

TUG ESCORT ANALYSIS

Response to comments on scope of work

January 10, 2022



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Comments from Agencies

A-1: Puget Sound Partnership, Ahren Stroming

Comment A-1-1

Puget Sound Partnership requests that Ecology's model be able to incorporate and assess potential tug escort noise-mitigation measures intended to offset expected increases in underwater noise. The use of tug escorts by specified tank vessels in waters east of New Dungeness Light/Discovery Island Light will occur in the critical habitat of endangered southern resident orcas. Any increase in underwater noise may compromise their ability and opportunity to feed. As the scope of work notes, ESHB 1578 Section 3(5) states that "to inform rule making, the board of pilotage commissioners must conduct an analysis of tug escorts using the model developed by the department of ecology under section 4 of this act." While the research questions outlined on page 2 of the scope of work are a promising start for guiding that analysis, they are incomplete: they neglect to consider potential underwater noise considerations resulting from the use of tug escorts. The omission of underwater noise from this scope of work is inconsistent with both the letter and the spirit of ESHB 1578. ESHB 1578 Section 3(6) states that "Considering relevant information elicited during the consultations required under this subsection, the board of pilotage commissioners must also design the rules with a goal of avoiding or minimizing additional underwater noise from vessels in the Salish Sea." If the Board of Pilotage Commissioners are to design rules that avoid or minimize underwater vessel noise, as the law requires, then we encourage Ecology to include underwater noise from tug escorts in this scope of work. To wit, Ecology's 2018 "Report of Vessel Traffic and Vessel Traffic Safety: Strait of Juan de Fuca and Puget Sound Area" recognized that escort tugs would increase underwater noise during each vessel's return to their point of origin (if not hired for other duty for the return leg), while fortunately those escorting a laden tank vessel at close proximity would add negligible underwater noise due to the acoustic "cloaking" of the louder adjacent tank vessel. Thus we hope that the SOW for the model can include provisions that acknowledge the need for simulation attributes that allow assessment of potential noise-mitigation measures like: having outbound and returning tugs slow down or change course when notified of Southern Resident sightings via the Whale Report Alert System (analogous to how tugs in the northern Strait of Juan de Fuca show high compliance with the voluntary slow down measures of the ECHO program); or assessing the potential for tugs to make return trips in association with other vessels (like a convoy); and other alternatives. More generally, we observe that ESHB 1578 emerged directly out of recommendations made by the Governor's Southern Resident Orca Task Force. Consequentially, the objective of this law, as stipulated in its title, is to reduce "threats to southern resident killer whales." The task force recommendations sought to achieve four goals, one of which was to "Decrease disturbance of and risk to Southern Resident orcas from vessels and noise and increase their access to prey." Research from NOAA Fisheries' Northwest Fisheries Science Center, including a paper published as recently as last month in Marine Environmental Research, has consistently found that vessels and their sounds reduce prey capture effort by endangered killer whales. It is critical, therefore, that rules made with the intention of reducing threats to southern residents, including those for tug escorts, incorporate efforts and measures to reduce the potential exposure of Southern Residents to underwater noise.

Response to A-1-1

While underwater noise impacts are indicated as rule-making considerations in ESHB 1578, this is out of scope for this analysis. The tug escort analysis will assess oil spill risk using the model under development by Ecology as described in ESHB 1578 Section 4.

A-2: Board of Pilotage Commissioners, Jaimie Bever

Comment A-2-1

Eleanor Kirtley (Marine Environment/BPC) said that back when she worked at Glosten, they used a program called Tug Master to simulate scenarios, which could be helpful.

Response to A-2-1

Thank you for your suggestion.

Comment A-2-2

Blair Bouma (Pilot/PSP) wondered if the answer for these questions would come solely from the model or if there would be other sources. Alex answered that Ecology will use the model to answer as many of the questions as they can but will rely on outside resources as needed.

Response to A-2-2

Ecology will use the model to answer the research questions to the extent possible. We anticipate the need to conduct supplemental research outside the model to address nuanced issues such as the effect of tug characteristics on rescue towing success.

Comment A-2-3

Tom Ehrlichman (Tribal/Swinomish) acknowledged the hard work from the Ecology team on both data collection and outreach concerning the oil spill risk analysis. However, he felt that Ecology's Tug Escort scope of analysis should characterize the Swinomish listed concerns as more than "cultural" issues. Swinomish would like Ecology to revise its scope to identify those issues that the Board of Pilotage Commissioners is required to address during rulemaking, according to ESHB 1578, including the consideration of federally recognized treaty fishing rights (as explained in Swinomish's scoping comment letter to Ecology dated September 21, 2021). The Ecology Tug Escort scope of work should make clear that the Ecology analysis for the Board will not address impacts to those treaty fishing rights. Secondly, Ecology has provided a good definition of "risk" in the Scope of Work that includes both probability and consequences to determine risk. However, Ecology's analysis of "consequences" is deficient because it only focuses on the volume of spills if they occur. The severity of the consequence of a certain volume of spilled oil in fact depends on the location of the spill and the seasonal elements, such as wind, tides, etc., in order to assess the impact of an oil spill on surrounding beach areas and the seafloor. If limited to predicting volumes of oil releases, the study should make clear that it is not assessing additional severity of consequences due to wind, tide, and seasonal conditions. The third issue he felt should be clearly articulated beyond the scope was spill releases from other kinds of vessels. He concluded by sending best wishes and hoped the comments were helpful.

Response to A-2-3

We have modified the "out-of-scope" section to better reflect the request about treaty fishing rights.

Volume of oil spilled will be used as a metric for comparing the relative effect of tug escorts under various modeled scenarios. While the impact of spilled oil can vary with geography, the objective here is to assess tug escorts as an intervention strategy to prevent oil spilled to

Washington waters. For the purposes of this study, consequence will be limited to volume of oil spilled.

Comment A-2-4

Eleanor Kirtley (Marine Environment/BPC) wondered if there were areas where Ecology was anticipating a lack of data.

Response to A-2-4

The Salish Sea has a good safety record in relation to many other regions. As a result, there is limited recent and local data available for calculating hazard probabilities. We anticipate a potential need to broaden our approach to determining hazard probabilities, which could include expanding the spatial and temporal scope of data sets.

Comment A-2-5

Laird Hail (Advisor/USCG) cautioned that looking outside the area could result in taking away the impact of the active monitoring of the area and some of the new rules and regulations that were in place. He referenced the active VTS in the area (there are only 12 in the US). He questioned how Ecology would take into account the safety measures that are in place while considering another area.

Response to A-2-5

Ecology recognizes that the frequency of vessel casualties varies across geography and over time. This makes direct comparisons challenging. We know that our hazard probabilities will have uncertainty which we will reduce as much as possible. Our goal is to use these estimated probabilities to provide useful insight into the utility of tug escorts for reducing oil spill risk.

Comment A-2-6

Joseph Williams (Tribal/Swinomish) inquired about the outreach process between the rulemaking body, the Board, and federally recognized Tribes, adding that the tugs do the most damage to their fishing gear with no compensation, this last year in particular.

Response to A-2-6

A letter will be sent to potentially affected Indian treaty tribes inviting them to consult with Ecology on the Tug Escort Analysis project. We will hold regular outreach events and are open to any format that facilitates participation from tribes. There will be a separate consultation and outreach process for the upcoming rule-making for tug escorts.

The focus of this analysis is the effects of the use of tug escorts on oil spill risk from covered vessels. The modeled scenarios will not provide specific information on interactions between commercial vessel traffic and tribal fishing activity and gear.

Comment A-2-7

Eleanor Kirtley (Marine Environment/BPC) suggested that it would be helpful to provide any applicable information regarding future outreach on the scope document. More detail in the scope is better, in her

opinion. Regarding the risk model webinars hosted by JD Leahy, she wondered if it would make sense to include information from those presentations in the scope.

Response to A-2-7

We expanded the "Outreach" section but have not yet established specific events or dates. We added a reference to the model under development with a link in the bibliography to additional resources.

Comment A-2-8

Eleanor Kirtley (Marine Environment/BPC) wondered if "near miss" events would be considered, pointing out that the term was not listed in the definitions section.

Rein Attemann (Environment Alternate/WEC) requested further clarification regarding the term "near miss" as a hazard probability.

Jaimie wondered about a clear definition of "near miss" acknowledging that the BPC had its own definition for pilots. Blair Bouma (Pilot/PSP) added that the MSO information would be valuable for the rulemaking process as well. Laird Hail (Advisor/USCG) concurred that there was a definitional problem with the term "near miss". It means different things to different entities. Blair Bouma (Pilot/PSP) did mention that the USCG have a very specific definition in Form 2692, which is human injury, spill, or a specific dollar value, which could provide some structure.

Response to A-2-8

This analysis will consider incidents available in the marine casualty databases. While some incidents may be considered near-misses in some contexts (such as a loss of propulsion), for clarity, our consideration of hazards does not include the term "near-miss."

Comments from Tribes

T-1: Jennifer Hagen

Comment T-1-1

"ESHB1578 restricted this to boundary waters and the Salish Sea. While concerns remain for spill potential on the outer coast, it is our understanding that this process will not discuss geography outside of the Salish Sea. We hope that through this current process however that relationships are built and should a discussion on the outer coast come to fruition it will build upon this process."

Response to T-1-1

Thank you for your comments. While this analysis is limited to the Salish Sea, we anticipate the model underlying it could be adapted to future research questions. We also hope to build relationships through this process.

T-2: Swinomish Indian Tribal Community, Tom Ehrlichman

Comment T-2-1

"This model and the two analysis projects are important to the Swinomish Indian Tribal Community and treaty fishing tribes in general, because they are designed to serve as the basis for new rulemaking by the Board of Pilotage Commissioners on vessel safety. We can also anticipate that your analysis will be utilized in legislative and other public policy forums where it is important to characterize risk and evaluate new safety measures.

It is important to reaffirm the context for the work that you are doing in support of the Board's rulemaking. Because your work is designed to lead to rulemaking, we believe it must necessarily be guided by the goals of that rulemaking outlined in ESHB 1578:

. . . the board of pilotage commissioners must also design the rules with a goal of avoiding or minimizing additional underwater noise from vessels in the Salish Sea, focusing vessel traffic into established shipping lanes, protecting and minimizing vessel traffic impacts to established treaty fishing areas, and respecting and preserving the treaty-protected interests and fishing rights of potentially affected federally recognized Indian tribes.

