



STATE OF WASHINGTON  
**BOARD OF PILOTAGE COMMISSIONERS**

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**Meeting Minutes – Oil Transportation Safety Committee (OTSC)**

February 13, 2025, 10:00am – 12:00pm

Via MS Teams

**Attendees:**

Jaimie Bever (Chair/BPC), Adam Byrd (Ecology SME), Haley Kennard (Ecology SME), Angela Zeigenfuse (Ecology Alternate/BPC), Megan Hillyard (Ecology Alternate/BPC), JD Ross Leahy (Ecology SME), Jason Hamilton (Commissioner/BPC), Blair Bouma, (Pilot/PSP), Jeff Slesinger (Tug Industry/Delphi Maritime), Clyde Halstead (Tribal Government Alternate/Swinomish), Antonio Machado (Oil Industry/WSPA), Genaro Villegas (Advisory/USCG), Peter Schrappen (Tug Industry Alternate/AWO), Lillie Wightman (Tug Industry Alternate/AWO), Joel Morton (Tug Industry Alternate/Crowley), Jim Peschel (Tug Industry Alternate/Vane Brothers), Fred Felleman (Environment/Friends of the Earth), Rein Attemann (Environment Alternate/WEC), Allen Posewitz (Ecology SME)

**1. Welcome & Meeting Minutes**

Jaimie Bever (OTSC Chair/BPC) welcomed everyone to the meeting. She mentioned that the group would have both the 1/9 and 2/13 meetings for review at the March 6 meeting. She then introduced Megan Hillyard, Rule Coordinator for this rulemaking.

**2. Meeting Objectives**

Megan began the presentation by reviewing the objectives for the meeting.

**Meeting Objectives**

- ✓ Gain a clear understanding of the EIS and preliminary cost-benefit analysis and least-burdensome alternatives analysis findings to inform decision-making
- ✓ Review rule components needed to draft WAC
  - Functional and operational requirements
  - Geographic escort area
  - Mitigation measures
- ✓ Review potential rule proposals
- ✓ Draft of a recommendation for the BPC

### 3. Introductions and Overview

Megan moved on to the next slide.

### 4. OTSC Decision Process

Megan explained that members should already be familiar with their role on the OTSC and the committee's authority, and the decision process, but the team felt it was necessary at this time to reiterate these important points. First it's important to remember that the OTSC serves as an advisory committee only to the Board. While they have a key role in evaluating the alternatives and providing input, they are not responsible for making policy decisions. That authority rests with the Board alone. The OTSC is responsible for providing a well-informed recommendation that's based on discussions and analysis. When it comes time to vote, only OTSC members or their chosen alternates if they are not present will vote and the goal is to develop a recommendation that reflects the group's collective expertise and judgement. If there are differing perspectives, they'll document both the majority opinion and any dissenting views in the recommendation document. This ensures that the Board has a full understanding of the key considerations behind the recommendation.

She also wanted to remind everyone that they are currently in the rule development phase of this rule making process. This means that any comments or questions that are raised during this time are considered informal feedback. And that's not to say that it's less important than the formal comments, because it does help the rulemaking agencies shape a proposed rule that reflects key perspectives and priorities. However, the workshop series in this rule development process highlighted early identification of issues allowing for adjustments before the rule is formally proposed. Once the proposed rule is published, the formal comment period officially begins, and at that stage the team will be obligated to respond to all comments and questions submitted. The focus now is really on finalizing the details of these rule updates, ensuring that all aspects of the update and the language are well defined and ready for formal presentation in the summer.

### 5. Ground Rules

Megan then reviewed the ground rules for the meeting which included speaking respectfully and focusing on ideas, not individuals. Remembering to give one voice at a time, so it's important that everyone has the space and time to finish before jumping in. Staying on mute when not speaking to avoid any distractions or background noise. Everyone is there to share their own experience and perspectives, and just agree to disagree. Respecting different opinions is key, especially during this decision-making process. The goal is to always focus on solutions. So, aim for constructive outcomes and actionable steps. And then last but not least, respect time limits and the agenda. Please try and keep comments on topic and concise so everyone has a chance to contribute.

Megan paused for questions. There were none so she moved on to the next slide.

### 6. Alternatives Under Consideration

Each alternative considers different geographic zones and functional and operational requirements, which are abbreviated as FORs.

#### Alternative A is the No Action

**Alternative.** It maintains both the geographic scope of tug escort requirements for target vessels, and the functional and operational requirements included in

ESHB 1578.

	Alt. A: No Action	Alt. B: Addition of FOR Only	Alt. C: Expansion	Alt. D: Removal
Geography	No change from 2020	No change from 2020	Keep 2020 + expand to SoG/SoG S.	Remove reqs. w/in 2020 boundary
Functional and Operational Requirements (FOR)?	No change from 2020.	ADD pre-escort conference, minimum horsepower, propulsion specifications	ADD pre-escort conference, minimum horsepower, propulsion specifications	No requirements for target vessels

**Alternative B is the Addition of Functional and Operational Requirements Only.** It maintains

the geographic scope of tug escort requirements for target vessels and ADDS the new proposed functional and operational requirements.

**Alternative C is the Expansion Option.** It maintains the 2020 requirements for target vessels and expands the area they are required north along the San Juan Islands to Patos Island. The expansion area is noted by the red arrow. It also adds the new proposed functional and operational requirements.

**Alternative D is the Removal Option.** It removes all tug escort requirements for the target vessels. Tug escort requirements for tankers over 40,000 DWT remain unchanged.

Megan then handed the presentation over to Haley Kennard (Ecology SME) to walk the group through the environmental findings from the EIS process.

## 7. Staff Presentation – Environmental Findings













Haley began by explaining that in the interest of time today, she was planning to move through some of these slides quickly because they cover information that the OTSC should have received in the EIS summaries and in the previous workshops. She asked that members raise a hand if they'd like her to stop at any time to cover topics in a bit more detail.

## 8. Determination of Significance (WAC 197-11-794)

Haley explained that the information on the slide was from the WAC. For reference, significance determinations are for the elements where the team found a reasonable likelihood of more than a moderate adverse impact on Environmental Quality. Significance determinations involve context and intensity. They're not a formula or a statistical test. And they can vary with the physical setting. Importantly, the severity and the likelihood of occurrence should be weighed so that an impact can be significant even if the likelihood is low, but the resulting environmental impact could be severe. Haley added that this was particularly useful for this rule making process and for this EIS, both for thinking about oil spills, which are low probability, high consequence events, but also for thinking about potential impacts to critically endangered species like Southern Resident Killer Whales.

## 9. EIS: Preliminary Significance Determinations

The next slide shows the significance determinations for the priority EIS elements, as identified as a priority by the BPC. The elements comprise the first column and the alternatives are across the top. Just a reminder, that Alternative A (No Action) means continuing with the current levels of escort tug traffic and the current regulatory structure, so no change from what we see today. The Determinations of Significance are shown in red, and they have an icon next to them that indicates which element contributed to the finding.

EIS: Preliminary Significance Determinations				
Element of the Environment	Alternative A (No Action)	Alternative B (Addition of FORs)	Alternative C (Expansion)	Alternative D (Removal)
Vessel Traffic	No	No	No	No
Oil Pollution	No	No	No	Yes 
Tribal Resources	Yes 	Yes 	Yes 	Yes 
Plants and Animals	Yes 	Yes 	Yes 	Yes 
Underwater Noise	Yes 	Yes 	Yes 	No
Air Quality	No	No	No	No
Environmental Justice	Yes	Yes	Yes	Yes

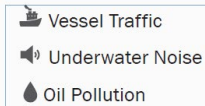
For vessel traffic, there's a finding of no significant impact for all alternatives. For oil pollution, there is a yes finding for alternative D because of the increased oil spill risk under the removal option. For Tribal Resources for Alternatives A through C, the team found a significant impact because of the impacts of vessel traffic on treaty fishing. And for Alternative D they found a significant impact



because of the increase in oil spill risk.

## 10. EIS: Preliminary Significance Determinations Cont'd

For plants and animals, for alternatives A through C, we found a significant impact because of underwater noise levels. And for Alternative D, a yes because of the increase in oil spill risk under the removal option for underwater noise. They found a significant impact for alternatives A through C because of significant increases in the time when harmful levels of underwater noise would be present. For air quality, they did not find a significant impact for any alternative. And for environmental justice, this mirrors the tribal resources determination because in addition to being sovereign governments, tribes are also in many cases, environmental justice communities.

### EIS: Preliminary Significance Determinations Cont'd



Element of the Environment	Alternative A (No Action)	Alternative B (Addition of FORs)	Alternative C (Expansion)	Alternative D (Removal)
Water Quality	No	No	No	Yes 
Recreation	No	No	No	Yes 
Visual Resources	No	No	No	No
Energy and Natural Resources	No	No	No	No

## 11. Significance Findings

The next slide talks about the organization of the next section.

### Significance Findings

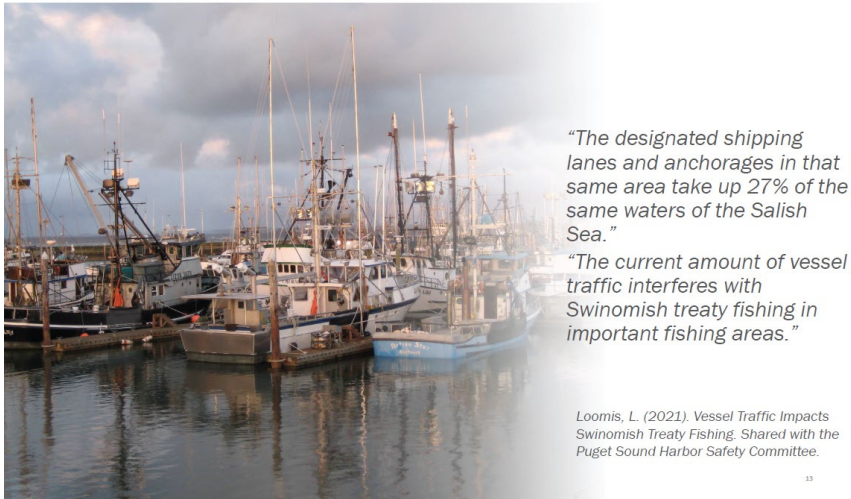
1. Tribal Resources (Alternatives A, B, C)
  1. Environmental Justice
2. Underwater Noise (Alternatives A, B, C)
  1. Plants and Animals
3. Oil Pollution (Alternative D)
  1. Tribal Resources
  2. Plants and Animals
  3. Environmental Justice
  4. Water Quality
  5. Recreation

## 12. Tribal Resources Significance Finding (Alternatives A-C)

Haley next presented the tribal resource significance findings, which as she mentioned, were due to the impacts of vessel traffic on Treaty fishing under the current levels of traffic.

