million to \$243 million. These estimates reflects impacts to:

- Commercial fishing
- Aquaculture
- Tourist spending, wages, and local tax revenue
- Property values and taxes
- Recreation
- Ecosystem services (including water storage, water quality, carbon sequestration, and habitat services provided by tidal wetlands, eelgrass, and the marine water column)

These estimates did not include costs of:¹⁹

- Spill response
- Natural resources damage assessment
- Restoration of natural resources
- Impacts to marine transportation
- Impacts to human health and social services
- Impairment to science and education opportunities
- Losses to tribal treaty fisheries

For comparison, the alternative cost of preventative mitigation – the cost of positioning an ERTV in San Juan County – was estimated to cost between \$4.3 million and \$6.2 million per year.²⁰

There are 1,116 permitted vacation rental properties in San Juan County.²¹ Half of these properties were permitted since 2010. Using the affected geography in the modeled oil spill above, about 191 of these properties are on or near shorelines that would be oiled. Rental occupancies and prices vary depending on property attributes and season. Illustratively, if we assume full occupancy (e.g., during summer months), at an average price of \$300 per night,

¹⁷ <https://esd.wa.gov/labormarketinfo/county-profiles/san-juan>

¹⁸ Earth Economics, 2019, p. 42

¹⁹ <https://www.sjcmrc.org/projects/oil-spill-prevention/>

²⁰ Ibid.

²¹ San Juan County Open Data, 2019.

191 rental properties would incur losses of over \$1.7 million per month if a significant spill deterred visitors. There are also many resorts on the islands, employing hundreds of people in permanent positions, as well as seasonal employees.

A spill on the Columbia River

The Columbia is the largest river in the Pacific Northwest, and is over a thousand miles long. It is a large regional source of water, hydropower, transportation, recreation, and habitat. In particular, it is home to or a place of transit for multiple fish species, and specifically salmon species (some of which are listed as protected under the Endangered Species Act on sections of the Columbia or its tributaries) and the white sturgeon (the population of which is divided into landlocked populations between the river's dams, except below Bonneville Dam). Recreational areas thrive on and near the river throughout its course, including near freight rail crossings such as the Rock Island Railroad Bridge near Wenatchee, Washington. Downriver, the Columbia River Gorge is a National Scenic Area that attracts \$50 million dollars in annual spending in local communities on the Oregon side of the river.²² The river (including its fisheries) is also of significant historical and cultural value to multiple regional tribes. The amendments' requirements for rapid and comprehensive response to spills are likely to reduce impacts to these multiple values.

4.3.3 Benefits of efficient and improved wildlife and non-floating oil response

Amendments specific to non-floating oils, wildlife response, and appropriate use of dispersants are likely to reduce impacts to:

- Water column and sediment wildlife, including shellfish.
- Bird populations.
- Animals including sea mammals.
- Fish.
- Endangered species such as some salmon and orcas.
- Recreational use of shorelines.
- Wildlife habitat surrounding the spill that may be impacted by long-term response size and duration.
- Property values.

While we could not quantify the degree to which more efficient and improved response to oiled wildlife and non-floating oils will reduce the scope or severity of spills, we have included illustrative values related to non-floating oils and wildlife, below.

Non-floating oil impacts

²² White, EM and D Goodding, 2013.

Additional coordination and preparedness for dealing with spills of potentially non-floating oils reduce the likelihood that oils will weather and sink before they are addressed. Improved preparedness for potentially sinking oils could have helped reduce damages and ultimate cleanup costs from the Enbridge Kalamazoo spill that cost \$1.2 billion to clean up.²³ Non-floating oils are more likely to carry a high cleanup cost per gallon spilled, particularly if their sinking nature is not recognized and addressed early. The Enbridge Kalamazoo spill was reported to have spilled 843,000 gallons (over a million gallons were eventually recovered).²⁴ This results in an approximate cost of nearly \$15,000 per gallon reported spilled (or \$60,000 per barrel).²⁵

Wildlife and spill extent or duration

Even after spills are cleaned up, and surviving wildlife have been cleaned, there may be long-run impacts to wildlife wellbeing. These may manifest as wildlife mortality during cleanup, or as long-run morbidity and mortality from exposure to toxins in the oil (external or through ingestion).²⁶ Improving the efficiency and potential response time of wildlife response (through documentation and practice of notification procedures, and through contracted access to wildlife response contractors and equipment) may result in reduced wildlife mortality or duration of exposure to oils. Improved survival or reduced toxicity of plants and animals that are important food sources for other animals (e.g., shellfish for otters, or salmon for orcas) will result in additional benefits for animals higher on the food chain.