ESHB 1578, § (3)(6) (now codified at RCW 88.16.260) (emphasized added). We appreciate that you and your staff have conducted your work on the oil spill risk model in a way that demonstrates you are mindful of this nexus with the goals of the rulemaking."

Response to T-2-1

Thank you for this comment.

Comment T-2-2

"To assist you further in that regard, we offer the attached evaluation prepared for the Swinomish Indian Tribal Community by a respected international maritime risk firm, Nash Maritime. As we have discussed, it has been Swinomish' intent that the Nash analysis support your work by offering an outside, peer review of methods described to date. Their analysis is complimentary of your model construct and offers suggestions to ensure that the model remain as flexible as possible, to answer the kinds of questions that must be answered when "protecting and minimizing vessel traffic impacts to established treaty fishing areas."

Response to T-2-2

Thank you for providing the preliminary review of the oil spill risk model conducted by Nash Maritime. The recommendations will be considered in the model development process.

Comment T-2-3

"As you have acknowledged in your two descriptors for the Scope of Work, the risk model evaluated in the Nash Maritime paper serves as the underpinning of the Tug Escort and ERTV analyses captioned above. We would go so far as to say that the most critical component underlying these Scope of Work descriptors is the model. Accordingly, the Scope of Work descriptors should be amended to include a scope of work and timeline for completion of the model. We encourage you to revise your scope of work for the model to include study of the issues identified in the attached report. One of the recommendations in the attached is that the scope of work and timeline for the model include a specific event in the future in which you display the workings of the initial model (in sample video displays), so that functionality can be discussed and adjusted in response to comments by tribes and stakeholders. We trust that the other recommendations for transparency and functionality in the Nash Maritime report will be given your full consideration."

Response to T-2-3

The Tug Escort Analysis will use the Ecology Oil Spill Risk Model currently under development. The model development team will continue to conduct outreach events and other communications regarding progress, decisions and timelines.

Comment T-2-4

"Swinomish would also like to see the Scope of Work for the Tug Escort Analysis dedicate a portion of the analysis to an evaluation of how additional tug escorts would generate additional new vessel trips through treaty fishing areas. As discussed in multiple forums, risk reduction and mitigation measures often generate more vessel traffic, however well intentioned. The report could include an assessment of the degree to which tribal fishermen already experience conflicts between tug transits and the laying of treaty fishing gear for crab and salmon harvest."

Response to T-2-4

The purpose of adding tug escorts in the scenarios is to assess the effect on oil spill risk. This does not necessarily reflect how tug traffic would behave in practice. We anticipate reporting information about the number and locations of tug escorts in the context of analysis scenarios (e.g., the numbers of tug trips by geographic zone that result from each scenario).

Comments from Organizations

O-1: American Waterways Operators, Bradley Trammell

Comment O-1-1

"As the Department of Ecology begins its analysis of tug escorts in Puget Sound, please consider the tug escort safety risk study developed by Captain Jeff Slesinger of Delphi Marine and attached as an addendum to these comments. The study, commissioned by the Western States Petroleum Association, the American Waterways Operators, and Puget Sound Pilots, outlines specific technical considerations for the escort of laden tank vessels between 5,000 and 40,000 deadweight tons. It was modeled over several days in the Pacific Maritime Institute, Maritime Institute of Technology and Graduate Studies vessel simulator at its maritime training facility in Seattle. The study is intended to inform future tug escort considerations. The Department of Ecology and the Board of Pilotage Commissioners should fully understand the results of this study when performing their own analysis."

Response to O-1-1

Thank you for providing this document.

Comment O-1-2

"Washington's barge and towing vessel operators are committed to effective and appropriate risk mitigation measures. Given our industry's proactive efforts, AWO anticipates that Washington's ongoing oil spill risk modeling will demonstrate that safety and equipment advancements have significantly diminished the likelihood of a catastrophic oil spill event in Puget Sound, particularly from tank vessels. Although the additional spill risk mitigation offered by tug escorts may be difficult to quantify, the ecological costs may be more easily understood. Expanded escort requirements in Puget Sound will increase vessel traffic, attendant emissions, and underwater noise. Additionally, in areas with one-way traffic restrictions, vessels could sit idling for several hours, burning fuel without productive benefit. This study must take these costs into account when determining the ecological benefit of expanding the tug escort program."

Response to O-1-2

While climate and underwater noise impacts are indicated as rule-making considerations in ESHB 1578, this is out of scope for this analysis. The tug escort analysis will assess oil spill risk using the model under development by Ecology as described in ESHB 1578 Section 4.

Comment O-1-3

"The tugboat, towboat and barge industry in Washington state is not static and continues to evolve. We urge Ecology to ensure that this study examines the current and emerging risk profile of the industry, not one that is outdated. This requires realistic projections of vessel traffic, cargo volumes, and vessel risk profiles."

Response to O-1-3

We will conduct outreach events with tribes and stakeholders to communicate options and decisions about data inputs for the analyses. We will document input data decisions in the summary report. We agree that regulations and safety measures have improved over time and

will take this into account when selecting date ranges for data used to calculate hazard probabilities.

O-2: Trans Mountain, Stephanie Snider

Comment O-2-1

"Trans Mountain-related marine shipping has operated safely and responsibly for more than 65 years. In keeping with the regime's focus on safety, there will be additional risk control measures to be implemented for the Trans Mountain Expansion Project (TMEP). One key measure will be the expanded use of escort tugs for loaded tankers. Loaded tankers are already escorted from the Port of Vancouver to Race Rocks through Boundary Pass and Haro Straits under current regulations. However, post TMEP, tankers loaded at Westridge Marine Terminal will be escorted by large, modern and highly capable tugs for the entire passage from the Port of Vancouver to the western entrance of the Juan de Fuca Strait. With operations based out of Southern Vancouver Island, these tugs with skilled crews will also have spill response capacity onboard. Although primarily focused on ensuring the safety of Trans Mountain tankers, the presence of these tugs will bring significant new tow capability to this region and are expected to raise the level of marine safety and emergency response, benefitting the shared waters of the Salish Sea."

Response to O-2-1

Our analysis will consider tugs of opportunity.

O-3: Pacific Merchant Shipping Association, Mike Moore

Comment O-3-1

"We remain committed (personally and organizationally) to objective needs based continuous improvement. The tug escort study should fully update and acknowledge marine safety advancements made over the decades to reduce the risk of incidents/accidents that might be mitigated by a tug escort scheme. Tug escorts are designed to provide immediate response to situations involving a reduction or loss in propulsion and/or steering and so the probability of such incidents should be determined along with the seriousness of each incident type, location and range of conditions (tide, wind, etc.)."

Response to O-3-1

The model will include probabilities of loss of propulsion or steering events. Severity of these events will be approximated using a self-repair function in conjunction with our momentum and drift sub-model. The model will also incorporate metocean data including wind and current. We agree that regulations and safety measures have improved over time and will take this into account when selecting date ranges for data used to calculate hazard probabilities.

Comment O-3-2

"The analysis should involve the risk of transporting smaller volumes of oil on vessels with redundant propulsion and steering compared to the value of adding a tug to the transit mix. The only tank vessel collision in this region involved a tanker colliding with its own tug escort. I highlight this fact not to infer getting rid of tug escorts but to highlight there are other considerations around introducing more transits into the mix with respect to collisions, emissions and underwater noise as compared to how much risk mitigation is being provided by the escort."

Response to O-3-2

Our analysis will assess the risks of oil spills with and without tug escorts. Escorting tugs will be included in the assessment of modeled hazards such as collision or grounding. Emissions and underwater noise are out of scope for this analysis.

Comment O-3-3

"Lastly, there should be some overlap with the ERTV study as that study should involve determining overall tug presence and availability in that study region. With the increases in tug escort by the State of Washington and the Trans Mountain project, the involved waterways will involve a significant increase in tug presence."

Response to O-3-3

Our analysis will include tugs of opportunity. While the ERTV analysis is a separate project, we will look for synergies between the two.

O-4: Friends of the Earth, Fred Felleman

Comment O-4-1

"We understand that Ecology will consider our input in the development of the scope of work it will be submitting to the Board of Pilotage Commission for its approval to inform the analysis of tug escorts using the model under development by the Department of Ecology. The results of this analysis will be presented in a summary report to the legislature by September 1, 2023 as called for by ESHB 1578 Section 3(1)(d)(iii), passed in 2019, consistent with RCW 43.01.036."

Response to O-4-1

Ecology is considering comments received, and revising the scope of work. The draft scope of work will be submitted to the Board of Pilotage Commissioners for approval. A summary report of the analysis findings will be submitted to the Legislature no later than Sept. 1, 2023.

Comment O-4-2

"It is our understanding that this analysis is limited to laden tank vessels between 5,000 and 40,000 deadweight tonnage (DWT), including ATBs and tank barges operating within the geographic coverage of the existing tug escort requirement for tankers between 40,000 - 125,000 DWT. It is also our understanding this analysis will not include tank vessels that are engaged in bunkering operations. This excludes from the analysis laden or partially laden barges and ATBs transiting to and from bunkering operations, which still clearly pose a risk of an oil spill."

Response to O-4-2

The analysis will include oil spill risk associated with tank vessels engaged in bunkering as well as in various laden conditions. However, unladen tankers and tank vessels engaged in bunkering will not be simulated with tug escorts because tug escort for these vessels is excluded from the legislative direction in ESHB 1578.

Comment O-4-3

"An important context to these comments is the recognition that a large and diverse group of maritime stakeholders attending the 2016 Salish Sea Oil Spill Risk Mitigation Workshop the Department of Ecology convened found that escorting tank vessels, including oil barges and ATBS in Puget Sound, to be the most effective Risk Mitigation Measure (RMM) of the 225 RMM's considered by the attendees. This work built on a workshop Ecology hosted in 2015 where participants identified the oil spill risk categories reviewed in 2016."

Response to O-4-3

Thank you for your comment.