## 13. Vessel Traffic Impacts on Swinomish Treaty Fishing

The next slide provided some examples from a statement that the Swinomish Tribe shared with the team. Haley pointed out that both in this document as well as input received from tribes, incidents with tugs were described specifically.



#### 14. Tribal Resources & Environmental Justice (Alternatives A-C)

As mentioned, the Environmental Justice finding is because of disproportionate impacts to Tribes. That is reflected in the significance findings.

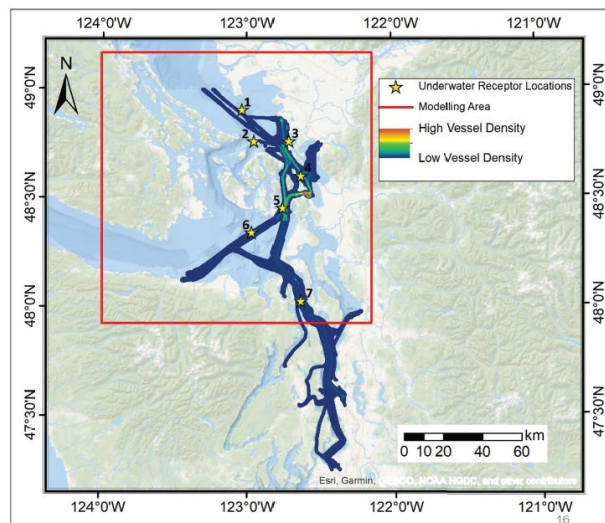
#### 15. Underwater Noise Significance Findings (Alternatives A-C)

And for underwater noise, there is a significance finding because of the increase in time over 120 decibels at the Rosario location in the summer. In the wintertime and at the Lummi and Anacortes locations in the wintertime. Haley mentioned that there is a map on the next slide and the numbers might be a little hard to see, but it's receptor locations 3-4 and five and that's sort of near where that green triangle is that's showing higher levels of noise.

#### 16. Underwater Noise Modeled Receiver Locations

##### Underwater Noise Modeled Receiver Locations

1. Strait of Georgia
2. Boundary
3. Lummi
4. Anacortes
5. Rosario
6. Haro
7. Puget



#### 17. Underwater Noise Significance Findings (Alternatives A-C), Cont'd

Continuing on with underwater noise alternatives B&C, they saw very little change in the modeling from Alternative A. So, there's also a significance finding there.

They have the same significant threshold for marine mammals as they had for underwater noise, so looking for that increase of over 10% in harmful levels of underwater noise.



There's also a significant finding for plants and animals for alternatives A through C.

Haley then talked a little bit about the oil pollution results. Oil pollution risk increases significantly under the removal alternative, by 11.84%. Compared to Alternative A for the entire EIS study area and within just the rulemaking area, the increase is about 90.5%, although the absolute numbers are small. And while oil spill events are rare, the potential environmental consequences, if they do occur, are severe. So, because of that, there are impacts to five additional elements, tribal resources, environmental justice plants and animals, water quality and recreation.

#### 18. Underwater Noise Finding Affects (Alternatives A-C)

So, there's also a significant finding for plants and animals for alternatives A through C.

Element of the Environment	Relevant Significance Thresholds
Plants and Animals	More than a moderate increase in adverse impacts to: <ul style="list-style-type: none"><li>special-status species</li><li>degradation of sensitive ecological areas</li><li>Impacts expected to affect the viability of a population or ecosystem</li></ul> Marine mammals: increase of at least 10% in noise levels above the NMFS behavioral disturbance threshold.

#### 19. Oil Pollution Significance Finding (Alternative D)

Oil pollution risk increases significantly under the removal alternative 11.84%. Compared to Alternative A for the entire EIS study area and within just the rulemaking area, the increase is about 90.5%, although the absolute numbers are small. And while oil spill events are rare, the potential environmental consequences, if they do occur, are severe.

#### 20. Oil Pollution Affects (Alternative D)

So, because of that, there are impacts to five additional elements, tribal resources, environmental justice plants and animals, water quality and recreation. Haley explained that the slide summarizes the same information as the first slide presented by alternative rather than by element of the environment.

Element	Relevant Significance Threshold
Tribal Resources	Adverse impacts to <ul style="list-style-type: none"><li>Wildlife or habitats of cultural significance</li><li>Tribes' water-dependent activities (water quality)</li><li>Coastal cultural resources</li><li>Treaty fishing (access, operation, quality)</li></ul>
Environmental Justice	Disproportionate adverse impact to populations of color, low-income populations, and/or Tribes
Plants and Animals	More than a moderate increase in adverse impacts to <ul style="list-style-type: none"><li>special-status species</li><li>degradation of sensitive ecological areas</li><li>Impacts expected to affect the viability of a population or ecosystem</li></ul>
Water Quality	Meaningful increase in frequency of acute water quality standard exceedances from spills
Recreation	Long-term or permanent changes to recreational access or quality

#### 21. EIS: Significance Findings

The job of the EIS is to assess and to clarify the differing environmental impacts for each alternative at a high level. All the alternatives have some significant impact to tribal resources, environmental justice and plants and animals. Alternatives A, B, and C also have a significant noise impact. And Alternative D also has the oil pollution, water quality and recreational impact.

Alternative	Proposed Significance Findings	
Alternative A (No Action)	<ul style="list-style-type: none"> <li>Underwater Noise</li> </ul>	<ul style="list-style-type: none"> <li>Tribal Resources</li> <li>Plants and Animals</li> <li>Environmental Justice</li> </ul>
Alternative B (Addition of FORs)	<ul style="list-style-type: none"> <li>Underwater Noise</li> </ul>	
Alternative C (Expansion)	<ul style="list-style-type: none"> <li>Underwater Noise</li> </ul>	
Alternative D (Removal)	<ul style="list-style-type: none"> <li>Oil Pollution</li> <li>Water Quality</li> <li>Recreation</li> </ul>	

## 22. Mitigation Measures Included in the EIS

Next, Haley talked about mitigation. There are three types that are discussed in the EIS. First, mitigation captured in the rule making language. Second, existing regulations and requirements that mitigate potential impacts. And third, voluntary mitigation that ecology encourages but can't require.

## 23. Mitigation Measures Included in the EIS Cont'd

So in the rulemaking language, this is probably the most narrowly defined of the three for all alternatives. Of course, the selection of the geographic alternative and the decision to include or not include functional and operations will affect the type and the scale of impacts for tribal resources, underwater noise and plants and animals. The team is suggesting the following recommended mitigation language be included in the rule: Operators must consider opportunities to 1) coordinate with interested tribes to avoid or reduce impacts to treaty fishing and 2) participate in voluntary underwater noise reduction efforts.

### In Rulemaking Language

Elements of the Environment	Mitigation Measures
All	<ul style="list-style-type: none"> <li>Selection of geographic alternative</li> <li>Inclusion of FORs</li> </ul>
Tribal Resources	<ul style="list-style-type: none"> <li>Operators must consider opportunities to coordinate with interested Tribes to avoid/reduce impacts</li> </ul>
Underwater Noise, Plants and Animals	<ul style="list-style-type: none"> <li>Operators must consider opportunities to participate in voluntary noise reduction efforts</li> </ul>

## 24. Mitigation Measures Included in the EIS Cont'd

There are many other existing regulations that mitigate some of the impacts described in the EIS, which are depicted on the slide that include some impacts that that don't rise to the level of significance. This is a summary only. There are of course more, but these include things like existing vessel traffic safety requirements, existing oil pollution regulations, existing federal and state regulations that protect marine mammals, and southern resident killer whales in particular, existing water quality and vessel discharge regulations. And then plans like the Northwest Area Contingency Plan, for example, that include policies about protecting cultural resources in the event of an oil spill.

## Already Required by Other Regulations

Elements of the Environment	Mitigation Measures
All	<ul style="list-style-type: none"> <li>Existing vessel traffic safety requirements</li> <li>Existing oil pollution regulations</li> </ul>
Underwater Noise, Plants and Animals	<ul style="list-style-type: none"> <li>Existing federal and state regulations protecting SRKW and other marine mammals (e.g. reducing speed, maintaining distance)</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>Existing water quality and vessel discharge regulations</li> </ul>
Tribal Resources	<ul style="list-style-type: none"> <li>Northwest Area Contingency Plan policies and procedures for oil spill response and cultural resource protection.</li> </ul>

### 25. Mitigation Measures Included in the EIS Cont'd

And finally are the voluntary mitigation things that the team recommends operators do or continue to do. These include continued participation in Puget Sound Harbor Safety Committee Standards of Care and other industry best practices. The team also recommends that the applicable Puget Sound Harbor Safety Committee Standards of Care be extended to escorts for target vessels. To reduce underwater noise and impacts to plants and animals, the team encourages operators to continue to participate in voluntary noise reduction efforts. In addition, adopt the Be Whale Wise guidance, transition to quieter hybrid indoor electric propulsion systems when the technology and cost make this more feasible, and continued participation in voluntary environmental certification programs. To further reduce impacts to tribal resources, the team is also recommending that operators develop agreements with interested tribes to improve communication and reduce impacts to treaty fishing, and also that operators limit waiting time in the rendezvous areas with the vessel or with the target vessels as much as safe and practical, because this has been highlighted as an area of potential conflict of treaty fishing.