Chinook salmon value

In 2012, a survey of households found a willingness to pay an average of \$40.49 per household, per year, for ten years for the recovery of Puget Sound Chinook salmon (removal from the list of threatened species). For the 2.8 million households in Washington, this translates to an annual willingness to pay of \$112 million, or over \$1 billion in present value over ten years.²⁷ While values for salmon are typically thought of in the context of marine oil spills, inland oil spills can affect spawning areas and habitat for salmon fry and parr, as well as adults traveling inland to spawn, and smolt traveling to sea.

Wildlife watching value -- Orcas

The Southern Resident Killer Whale Chinook Salmon Initiative reports that:²⁸

- Wildlife watchers spend nearly \$1 billion annually in Washington, primarily in rural areas.

²³ Enbridge, Inc., 2015.

²⁴ <https://www.epa.gov/sites/production/files/2013-12/documents/enbridge-fs-20130624.pdf>

²⁵ Comments received during the public comment for this rulemaking suggest using an illustrative total value based on mean and worst-case Salish Sea spill risk volumes, as estimated in the application for the Trans Mountain Pipeline Expansion Project (52 thousand and 104 thousand barrels, respectively). While spills would potentially differ significantly in their affected media, wildlife, and depths as compared to the Kalamazoo spill, using the per-gallon Enbridge cleanup cost would result in total cost estimates of between over \$3 billion and over \$6 billion, for respective mean and worst-case spill volumes.

²⁶ Shigenaka, G, 2015.

²⁷ US Treasury Department, 2019.

²⁸ Southern Resident Killer Whale Chinook Salmon Initiative, 2015.

- In 2001, 47 percent of Washington’s residents participated in wildlife watching, compared to 16 percent in fishing and 5 percent in hunting.
- Wildlife watching activities support more than 21,000 jobs in Washington State, yield \$426.9 million in job income, and generate \$56.9 million in state and \$67.4 million in federal tax revenues each year, based on 2001 data.
- The value of the overall whale watching industry in Washington State is worth at least \$65-\$70 million annually, with an average annual growth rate of 3 percent.
- An estimated 42 whale watch companies operate in Washington State, 22 of which are listed in Dun & Bradstreet’s Million Dollar Data base. The 22 listed companies generated \$64 million in sales, by themselves.
- On San Juan Island, there are 17 whale-watching and kayak-touring businesses. Countywide, tourism is a \$127 million industry. “This is an orca-based economy,” says Jason Gunter, manager of Discovery Sea Kayak. He estimates that 75 percent of his clients sign up to see killer whales.

Commercial fishing value

Washington's commercial fisheries have historical, cultural, and economic significance to the state. Pollution from an oil spill and resulting impacts to wildlife would have lasting negative effects on the state’s fisheries, but we are unable to quantify these at this time. As provided above, we discuss total values of Washington’s commercial fisheries in lieu of a detailed analysis of avoided risk resulting from the amendments.

In 2015, Washington's commercial fishing and seafood processing industries supported nearly 16,000 jobs with combined wages of over \$1 billion and revenue of \$9.4 billion.²⁹ Between 2009 and 2015, Washington exported over \$8 billion in seafood, with the majority going to Canada, China, and Japan. Over half of Washington's counties support fisheries-related jobs with locations along the coastal, Puget Sound, and inland regions of the state.

A significant portion of the state’s fishing industry shares Puget Sound with petroleum-related industries. Washington is the largest farmed and hatchery shellfish producer in the nation, with annual sales exceeding \$100 million.³⁰ Although revenue from Washington's commercial salmon fisheries (\$7.7 million in 2017) is not as significant as that from shellfish, the health of Washington's salmon population have economic implications fisheries both in and outside the state, given that Canadian and Alaskan fisheries harvest 97 percent of the landed chinook salmon that spawn along Washington's coast.³¹

A large oil spill in Washington's marine or fresh waters could have significant and lasting impacts on fisheries in Washington and beyond. In the case of the Exxon-Valdez Spill of 1989, traces of oil persisted in the environment for more than 10 years, with chronic direct

²⁹ CAI, 2017.

³⁰ Pacific Shellfish Institute, 2019.