Comment O-4-4

"Reducing the oil spill risks associated with the significant number of laden tank vessels transits associated with bunkering operations (the most frequent transits of tank vessels in the study area), without increasing the number of escort tug transits through the waterway, is best addressed through the establishment of a strategically positioned Emergency Response Towing Vessel(s) (ERTV) in the San

Juan Islands as called for in RCW 88.46.250 Subsection 2 which will be discussed separately in our comments on the scope of work for that project which are also due September 30, 2020."

Response to O-4-4

Thank you for your comments regarding the Emergency Response Towing Vessel Analysis scope of work. We will review and respond to those separately.

Comment O-4-5

"We recognize that Section 3(5)(b) of ESHB 1578 calls for Ecology's model to consider vessel safety measures implemented after July 1, 2019. Despite the legislation allowing for qualitative analysis to be used to answer and provide context for research questions, we find the incorporation of this information to be too subjective to be built into a quantitative model."

Response to O-4-5

Thank you for your comment. We are not currently aware of any vessel safety measures implemented after July 1, 2019 that would have a significant impact on modelled oil spill risk. If we find or receive information regarding a specific intervention with significant implications for oil spill risk from covered vessels in the study area, we will review it and decide how best to address it in the analysis, if appropriate to do so.

Comment O-4-6

While there are data documenting that the frequency and size of oil spills have declined over the years, it is rarely possible to account for how specific regulations have contributed to these results. However, near misses occur far more frequently than oil spills and provide a more accurate characterization of oil spill risk than spills themselves. Unfortunately, the lack of consistently collected, stored, and analyzed near miss data results in a significant underrepresentation of oil spill risk and further obscures the ability to apportion the amount of oil spill risk reduction associated with any specific measure

Response to O-4-6

Thank you for your comment.

Comment O-4-7

"Lessons on how trying to incorporate such subjective evaluations of how specific regulations result in reducing oil spill risk in a quantitative model can be gleaned from the 2015 Vessel Traffic Risk Assessment (VTRA) conducted by George Washington University. VTRA 2015 included the evaluation of a suite of regulatory measures with a purported risk reduction value associated with each. This resulted in the finding that the existence of the current and soon-to-be implemented regulatory regime significantly outranked all other potential new safety measures analyzed quantitatively. This arbitrary finding was then used as the only scenario reported in the 2017 Ports and Waterways Safety Assessment (PAWSA) conducted for these waters by the Coast Guard, thereby suggesting that additional measures are not needed to address the changing oil spill risk profile of the region"

Response to O-4-7

Thank you for your comment.

Comment O-4-8

"While we do not doubt there have been measures instituted to reduce oil spill risk over the years, as borne out by the data, we believe such specific attributions do not belong in a model that is intended to be rigorous and without bias. Given the small number of large spills in the Salish Sea, it is essential that we look at spills that have occurred in the broader region, which is frequented by many of the same vessels, and to put far more emphasis on calibrating the model on near miss, rather than oil spill data."

Response to O-4-8

The geographic and temporal scope for hazard probabilities used in the analysis have not yet been determined. We intend to look at a larger geographic scope for hazard probabilities than the study area. Our model will use separate probabilities for hazards and oil outflow probabilities to capture incidents that do not necessarily result in oil outflow. However, our ability to include near-miss data is limited to incidents documented in marine casualty databases that will be used to calculate hazard probabilities.

Comment O-4-9

"It has long been recognized that having the Coast Guard collect, analyze, and make publicly available, near-miss and other pertinent data in a systematic matter is fundamental to the accurate characterization of a waterway's oil spill risk. In fact, several provisions in the 2020 National Defense Authorization Act (NDAA) (H. R. 6395) calls for Coast Guard districts with VTS to do just that."

Response to O-4-9

Thank you for your comment.

Comment O-4-10

"Similarly, the lack of information on whether tugs have tows (no less if they are laden) has also hampered quantitative analysis of oil spill risk in the Salish Sea. This has been most recently demonstrated in the Puget Sound Pilotage Commission's ongoing effort to document whether there have been changes in vessel traffic associated with the addition of a tug escort requirement for laden tank vessels between 5,000-40,000 DWT in Rosario Strait, called for in ESHB 1578. The Rosario Strait tug escort study would have also been far more informative if the Coast Guard required AIS on barges and to provide near miss data that was collected in a systematic fashion."... "Despite the limitations of the data being used by the Pilotage Commission and Ecology to monitor the year-long tug escort pilot study, failure to include those findings in this study further reduces the rigor of the model currently under development. It is perplexing why the Department of Ecology would not incorporate such real-world information to inform this analysis given the frequency with which ATBs and barges change their transit to Haro Strait in order to evade Rosario Strait's escort requirement would inform answers to questions specifically called for in this study which are addressed in these comments below. A summary of the results from this current tug escort study, and that for the ERTV, are due to the Washington legislature until September 2023. Therefore, there is ample time to include the findings of the Rosario Strait tug escort pilot study in this evaluation."

Response to O-4-10

The Ecology oil spill risk model will simulate vessel traffic. Simulation will be based on available AIS data. The specific years of data to be used in the analysis has yet to be determined. We will

include barges in the simulation; this will require assumptions about barges that will be determined during the analysis process. We will also need to make assumptions about the amount of oil on vessels. The vessel trend synopsis uses a different methodology, but it will help inform the tug escort analysis.

Comment O-4-11

"How is oil spill risk distributed geographically? - Turn Point, East. Point, Guemas [sic.] Channel/ Saddlebags and the Port Angeles rotary need targeted analysis. (See 2017 PAWSA)"

Response to O-4-11

The geographic locations described fall within the study area with the exception of the Port Angeles Rotary. The western boundary for tug escort requirements for tank vessels in ESHB 1578 is a line from New Dungeness Light to Discovery Island Light. The model will simulate vessel traffic coming into and out of the study area from the Strait of Juan de Fuca, including the Port Angeles Rotary. We will use the BPC defined zones to communicate the geographic distribution of risk.

Comment O-4-12

"How does the use of tug escorts change the way that oil spill risk is distributed geographically? - Impacts from the Rosario Strait Study need to be incorporated in order to evaluate this question. Various interventions regarding tanker incidents have clearly indicated risks to Rosario Strait have been reduced since there is now a requirement for tug escorts on tank vessels greater than 50K DWT."

Response to O-4-12

Tug escort scenarios in the analysis will include the 2020 expansion of tug escort requirements.

Comment O-4-13

"How is oil spill risk distributed across covered vessel types? - The results from the following study by Clear Seas demonstrates the fact that Bulk Carriers are the largest and most frequent covered vessels calling on the study area. They also have the highest incident rates across most of the waterways, which demonstrates the need to address bulk carriers with priority. This will be especially important in the analysis of the ERTV: (Also see 2017 PAWSA). (https://clearseas.org/en/research_project/maritime-commercial-incidents-and-accidents)." ... "Tug escorts should be considered for bulk carriers considering their numbers, size and frequency of incidents compared to tankers. Alternatively, they should help underwrite the cost of an ERTV as described in our comments on the ERTV as called for in RCW 88.46.250 Subsection 2."

Response to O-4-13

Tug escort scenarios will apply to laden tank vessels as specified by ESHB 1578. Oil spill risk from bulk carriers will be considered in the analysis.

Comment O-4-14

"How does the use of tug escorts change the way that oil spill risk is distributed across covered vessel types? Without evaluation of the Rosario Strait tug escort pilot study, the only evaluation that can be made empirically is for tankers greater than 50K DWT. However, the waters of Eastern Juan de Fuca

Strait, Haro Strait and Boundary Pass and Puget Sound are likely to have higher risks of oil spills from oil barges and ATBs due to the fact that tug escorts are not required for these vessels in these waterways."

Response to O-4-14

Tug escort scenarios in the analysis will include the 2020 expansion of tug escort requirements. Our analysis will include tankers, ATBs, and towed oil barges greater than 5000 DWT in all waters of the study area.

Comment O-4-15

"How does the 2020 expansion of tug escorts in Rosario Strait and connected waters to the east change oil spill risks from covered vessels? – This question illustrates our previously stated point why Ecology needs to incorporate the results of that analysis in this study."

Response to O-4-15

Tug escort scenarios in the analysis will include the 2020 expansion of tug escort requirements.

Comment O-4-16

"How does oil spill risk change if the escorts are tethered versus untethered? - This depends significantly on the characteristics of the tug, training of the crew, and type of vessel to be tethered. In general, teathering [sic] increases the speed and capacity for a tug escort to alter the course of a disabled vessel. There are also risks associated with such activities that can be minimized by crew training and the use of an appropriated outfitted tug."

Response to O-4-16

Thank you for your suggestions.

Comment O-4-17

"How do key design characteristics for escort tugs affect spill risk? - Maneuverability, sea keeping, ability to work in indirect modes, bollard pull, and crew training are all critical. These characteristics need serious consideration if evaluating potential value of tugs of opportunity."

Response to O-4-17

Thank you for your comments.

Comment O-4-18

"In closing, we believe the geographic expansion of tug escorts for barges and ATBs in combination with a strategically positioned and operated ERTV(s) is likely to contribute to our region's ongoing commitment to improving maritime safety and reducing oil spill risk." "However, unless the aforementioned data from the US Coast Guard (USCG) and Ecology/Pilotage Commission are incorporated in the model, it will remain an underrepresentation of risk in the Salish Sea. It will also hinder the ability to accurately evaluate the benefits of risk mitigation measures being considered for this and the ERTV studies." "In the mean-time the use of the study conducted by Clear Seas quantifying vessel traffic in Canada, including the Salish Sea should be useful in filling some of the information gaps and helpful to inform various questions in this analysis: Vessel Traffic in Canada's Pacific Region

December 2020 which can be found at: https://clearseas.org/en/research_project/vessel-traffic-incanadas-pacific-region/"

Response to O-4-18

Thank you for your comments.

Comments from Individuals

I-2: Eleanor Kirtley

Comment I-2-1

"Text that looks like it should be linked to a webpage (is blue and underlined) are not actually linked, in version viewable/downloadable here -
<https://fortress.wa.gov/ecy/ezshare/sppr/prevention/Tug%20Escort%20Analysis%20-%20Scope%20of%20Work.pdf>"

Response to I-2-1

Links in the revised document are to the references section. Full URLs are noted in the references and those hyperlinks connect to web-published documents.