## Voluntary

Elements of the Environment	Mitigation Measures
All	<ul style="list-style-type: none"> <li>Continued participation in PSHSC Standards of Care and industry best practices</li> <li>Extension of applicable PSHSC Standards of Care to 5,000 – 40,000 DWT escorts</li> </ul>
Underwater Noise, Plants and Animals	<ul style="list-style-type: none"> <li>Voluntary noise reduction efforts in the EIS Study Area</li> <li>Adoption of Be Whale Wise guidance</li> <li>Transition to quieter, hybrid, and/or electric propulsion when technology and cost make this feasible.</li> </ul>
Plants and Animals	<ul style="list-style-type: none"> <li>Voluntary environmental certification programs</li> </ul>
Tribal Resources	<ul style="list-style-type: none"> <li>Encourage operators to develop agreements with interested Tribes to improve communication and reduce impacts to treaty fishing.</li> <li>Encourage operators to limit waiting time at rendezvous locations</li> </ul>

### 26. Proposed Mitigation Rule Language

The last slide Haley presented showed proposed mitigation language again for OTSC reference, which will be discussed in more detail later in the presentation. Operators must consider: 1) Opportunities to coordinate with interested Tribes to avoid or reduce impacts of tugs to treaty fishing and 2) Opportunities to participate in voluntary underwater noise reduction measure and best practices where safe and feasible to do so.

Jaimie then asked for questions or comments from the group.



Rein Attemann (Environment Alternate/WEC) was confused how the terminology of "operators must consider opportunities to participate in voluntary activities" pans out in terms of a decision on whether to reduce underwater noise, if it is voluntary but they must consider it. He didn't understand how that implementation would work. Haley responded that his question was a good one. The team's understanding is that most of the existing underwater noise reduction trials and programs through the ECHO program or Quiet Sound, for example, are voluntary and are designed that way. Those groups are working with the Coast Guard and have decided that a voluntary approach is best. So, this recommendation would formally, through the rule, encourage operators to participate in those if they can. So, voluntary is describing the way that those measures are set up now, not that we are suggesting that they do it on a voluntary basis. Rein then wondered about enforcement. Haley responded that participation can't be required, and that the "consider opportunities" is language recommended by the Rules Unit at Ecology.

Fred Felleman (Environment/Friends of the Earth) observed that the state has a zero-oil spill policy and that removing the escort requirement increases risk by about 11.8% in the overall area and some 90% where escorts are applied. The significance impact for the noise was based on the duration of time that exceedance can occur in the waterway but does not account for the presence of the whales. He then reiterated similar comments about encounters he made at the last workshop including that in the winter in Rosario Strait the whales are not present. That whales would have to be in the same place at the same time, the fact that the noise would have to exceed the whales would have to be there when that exceedance occurs and then be in proximity and orientation. For that to be a masking event is analogous to a loss of power, resulting in an oil spill. He doesn't see that similar consideration being made for this significance determination. He also didn't recall seeing the same threshold analysis being done for the other species of marine mammals. While he knows that the frequency distribution being discussed has been with killer whales, certainly these other mammals are acoustically acute.

Haley responded that the team discussed and took his comments from the last workshop to Ecology's SEPA experts. The team acknowledges that the SRKW are not here year-round and that they don't use the whole critical habitat area all the time. She urged the importance of acknowledging that most of the EIS study area is designated as critical habitat for Southern resident killer whales and most of the rulemaking area is designated as summer core critical Habitat. NOAA made these designations based on their best available science. The data shows significant increases in noise at three locations in the summer core habitat with a 25% increase in noise over the 120-decibel threshold at the Rosario location in the summertime. They know from the modelling that the area that would exceed 120 decibels is 80.7 square kil. in the summer, in alternative A. They can't predict exactly where within the critical habitat the whales might be, or when they might encounter noise from a tug. But the job of the EIS is to identify the potential for significant adverse impacts. Underwater noise is one of the three main stressors for Southern Resident Killer Whales and that harmful levels of underwater noise increase under this rule, making in their critical habitat. That's why there is a finding of significant impact. Fred then asked for clarification that Alternative D results in noise reduction that is not significant. Haley answered that the removal option decreases Harmful levels of underwater noise by 25% at the Rosario location in the summertime and at the other locations in the wintertime. So, it's reducing underwater noise from current levels. She also noted that it's not that tugs are the only contributor to harmful levels of noise, so they can still exist, which is noted in the EIS. But the threshold is looking at increase or maintenance of

*that level. Fred's last question was regarding tribal impacts. He wondered if there had been an analysis of increases or decreases in frequency of interactions with fishing gear during this period of the study where the regulation has been in place. Haley responded that they have been discussing the potential for impacts with tribes, and as she mentioned, they've heard that current levels of vessel traffic were impacting treaty fishing, and that tribes were having negative interactions with tugs specifically. The team has heard from tribes that there is negative impact both before and after and that is what the finding relies on.*

*There being no other question, Jaimie moved the group on to the next topic.*

## **27. Staff Presentation – Economic Findings**

Allen Posewitz with the Rules and Accountability Section of Ecology introduced himself and began the presentation on the economic findings.

## **28. Administrative Procedures Act**

Allen explained that the rulemaking was directed by the legislature and that there were specific requirements associated with it. Whenever the legislature either mandates or authorizes a rulemaking, it is subject to some general requirements, and these can be considered the guardrails it has put on the overall process. Some key ones are specified in the Administrative Procedures Act. The first is that a cost benefit analysis will be done, and the benefits of the proposed rule must outweigh the costs and, very importantly, qualitative and quantitative measures are equally considered.

The second requirement is that at a least burdensome alternatives analysis will be done, and if the rule alternatives are assessed to meet the goals and objectives of the authorizing statute. Then among those options, the one that's least burdensome to those required to comply with, must be chosen.

## **29. Engrossed Substitute House Bill 1578 (2019)**

This process began with engrossed substitute House Bill 1578 in 2019. He then read the language from the bill, that the "intent of the legislature is to enact certain new safety requirements designed to reduce the current acute risk from existing infrastructure and activities of an oil spill that could eradicate our southern resident killer whales, violate treaty interests and fishing rights of potentially affected federally recognized Indian tribes, damage commercial fishing prospects, undercut many aspects of the economy that depend on the Salish Sea and otherwise harm the health and well-being of Washington residents.

## **30. Framework for Spill Prevention**

And as already noted, the broader context is that the legislature finds that the primary objective of the state is to achieve a zero-spill strategy to prevent any oil or hazardous substance from entering the waters of the state.

## Framework for Spill Prevention

### Chapter 90.56 RCW

#### Oil and Hazardous Substance Spill Prevention and Response

“...the legislature finds that the primary objective of the state is to achieve a zero spills strategy to prevent any oil or hazardous substances from entering waters of the state.”



### 31. Quantitative Oil Spill Costs

In terms of quantitative oil spill costs, typically cleanup costs and damage costs are considered because of the specific language in the authorizing statute in the scenario here where there is also the Southern Resident Killer Whale premium consideration.

### 32. Cleanup Costs

There are many factors that affect cleanup costs, which are acknowledged to be widely variable by almost all involved. They include oil type, spill location, timing, sensitive areas, affective affected liability limits and clean up strategy. For this process, the team borrowed a number from a study the state of California commissioned. They estimated a \$29,539 per barrel cleanup cost. Updating that for inflation results in \$36,000. And the author noted, importantly, that this reflects recent higher public expectations for cleanup standards. The cost was for medium persistent oil and using high end cost of the four categories that they considered.

### 33. Damage Costs

Oil spills, of course, can damage lots of things, including lost tourism, fishing revenues, including tribal recreation and commerce. For this number the team used Earth Economics study modeled to 24,000 barrels spill of heavy fuel oil. They assessed quantitatively 5 impact categories, including property values, tourism and ecosystem services. Taking their high-end number of \$243,000,000 in damage cost, converting that to per barrel, and updating it to 2024 dollars, the result is \$12,500 and \$78 per barrel and damage costs.

### 34. Total Costs Per Barrel

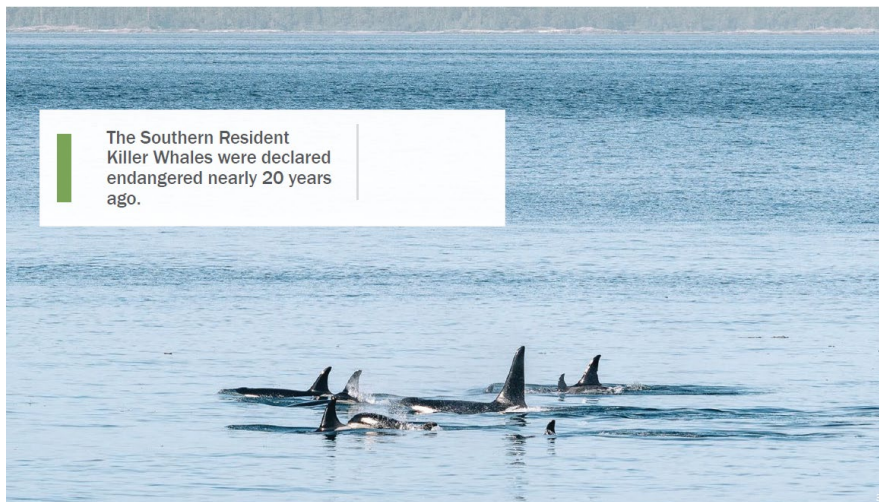


Cleanup Cost + Damage Cost = Total cost per Barrel



\$36,403 + \$12,578 = \$49,981 (rounded up to **\$50,000**)

### 35. Southern Resident Killer Whales



### 36. SRKW Premium

There was a contingent valuation survey mailed in 2010 when the valuation was for conservation efforts that would move this population from endangered to recovered over the course of 50 years. Households responded. They were willing to pay roughly \$1000 / 10 years so per household, that's around 1/4 a day. This survey was mailed 8 years prior to the population of whales making global headlines. Adjusting this willingness to pay from 2014 to 2024 dollars and multiplying that value by Washington State's 3,000,000 households, we landed our 3.5-billion-dollar orca premium.