³¹ PFMC, 2018; EcoNorthwest, 1999.

and indirect ecosystem effects even after the significant cleanup effort.³² Many of Washington's key fisheries species are highly sensitive to pollution from oil spills. Studies have shown that both shellfish and finfish may experience rapid population declines and lasting effects from exposure.³³

In the years following the *Deep Water Horizon* (DWH) spill in 2010, shrimp landings in the Gulf of Mexico decreased by 27 percent. Louisiana's shrimp harvest decreased by nearly 60 percent and some estimates suggest that up to half of the state's annual oyster crop was lost, due in part to both the spill and remediation.³⁴ One estimate places the DWH spill's total economic impacts to the Gulf of Mexico commercial and mariculture fishing industries at nearly \$5 billion between 2012 and 2020 (2012 dollars).³⁵ Exposure to even low levels of crude oil has been shown to negatively impact salmon and herring embryos, affecting reduced growth, reduced cardiorespiratory function, and altered cardiac structure. These physiological changes reduce the fitness and survivability of individuals as well as their ability to spawn.³⁶

Impacts to fisheries from oil spills go beyond those related to direct ecosystem services, especially in the case of catastrophic and highly publicized oil-related disasters. Consumers, worried about the quality or health effects of eating seafood from areas near spills, may change their consumption patterns. In a public opinion poll following the DWH spill, Louisiana Seafood and Promotion Board found that 70 percent of consumers expressed some concern about the health implications of consuming Gulf seafood and over 20 percent reduced their consumption of seafood.³⁷

Property values and use

Properties located near a coast experience a drop in value after an oil spill. Sales impacts could be as low as 3.5 percent of sales values, or as high as 80 percent of annualized use value immediately after a spill, remaining at a 20 percent loss in five years.³⁸ Estimates for a four million gallon non-floating oil spill in San Juan County range from \$89.7 million to \$245.0 million, in lost property value and taxes.³⁹

Property values to some degree reflect willingness to pay for the stream of services or income buyers may receive from using a property. This includes the value of residing in a property (either currently or in future, e.g., as a retirement property), or potential future rents net of improvements and effort put into renting out a property. Because spills have short-run and long-run impacts (depending on their location, composition, size, and duration) a spill that reduced the usability, access, amenity, or recreational opportunities of properties would

³² Peterson et al, 2003.

³³ Ibid.

³⁴ Upton, 2011.

³⁵ Sumalia, et al, 2012.

³⁶ Incardona et al, 2015.

³⁷ CBS, 2011.

³⁸ See Hellman and Walsh, 2017 and Richardson & Brugnone, 2018.

³⁹ Earth Economics, 2019. Note that this is based on annualized values for a 30-year time period.

impact property values reflecting current and future income streams, as well as the value of current or future use of the property by the owners. Reduced property values would also result in reduced property taxes collected by counties – potentially affecting services or county planning – or in shifting of the tax burden (if total receipts were set as constant).

After the Enbridge spill into Michigan's Kalamazoo River, Enbridge purchased 154 properties.⁴⁰ This was for a spill of over one million gallons of oil that weathered and sank. While a large company may be able to buy out impacted property owners, a smaller company or single vessel may not be able to do so. Property owners also expressed concern that properties would be purchased for prices lower than they would have sold for (Enbridge indicated purchase prices would be in line with the asking prices of properties listed for sale), and that buyouts don't capture the lost values of continuing to live in a home and on a property that families were not originally planning to leave.⁴¹

Post spill response remediation

We note also that oil spills may extend beyond the scope of spill response and immediate cleanup, if they result in toxic contamination that must be remediated as required under cleanup regulations such as the Model Toxics Control Act (chapter 70.105D RCW; chapter 173-340 WAC). Spills resulting in long-term contamination of groundwater could affect nearby groundwater and surface water users, such as homes and agriculture using irrigation water, as well as wildlife. Spills allowed to weather and sink could contaminate sediments, resulting in long-term impacts to the viability of sediment habitats and ecosystems. Improvements in spill response structure and communication could reduce the likelihood or degree of creating cleanup sites.

Oils can remain at spill sites for a long time. For example, oil from the 1989 Exxon Valdez spill in Prince William Sound remains below the beaches there. Fortunately, for the surrounding environment, this oil is currently sequestered and is not considered to pose a risk. A hundred-year storm, however, could bring this oil back to the surface waters and shoreline, exposing shoreline and near-shore animals. While remediation is possible, through excavation and removal, it is likely more disruptive to the environment than the risk posed by the oil.⁴² Climate change, however, is expected to result in sea level rise and increased frequency and severity of storms over time.⁴³ A large spill along Washington coastlines could have similar lingering results, with increasing risks of exposure over time to oils that reach subsurface soils and sediments.