Comment I-2-2

"Scope of Work (SOW) or at least the summary report would benefit from additional sections on:
Definitions

- Zones, as per defined by the BPC for ESHB 1578 Section 3(5)(d)(i)
- Covered vessel, as per: <https://app.leg.wa.gov/rcw/default.aspx?cite=88.46.010> (5)
- Tank vessel
- Risk – is this the combination of likelihood and consequence?
- At least reference those used in the model, as in: Encounter, Accident, Outflow,
- Reference the Interpretative Statement from the BPC, <https://pilotage.wa.gov/oil-transportation-safety.html> <https://nebula.wsimg.com/2e0c94a21d0285c4ed21a3d5eb31280a?AccessKeyId=F86D0A1E7A0091C2061F&disposition=0&alloworigin=1>
- As per Section 3(8)

Response to I-2-2

We will add a definitions section as described. We will include a link to the BPC interpretive statement on ESHB 1578.

Comment I-2-3

"Scope of Work (SOW) or at least the summary report would benefit from additional sections on:" ...
"Methodology

- ESHB 1578 Section 3(5)(a) states: "Develop scenarios and subsets of oil tankers, articulated tug barges, and towed waterborne vessels or barges that could preclude requirements from being imposed under the rule making for a given zone or vessel;"
- Estimated number of scenarios – perhaps present a matrix that isolates pairwise comparison by zones, by escorted vessel types, etc; provide explanation for how/why scenarios were selected"

Response to I-2-3

The development of the scenarios will be guided by the scope of work document. We will conduct outreach events with tribes and stakeholders to communicate scenario options and decisions. We will document analysis methodology in the summary report.

Comment I-2-4

"Scope of Work (SOW) or at least the summary report would benefit from additional sections on:" ...

"Available inputs – model and data, as per Section 3(3)(e)"

Response to I-2-4

We will add a data inputs section to the scope of work.

Comment I-2-5

"Scope of Work (SOW) or at least the summary report would benefit from additional sections on:" ...
"Model and Data limitations; Assumptions"

Response to I-2-5

We will conduct outreach events with tribes and stakeholders to communicate limitations and assumptions. We will document these in the summary report.

Comment I-2-6

"Scope of Work (SOW) or at least the summary report would benefit from additional sections on:" ...
"What's out of scope, ex. As per Section 3(4)?"

Response to I-2-6

We will add an out of scope section to the scope of work.

Comment I-2-7

"Will the analysis be able to address the additional impacts from additional tug escorts related to:

- underwater radiated noise, as per Section 3(6)(b)
- bunker demand and transfer
- air emissions
- cost, as per Section 3(2)(e)?"

Response to I-2-7

Underwater noise, bunker demand, air emissions and costs are out of scope. The analysis will provide data and conclusions that could be used for subsequent research. The upcoming rule-making process specified in ESHB 1578 must consider the impacts of proposed rules.

Comment I-2-8

Proposed Edit: (note, refer to edited document submitted)

"operational and functionality requirements for tug escorts, such as aggregate shaft power and operational (tethering) and functionality requirements – Section 3(3)(c)

Response to I-2-8

We will remove the ESHB 1578 considerations section from the revised scope of work.

Comment I-2-9

Proposed Edit and addition: (note, refer to edited document submitted)

"Vessel safety measures implemented after July 1, 2019 – Section 3(5)(b) Consider the benefits of vessel safety measures that are newly in effect on or after July 1, 2019, and prior to the adoption of rules under this section; and

- avoiding or minimizing – Section 3(6)(b):
 - additional underwater noise from vessels in the Salish Sea, focusing vessel traffic into
 - established shipping lanes,
 - vessel traffic impacts to established treaty fishing areas, and respecting and preserving the treaty protected interests and fishing rights of potentially affected federally recognized Indian tribes."

Response to I-2-9

We will remove the ESHB 1578 considerations section from the revised scope of work. This analysis will address effects of tug escorts on oil spill risks. Other impacts of tug escort use are out of scope for this analysis.

Comment I-2-10

"The analysis intent, I do not believe is limited to risk reduction. For example, the consideration of benefits in Section 3(5)(b). Purpose: To inform rule making, the board of pilotage commissioners must conduct an analysis of tug escorts using the model developed by the department of ecology under section 4 of this act. "

Response to I-2-10

The analysis objective will be modified to replace "reduction" with "change."

Comment I-2-11

"Where possible, relate this to zones as defined in Section 3(1)(d)(i)"

Response to I-2-11

We intend to reference the BPC defined zones in the summary report to communicate geographic risk distribution.

Comment I-2-12

"Can the model do this? Or will this question be answered more anecdotally or qualitatively, rather than quantitatively from the model? If so, perhaps re organize Qs under sentence "Qualitative analysis...""

Response to I-2-12

These questions will likely be answered primarily by qualitative analysis. We chose not to separate the research questions between qualitative and quantitative analysis because we anticipate that both types of analysis will be used to answer each research question. We added a distinction that the first three research questions will be addressed in the context of analysis scenarios.

I-3: Mike Doherty

Comment I-3-1

"For well over three decades, the public record in oil shipment matters reflects strong public support for escort tugs assisting tank vessels ladden [sic.] with crude oil and product. The record also reflects that the public understands that they may be paying a bit more at the pump for protections against spills and spill risk."

Response to I-3-1

Thank you for your comments.

Comment I-3-2

"Near misses". While the record of actual oil or product spilled on Washington waters has declined, the record of "near misses" and "other incidents" has failed to be maintained adequately for the development of sound public policy through analysis. Please increase the "near miss" data subject to the analysis.

Response to I-3-2

The geographic and temporal scope for hazard probabilities used in the analysis have not yet been determined. Our model is designed to include hazards that do not necessarily result in oil outflow. However, our ability to include near-miss data is limited to incidents documented in marine casualty databases that will be used to calculate hazard probabilities.

Comment I-3-3

"Geographic Area. In the area to be studied, please include a thorough analysis of the area known as the "Port Angeles Rotary". Projections for the increases in maritime traffic at this rotary continue to increase."

Response to I-3-3

While the Port Angeles rotary is not included in the study area for Tug Escort Analysis, the model will simulate vessel traffic coming into and out of the study area from the Strait of Juan de Fuca, including the Port Angeles Rotary.

Comment I-3-4

"Geology. Please provide analysis of the shoreline and bottom geology of the areas of the San Juan Islands subject to the study. Past spill risk studies have generally involved soft shoreline and bottom sediments. In the area of the San Juan Islands the shorelines and bottoms contain much more solid rock, which would increase the risk of serious hull damage and spills in grounding incidents."

Response to I-3-4

We agree that seafloor characteristics have a significant effect on grounding outcomes. Our model will include hydrographic data for the study area. Our ability to differentiate oil outflow from simulated accidents based on bottom characteristics will depend on the availability historical data.

Comment I-3-5

"Covered Vessels. In the "Clear Seas" study, bulk carriers [sic.] are the largest and most frequent covered vessels transiting the study area. Please assess risks of bulk carrier accidents in the analysis."

Response to I-3-5

Bulk carriers will be included in the analysis.

Comment I-3-6

"Teathed [sic.] Vessels. Please include in the study the values of increased efficiency in controlling a disabled vessel, by tethered escort tugs. Additional crew training and improved equipment may be involved to limit risks/tradeoffs involved with required teathering [sic.]escort tugs."

Response to I-3-6

Tethering and tug characteristics will be considered in this analysis. Assessment of crew training, while important, is out of scope for this study.

Appendix: Original Comment Letters

Puget Sound Partnership

Hello,

On behalf of Todd Hass and the Puget Sound Partnership, please see the attached comments on the tug escort scope of work.

Thank you,
Ahren Stroming

September 30, 2021

TO: Alex Hess, Maritime Risk Lead
Washington State Department of Ecology

FROM: Todd Hass, Special Assistant to the Director
Puget Sound Partnership

SUBJECT: Comments on Ecology's Tug Escort Analysis – Scope of Work

Dear Mr. Hess,

Thank you for the opportunity to comment on the scope of work for an analysis of tank vessel tug escorts. We are confident that Ecology's commitment to incorporating the input and expertise of partners will lead to a stronger, more grounded oil spill risk modelling project. In that spirit, **Puget Sound Partnership requests that Ecology's model be able to incorporate and assess potential tug escort noise-mitigation measures intended to offset expected increases in underwater noise.** The use of tug escorts by specified tank vessels in waters east of New Dungeness Light/Discovery Island Light will occur in the critical habitat of endangered southern resident orcas. Any increase in underwater noise may compromise their ability and opportunity to feed.

As the scope of work notes, ESHB 1578 Section 3(5) states that "to inform rule making, the board of pilotage commissioners must conduct an analysis of tug escorts using the model developed by the department of ecology under section 4 of this act." While the research questions outlined on page 2 of the scope of work are a promising start for guiding that analysis, they are incomplete: they neglect to consider potential underwater noise considerations resulting from the use of tug escorts.

The omission of underwater noise from this scope of work is inconsistent with both the letter and the spirit of ESHB 1578. ESHB 1578 Section 3(6) states that "Considering relevant information elicited during the consultations required under this subsection, the board of pilotage commissioners must also design the rules **with a goal of avoiding or minimizing additional underwater noise** from vessels in the Salish Sea." If the Board of Pilotage Commissioners are to design rules that avoid or minimize underwater vessel noise – as the law requires – then we encourage Ecology to include underwater noise from tug escorts in this scope of work. To wit, Ecology's 2018 "Report of Vessel Traffic and Vessel Traffic Safety: Strait of Juan de Fuca and Puget Sound Area" recognized that escort tugs

would increase underwater noise during each vessel's return to their point of origin (if not hired for other duty for the return leg), while fortunately those escorting a laden tank vessel at close proximity would add negligible underwater noise due to the acoustic "cloaking" of the louder adjacent tank vessel.

Thus we hope that the SOW for the model can include provisions that acknowledge the need for simulation attributes that allow assessment of potential noise-mitigation measures like: having outbound and returning tugs slow down or change course when notified of Southern Resident sightings via the Whale Report Alert System (analogous to how tugs in the northern Strait of Juan de Fuca show high compliance with the voluntary slow down measures of the ECHO program); or assessing the potential for tugs to make return trips in association with other vessels (like a convoy); and other alternatives.