### 37. Catastrophic Spill Cost

For considering the cost of a catastrophic spill, the assumption is that a drift grounding will occur, and then it will result in a worst-case spill. Worst-case spill is defined in statute as the entire cargo and fuel capacity of the vessel. Looking at this worst-case spill, it's consistent with the requirements for emergency and contingency planning for vessel operators of the largest target vessels. So, considering a capacity of 259,000 barrels and then adding to this catastrophic cost of a drift grounding and a spill, and the \$10 million in damage estimated to the vessel results in half a billion dollars. 259,000 barrels times \$50,000 per barrel and add the orca premium is the vessel damage cost. This would be the worst-case spill and this equation, or this calculation will appear in these subsequent equations.

- Assumes a drift grounding will occur and that it will result in a **worst-case spill\*** (a spill of the entire cargo and fuel of the vessel).
- The largest target vessel has a cargo capacity of 259,000 barrels.
- Possible damage costs to vessels from drift grounding is \$10 million (D)

#### Calculation:

$$(\$10 \text{ million} + (259,000 \text{ barrels} \times \$50,000/\text{barrel})) + \$3.5 \text{ billion} =$$

**\$16.46 billion**

\*Defined in statute, RCW 90.56.010

### 38. CBA Methods

The cost benefit analysis estimates the expected avoided spill costs by considering the probability of a drift grounding. These probability numbers come from the Spills Programs Risk Model. A drift

grounding is one specific type of incident type that escorts are well suited to addressing and while they are rare, they have potential to be catastrophic.

**Low  
Probability,  
High Impact**

### CBA Methods

- The methods estimate expected **avoided spill costs** by considering the probability of a drift groundings.
- A drift grounding is one specific type of incident escort tugs are well suited to addressing.
- While drift groundings are rare, they have the potential to result in catastrophic consequences.

Alternative	Reoccurrence interval for a drift grounding*	% chance of drift grounding in 20 years
A and B	186 years	10.8% chance over 20 years
C	189 years	10.6% chance over 20 years
D	167 years	12% chance over 20 years

\*Chance of a spill from a grounding estimated at 0.73%

### 39. Method Factoring in Probability of a drift grounding

This is the recurrence interval for a drift grounding under alternatives A and B. That recurrence interval is 186 years. The current interval increases to 189 years under the expanded escorts and the removal causes the recurrence interval to be more frequent, once every 167 years. Putting it differently, the chance of getting over 20 years in the various scenarios range from 10.6%, which is the shortest lowest probability under alternative C, 10.8% under A and B, and increasing to 12% under alternative D.

- Assumes a drift grounding will result in a worst-case spill of 259,000 barrels.
- Possible damage costs to vessels from drift grounding is \$10 million (D.)
- Includes the difference in the odds of a drift grounding occurring using the Spill Risk Model (O).

#### Calculation of expected avoided oil spill cost benefit for Alternative C

$$\begin{aligned}
 & O \times ((D + (259,000 \times C)) + SRKW) = \text{Benefit} \\
 & (1/186 - 1/189) \times ((\$10 \text{ M} + (259,000 \text{ barrels} \times \$50,000/\text{barrel})) + \$3.5 \text{ billion}) \\
 & = \\
 & \text{\$1.4 million /yr}
 \end{aligned}$$

### 40. Method factoring in probability of a drift grounding and probability of a spill from grounding

Running the first number adjusting for the probability of adrift grounding is for alternative C. And so again, these are the values that generate the 16.5-billion-dollar worst case spill cost and out front is the  $1/186 - 1/189$ . That's the difference in probability created by expanding the tug escorts, and that's going to be a very small number. And when adjusting for that, multiply that probability times the worst-case spill cost that produces an expected avoided spill cost per year of \$1.4 million.

- Assumes worst case spill of 259,000 barrels.
- Possible damage costs to vessels from drift grounding is \$10 million (D.)
- Includes the difference in the odds (O) of a drift grounding occurring using the Spill Risk Model and the probability (P) of a spill from a grounding (0.73%).

Calculation of expected avoided oil spill cost benefit for Alternative C

$$(O \times D) + O \times P \times (259,000 \times C) + SRKW = \text{Benefit}$$

$$((1/186 - 1/189) \times \$10,000,000) + (1/186 - 1/189) \times 0.0073 \times ((259,000 \text{ barrels} \times \$50,000/\text{barrel}) + \$3.5 \text{ billion}) =$$

$$\text{\$11,101 /yr}$$

40

#### 41. Method factoring in probability of a drift grounding and probability of a spill from grounding

Allen then presented the likelihood that a spill will result from a drift grounding and that spans 20 years over a wide area, and it should also be stressed that there are many factors that influence whether a grounding results in a spill, including speed and shoreline weather, because of the uncertainty in which the conditions might be present at the time of a grounding. Because they wanted to be sure to understand the full potential cost of a spill, the rule team decided to focus on the drift groundings, which produced that first \$1.4 million number. Now using the data collected on the likelihood of a spill and adding in that probability of .73%, this annual estimated avoided spill cost benefit falls to 11,000 per year.

- Assumes estimated median spill size of 24 barrels
- Possible damage costs to vessels from drift grounding is \$10 million (D)
- Includes the difference in the odds (O) of a drift grounding occurring using the Spill Risk Model and the probability (P) of a spill from a grounding (0.73%)

Calculation of expected avoided oil spill cost benefit for Alternative C

$$(O \times D) + O \times P \times (24 \times C) + SRKW = \text{Benefit}$$

$$((1/186 - 1/189) \times \$10,000,000) + (1/186 - 1/189) \times 0.0073 \times ((24 \text{ barrels} \times \$50,000/\text{barrel}) + \$3.5 \text{ billion}) =$$

$$\text{\$3,035 /yr}$$

41

#### 42. Some quantitative cost estimates

The pre-escort requirement conference is estimated to cost roughly \$16,000 a year. The expansion of the escort area, which includes extra tug time and conference cost is estimated to cost \$850,000 a year and the cost of the current tug escort requirements is estimated at \$20 million per year based on the model number of escorts per year, and the average price of tug escorts based on price sheets from the tug operators.

#### 43. Qualitative Oil Spill Costs

Importantly, qualitative and quantitative costs have equal footing under the Administrative Procedures Act. But there are some unquantifiable impacts from oil spills, including immeasurable harm to ecosystems, cultural heritage and community well-being, threatening critical habitats and biodiversity tribal resources. Tribal nations would face severe cultural and spiritual losses, disruption of treaty, fishing and harvest rights, and exacerbated social and economic inequities due to their placement. Widespread community impacts would include loss of natural and cultural resources that would harm livelihoods, mental health and public health, with long term consequences for both tribal and non-tribal communities.





**Unquantifiable impacts:** devastating, immeasurable harm to ecosystems, cultural heritage, and community well-being, threatening critical habitats and biodiversity.



**Tribal resources:** Tribal nations would face severe cultural and spiritual losses, disruption of treaty fishing and harvest rights, and exacerbated social and economic inequities due to their place-based rights.



**Widespread community impacts:** Loss of natural and cultural resources would harm livelihoods, mental health, and public health, with long-term consequences for both Tribal and non-Tribal communities.

#### 44. CBA Summary – Alternative B – Addition of FORs

For Alternative B, there are the additional functional and operational requirements. While we have no estimate of a quantitative change in drift grounding probability, the functional and operational requirements are considered by professional opinion to increase safety and ensure adequate power and maneuverability to prevent a drift grounding on the cost side. The team estimates the pre-escort conference cost at almost \$16,000 per year. And the environmental impact statement showed very significant impacts to plants and animals from underwater noise and to travel resources from vessel traffic.

Benefits	Costs
<ul style="list-style-type: none"><li>• No quantified change from Alternative A, Drift Grounding is 186-year event.</li><li>• FORs are considered to enhance safety and ensure adequate power and maneuverability to prevent drift grounding</li></ul>	<ul style="list-style-type: none"><li>• Pre-escort conference = \$15,851/yr</li><li>• EIS adverse significant impacts:<ul style="list-style-type: none"><li>• Plants and animals from underwater noise</li><li>• Tribal resources from vessel traffic</li></ul></li></ul>

#### 45. CBA Summary – Alternative C – Expansion

For Alternative C expansion the drift grounding risk goes from 886-year event to 189-year event. The added functional and operational requirements are assessed to improve safety, avoided spill costs of up to \$1.4 million per year, if the assumption is that a drift grounding leads to a worst-case spill. The estimated of the cost of that is nearly \$16. billion dollars. There's some pristine local geography and ecosystems in the expansion area. Susca Island State Marine Park is in the area and the fact that it's contiguous with the current requirements lends a certain efficiency for expansion of escorts in this area in terms of costs. They estimate \$850,000 per year including conference cost time and the extra tug operation time and the adverse impacts, again two plants and animals from underwater noise and to travel resources from vessel traffic as outlined in the EIS that Haley presented earlier.