⁴⁰ <https://www.enbridge.com/marshall/marshall-release-timeline>

⁴¹ Hearing before the Committee on Transportation and Infrastructure, House of Representatives. 111th Congress, Second Session. September 15, 2010. <https://www.govinfo.gov/content/pkg/CHRG-111hhrg58236/html/CHRG-111hhrg58236.htm>

⁴² NOAA Fisheries: <https://www.fisheries.noaa.gov/feature-story/lingering-oil-exxon-valdez-spill>

⁴³ British Columbia Ministry of Environment: https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/climate-change/climatechangeindicators-13sept2016_final.pdf

After the 2016 derailment of an oil train in Mosier, Oregon that leaked a small unknown quantity of oil, Oregon’s Department of Environmental Quality (DEQ) identified high concentrations of benzene in the groundwater. Drinking water wells in that area were uphill from the benzene contamination, but a hydrologically connected wetland was not, generating concern about exposure for amphibians and insects living in the wetland.⁴⁴ About 2,960 tons of oil-contaminated soil were excavated from the site and transported off-site to Wasco County landfill.⁴⁵ Monitoring wells and biosparge cleanup technology was installed at the contaminated site, resulting in reduced methylnaphthalene, toluene, and xylene contamination that was still marginally above cleanup screening levels in 2017.⁴⁶ The cost of groundwater remediation was not reported for this cleanup, but in 2003 EPA reported that sparging (without additional soil vapor extraction or pump-and-treat technology) cost a median of \$154,000.⁴⁷

4.3.4 Avoided cost of ERTV deployment drill

The amendments could result in avoided costs of Emergency Response Towing Vessel (ERTV) deployment drills, if the ERTV is deployed for an emergency. Plan holders with ERTV Compliance Group enrollment would only incur the baseline costs of the enrollment and the ERTV emergency call out, and not incur additional costs of a drill. Drill costs would be borne by the vessel calling out the ERTV.

Over the past 20 years, the ERTV has been called out an average of 3.6 times per year.⁴⁸ Looking at only the past ten years, this average is a slightly lower three times per year. Nearly half of all call outs were related to tank vessels. Total costs of the ERTV are shared between tank and non-tank vessels. Tank vessel coverage costs between \$1,448 and \$7,675 per year, depending on vessel attributes.⁴⁹ Non-tank vessel coverage costs are calculated based on Dead Weight Tonnage, Worst-Case Discharge Volume, and credit components such as redundant propulsion and double hulls. Small fishing vessels that calculate enrollment fees below the minimum annual \$550 first visit and subsequent \$175, pay only the minimum amounts.⁵⁰ Enrollment includes ERTV deployment for drills.

An ERTV deployment drill costs at least the cost of ERTV deployment as part of enrollment. Additional costs include costs of staff used during the drill, plus administrative costs of drill documentation.⁵¹

⁴⁴ Davidson, 2016.

⁴⁵ Franklin, R, undated.

⁴⁶ Mulvihill, P, 2017.

⁴⁷ Fiedler, L and M Berman, undated.

⁴⁸ Neah Bay ERTV call out reports to Ecology.

https://fortress.wa.gov/ecy/coastalatlascy/storymaps/spills/spills_sm.html?&Tab=nt2

⁴⁹

<https://static1.squarespace.com/static/59154fd3c534a532e2ab6ce0/t/5b43986b758d4684858aab72/1531156587581/ertvTankSectorRateSheet2018-07-01.pdf>

⁵⁰

<https://static1.squarespace.com/static/59154fd3c534a532e2ab6ce0/t/5b43ac4803ce643d94c1ec2b/1531161673264/ERTV+Non-Tank+Rate+Sheet+%287.1.18%29.pdf>

⁵¹ We note also that San Juan County estimates a tug with ERTV capabilities costs a day rate of \$11,500 to \$16,500.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the rule amendments

Costs of the amendments

The amendments are likely to result in:

- One-time plan update costs of \$1.3 million to \$1.8 million.
- 20-year present value SMT and WRSP retainer costs of \$245 million to \$368 million. (See section 3.3.2 for distributional assumptions.)
- 20-year present value drill costs of \$14.4 million to \$21.6 million.
- One-time SMT and WRSP application costs of \$49,000.

Estimated total 20-year present value costs of the amendments are approximately \$261 million to \$391 million. There is a potential additional one-time purchase cost of \$80,000 to \$250,000 thousand for transfer site purchase of equipment to meet the four-hour planning standard, but this cost could be lowered by contracting with a PRC holding the asset in an appropriate location.

Benefits of amendments

The amendments are likely to result in:

- Reduced present value costs or avoided impaired operations, due to phase in of requirements.
- Improved efficiencies in spill management, due to additional planning, available personnel, and contracted or owned assets. This will potentially reduce the severity of oil spill impacts, including impacts to:
 - Public health and safety:
 - Fire.
 - Air quality.
 - Toxic chemical exposure.
 - Drinking water contamination.
 - Subsistence or traditional food source contamination.
 - Evacuation.
 - Property damage and contamination.
 - Property value impacts of risk and spills.
 - Surface water quality.
 - Ground water quality.
 - Fisheries.
 - Wildfire.
 - Shellfisheries.
 - Bird populations.
 - Sea mammals.