More generally, we observe that ESHB 1578 emerged directly out of recommendations made by the Governor's Southern Resident Orca Task Force. Consequentially, the objective of this law – as stipulated in its title – is to reduce "threats to southern resident killer whales." The task force recommendations sought to achieve four goals, one of which was to "Decrease disturbance of and risk to Southern Resident orcas from vessels and noise and increase their access to prey." Research from NOAA Fisheries' Northwest Fisheries Science Center, including a paper published as recently as last month in *Marine Environmental Research*, has consistently found that vessels and their sounds reduce prey capture effort by endangered killer whales. It is critical, therefore, that rules made with the intention of reducing threats to southern residents – including those for tug escorts – incorporate efforts and measures to reduce the potential exposure of Southern Residents to underwater noise.

Puget Sound Partnership is grateful for Ecology's hard work and willingness to solicit feedback. More specifically, we are glad to see that this scope of work – along with the scope of work for a potential emergency response towing vessel – includes robust outreach to tribes and other stakeholders as well as various outreach activities throughout the process. We look forward to continuing to engage as we work together to recover Puget Sound and its imperiled species.

Please do not hesitate to reach out with any questions.

Sincerely,

Todd Hass, PhD

cc: Jaimie Bever, Executive Director, Board of Pilotage Commissioners



STATE OF WASHINGTON
BOARD OF PILOTAGE COMMISSIONERS

2901 Third Avenue, Suite 500 | Seattle, Washington 98121 | (206) 515-3904 | www.pilotage.wa.gov

Agenda – Oil Transportation Safety Committee (OTSC)

October 18, 2021, 10:00am – 12:00pm

Via MS Teams

Attendees:

Jaimie Bever (Chair/BPC), Alex Hess (Ecology Alternate/BPC), Brian Kirk (Ecology Alternate/BPC), JD Leahy (Ecology Alternate/BPC), Lori Crews (Ecology Guest), Eleanor Kirtley (Marine Environment/BPC), Blair Bouma (Pilot/PSP), Jeff Slesinger (Tug Industry/Delphi Maritime), Senator Joseph Williams (Tribal/Swinomish), Tom Ehrlichman (Tribal/Swinomish), Bettina Maki (Staff/BPC), Laird Hail (Advisor/USCG), Bob Poole (Oil Industry/WSPA), and Rein Attemann (Environment Alternate/WEC).

Absent:

Mark Homeyer (Tug Industry Alternate/Crowley), Fred Felleman (Environment/Friends of the Earth), Keith Kridler (Pilot Alternate/PSP)

1. Welcome and Updates

Jaimie Bever (Chair/BPC) started the meeting by reviewing the agenda and noted that the Enterprise Risk Management item will likely become a quarterly conversation at the committee level.

She announced that the OTSC's Tug Industry Representative, Charlie Costanzo from AWO, has accepted a position as Puget Sound Pilot's new Executive Director. Therefore, the OTSC will need a new representative. She introduced Jeff Slesinger, Delphi Maritime, as the proposed replacement. His appointment to the committee will be considered by the Board at the October 26, 2021, meeting.

2. Approve August 30, 2021, Meeting Minutes

Eleanor Kirtley (Marine Environment/BPC) provided two grammatical corrections to prior to the meeting. With those two revisions, the committee approved the minutes, which will be provided to the Board as a part of the October 26, 2021 meeting packets.

3. Ecology Presentations:

a. Synopsis of Changing Vessel Traffic Trends

Lori Crews (Ecology Alternate/BPC) provided an update regarding the synopsis via a slide deck presentation, which broke the data down by research questions and answers.

- 1)** How does the overall number of transits (by vessel type) change pre-and post-bill implementation?
 - Transits by all three types of vessels effected by the new tug escort requirement (ATBs and barges greater than 5,000 DWT and tankers between 5,000 and 40,000 DWT) increased in Year 2 (post-tug escort implementation) of data collection for the synopsis compared to Year 1 (pre-tug escort implementation), for both Rosario Strait and Haro Strait.
 - Most of these changes were not related to the tug escort requirement.
 - Some were likely the result of business decisions by companies, the year-to-year variation in the market for crude oil and refined product, and the effects of the global pandemic.

Eleanor Kirtley (Marine Environment/BPC) commented that she was surprised by the second bullet regarding changes not being related to the tug escort requirement. She agreed it was important to provide context but wasn't expecting Ecology to have to come up with why the changes occurred. Lori agreed and offered that they could tell by looking at the data when vessels were laden but choosing a different route, which is part of their overall conclusions. Brian Kirk (Ecology Alternate/BPC) added that there were strong limits to what could be reported by the data but felt there were some areas where Ecology could provide some context and tried to do that where they could.

Tom Ehrlichman (Tribal/Swinomish) wondered, regarding the second bullet as well, what changes *were* related to the tug escort requirement. Lori responded that Ecology thinks that in 11 of 16 transits of barges through Haro Strait in Year 2 by barges greater than 5,000 DWT the tug escort requirements may have been a factor in deciding the route.

Tom also wondered if there was data collected regarding to Treaty Tribe fishing areas and if there were going to be any comments on that. Lori and Brian Kirk (Ecology Alternate/BPC) answered that they were not planning to address that in the synopsis as those considerations were not part of the scope of work, but instead a part of the tug escort rulemaking process, as directed by the legislation (ESHB 1578). Tom responded with a follow-up request. He stated that while he appreciated that the rulemaking contained that component, his understanding of the word "trend" would include a note regarding the increased number of transits occurring through usual and accustomed fishing areas for Treat Fishing Tribes. Lori suggested that it could be mentioned when discussing the crossing lines in the report. Brian concurred that Ecology could take a look at including some language, but that it would not be based on original work or data gathering. Lori requested comments from the Tribes specific to the crossing lines and

how those effect Treaty fishing areas. Rein Attemann (Environment Alternate/WEC) echoed Tom's comment on more analysis on the impacts to Tribes.

- 2) What changing vessel traffic trends do we see for vessels that newly fall under an escort requirement?
 - Ecology found that the new tug escort requirement does not appear to have effected route selection for ATBs or tankers less than 40,000 DWT.
 - Ecology identified 11 of 16 transits through Haro Strait in Year 2 by barges greater than 5,000 DWT where the tug escort requirements may have been a factor in deciding the route.
- 3) What changing vessel traffic trends do we see for vessels that newly fall under an escort requirement?
 - Ecology found that the new tug escort requirement does not appear to have effected route selection for ATBs or tankers less than 40,000 DWT.
 - Ecology identified 11 of 16 transits through Haro Strait in Year 2 by barges greater than 5,000 DWT where the tug escort requirements may have been a factor in deciding the route.
- 4) What changing vessel traffic trends do we see for deep draft and tug traffic that have no additional escort requirements?
 - There was a decrease of transits by barges less than 5,000 DWT in Rosario Strait between Year 1 and Year 2.
 - There were no transits through Haro Strait by barges less than 5,000 DWT in Year 1 or Year 2.
 - Transits by barges engaged in bunkering within the study area decreased overall.
 - There was an increase in bunkering transits by barges greater than 5,000 DWT and a decrease in transits by barges less than 5,000 DWT.
 - The overall decrease in bunker transits may reflect vessels receiving fuel at a location outside of the study area, rather than a decrease in bunkering in the Puget Sound.
- 5) What changing vessel traffic trends do we see for deep draft and tug traffic that have no additional escort requirements?
 - There was a decrease of transits by barges less than 5,000 DWT in Rosario Strait between Year 1 and Year 2.
 - There were no transits through Haro Strait by barges less than 5,000 DWT in Year 1 or Year 2.
 - Transits by barges engaged in bunkering within the study area decreased overall. There was an increase in bunkering transits by barges greater than 5,000 DWT and a decrease in transits by barges less than 5,000 DWT.
 - The overall decrease in bunker transits may reflect vessels receiving fuel at a location outside of the study area, rather than a decrease in bunkering in the Puget Sound.
- 6) What changing vessel traffic trends do we see for tug escorts?

[Redline edits to draft minutes proposed by Swinomish Indian Tribal Community, representative for Inland Coastal Federally Recognized Treaty Tribes.]

- Tug escort transits increased significantly following the implementation of the new requirement, especially for multi-purpose tugs, or tugs that performed escort duties as well as towed barges.
 - Transits by purpose-built escort tugs over crossing lines in the study area increased from 5,991 in Year 1 to 7,321 in Year 2. Transits increased over all crossing lines with the exception of the Saddlebag to Guemes Island line which decreased by 53 transits.
 - Transits by multi-purpose escort tugs over crossing lines in the study area increased from 79 in Year 1 to 1,745 in Year 2. Transits increased over all crossing lines.
 - Vessels can transit over multiple crossing lines in a single trip, so the total number of transits over crossing lines does not represent the number of trips.

Regarding the last bullet, Jason Hamilton (Public/BPC) wondered if there was a better indicator for the number of trips. Lori answered that the way it was set up was that they established the crossing lines then counted the number of times the tug crossed them. There was no way to tell what the tug was doing at the time. Therefore, there was no way to tell how many times a tug went on a tug escort trip.

Blair Bouma (Pilot/PSP) wondered about the significance of the “purpose built” vs “multi-purpose” designations. Lori responded that when they first started comparing year one to year 2 purpose-built tugs doing escort and shift assist services, they found, in year 2, there was another group of tugs that had never done ship assist in the area. They generally tow barges. When comparing the 2 years, they wanted to be clear about the comparisons. They looked at the categories separately, but also combined. Ecology felt they needed to compare apples to apples throughout both years. Lori confirmed that the definition is included in a terminology section of the synopsis. Jeff Slesinger (Tug Industry Candidate/Delphi Maritime) asked for additional clarification on the distinctions in the data. Lori responded that they looked at the ANT system data. She followed that up by looking at the AIS history data. To make their list of multipurpose tugs, they used AIS data to see what tugs were towing vs assisting.