Benefits	Costs
<ul style="list-style-type: none"> <li>• DG risk goes from a 186-year event to a 189-year event.</li> <li>• FORs</li> <li>• Avoided spill costs up to \$1.4 million/yr IF DG → WCS. Total cost of WCS is \$16.46 B.</li> <li>• Local geography and ecosystem</li> <li>• Efficiency and suitability of geographic area</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-escort conference + extra operation time = \$850k/yr</li> <li>• EIS adverse significant impacts: <ul style="list-style-type: none"> <li>• Plants and animals from underwater noise</li> <li>• Tribal resources from vessel traffic</li> </ul> </li> </ul>

Drift grounding (DG)  
Worst-case spill (WCS)

#### 46. CBA Summary – Alternative D – Removal

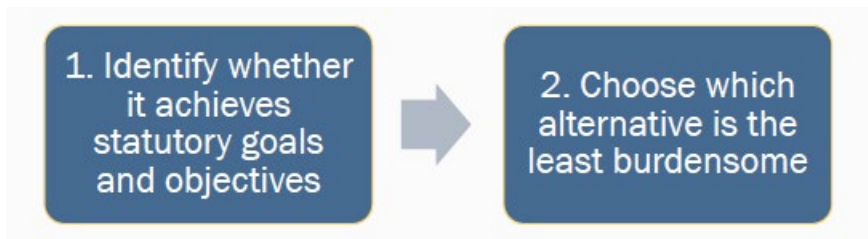
Considering the removal option, the estimated benefit would be to save a \$20 million a year in tug escort costs, less vessel traffic, reduction in underwater noise, and reduction in impacts to travel resources. On the cost side, drift grounding goes from 186-year event to a 167-year event or from 10.8% chance to a 12% chance of drift grounding over 20 years. If a drift grounding were to result in a worst-case spill, the estimated cost would be \$10.1 million per year. Using again, the worst-case spill cost estimate of \$16.5 billion dollars. In this instance, the adverse environmental impacts are from increased oil pollution and that those were found to affect that risk was found to affect travel resources, plants and animals, water quality and recreation.

Benefits	Costs
<ul style="list-style-type: none"> <li>• Amount saved on tug escorts = \$20 million/yr</li> <li>• Less vessel traffic</li> <li>• Reduction in underwater noise</li> <li>• Reduction in impacts to Tribal resources</li> </ul>	<ul style="list-style-type: none"> <li>• DG goes from a 186-year event to a 167-year event. 10.8% to 12% chance of a drift grounding / 20 yrs</li> <li>• IF drift grounding → WCS \$10.1 million/yr, using WCS cost of \$16.46 billion.</li> <li>• EIS adverse significant impacts: <ul style="list-style-type: none"> <li>• Increased Oil pollution risk affects: <ul style="list-style-type: none"> <li>• Tribal resources</li> <li>• Plants and animals</li> <li>• Water quality</li> <li>• Recreation</li> </ul> </li> </ul> </li> </ul>

Drift grounding (DG)  
Worst-case spill (WCS)

#### 47. Least-Burdensome Alternatives Analysis

Allen continued with the least burdensome alternatives analysis. A decision is required whether the identified rule option meets the goals and objectives of the authorizing statute. And if it does, then the choice is the one that is least burdensome to those that are required to comply with it.



#### 48. Goals and Objectives of Chapter 88.16 RCW

In terms of the goals and objectives specifically, the team is mandated to have the rule be designed to achieve best achievable protection, which considers the additional protection provided by the measures, the technological achievability of the measures, and the cost of the measures. Again, the intent of the authorizing legislation was to reduce spill risk. There is specific direction to specify functional and operational requirements, consider geographic area for tug escort requirements, avoid or minimize additional vessel noise and reduce tribal impacts.

#### 49. LBA Summary

Allen concluded with a summary slide depicting those numbers. He directed the group's attention to the last column, because this is the location of the rulemaking team's assessment that Alternative A, does not meet best achievable protection because it does not have the functional and operational requirements added. The removal option, D was likewise assessed to not meet best achievable protection because of the increased risk in oil spill, which leaves options B&C, the remaining contenders to be determined.

Alternative	Estimated Cost to Comply (per year)	Drift Grounding Risk Over 20 years	Other Statutory Considerations	Does it achieve BAP?
A – No Action	\$20M	186-year event (10.8% chance)	Vessel noise and Tribal impacts	No
B – Addition of FORs	\$20M+ \$15k (FORs)	186-year event (10.8% chance)	Vessel noise and Tribal impacts	TBD
C- Expansion	\$20M+ \$15k+\$850k	189-year event (10.6% chance)	Vessel noise and Tribal impacts	TBD
D - Removal	\$0	167-year event (12% chance)	Significant oil spill risk impact	No

#### 50. Discussion and Questions

*Jim Peschel (Tug Industry Alternate/Vane Brothers) questioned worst case discharge of 259,000 barrels considering that Vane Brothers barges hold 30,000 barrels. He questioned the assumption that a spill basically be a tenfold increase of what their barges hold. He referenced a previous slide regarding the median spill size, but didn't see how it was included in the equation. He added that in the spill planning world it's called the average most probable discharge, which is what's more likely to be a spill. He also commented on the SRKW premium, which seemed like a new wild card saying every citizen or every household in Washington state is willing to pay \$1000. It seemed that the team was now proposing to put that cost instead of on individuals on to industry. Allen Posewitz (Ecology SME) responded that yes, they put in high end bracket numbers for this analysis and later they'll review other calculations showing the probability of a risk and the mostly spill size. He added that Jim's point was taken, that not all vessels are the size in terms of the Southern resident killer SRKW premium and what it might be. And there's a case to be made that the number is lowballed given the change in public attention on this particular population of whales.*

*Megan Hillyard (Ecology SME) noted that the team did add a few slides to the deck that OTSC received in response to that question about having multiple methods and a range of costs that represent what a*

*potential cost of an avoided oil spill would be. And each of those methods just offers a different perspective on risk and cost to balance the uncertainty and real-world probabilities. Three of those methods incorporate a worst-case spill volume, and that's in line with Ecology's practice in rulemakings contingency planning. For example, they applied the worst-case bill standard as a guiding principle in decision making to prioritize those high impact scenarios to ensure that the regulatory policies are designed to address catastrophic events. That is primarily what decision making is driven by. And then just to touch on the SRKW premium, Megan added that the number is not necessarily a fee or a charge on businesses or consumers. It reflects how much people hypothetically value the protection of SRKWs, not what they will actually pay. Those estimates are used here to evaluate whether the regulations benefits justify its cost, as a decision-making mechanism.*

*Antonio Machado (Oil Industry/WSPA) appreciated the explanation adding based on his background as a scientist, he believes there was a gap in the data. The numbers don't consider improvements in equipment and that there are better emergency response preparedness and stockpiles. Industry focuses on a worst-case spill when any vessel has different compartments and with double-hulled vessels. He didn't understand why the data is looking at a worst-case spill-scenario as opposed to a probable outcome. Allen acknowledged that it was absolutely a high-end estimate. Antonio asked if there was an adjustment for industry efforts in the last 30 years. Allen responded yes and that he would argue it was in that last slide where the median spill size was shown that has been observed over the last 20 years and was 24 barrels.*

*Fred Felleman (Environment/Friends of the Earth) reminded the group that anticipating the cost of responding to an oil spill does not mean the spill has been cleaned up, which could result in only a 10% recovery. He added that there is more sinking oil locally which would be more expensive to clean up than the medium oil in the California study used. He asked about the additional cost estimate for the geographic expansion from Alternative B to Alternative C. Allen responded that it was to go from B to C would \$850,000 a year in extra tug time, including the pre-escort conference cost for the functional operational requirements.*

## **51. Draft Rule Language**

Sara explained that the next section summarizes the important insights just reviewed to help the group move towards selection of a proposed rule alternative.

## **52. EIS Significance Finding Summary**

She explained the first slide was summary of the EIS significant findings with a reminder that at a high level, all the alternatives had an impact on tribal resources and plants and animals. And when developing the rule language, the group must consider the underwater noise impact from alternatives A, B and C, as well as the oil pollution, water quality and recreational impact in alternative D. On the slide, the alternatives are in the rows and the cost and benefits are in the columns. As another reminder, in terms of cost, alternative A is the baseline. Alternative B cost 15,851 for the functional and operational requirements. Alternative C cost \$850,000 per year for the functional operational requirements and those expansion area escorts. And alternative D is the highest spill risk with spill cost up to \$10.1 million per year. She noted that the \$10.1 million calculation does assume that every drift grounding will result in a worst-case spill. And alternative D also has the total one-time cost of a worst-case bill remaining at \$16.46 billion.

Alternative	Proposed Significance Findings	
Alternative A (No Action)	• Underwater Noise	• Tribal Resources  • Plants and Animals
Alternative B (Addition of FORs)	• Underwater Noise	
Alternative C (Expansion)	• Underwater Noise	
Alternative D (Removal)	• Oil Pollution  • Water Quality  • Recreation	

### 53. Cost Benefit Summary

When looking at benefits, alternative A was the baseline. Again, Alternative B had the benefit of the functional and operational requirements and those ensure the escorts communicate and have sufficient maneuverability and power. Alternative B has a benefit of a drift grounding reoccurrence interval of 186 years and a 10.8% chance of a drift grounding in 20 years. Alternative C has the benefit again of the functional and operational requirements. Alternative C has a decrease in spill risk with a drift, grounding reoccurrence interval of 189 years and a 10.6% chance of adrift grounding in 20 years. Alternative C could save up to 1.4 million per year in spill cost and avoid that one time cost of a worse possible spill of \$16.46 billion. The expansion area and alternative C has high escort efficiency, and it refines the RCW escort area based on the model and OTSC input to date. Alternative D has the benefit of reduced noise and vessel traffic as well as the savings of that \$20 million costs for escorts that is present in alternative A that would be removed in alternative D. So, the cost benefit analysis shows that there are benefits for spill risk reduction and assurance of tug escort capability and for alternatives B & C, the rule team believes that the benefits outweigh the costs, given the spill risk reduction intent of this rule making.