- Endangered species.
- Animals consuming contaminated fish or shellfish.
- Recreational quality.
- Passive or non-use values for nature.
- Improved efficiency and quality of responses to oiled wildlife and non-floating oils, including impacts to:
 - Water column and sediment wildlife, including shellfish.
 - Bird populations.
 - Animals including sea mammals.
 - Fish.
 - Endangered species such as Southern Resident Killer Whales and some salmon.
 - Recreational use of shorelines.
 - Wildlife habitat surrounding the spill that may be impacted by long-term response size and duration.
 - Property values.
 - Marine transportation and infrastructure.
 - Avoided ERTV drill costs.

We were unable to quantify the degree to which the amendments will improve spill preparedness and response, and so have included various illustrative values of potential impacts. See chapter 4 for full discussion. Some examples of these illustrative values are:

- Modeled spill impacts of a spill affecting the San Juan Islands, of \$142.3 to \$509.9 million.
- Annual spending in and around the Columbia River Gorge, of \$50 million (Oregon side).
- A modeled spill of regional significance in Washington waters potentially causing \$3.2 billion in lost economic activity.
- Willingness to pay for recovery of Puget Sound Chinook or over \$1 billion (ten-year present value).
- Whale watching industry values of \$65 million to \$70 million each year.
- Shoreline property value impacts of up to 80 percent (annualized) after a spill.

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the rule amendments, that the benefits of the rule amendments are greater than the costs.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(e) requires Ecology to “...[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection.” The referenced subsections are:

- (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
- (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
- (c) Provide notification in the notice of proposed rulemaking under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
- (d) 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 other words, to be able to adopt the rule, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s). Ecology assessed alternative rule contents, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the amended rule were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statutes

The goals and objectives of the authorizing statutes related to spills or contingency planning include:

RCW 88.46.060

- “Each covered vessel shall have a contingency plan for the containment and cleanup of oil spills from the covered vessel into the waters of the state and for the protection of fisheries and wildlife, shellfish beds, natural resources, and public and private property from such spills.”
- “The department shall approve a contingency plan only if it determines that the plan meets the requirements of this section and that, if implemented, the plan is capable, in terms of personnel, materials, and equipment, of removing oil promptly and properly and minimizing any damage to the environment.”

RCW 90.48.010

- “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.”
- “Retain and secure high quality for all waters of the state.”
- “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.”

RCW 90.56.005

- “The state has an obligation to ensure the citizens of the state that the waters of the state will be protected from oil spills.”
- “Establish a comprehensive prevention and response program to protect Washington's waters and natural resources from spills of oil.”
- “Ensure that responsible parties are liable, and have the resources and ability, to respond to spills and provide compensation for all costs and damages.”
- “Provide for state spill response and wildlife rescue planning and implementation.”
- “Provide broad powers of regulation to the department of ecology relating to spill prevention and response.”
- “Provide for independent review on an ongoing basis the adequacy of oil spill prevention, preparedness, and response activities in this state.”
- “Maintain the best achievable protection that can be obtained through the use of the best achievable technology and those staffing levels, training procedures, and operational methods that provide the greatest degree of protection achievable.”

6.3 Alternatives considered and why they were not included

6.3.1 Disallow internal SMT personnel

Ecology considered allowing only external contracted groups to be SMT personnel. This alternative would not have met the goals and objectives of the authorizing statute, and could have increased burden on plan holders. Under the amendments, plan holders decide on their SMT to enable rapid, aggressive, and well-coordinated response to an oil spill, and this may potentially best include internal trained staff or contracted professional groups. This alternative would also have increased costs for plan holders with internal SMTs, since internal SMTs would be approved through their contingency plan under the amendments. This alternative would impose additional application costs on those SMTs.

6.3.2 SMT listing

Ecology considered requiring only the name of the SMT to be listed in the ICS table, rather than individuals. This alternative would not have necessarily met the goals and objectives of the authorizing statute. While many plan holders were concerned about needing to list individuals, in cases where individual names are appropriate, they should be listed in the ICS table. Rather than require individuals in all cases, Ecology decided burden would be minimized, and requirements would meet statutory goals, by requiring the name of an individual or the SMT company to be listed. This determination was based on comments and input from plan holders.

6.3.3 Spill Management Team arrival in state

Ecology considered retaining the baseline requirement that the SMT would be able to arrive at the spill location or incident command post. This would have increased burden and did not meet statutory goals and objectives as well. Goals are better met by requiring a single standard, where arrival in the state is sufficient.