Brian Kirk (Ecology Alternate/BPC) acknowledged the meticulous work by Lori resulting in the conclusions and added that he looked forward to presenting the findings to the Board. Jaimie Bever (Chair/BPC) concurred.

b. Tug Escort Analysis Scope of Work

Alex Hess (Ecology Alternate/BPC) provided an update regarding the tug escort analysis scope of work via a presentation and slide deck, as well as providing the revised scope language and comments that were submitted during the public comment period in September.

The original scope of work contained the following sections: Background, ESHB 1578 Considerations (Removed), BPC and Ecology Roles & Responsibilities,

[Redline edits to draft minutes proposed by Swinomish Indian Tribal Community, representative for Inland Coastal Federally Recognized Treaty Tribes.]

Analysis Objective, Research Questions, Outreach, and Deliverable. After reviewing the public comments, the following sections were added: Out of Scope, Definitions, Data Inputs, Study Area, and References.

Analysis Objective

Evaluate the potential change in oil spill risk from covered vessels resulting from the use of tug escorts by specified tank vessels in waters east of New Dungeness Light and Discovery Island Light.

Research Questions 1-3

The following research questions will be assessed within analysis scenarios:

- How is oil spill risk distributed geographically? How does the use of tug escorts change the way that oil spill risk is distributed geographically?
- How is oil spill risk distributed across covered vessel types? How does the use of tug escorts change the way that oil spill risk is distributed across covered vessel types?
- How does the 2020 expansion of tug escorts in Rosario Strait and connected waters to the east change oil spill risk from covered vessels?

Eleanor Kirtley (Marine Environment/BPC) said that back when she worked at Glosten, they used a program called Tug Master to simulate scenarios, which could be helpful.

Research Questions 4-6

- How does tethering affect oil spill risk?
- How do key design characteristics for escort tugs affect oil spill risk?
- Are there new safety measures adopted since July 1, 2019? If so, what are the benefits of these measures?

Blair Bouma (Pilot/PSP) wondered if the answer for these questions would come solely from the model or if there would be other sources. Alex answered that Ecology will use the model to answer as many of the questions as they can but will rely on outside resources as needed.

Out of Scope

The following items are out of scope for this analysis.

- Consideration of underwater noise
- Consideration of air emissions
- Cost of tug escort requirements
- Analysis of the impacts of spilled oil (e.g., environmental, economic, cultural)
- Tug escorts for vessels specifically excluded in ESHB 1578

Tom Ehrlichman (Tribal/Swinomish) acknowledged the hard work from the Ecology team on both data collection and outreach concerning the oil spill risk analysis. However, he felt that this Ecology's Tug Escort scope of analysis should characterize the Swinomish listed concerns as more than "cultural" issues. Swinomish would like Ecology to revise its scope to identify those issues that the Board of Pilotage Commissioners is required to

[Redline edits to draft minutes proposed by Swinomish Indian Tribal Community, representative for Inland Coastal Federally Recognized Treaty Tribes.]

~~address during rulemaking, according to ESHB 1578, including the consideration of federally recognized treaty fishing rights (as explained in Swinomish's scoping comment letter to Ecology dated September 21, 2021). The Ecology Tug Escort scope of work should make clear that the Ecology analysis for the Board will not address impacts to those treaty fishing rights. out-of-scope section was woefully inadequate. He felt that the important comments from Swinomish throughout the process were not reflected, especially items that they felt were important to oil spill risk. He requested that the out-of-scope section include another bullet point to indicate that the impact of oil spill on Tribes' ability to exercise their Treaty fishing rights was not being considered in the analysis. He added that this was not a "cultural" impact, but a legal right not being assessed. Secondly, Ecology has provided a good definition of "risk" in the Scope of Work that includes both probability and consequences to determine risk. However, Ecology's analysis of "consequences" is deficient because it only focuses on the volume of spills if they occur. The severity of the consequence of a certain volume of spilled oil in fact depends on the location of the spill and the seasonal elements, such as wind, tides, etc., in order to assess the impact of an oil spill on surrounding beach areas and the seafloor. If limited to predicting volumes of oil releases, the study should make clear that it is not assessing additional severity of consequences due to was missing and needed to be articulated. He pointed out that the analysis of risk was currently listed in terms of volume. However, wind, tide, and seasonal conditions should be considered. The third issue he felt should be clearly articulated beyond the scope was spill releases from other kinds of vessels. He referenced the specific language in the bill regarding consideration of Treaty rights. He suggested adding that language to the top of the scoping document. While he appreciated the definition of risk being added to the scope, he suggested also focusing on consequences.~~ He concluded by sending best wishes and hoped the comments were helpful.

[Jaimie: Here is the above revision without showing the redlines, for ease of reading and review –

Tom Ehrlichman (Tribal/Swinomish) acknowledged the hard work from the Ecology team on both data collection and outreach concerning the oil spill risk analysis. However, he felt that Ecology's Tug Escort scope of analysis should characterize the Swinomish listed concerns as more than "cultural" issues. Swinomish would like Ecology to revise its scope to identify those issues that the Board of Pilotage Commissioners is required to address during rulemaking, according to ESHB 1578, including the consideration of federally recognized treaty fishing rights (as explained in Swinomish's scoping comment letter to Ecology dated September 21, 2021). The Ecology Tug Escort scope of work should make clear that the Ecology analysis for the Board will not address impacts to those treaty fishing rights. Secondly, Ecology has provided a good definition of "risk" in the Scope of Work that includes both probability and consequences to determine risk. However, Ecology's analysis of "consequences" is deficient because it only focuses on the volume of spills if they occur. The severity of the consequence of a certain volume of spilled oil in fact depends on the location of the spill and the seasonal elements, such as

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wind, tides, etc., in order to assess the impact of an oil spill on surrounding beach areas and the seafloor. If limited to predicting volumes of oil releases, the study should make clear that it is not assessing additional severity of consequences due to wind, tide, and seasonal conditions. The third issue he felt should be clearly articulated beyond the scope was spill releases from other kinds of vessels. He concluded by sending best wishes and hoped the comments were helpful.]

Brian Kirk (Ecology Alternate/BPC) responded that what was being attempted with this model was to provide info about whether tug escorts for the three types of tank vessels was or was not a good. Questions: would that intervention reduce risk. If yes, what can they say about the magnitude of the change. To answer that question, they do not need to chase down what happens to the oil after it spills. The other consideration was that throughout this process, they want to be careful in only saying what they can produce evidence for, as it is important to not mislead anyone. Tom responded that he agreed. However, the Tribe is asking that Ecology add a bullet that states that, and the Treaty rights, rather than using the word "cultural" as a catchall. JD Leahy (Ecology Alternate/BPC) acknowledged the time Swinomish puts into providing their input. He thought Tom brought up important points.

Data Inputs

- Traffic Simulation–AIS data
- Vessel Characteristics –IHS Markit
- Incident Records –US Coast Guard Marine Information for Safety and Law Enforcement (MISLE), Transportation Safety Board of Canada Marine Safety Information System (MARSIS), IHS Markit, Ecology Spill Program Integrated Information System (SPIIS)
- Loss of propulsion resolution times –BPC marine occurrence records
- Oil Transfer Records –Ecology Advance Notice of Transfer (ANT) database

Eleanor Kirtley (Marine Environment/BPC) wondered if there were areas where Ecology was anticipating a lack of data. Alex answered that there was concern about lack of incidents. While it's great news, it may make calculating hazard probabilities difficult. He added that they would fill the gap by looking beyond the study area for data. Laird Hail (Advisor/USCG) cautioned that looking outside the area could result in taking away the impact of the active monitoring of the area and some of the new rules and regulations that were in place. He referenced the active VTS in the area (there are only 12 in the US). He questioned how Ecology would take into account the safety measures that are in place while considering another area. Alex didn't have a specific answer at that time. He did say that they were conscious that risk changes both in space and time and that there were challenges to doing direct comparisons. JD Leahy (Ecology Alternate/BPC) added that the reality was they would be producing an estimate no matter which area they

[Redline edits to draft minutes proposed by Swinomish Indian Tribal Community, representative for Inland Coastal Federally Recognized Treaty Tribes.]

chose. The model will have limitations. The goal is to have estimates that are informative enough to provide data on the utility of tug escorts for oil spill risk.

Outreach

Joseph Williams (Tribal/Swinomish) inquired about the outreach process ~~to~~ between the rulemaking body, the Board, and federally recognized treaty Tribes, adding that the tugs do the most damage to their fishing gear with no compensation, this last year in particular. Alex responded that a letter would be going out next month to Treaty Tribes outlining the process. The letter was currently being drafted. He added that outreach would include public forums, webinars, in-person meetings, phone calls, basically whatever the individual Tribe preferred. Brian Kirk (Ecology Alternate/BPC) responded that he agreed and looked forward to future conversations. He did clarify that for this particular analysis, they would be looking specifically at oil spill risk. Additional impacts would be considered during the rulemaking process, which will also include opportunities for consultation with Ecology and the BPC.

Eleanor Kirtley (Marine Environment/BPC) suggested that it would be helpful to provide any applicable information regarding future outreach on the scope document. More detail in the scope is better, in her opinion. Regarding the risk model webinars hosted by JD Leahy, she wondered if it would make sense to include information from those presentations in the scope. Alex responded that they would take a look at doing that.

Definitions

Eleanor Kirtley (Marine Environment/BPC) wondered if "near miss" events would be considered, pointing out that the term was not listed in the definitions section. Alex answered that they were only looking at occurrences that resulted in oil spill. The model, however, would look at a range of hazards like collisions, power grounding, loss of propulsion. But not all those lead to oil spill. Jaimie Bever (Chair/BPC) added that BPC has provided both Near Miss MSOs and Incidents to Ecology for consideration in the model. Rein Attemann (Environment Alternate/WEC) requested further clarification regarding the term "near miss" as a hazard probability. Alex responded that Ecology was limited to incidents when talking about this category. JD Leahy (Ecology Alternate/BPC) added they were only looking at the probabilities for their list of hazards that could lead to an oil spill, like loss of propulsion. Jaimie wondered about a clear definition of "near miss" acknowledging that the BPC had its own definition for pilots. Blair Bouma (Pilot/PSP) added that the MSO information would be valuable for the rulemaking process as well. Brian Kirk (Ecology Alternate/BPC) wanted to make sure that Ecology was not pushing back on including all varieties of near-miss', they just don't have all the data necessary to include it. There was no database like there is for aviation near-miss'. JD added that there was a distinct challenge around using near miss data in terms of correlating reports with the potential for a hazard. Laird Hail (Advisor/USCG) concurred that there was a definitional problem with the term "near miss". It means different things to different entities. Blair Bouma (Pilot/PSP) did mention that the USCG have a very

[Redline edits to draft minutes proposed by Swinomish Indian Tribal Community, representative for Inland Coastal Federally Recognized Treaty Tribes.]

specific definition in Form 2692, which is human injury, spill, or a specific dollar value, which could provide some structure. JD clarified that they are including loss of steering and loss of propulsion, even if they are not formally classified as near miss.