	Cost (qualitative & quantitative)	Benefit (qualitative & quantitative)
<b>B</b>	<ul style="list-style-type: none"> <li>• \$15,851 per year (FOR)</li> <li>• Underwater noise, tribal, and plants and animal impact</li> </ul>	<ul style="list-style-type: none"> <li>• FORs ensure escorts communicate and have sufficient maneuverability and power</li> <li>• Drift Grounding is <b>186-year event</b></li> <li>• <b>10.8%</b> chance of a drift grounding / 20yrs</li> </ul>
<b>C</b>	<ul style="list-style-type: none"> <li>• \$850,000 per year (FOR and expansion)</li> <li>• Underwater noise, tribal, and plants and animal impact</li> </ul>	<ul style="list-style-type: none"> <li>• Save up to <b>\$1.4 M</b> in spill costs per year. Total cost of worst possible spill is <b>\$16.46 B</b> if spill prevented by expanded escorts.</li> <li>• Drift Grounding <b>189-year event</b>. <b>10.6%</b> chance of a drift grounding/ 20yrs</li> <li>• Expansion provides high escort efficiency, refines RCW area based on model and OTSC input.</li> </ul>
<b>D</b>	<ul style="list-style-type: none"> <li>• Up to <b>\$10.1 M</b> in spill costs per year. Total cost of worst possible spill is <b>\$16.46 B</b> if spill occurred due to removal of escorts.</li> <li>• Drift Grounding <b>167-year event</b>. <b>12%</b> chance of a drift grounding / 20 yrs</li> <li>• Oil Pollution, water quality, and recreation impact</li> </ul>	<ul style="list-style-type: none"> <li>• Save <b>\$20 M</b> in escort costs (removal of Alt A escorts)</li> <li>• Reduced noise and vessel traffic.</li> </ul>

### 54. Least Burdensome Alternative Summary

Next was the summary of the findings from the Least Burdensome Alternative analysis. The Least Burdensome Alternative analysis is necessary because the adopted rule must: achieve the goals and objectives of the authorizing statute and be the least burdensome to those required to comply.

The numbers in this least burdensome alternative summary may look different from the numbers on the previous slide because in this evaluation, the 20 million escort tug costs for the baseline Alternative A requirements are included in the cost of Alternative A, B, and C rather than as a benefit of Alternative D. This is due to the nature of the least burdensome alternative analysis.

As Allen mentioned, the first test a proposed alternative must pass, is the test of whether it meets the goals and objectives of the statute. In this case, those goals and objectives are to provide preventative measures to reduce the risk of a major oil spill, taking into consideration functional and operational requirements; geographic area for tug escort requirements, and Best Achievable Protection. The statute also requires that the rule consider tribal impacts and underwater noise.

The table above attempts to capture these goals alongside the costs for each alternative. The alternatives are across the top and the costs and goals are in the first column.

In evaluation the Costs: Alternatives A, B, and C all have a compliance costs of \$20m or more. Alternative D has no cost to comply.

Moving on to the goals of the statute:

For the Goal of Spill Risk Reduction: Alt A, B, and C each enhance the goal of spill risk reduction, with Alternative C providing the greatest reduction in spill risk, expanding the reoccurrence interval to 189-years. Alt D brings the spill risk from drift grounding back to the Pre-2020 level of a 167-year event.

For the Goal of limiting impact to Tribal resources and underwater noise: Alt A, B, and C have significant impacts from underwater noise and impacts to tribal resources from vessel traffic. Alt D did not have significant impact from underwater noise but had an impact to Tribal Resources due to oil spill risk.

The Goal of meeting Best Achievable Protection is under evaluation based on the information shared. BAP must consider the protection provided by the measure, the cost, and the availability. The Functional and Operational requirements all met the BAP criteria, and these requirements are included in Alternatives B and C.

	A	B	C	D
Cost to comply	<ul style="list-style-type: none"> <li>• Status quo costs \$20 million</li> <li>• \$0 additional costs to comply</li> </ul>	<ul style="list-style-type: none"> <li>• Status quo costs \$20 million</li> <li>• \$15,851 additional cost per year to comply (FOR)</li> </ul>	<ul style="list-style-type: none"> <li>• Status quo costs \$20 million</li> <li>• \$850,000 additional cost per year to comply (FOR and expansion)</li> </ul>	<ul style="list-style-type: none"> <li>• \$0 to comply</li> </ul>
Goal: Spill risk reduction	<ul style="list-style-type: none"> <li>• Drift Grounding is 186-year event</li> <li>• 10.8% chance of a drift grounding /20yrs</li> </ul>	<ul style="list-style-type: none"> <li>• Drift Grounding is 186-year event</li> <li>• 10.8% chance of a drift grounding /20yrs</li> </ul>	<ul style="list-style-type: none"> <li>• Drift Grounding is 189-year event</li> <li>• 10.6% chance of a drift grounding /20yrs</li> </ul>	<ul style="list-style-type: none"> <li>• No spill reduction achieved, Drift Grounding is 167-year event</li> <li>• 12% chance of a drift grounding /20yrs</li> </ul>
Goal: Consider Tribal Impacts and Noise	<ul style="list-style-type: none"> <li>• Vessel noise, Tribal impacts found significant in the EIS</li> </ul>	<ul style="list-style-type: none"> <li>• Vessel noise, Tribal impacts found significant in the EIS</li> </ul>	<ul style="list-style-type: none"> <li>• Vessel noise, Tribal impacts found significant in the EIS</li> </ul>	<ul style="list-style-type: none"> <li>• Oil spill risk to Tribal Resources found significant in the EIS</li> </ul>
Goal: BAP	<ul style="list-style-type: none"> <li>• No - no FORs</li> </ul>	TBD	TBD	<ul style="list-style-type: none"> <li>• No - no spill reduction achieved</li> </ul>

## 55. Rule Components needed to draft WAC text

Next is to look at are the rule components that need to be decided upon to draft the proposed rule.

These components are the Functional and operational requirements; the geographic escort area; and the mitigation measures

## 56. Potential Rule Language

Sara then presented how the rule language could look. The rule language will likely be a new section



in WAC 363-116. The rule components mentioned in the previous slide are called out in blue highlight. The high-level overview of the potential rule language is that it could begin with information about applicability (does not apply to bunkering transits, cargo deck barges, or unladen vessels), then move to describe the geographic area for escort requirements and the escort tug functional and operational requirements, and close with required mitigation measures.

### Potential rule language with placeholders for rule components

WAC 363 – 116 – 600: Tug escort requirements for tank vessels up to 40,000 DWT.

- (1) Escort requirements in WAC 363 – 116 – 600 do not apply to:
  - a) vessels providing bunkering or refueling services, as defined by the Board;
  - b) towed general cargo deck barges; or
  - c) vessels in ballast or unladen, as defined by the Board.
- (2) The following vessel types shall not operate in [geographic area] unless they are under the escort of a tug with [functional requirements]:
  - a) Oil tankers of between five thousand and forty thousand deadweight tons;
  - b) Articulated tug barges that are designed to transport oil in bulk internal to the hull and greater than five thousand deadweight tons; and
  - c) Towed waterborne vessels or barges that are designed to transport oil in bulk internal to the hull and greater than five thousand deadweight tons.
- (3) [Placeholder for additional functional requirements]
- (4) [Placeholder for operational pre-escort requirement]
- (5) [Placeholder for mitigation]

## 57. Functional and Operational Requirement Rationale

Sara then went through each of those rule components and how they relate to the alternatives under consideration. The first component is the escort tug functional and operational requirements. These requirements include the pre-escort conference; twin-screw propulsion; 2,000 horsepower tug for 5,000 – 18,000 DWT vessels; and a 3,000 horsepower tug for 18,000 - 40,000 DWT vessels. The rationale for each proposed requirement is listed on the slide.

The rule team suggests that the proposed alternative include these functional and operational requirements. Each of the proposed functional and operational requirements met the rule team's best achievable protection evaluation. The total cost of these requirements is expected to be \$15,851 per year.

### Functional and Operational Requirement Rationale

Requirement	Rationale
Pre-escort conference	Ensures both vessels have a shared understanding of key elements of the escort operation
Twin-screw propulsion	Provide a higher level of confidence that the escort tug will be able to successfully maneuver to intervene to prevent a drift grounding and subsequent spill.
2,000 horsepower tug for 5,000 – 18,000 DWT vessels	Current industry practice for escorting of vessel less than 18,000, least burdensome alternative for these DWT vessels.
3,000 horsepower tug for 18,000 - 40,000 DWT vessels	Provides a higher level of confidence that the escort tug will have sufficient power to successfully intervene to prevent a drift grounding and subsequent spill.

## 58. Geographic escort area rationale

The next rule component to consider is the geographic escort area. The geographic area options are None (Alt D); Rosario Strait and connected waterways to the east (Alt A and B); and the Expansion Area plus Rosario Strait and connected waterways to the east (Alt C).

## Geographic escort area rationale

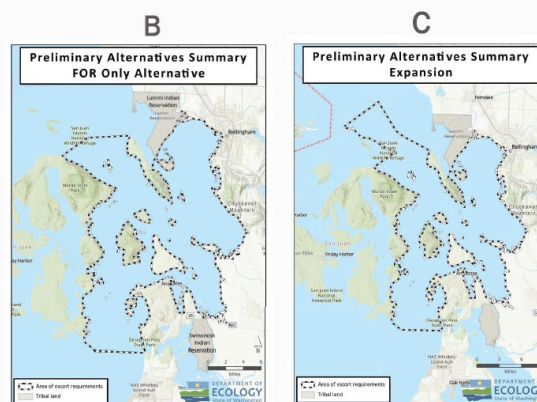
Area	Rationale
None (Removal)	This was considered to have a baseline to compare other alternatives against with the awareness that it could result in an increase in oil spill risk but could reduce tug escort traffic and related impacts.
Rosario Strait and connected waterways to the east (current escort area)	This is the no action alternative which was required to be considered.
Expansion area	This area is adjacent to the Rosario and waters east escort area. The Ecology model showed this area to have a high escort efficiency, and the OTSC agreed that the characteristics of this zone make it a good candidate for an escort requirement.

### 59. Proposed Geographic Escort Area

The rule team suggests consideration of escorts in the geographic areas of Rosario and waters east (Alt B) and in the expansion area (Alt C). In terms of meeting the risk reduction goals of the rulemaking, the escorts in Alt C provide the most spill risk reduction with a Drift Grounding re-occurrence interval of 189-years. Alternative B's drift grounding re-occurrence interval was 186 years and the interval for Alt D removal was 167-years. The EIS found Tribal Resource and Vessel Noise impacts for Alternatives B and C. The next section provides suggested mitigation measures to address these impacts.