6.3.4 Longer time to assess potentially non-floating oil cargo

Ecology considered allowing six hours (rather than one) for assessment of non-floating oil cargo. Plan holders indicated that the shorter timeframe may be too difficult, since there are many high-priority tasks (such as safety) to be completed in the first hour. This alternative would not have met statutory goals, but we reduced burden in the amendments by allowing the plan holder, PRC, or SMT to conduct the assessment remotely.

6.3.5 Higher wildlife planning standard

Ecology considered making the wildlife-planning standard more stringent. This alternative would have increased burden without necessarily meeting statutory goals and objectives better. The potential for oil spills to affect wildlife is very high. The new rule establishes a wildlife-planning standard for equipment and personnel to support all phases of wildlife response including:

- Initial assessment and reconnaissance.
- Deterrence.
- Capture.
- Stabilization.
- Rehabilitation.

We determined this was sufficient to meet statutory goals and objectives.

6.3.6 Responsibility for volunteers

Ecology considered making plan holders responsible for hiring volunteers. Plan holders suggested we should adopt California's standard of assuming responsibility for volunteers in case they are injured during the response. Requiring plan holders to plan for wildlife volunteers could have been significantly more burdensome, and we removed this requirement from the amendments.

6.3.7 Lower cost for large-scale equipment deployment drill

Based on comments concerned about the cost of sponsoring large deployment drills, Ecology considered reducing requirements for the large-scale multi plan holder deployment drill. This alternative would not have met statutory goals and objectives. Moreover, the large-scale multi plan holder deployment drill involves several plan holders and PRCs demonstrating simultaneous response tactics. The costs of this drill are shared among the plan holders. Ecology calls this drill in a region and the plan holders that operate in that region are responsible for sharing the drill costs, reducing costs compared to what an individual sponsor would incur.

6.3.8 Drill credit

Ecology considered allowing drill credit for all out-of-state tabletop drills, based on comments. As a universal allowance, this would not have met the goals and objectives of the authorizing statute. The rule does, however, allow this credit under certain circumstances (Ecology has sufficient notice, an opportunity to participate in the drill planning process, and the out-of-state drill is of similar scope and scale to what would have occurred in state). This serves to reduce burden while ensuring the goals of the drill are met.

6.4 Conclusion

After considering alternatives to the amended rule's contents, as well as the goals and objectives of the authorizing statutes, Ecology determined that the amended rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

Chapter 7: Regulatory Fairness Act Compliance

7.1 Introduction

The Regulatory Fairness Act (RFA; RCW 19.85.070) requires Ecology to perform a set of analyses and make certain determinations regarding the rule amendments. This chapter presents the:

- 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 rule.
- Expected net impact on jobs statewide.

A small business is defined by the RFA 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 amendments. The RFA only applies to costs to “businesses in an industry” in Washington State. This means that impacts, for this document, are not evaluated for non-profit or 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.

7.2 Quantification of Cost Ratios

Ecology calculated the estimated per-entity costs to comply with the rule amendments, based on the costs estimated in chapter 3. In this section, Ecology summarizes compliance cost per employee at affected businesses of different sizes.

Separating across various types of potentially impacted parties (using employment at the highest ownership level):⁵²

- There are no small-business plan holders covered by the amendments.
- The average small-business PRC employs about 16 people, while the largest 10 percent employs 10 thousand people.
- The average small-business SMT employs about 10 people, while the largest 10 percent employs 10 thousand people.
- Only one private business WRSP is potentially impacted by the amendments.

We note that aside from application and application-revision related costs, the amendments require only plan holders to have or have access to assets and personnel. The costs of assets that may need to be acquired, therefore, fall on the plan holders, even if access is acquired through

⁵² Ecology employment dataset.

contract with a SMT, PRC, or WRSP. Contracted parties providing personnel or response equipment are likely to pass voluntary costs (to be able to act as contracted parties for contingency plans) on to plan holders with whom they contract. Therefore, for the purposes of Regulatory Fairness Act compliance, and to better reflect compliance cost burden in a competitive context, we have limited the costs examined for the remainder of this chapter to application costs incurred by SMTs. Again, this is because:

- Likely compliance costs differ by multiple orders of magnitude across the related, though not inter-competitive, markets affected by the amendments.
- While plan holders are likely to incur significant costs as a result of the amendments, there are no small-business plan holders covered by the amendments.
- There are no direct costs to PRCs as a result of the amendments.
- Only one potentially impacted WRSP is a private business, so costs are inherently not disproportionate for WRSPs.