Eleanor Kirtley (Marine Environment/BPC) thanked Alex for his presentation and for capturing many of her comments in the revisions to the scope document. She asked Jaimie about the BPC's upcoming rulemaking process recognizing the tug escort analysis is part of the consideration. She asked for a flowchart to show what all be considered as a part of rulemaking adding that it would be helpful to understand what was going to be considered when. Jaimie clarified that the model analysis is only a piece of the overall consideration for rulemaking. There were other ways to inform rulemaking outside of the tug escort risk model analysis. Jaimie also offered to put together a flowchart. Jeff Slesinger (Tug Industry Candidate/Delphi Maritime) concurred with making it clear that this analysis is not the focal point for solving all the other issues.

Alex concluded by recognizing the infinite level of complexity. The reason the out-of-scope items were selected as well as the narrow definition of risk, was not to discount important things that need to be thought about in the risk picture. But because they were trying to get at, as clear as possible, what exactly was the impact of tug intervention on oil spill risk, not overall oil spill risk.

4. Next Steps

The next meeting will occur early next year. Jaimie Bever (Chair/BPC) will provide meeting links to the remaining BPC meetings in 2021. The BPC will take up the draft Tug Escort scope of work for review at its December 2021 meeting.

Jennifer Hagen

ESHB1578 restricted this to boundary waters and the Salish Sea. While concerns remain for spill potential on the outer coast, it is our understanding that this process will not discuss geography outside of the Salish Sea. We hope that through this current process however that relationships are built and should a discussion on the outer coast come to fruition it will build upon this process.



DYKES EHRLICHMAN LAW FIRM

Land Use, Real Estate, & Environmental Law

September 30, 2021

Mr. Carlos Clements, Program Manager
Spill Prevention, Preparedness, and Response
Washington Department of Ecology
carlos.clements@ecy.wa.gov

Via Electronic Mail

Mr. Brian Kirk, PMP
Prevention Section Manager
Washington Department of Ecology
bkir461@ecy.wa.gov

Re: Combined Comment Letter on Two Ecology Projects Under ESHB 1578:

- Scope of Work for Analysis of Tug Escorts; and
- Scope of Work for Analysis of Emergency Response Towing Vessel

Dear Carlos and Brian:

Thank you for the courtesy your office and staff have shown to staff for the Swinomish Indian Tribal Community during your ongoing study of vessel traffic risk in the Salish Sea. We look forward to continued dialog with you at the staff level as your work proceeds. At some point, we will work with you to arrange a formal government-to-government consultation between Director Watson and Swinomish Chairman Steve Edwards consistent with the outreach requirements of ESHB 1578.

At this time, at the staff level, we want to offer you our comments and input on your work to create a new oil spill risk model, and to create a scope of work for the associated two projects described above (Analysis of Tug Escorts and a proposed Emergency Response Towing Vessel (ERTV)). This comment letter incorporates various attachments, including the paper commissioned from Nash Maritime.

This model and the two analysis projects are important to the Swinomish Indian Tribal Community and treaty fishing tribes in general, because they are designed to serve as the basis for new rulemaking by the Board of Pilotage Commissioners on vessel safety. We can also anticipate that your analysis will be utilized in legislative and other public policy forums where it is important to characterize risk and evaluate new safety measures.

It is important to reaffirm the context for the work that you are doing in support of the Board's rulemaking. Because your work is designed to lead to rulemaking, we believe it must necessarily be guided by the goals of that rulemaking outlined in ESHB 1578:

P.O. Box 3308
Sequim, WA 98382
(425) 268-5553
tom@dykesehrlichman.com

. . . the board of pilotage commissioners must also design the rules with a goal of avoiding or minimizing additional underwater noise from vessels in the Salish Sea, focusing vessel traffic into established shipping lanes, protecting and minimizing vessel traffic impacts to established treaty fishing areas, and respecting and preserving the treaty-protected interests and fishing rights of potentially affected federally recognized Indian tribes.

ESHB 1578, § (3)(6) (now codified at RCW 88.16.260) (emphasized added). We appreciate that you and your staff have conducted your work on the oil spill risk model in a way that demonstrates you are mindful of this nexus with the goals of the rulemaking.¹

To assist you further in that regard, we offer the attached evaluation prepared for the Swinomish Indian Tribal Community by a respected international maritime risk firm, Nash Maritime. As we have discussed, it has been Swinomish' intent that the Nash analysis support your work by offering an outside, peer review of methods described to date. Their analysis is complimentary of your model construct and offers suggestions to ensure that the model remain as flexible as possible, to answer the kinds of questions that must be answered when "protecting and minimizing vessel traffic impacts to established treaty fishing areas." We look forward to discussing their conclusions and recommendations with you in a staff-level meeting in the near future.

The analysis by Nash Maritime is also offered in the context of your immediate request for comments on Scope of Work. As you have acknowledged in your two descriptors for the Scope of Work, the risk model evaluated in the Nash Maritime paper serves as the underpinning of the Tug Escort and ERTV analyses captioned above. We would go so far as to say that the most critical component underlying these Scope of Work descriptors is the model. Accordingly, the Scope of Work descriptors should be amended to include a scope of work and timeline for completion of the model. We encourage you to revise your scope of work for the model to include study of the issues identified in the attached report.

One of the recommendations in the attached is that the scope of work and timeline for the model include a specific event in the future in which you display the workings of the initial model (in sample video displays), so that functionality can be discussed and adjusted in response to comments by tribes and stakeholders. We trust that the other recommendations for transparency and functionality in the Nash Maritime report will be given your full consideration.

Swinomish would also like to see the Scope of Work for the Tug Escort Analysis dedicate a portion of the analysis to an evaluation of how additional tug escorts would generate additional new vessel trips through treaty fishing areas. As discussed in multiple forums, risk reduction and mitigation measures often generate more vessel traffic, however well-intentioned. The report could include an assessment of the degree to which tribal fishermen already experience conflicts between tug transits and the laying of treaty fishing tribe gear for crab and salmon harvest.

¹ In the interests of a thorough summary of the legislative intent, we note that Section 1 of ESHB 1578 recognized that, among the community interests harmed by an oil spill, the spill could "violate the treaty interests and fishing rights of potentially affected federally recognized Indian tribes."

Letter to Dept. of Ecology
Sept. 30, 2021

The Scope of Work for the ETRV includes a discussion of how oil spill risk is distributed when different variables are adjusted. In line with the foregoing discussion of the rulemaking goals, we request that the Scope of Work be modified to include a statement that one of the variables to be adjusted to analyze risk would be the amount of oil or petroleum product on board vessels when transiting Rosario Strait or connected waterways, including those in transit and those at anchor. This will necessarily require development of the means to quantify historical levels of oil or product on board vessels in transit or at anchor.² We understand the complexities involved in the assessment of that variable, but it is a key concern in the areas where oil/petroleum product transport is highest – those connecting waterways between Anacortes and Ferndale. As we have discussed, this is prime fishing area for Swinomish and other treaty fishing tribes. In order to portray risk accurately, Ecology will have to solve this analytical question.

The Swinomish Indian Tribal Community remains committed to working with you to refine the oil spill risk modeling tools in a manner that ensures risks to treaty fishing interests from oil spills and vessel traffic are fully and accurately depicted.

Thank you for your attention to these comments and the attached report from Nash Maritime. If we can answer any questions concerning these suggestions, please call me (425) 268-5553 or Jim Jannetta (225) 313-4316.

Very truly yours,



Tom Ehrlichman

cc: Mr. Joe Williams, Swinomish Indian Tribal Community
Mr. Alex Hess, Department of Ecology alex.hess@ecy.wa.gov
Mr. James Jannetta, Office of Swinomish Tribal Attorney
Ms. Melody Allen, Office of Suquamish Tribal Attorney
Ms. Saza Osawa, Office of Tulalip Tribal Attorney
Mr. Ed Rogers, Nash Maritime
Mr. Andrew Rawson, Nash Maritime

² See Nash Maritime report, attached, at Page 12.



755 Winslow Way East
Suite 105B
Bainbridge Island, WA 98110

Charles P. Costanzo
General Counsel & Vice President – Pacific Region

PHONE: 203.980.3051
EMAIL: ccostanzo@americanwaterways.com

September 30, 2021

Mr. Alex Hess
Maritime Risk Lead
Department of Ecology, State of Washington
P.O. Box 47600
Olympia, WA 98504-7600

Re: Tug Escort Analysis – Scope
of Work

Dear Mr. Hess:

The American Waterways Operators is the national trade association for the tugboat, towboat, and barge industry, a vital segment of America's transportation system. Sixteen AWO member companies are headquartered in Washington, and many more operate tugboats, towboats, tank barges, and deck barges in Washington waters. Towing vessels move tens of millions of tons of freight every year on Washington waterways, reducing congestion on the state's highways and railroads while producing fewer pollutants than trucks and trains. In addition, harbor and ship assist tugboats perform shipdocking, tanker escort, and fueling services in Washington's harbors and ports. The tugboat, towboat, and barge industry provides the nation with a safe, secure, low-cost, environmentally-friendly means of transportation.

In the past AWO has worked collaboratively with the Department of Ecology on a range of transportation matters to better inform Ecology about maritime operations and safety practices within our industry. AWO served as a member of the 2013 Oil Spill Rulemaking Advisory Committee; the 2016 Columbia River Vessel Traffic Management and Safety Assessment Working Group; and provided significant input to Ecology's study modeling and assessment report to the state legislature. In 2018, AWO helped to inform the work of the Southern Resident Killer Whale Task Force. AWO has also served on the Board of Pilotage Commissioners' Oil Transportation Safety Committee that was charged with providing guidance on the implementation of towing vessel escort laws under Washington ESHB 1578.