Rosario Strait and connected waterways to the east  
or

Rosario Strait and connected waterways to the east and expansion area



### 60. Mitigation Measures Included in the EIS

Next, Sara shared the possible mitigation measures that could be included in the rule language.

### 61. Mitigation Measures – Rule Language

Sara displayed how the mitigation measures might look in the rule language. To address the Tribal Resources impact, rule language could be that “Operators must consider Opportunities to coordinate with interested Tribes to avoid or reduce impacts of tugs to treaty fishing” To address the underwater noise impacts, rule language could be that “Operators must consider Opportunities to participate in voluntary underwater noise reduction measures where safe and feasible to do so.”

## In Rulemaking Language

Elements of the Environment	Mitigation Measures
All	<ul style="list-style-type: none"> <li>• Selection of geographic alternative</li> <li>• Inclusion of FORs</li> </ul>
Tribal Resources	<ul style="list-style-type: none"> <li>• Operators must consider opportunities to coordinate with interested Tribes to avoid/reduce impacts</li> </ul>
Underwater Noise, Plants and Animals	<ul style="list-style-type: none"> <li>• Operators must consider opportunities to participate in voluntary noise reduction efforts</li> </ul>

### 62. Mitigation Measures – Voluntary

She added that in addition to mitigation measures included directly into the rule language, there is also an opportunity to recommend voluntary mitigation measures to the Board of Pilotage Commissioners. Examples of voluntary measures are shown on the slide and will be discussed in more detail when we begin drafting a Board recommendation.

Elements of the Environment	Mitigation Measures
All	<ul style="list-style-type: none"> <li>• Continued participation in PSHSC Standards of Care and industry best practices</li> <li>• Extension of applicable PSHSC Standards of Care to 5,000 – 40,000 DWT escorts</li> </ul>
Underwater Noise, Plants and Animals	<ul style="list-style-type: none"> <li>• Voluntary noise reduction efforts in the EIS Study Area</li> <li>• Adoption of Be Whale Wise guidance</li> <li>• Transition to quieter, hybrid, and/or electric propulsion when technology and cost make this feasible.</li> </ul>
Plants and Animals	<ul style="list-style-type: none"> <li>• Voluntary environmental certification programs</li> </ul>
Tribal Resources	<ul style="list-style-type: none"> <li>• Encourage operators to develop agreements with interested Tribes to improve communication and reduce impacts to treaty fishing.</li> <li>• Encourage operators to limit waiting time at rendezvous locations</li> </ul>

### 63. Questions and Answers

The team then asked for questions and comments.

*Rein Attemann (Environment Alternate/WEC) suggested that one of the mitigation measures that might be pertinent was to require is the use of whale alert. His understanding was that this was like real time documentation of the presence of whales and southern residents, and so that might be something to utilize and have a better understanding of situational awareness with the presence of whales.*

*Artie Seaman (Tug Industry Alternate) commented that many of the operators have a clean wheelhouse policy, very similar to airlines, meaning there's no cellular or mobile devices on the bridge when underway on the tugs or vessels. He believes the whale alert is a great tool and certainly can be used in the right situation. However, he strongly recommended, if possible, utilizing the VTS system of broadcasting alerts over VHF radio and others.*

*Fred Felleman (Environment/Friends of the Earth) followed up Artie's point by adding that he felt very strongly that the mariner looks to the Coast Guard for situational awareness. He thought the whale desk was the tool best utilizing this ability to give the mariner the information they need. However, the concern has been not wanting to broadcast publicly where the whales are. He urged the importance of making full utilization of the Coast Guard's role and communicating on ship-to-ship channels.*

*Jim Peschel (Tug Industry Alternate/Vane Brothers) agreed with Fred and Artie. He added that yes, as an operator, they have a sterile wheelhouse. He's not sure that the average mariner is listening to the VTS working station. They're probably listening and scanning channel 16. He wondered if perhaps whale*

*sightseeing vessels are familiar with the VTS working channels.*

*Blair Bouma (Pilot/Puget Sound Pilot) offered that the pilots do have access to the whale reporting system, which was helpful, and do use their phones for business, as it's the only way they can get that information other than what has been suggested through VTS.*

#### 64. Narrowing to Preferred Alternative

Sara continued by sharing, based on all the information presented, the rule team's suggestion for not continuing consideration of the following Alternatives:

- A: Does not pass the Least Burdensome Alternative criteria of achieving the Best Achievable Protection since it does not include the functional and operational requirements.
- D: Does not pass the Least Burdensome Alternative criteria of meeting the spill risk reduction intent of this rulemaking and does not achieve best protection.

#### 65. Proposal #1: Alternative B + Mitigation Measures

The rule team proposes consideration of Alternative B + applicable mitigation measures. Alt B includes the FOR's and escorts in the Rosario and waters east area shown on this slide.

#### 66. Proposal #2: Alternative C + Mitigation Measures

The rule team also proposes consideration of Alternative C + applicable mitigation measures. Alt C includes the FOR's and escorts in the expansion area as shown on this slide.

#### 67. Alternative C and D Quantitative Spill Cost Ranges

During the stakeholder meeting last week, there was interest in looking deeper into the different methods for evaluating spill costs. This slide shows the 4-spill cost assessment method results for Alternative C and, for context, Alternative D. The team reviewed the Alternative C costs for each method earlier in the economic presentation. The Alternative D costs use the same formulas, however the odds of drift grounding occurring (variable O) changes within those formula. The catastrophic spill cost is the same for all Alternatives, \$16.46 billion. The estimated spill costs are greater across the other 3 methods in Alt D verse Alt C because of the greater odds of a drift grounding in Alternative D. The rule team focused on the first two cost assessment methods in their evaluations.

Cost assessment method	Alternative C (189 yr recurrence interval)	Alternative D (167 yr recurrence interval)
Catastrophic spill (259,00 bbl. spill)	\$16.46 billion total cost	\$16.46 billion total cost
Method factoring in probability of a drift grounding (259,00 bbl. spill)	\$1.4 million/yr	\$10.1 million/yr.
Method factoring in probability of a drift grounding AND probability of a spill from a grounding (259,00 bbl. spill)	\$11,101 /yr.	\$79,570 /yr.
Method factoring in probability of a drift grounding AND probability of a spill from a grounding (24 bbl. spill)	\$3,035 /yr.	\$21,751 /yr.

#### 68. Cost Benefit Summary (Alt B and C)

Sara then presented a summary of the findings from the cost benefit analysis that we reviewed earlier, showing only Alt B

and C. In terms of Costs:

- Alt B costs \$15,851 per year
- Alt C costs \$850,000 per year

	Cost (qualitative & quantitative)	Benefit (qualitative & quantitative)
<b>B</b>	<ul style="list-style-type: none"> <li>• \$15,851 per year (FOR)</li> <li>• Underwater noise, tribal, and plants and animal impact</li> </ul>	<ul style="list-style-type: none"> <li>• FORs ensure escorts communicate and have sufficient maneuverability and power</li> <li>• Drift Grounding is <b>186-year event</b></li> <li>• <b>10.8%</b> chance of a drift grounding /20yrs</li> </ul>
<b>C</b>	<ul style="list-style-type: none"> <li>• \$850,000 per year (FOR and expansion)</li> <li>• Underwater noise, tribal, and plants and animal impact</li> </ul>	<ul style="list-style-type: none"> <li>• Save up to <b>\$1.4 M</b> in spill costs per year. Total cost of worst possible spill is <b>\$16.46 B</b> if spill prevented by expanded escorts.</li> <li>• Drift Grounding <b>189-year event</b>. <b>10.6%</b> chance of a drift grounding/ 20yrs</li> <li>• Expansion provides high escort efficiency, refines RCW area based on model and OTSC input.</li> </ul>

## 69. Least Burdensome

### Alternative Summary (Alt B and C)

Next was a summary of the findings from the Least Burdensome Alternative analysis showing just Alternatives B and C. The question for the OTSC to consider is whether Alt B or Alt C best accomplish the goals of this rule at the least burdensome cost to those who must comply with it.

	B	C
Cost to comply	<ul style="list-style-type: none"> <li>• Status quo costs <b>\$20 million</b></li> <li>• <b>\$15,851</b> additional cost per year to comply (FOR)</li> </ul>	<ul style="list-style-type: none"> <li>• Status quo costs <b>\$20 million</b></li> <li>• <b>\$850,000</b> additional cost per year to comply (FOR and expansion)</li> </ul>
Goal: Spill risk reduction	<ul style="list-style-type: none"> <li>• Drift Grounding is <b>186-year event</b></li> <li>• <b>10.8%</b> chance of a drift grounding /20yrs</li> </ul>	<ul style="list-style-type: none"> <li>• Drift Grounding is <b>189-year event</b></li> <li>• <b>10.6%</b> chance of a drift grounding /20yrs</li> </ul>
Goal: Consider Underwater Noise Impacts	• Vessel noise found significant in the EIS. Mitigation options proposed.	• Vessel noise found significant in the EIS. Mitigation options proposed.
Goal: Consider Tribal Impacts	• Tribal impacts found significant in the EIS. Mitigation options proposed.	• Tribal impacts found significant in the EIS. Mitigation options proposed.
Goal: BAP	TBD	TBD

## 70. Develop Recommendation to the Board

It was time to begin composing the draft recommendation to the Board. Sara reminded the group that at the last workshop the team asked for feedback on pre-escort language – thanks to Blair and Jeff for the feedback. Slides 72 and 73 show the updated pre-escort language with the edits in red.

## 71. Develop Recommendation to the Board

The team then closed out the PowerPoint and moved over to a word document where they were able to track the discussion and decision on the rule components that need to be included in the Board recommendation. For each rule component the rule team captured the OTSC recommendation, the rationale, and any dissenting options. Jaimie facilitated the input while Sara captures the notes.