Table 4: Compliance costs per employee

Business size	Average Employment	Cost per employee	
		Low	High
Small business	10	\$97.01	\$242.52
Largest 10 percent of businesses	10000	\$0.10	\$0.24

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses within the SMT industry. This is the case even if we assume that small businesses have less equipment and personnel to document or describe in applications, and will incur only low-end costs for less time, while the largest businesses incurred only high-end costs.

Therefore, Ecology must include elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

7.3 Loss of sales or revenue

Businesses that will incur costs could experience reduced sales or revenues if the 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 significantly affect marginal costs), and the specific attributes of the markets in which they sell goods, including the degree of influence of each firm on market prices, as well as the relative responsiveness of market demand to price changes.

We used the REMI PI+ model for Washington State to estimate the impact of the rule 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. This analysis was limited to the SMT industries likely to be disproportionately affected by the amended rule, as well as the WRSP industries including a single private small business. We assumed application expenditures will be incurred as production costs, as part of normal business operations.

Since we did not have comprehensive data for all potentially impacted SMTs and WRSPs, we ran 42 simulations reflecting possible combinations of identified SMT and WRSP North American Industry Classification System (NAICS) codes (at the level the REMI model aggregates them). The REMI model results do not indicate a significant impact to output or prices as a result of these production costs in any of the model runs. As such, we do not expect there to be any losses of sales or revenue in the SMT or WRSP industries as a result of the amendments.

7.4 Action Taken to Reduce Small Business Impacts

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.

Ecology considered all of the above options, and included the following legal and feasible elements in the rule amendments that reduce costs. In addition, Ecology considered the alternative rule contents discussed in chapter 6, and excluded those elements that would have imposed excess compliance burden on businesses. This includes elements suggested by stakeholders, such as allowing plan holders to list either individuals or names of SMTs in the IRC table. See chapter 6 for discussion.

Since the disproportionate compliance cost impact arises from application costs for SMTs, we were limited in options to reduce this disproportion. We were also limited numerically by the diverse nature of SMTs, with one SMT identified as a small business (within our employment data), while others were owned by larger, sometimes multinational, companies.

The options suggested in the RFA rely primarily on factors that are not applicable to application costs. These include substantive regulatory requirements, recordkeeping and reporting, and inspections. The amendments do, however, phase in application time for SMTs, by allowing six months from the rule effective date.

7.5 Small Business and Government Involvement

Ecology involved small businesses and local government in its development of the rule amendments, using:

- Letters to tribes (mailing).
- Spills Program listserv (email announcement of CR 101).
- WAC Track listserv (email announcement of CR 101).
- Email to state approved vessel and facility plan holders.
- Rule development workshops with 160 stakeholders invited (March 6, March 28, April 11, April 18, and May 7). Invitees attending at least one workshop included representatives from various covered parties, SMTs, WRSPs, PRCs, governments, tribes, animal welfare groups, and environmental groups.
- Email to state-approved PRCs.
- NWACP Distribution listserv.
- Direct email or other contact with representatives from over 130 interested parties, including covered parties, SMTs, WRSPs, PRCs, governments, tribes, and environmental groups.

7.6 North American Industry Classification System Codes of Impacted Industries

The rule amendments are likely to impact the following NAICS codes.

Table 5: NAICS codes of industries likely affected by the amendments

Plan holders	PRCs	SMTs	WRSPs
2212	2389	2371	5419
2389	4481	3241	6113
3241	5417	4412	8133
3366	5615	4832	
4247	5617	4861	
4471	5619	4882	
4821	5629	4883	
4861	8113	5629	
4883		9261	
5629		9999	
9281			
9119			
9999			

7.7 Impact on Jobs

Ecology used the REMI PI+ model for Washington State to estimate the impact of the rule on jobs in the state and 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.

This analysis was limited to the SMT industries likely to be disproportionately affected by the

amended rule, as well as the WRSP industries including a single private small business. We assumed application expenditures will be incurred as production costs, as part of normal business operations.

Since we did not have comprehensive data for all potentially impacted SMTs and WRSPs, we ran 42 simulations reflecting possible combinations of identified SMT and WRSP NAICS codes (at the level the REMI model aggregates them). The REMI model results indicated that the amendments would result in:

- Up to one job lost in 2020 in the Washington economy under low-cost assumptions. This lost job would be maintained through 2022, after which there would be no difference in employment from the baseline forecast.
- Under high-cost assumptions, up to three jobs in the Washington economy would be lost in 2020, and this job loss would diminish to zero in 2023, after which there would be no difference in employment from the baseline forecast.

These prospective changes in overall employment in the state are the sum of multiple small increases and decreases across all industries in the state.

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Appendix A

Administrative Procedure Act (RCW 34.05.328)

A. RCW 34.05.328(1)(a) – Clearly state in detail the general goals and specific objectives of the statute that this rule implements.