Rule Component	Recommendation	Rationale
Functional and Operational Requirements		
Geographic escort area		
Mitigation Measures (in rule language)		
Mitigation Measures (voluntary measures to include in BPC recommendation)		

## 72. Pre-escort conference language – OTSC edits

Before commencing an escort required in WAC 363 – 116 – 600, the escorted vessel officer in charge shall hold a pre-escort conference to confer with the escort vessel officer in charge and the pilot (if applicable) to discuss and agree upon the operational details of the transit. The pre-escort conference must be recorded in the logbooks of the participating vessels and must include discussion of the following topics:

### a) Safety

- i. Safety of tug and escorted vessel personnel
- ii. safe working load of the deck fittings on the escorted vessel;

### b) Navigation

- i. anticipated route and destination;
- ii. anticipated speeds along the transit;
- iii. location and approximate time of the escorted transit beginning and end;
- iv. anticipated weather and state of tides, currents, sea-state and anticipated traffic;

## 73. Pre-escort conference language – OTSC edits

### c. Operations

- i. operational status of each vessel and their equipment including any limitations such as speed;
- ii. propulsion type and maximum direct bollard pull of the escort tug;
- iii. primary and secondary means of communication (i.e. VHF channels);
- iv. availability of appropriate crewmembers and their roles when responding to an emergency;
- v. relative position, direction of travel and tethering locations of the escort tug(s) while on transit;
- vi. method of connection of the escort tug to the tank vessel in an emergency or if tethering (i.e. tugs line, pennant, messenger lines etc.);
- vii. Whether any training or escort exercise will be performed during the transit; and
- viii. Any other items to ensure that the escort transit is conducted in such a way that in the event of a failure or emergency the tank vessel can be kept under control within the limits of the available channel.

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The team began their discussion with the Functional and Operational Requirements. Jaimie used a round robin to get input and reminded everyone that if they have rationale beyond what is provided for their stance, to please share.

*Blair Bouma (Pilot/Puget Sound Pilots) said that the pilots support the FOR's as written here.*

*Clyde Halstead (Tribal Government Alternate/Swinomish) agreed with the pilots.*

*Jeff Slesinger (Tug Industry/Delphi Maritime) commented that all the voluntary mitigation measures which are a part of a rule component should be removed and placed in the functional operational requirements, so that there's a simple line item that says "review of appropriate voluntary measures" but*



*not include the mitigation measures in any kind of codified rule language. His rationale has two components. One is that the contradiction in language about "must involuntary" creates a legal minefield which will be exploited by various parties and create a bunch of confusion. The 2nd is that these voluntary measures are going to evolve over time in ways that can't possibly be imagined right now, and they need to be addressed outside of a rule, but in the context of being voluntary.*

*Going back to the FOR's, Jaimie asked Jeff to confirm that he is okay with them as listed. He responded yes. Blair agreed to the concept of moving the FORs but questioned putting them in the pre-escort conference to keep the focus narrow in the moment having to do with that actual operation in the moment and not expecting them to be referring to something that might need to be a company policy or something like that. Jeff thought that was a good point and wondered if there was some other place to put mitigation measures than in codified regulatory language.*

*Fred Felleman (Environment/Friends of the Earth) was of the opinion that the folks that have been doing this for years are the ones that are best qualified to make the call. Therefore, if this is what the pilots and tug operators see as appropriate, then he is all in favor of it.*

*Antonio Machado (Oil Industry/WSPA) supported the FOR's as presented. He echoed the comments that were said advising against voluntary language in a regulatory compliance document.*

*Jason Hamilton (BPC) concurred with the FORs and agreed with the confusion of the voluntary language being included in regulatory compliance documents. He thinks considering other options would be worthwhile.*

The group then moved on to the geographic area. The rule team is recommending the Rosario Strait and connected waterways east with the expansion area alternative. The rationale is that this area is adjacent to Rosario and Waters East escort area. The Ecology model showed this area to have a high escort efficiency and the OTSC in the past has agreed that the characteristics of this zone make it a good candidate for an escort requirement.

*Blair Bouma (Pilot/Puget Sound Pilots) supported the expansion. While there is a cost, it's a particularly high-risk area because of proximity to reefs and other navigational hazard and high current.*

*Clyde Halstead (Tribal Government Alternate/Swinomish) supported the expansion language.*

*Jeff Slesinger (Tug Industry/Delphi Maritime) deferred to the pilot's evaluation of the risk area. However, he commented that the cost benefit analysis might be misleading if using the probability figures, spending \$850,000 a year for a \$3,000 a year benefit. His other comment was that the area will most likely lead to engagement with Canada because of the tanker traffic coming through Boundary Pass. It may require international relations at some point. He added that his vote was yes, with the asterisk of the above comments. Blair responded that, in general, the approach with piloted vessels is that when a vessel is in whichever country's waters, they comply with that country's escort rules and have that country's pilot directing the operation. The proposed zone is 100% in US waters. And it doesn't intersect an area that the Canadian traffic will cross in their transits. So, for the purposes of this work he didn't think it will be a cross-border issue. But it was a relevant point for vessels that are crossing at some point, they will have to sort out which country's rules they're abiding with. He also added for 40,000 DWT tankers and above, this area is already being escorted.*

*Fred Felleman (Environment/Friends of the Earth) believed that this approach had many rationales and*

*supported it.*

*Antonio Machado (Oil Industry/WSPA) responded that based on their studies of the environmental impacts they preferred Alternative B, no expansion. But they also supported Alternative C.*

*Jason Hamilton (BPC) supported the expansion area.*

*Jaimie reminded everyone that the Board will do a preliminary review of the OTSC's first round of recommendations at next week's BPC meeting. Then the OTSC will have a chance to review Board comments at the March 6 OTSC meeting.*

### **Mitigation Measures**

Haley Kennard (Ecology SME) introduced this section by stating that the mitigation measures proposed were coming directly from the EIS. She explained that it was a like a project-based EIS, like building a hotel in a wetland area for example. There are permits that need to be obtained that provide opportunities for the agency to put in conditions. Because this is a rulemaking, the only place to do this is within the rulemaking language, where the scope is narrow. The measures are a reaction to the findings about impacts to tribes and the findings about underwater noise and plants and animals. The modeling showed that tugs are only spending, depending on the scenario, between 34% and 39% of their time actively escorting and the rest is commuting. Those commutes are also times when tugs could have negative interactions with treaty fishing and when they're contributing to underwater noise. She said it was something to consider when thinking about whether this makes sense as a pre-escort conference when the potential impact exists both while the tug is actively escorting and while they're commuting.

*Blair Bouma (Pilot/Puget Sound Pilots) commented that the measures were good ideas. Specifically, he thought it was a very good idea for the operators to consult with tribes, but was unsure of the effect of codification.*

*Clyde Halstead (Tribal Government Alternate/Swinomish) also thought it was a good idea in general. However, he didn't believe it would mitigate much when considering each escort opportunity to coordinate with tribes. The tribe he works for is heavily involved in this area, but they do not have the staff or the time to consult with each tug every time they are going to escort. So, per Clyde, it's not the most helpful language. He thought it may be better to include as part of the escort conference that they consult the Notice to Mariners so that they're aware of tribal fishery operations. And then they could do what they can to either avoid or mitigate their presence in those fisheries, rather than putting this burden on the tribes every time there's an escort to try to figure out where they're going to be and try to avoid it. In conclusion, he said it was fine to include this, but practically speaking, the tribes won't be able to actually do anything to participate. Haley thanked him for his feedback and added that it made sense to include the Notice to Mariners language. She added that the intent of the language was that it would be happening outside of individual transits, like coming up with general agreements.*

*Jeff Slesinger (Tug Industry/Delphi Maritime) reiterated that the recommendations were fine, he was just strongly opposed to them being put into the rule.*

*Fred Felleman (Environment/Friends of the Earth), with the exception of Clyde's comment, didn't think any of the recommendations were burdensome and he hoped that industry was not averse to them. He mentioned that at the last Harbor Safety Committee, the Tribal Council made recommendation to create a committee specifically to deal with these sorts of interactions. He wondered if it would be appropriate for the OTSC to support such a measure and wondered what Clyde thought. Clyde responded that he didn't know the best way that they could lend support to the Harbor Safety Committee as part of this*

rulemaking. He appreciated all the support they can get and if the OTSC wanted to issue a letter or something supporting the Harbor Safety Committee and its efforts that would be great. But if the Harbor Safety Committee adopts anything, those would of course be voluntary best practices. He didn't believe it would be appropriate to include language in the rulemaking that they need to follow the Harbor Safety Committee best practices. Jaimie added that a recommendation could always be made separately from the BPC. Fred reiterated his support for qualified direction in the WAC language for the measures to be considered.

Antonio Machado (Oil Industry/WSPA) responded that they supported these activities and ensuring help for tribes. However, when it comes to language, if it's voluntary it creates compliance issues. He supported taking the opportunity to be clear with the language and didn't think the measures should be in the rule.

Jason Hamilton (BPC) appreciated Clyde's comments and after listening to all the perspectives, he believed a different location for the language made sense. He was supportive of the language in general.

Jaimie acknowledged that the group was running short on time and recommended moving on to the rest of the meeting topics. The discussion and recommendation of the mitigation measures will continue at the March 6 meeting.

#### 74. OTSC and BPC Meeting Timeline

Sara presented the timeline. The Board meeting is next week and OTSC members are invited if they want to say anything regarding the first round of recommendations being discussed.

Date (2025)	What	Objective
February 20	BPC Meeting	Update on rule development
March 6	OTSC Meeting	Recommend proposed rule
March 20	BPC Meeting	Vote on proposed rule
June	BPC Meeting	BPC briefing before CR-102 filing

#### 75. Final Questions or Discussion?

Jaimie commended the group on the excellent meeting and work accomplished. She then adjourned the meeting.