See chapter 6.

1. RCW 34.05.328(1)(b) – Determine that the rule is needed to achieve the general goals and specific objectives of the statute.

See chapters 1 and 2.

2. Analyze alternatives to rulemaking and the consequences of not adopting this rule.

Rule revisions are needed to address legislative direction that came out of the 2018 session that requires a rule update by December 31, 2019. Legislative direction from E2SSB 6269 directed us to update our contingency planning rule to enhance preparedness for spills of non-floating oils, require facilities to participate in large scale multi-plan holder drills, and require spill management teams to apply to and be approved by Ecology in order to be cited in contingency plans. If we do not update our rule, we will not meet the December 31, 2019, deadline.

Please see the Least Burdensome Alternative Analysis, chapter 6 of this document, for discussion of alternative rule content considered.

B. RCW 34.05.328(1)(c) - A preliminary cost-benefit analysis was made available.

When filing a rule proposal (CR-102) under RCW 34.05.320, Ecology provides notice that a preliminary cost-benefit analysis is available. At adoption (CR-103 filing) under RCW 34.05.360, Ecology provides notice of the availability of the final cost-benefit analysis.

C. RCW 34.05.328(1)(d) – Determine that probable benefits of this 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.

See chapters 1 – 5.

D. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated in chapter 6.

Please see chapter 6.

E. RCW 34.05.328(1)(f) - Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

Ecology is proposing to amend the Oil Spill Contingency Plan Rule (chapter 173-182 WAC) to implement Engrossed Second Substitute Senate Bill (E2SSB) 6269 passed in 2018 and codified as RCW 88.46.0601, RCW 88.46.060, RCW 88.46.220, RCW 90.56.2101, RCW 90.56.210, RCW 90.56.240, and RCW 90.56.569.

This rulemaking will:

- Establish requirements for review and approval of Spill Management Teams including entities providing wildlife rehabilitation and recovery services.
- Enhance requirements for readiness for spills of oils that, depending on their chemical properties, environmental factors (weathering), and method of discharge, may submerge or sink.
- Update drill requirements to reflect legislative direction.
- Update planning standards to align vessel and facility requirements and ensure best achievable protection is maintained in contingency plans.
- Enhance planning standards for oiled wildlife response.
- Make other edits to address inconsistent or unclear direction in the rule, or other administrative edits.

The changes align with legislative direction and enhance our existing preparedness framework. The Oil Pollution Act of 1990 (OPA 90) allows states to pass more stringent requirements than the federal government. The federal government standards form the preparedness baseline and the additional protections required at the state level can be tailored to address the unique risks, operational conditions and sensitive natural, cultural and economic resources in the region.

E. RCW 34.05.328 (1)(g) - Determine that rule the does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The changes align with legislative direction and enhance our existing preparedness framework. The Oil Pollution Act of 1990 (OPA 90) allows states to pass more stringent requirements than the federal government. The federal government standards form the preparedness baseline and the additional protections required at the state level can be tailored to address the unique risks, operational conditions and sensitive natural, cultural and economic resources in the region.

F. RCW 34.05.328 (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter.

Yes, OPA 90, a federal law, allows states to adopt more stringent preparedness requirements than the federal government.

If yes, the difference is justified because of the following:

- (i) A state statute explicitly allows Ecology to differ from federal standards. [If checked, provide the citation included quote of the language.]
- (ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated in chapter 6.

G. RCW 34.05.328 (1)(i) – Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter.

This rulemaking applies to vessels, facilities, pipelines, and railroads operating statewide. The level of controversy associated with this rulemaking is high. The regulated community is concerned about this rulemaking because the update will require new investments in preparedness. Tribes and the public are concerned about oil spills because oil spills may damage significant, natural, cultural and economic resources. There is a heightened public concern about oil spills of potentially non-floating oils. Several federal and state agencies who also regulate the oil industry will also be interested in our proposal for addressing risks of non-floating oils, spill management team certifications, and wildlife response planning standards.

The following interested parties were consulted on the rulemaking; regulated industry, oil spill response contractors, spill management teams, and oil spill contingency plan holders (covered vessels, facilities, pipelines, and railroads). Tribes, environmental organizations, and the public will be interested in this rulemaking because it affects the health and safety of Washington waters.

Specific state and federal agencies that will be interested in this rulemaking include: United States Coast Guard, Environmental Protection Agency, Pipeline and Hazardous Materials Safety Administration, National Oceanic and Atmospheric Administration, Washington Utilities and Transportation Commission, Washington Department of Fish and Wildlife, Puget Sound Partnership, United States Fish and Wildlife, Oregon Department of Environmental Quality, and California Office of Spill Prevention and Response.