As the Department of Ecology begins its analysis of tug escorts in Puget Sound, please consider the tug escort safety risk study developed by Captain Jeff Slesinger of Delphi Marine and attached as an addendum to these comments. The study, commissioned by the Western States Petroleum Association, the American Waterways Operators, and Puget Sound Pilots, outlines specific technical considerations for the escort of laden tank vessels between 5,000

and 40,000 deadweight tons. It was modeled over several days in the Pacific Maritime Institute – Maritime Institute of Technology and Graduate Studies vessel simulator at its maritime training facility in Seattle. The study is intended to inform future tug escort considerations. The Department of Ecology and the Board of Pilotage Commissioners should fully understand the results of this study when performing their own analysis.

Washington's barge and towing vessel operators are committed to effective and appropriate risk mitigation measures. Given our industry's proactive efforts, AWO anticipates that Washington's ongoing oil spill risk modeling will demonstrate that safety and equipment advancements have significantly diminished the likelihood of a catastrophic oil spill event in Puget Sound, particularly from tank vessels. Although the additional spill risk mitigation offered by tug escorts may be difficult to quantify, the ecological costs may be more easily understood. Expanded escort requirements in Puget Sound will increase vessel traffic, attendant emissions, and underwater noise. Additionally, in areas with one-way traffic restrictions, vessels could sit idling for several hours, burning fuel without productive benefit. This study must take these costs into account when determining the ecological benefit of expanding the tug escort program.

The tugboat, towboat and barge industry in Washington state is not static and continues to evolve. We urge Ecology to ensure that this study examines the current and emerging risk profile of the industry, not one that is outdated. This requires realistic projections of vessel traffic, cargo volumes, and vessel risk profiles.

AWO and our members have a history of beneficial collaboration with the Department of Ecology. As a result of this collaboration, the risk of oil spills in Washington waters is exceedingly small. Our members are proud of this result and are committed to continuously improving the safety of the industry.

Thank you for the opportunity to comment on this issue. AWO would be pleased to answer any questions or provide further information as the Department sees fit.

Sincerely,



Charles P. Costanzo
General Counsel & Vice President – Pacific Region

ESHB 1578 Tug Escort Implementation Framing Safety Risk Management

On May 8, 2019, State of Washington Engrossed Substitute House Bill 1578 (ESHB 1578) was signed by the Governor with an effective date of July 28, 2019. A key element of the legislation was the requirement for tug escorts to accompany articulated tug barges (ATB's), and towed waterborne vessels in Rosario Strait and connected waterways to the East as of September 1, 2020. On December 6, 2019, the State of Washington Board of Pilotage Commissioners (PC) released a document entitled ESHB 1578 Implementation Plan- Section 2: Concerning Rosario Strait and Connecting Waters East (BPC Implementation Plan)¹ which provided a general framework for BPC working with the State of Washington Department of Ecology (Ecology) in the rulemaking process pursuant to ESHB 1578.

Objective

Our organizations have and continue to work proactively to meet the intent of ESHB 1578. Further, we support the BPC and Ecology in current efforts defining modeling protocols as a critical part of the rulemaking process. **This analysis has been prepared to assist BPC and Ecology in framing the key safety risk elements of the tug escort policy.** Specifically, this document has been developed with a focus on operational safety elements associated with tug escort for ATB's that our organizations jointly believe are critical to the BPC/Ecology development of escort tug response modeling scenarios and associated tug escort plans.

Operational Safety Overview of Escort Tugs and ATBs

Existing Safety Features of ATB's

ATB's and tank barges are required to have double-hulls. In addition, ATB's and tugs towing tank barges are equipped with redundant critical equipment including:

- **Propulsion Systems:** Dual main propulsion engines, dual drive trains (tail shafts, propellers).
- **Steering Systems:** Dual rudders, dual power sources, multiple steering modes (FU, NFU, Autopilot, Manual).
- **Auxiliary Systems:** Dual AC Generators, multiple DC power sources (battery banks, chargers, converters).

Role of Escort Tugs

The role of an escort tug is to have the capacity to apply sufficient braking and steering forces to a disabled ATB or towed barge to avoid or limit the impact of collision or grounding. The escort tug applies corrective forces by pulling on lines or pushing at various locations on the disabled vessel. The application of braking and steering forces individually or in combination is dependent on the specific circumstances of the tank vessel equipment failure.

Escort tug response can be categorized by four general techniques:

¹ State of Washington Board of Pilotage Commissioners, *Implementation Plan: ESHB 1578 Reducing the Threats to Southern Resident Killer Whales by Improving the Safety of Oil Transportation*, December 6, 2019.

- **Assist:** The intent of the assist maneuver is to enhance the effect of the ATB's rudder or tank barge sheer and make the tank vessel turn as tight as possible.
- **Oppose:** The goal of the oppose maneuver is to oppose the turning force of the ATB's rudder or tank barge sheer and slow the ship's turn rate or hold its original heading.
- **Retard:** The objective of the retard maneuver is to take the speed off the tank vessel as quickly as possible without concern for the tank vessel's heading.
- **Combination:** There are several escort tug maneuvers that combine braking and steering forces simultaneously to gain positive control of the ATB or tank barge. The most familiar example is indirect or direct towing while tethered to the tank vessel's stern. However, other escort configurations can create combination forces as well.

Operational Factors of Tug Response

The primary factors in executing an effective escort response to a disabled tank vessel include:

- Time
- Speed
- Operator experience and training

The greater the time interval between the tank vessel propulsion or steering disablement and the escort tug's application of a corrective force, the greater tank vessel momentum in the undesired direction, and as a consequence the greater corrective force required of the escort tug. Speed can have a critical cause and effect on emergency response with regard to off-track carry, extent of corrective force, effectiveness of an escort tug pushing or pulling requirements. Finally, operator training and experience in maneuvering an escort tug efficiently into an effective position to assist, oppose or retard a disabled tank vessel is a key factor as escort response is such a time-sensitive action.

Suggested Risk Management Considerations

The towing industry performance history along with improvements to tank vessel and tug design suggest that an ATB or towed tank barge casualty that might cause a pollution event in Washington State waters would be an extremely rare event. Developing a risk management strategy for ATB and towed tank barge transits will require an approach that gives ATB, towing tug and escort tug masters sufficient options to address a sequence of unpredictable, unique circumstances in a short time frame.

For reasonable worst-case model simulation, real-world elements to consider in concert with the baseline operational factors identified above may include:

- Multiple combinations of escort techniques that can render an effective response to a tank vessel loss of propulsion or steering.
- Bracketing of response time, a critical element in an escort tug's successful response.
- Alignment of escort tug horsepower and type of propulsion with barge types and sizes.
- Recognition that effective tug escort response techniques for an ATB may be inappropriate for a towed tank barge.
- Necessary actions by the escort tug(s) under the direction of the tank vessel master or pilot, to influence the speed and direction of travel of the tank vessels in the event of a casualty, steering



WSPA



The American
Waterways Operators

or propulsion failure, thereby reducing the possibility of groundings or collisions and the risk of an oil spill from these tank vessels.

In addition to consideration of the controllable risk management factors (transit speed, position of escort tug, free-running or made-fast mode, experience/training, a tug escort risk management should also address the following variables:

- Escort Tugs: Propulsion Type, Fendering, Winches, Manning Levels, Crew Qualifications.
- ATB/Barge: Manned/Unmanned Situation, Freeboard/Vessel Access, Trailing Lines.
- Transit Route: Waterway Restrictions, Vessel Traffic Density, Predicted Wind/Sea/Tidal Conditions.

Recommended Additional Next Steps

The BPC has identified the following schedule of activities (“next steps”) pursuant to ESHB 1578:

- By December 31, 2021: Complete synopsis of changing vessel traffic trends.
- By September 1, 2023: Complete analysis of tug escorts using the model developed by Ecology.
- By December 31, 2025: Adopt rule regarding tug escorts.

It is recommended that the following steps be considered subsequent to the BPC/Ecology modeling study but in advance of (or concurrent to) the tug escort rulemaking:

- **Live Tug Escort Trials:** Conducting live trials will serve to corroborate the key findings of the modeling study. Further, live trials will provide operator experience and test escort tug capabilities.
- **Solutions for Escorting an Unmanned Barge:** As a variation of a possible event scenario, development in advance of engineered solutions for connecting an escort tug to an unmanned tank barge without requiring transfer of a crewmember from the tug to the barge would be valuable in mitigating safety risk.
- **Crew Training and Qualification Programs:** Noted throughout this document has been the critical aspect of operator experience and capabilities. The early development of tug escort-specific crew training programs and operator experience requirements is considered essential to an effective regulation that meets the safety goals of ESHB 1578.

Trans Mountain

Thank you for the opportunity to provide comments related to the Tug Escort Analysis. Please note similar comments are provided to the ERTV analysis scope of work.

Trans Mountain-related marine shipping has operated safely and responsibly for more than 65 years. In keeping with the regime's focus on safety, there will be additional risk control measures to be implemented for the Trans Mountain Expansion Project (TMEP). One key measure will be the expanded use of escort tugs for loaded tankers. Loaded tankers are already escorted from the Port of Vancouver to Race Rocks through Boundary Pass and Haro Straits under current regulations. However, post TMEP, tankers loaded at Westridge Marine Terminal will be escorted by large, modern and highly capable tugs for the entire passage from the Port of Vancouver to the western entrance of the Juan de Fuca Strait.

With operations based out of Southern Vancouver Island, these tugs with skilled crews will also have spill response capacity onboard. Although primarily focused on ensuring the safety of Trans Mountain tankers, the presence of these tugs will bring significant new tow capability to this region and are expected to raise the level of marine safety and emergency response, benefitting the shared waters of the Salish Sea.

We can provide more details in follow up if requested. Please contact us at info@transmountain.com or 1.866.514.6700. Details about TMEP are also available at www.transmountain.com.

Respectfully submitted on behalf of,

Bikramjit Kanjilal
Director Burnaby and Westridge Terminals
Trans Mountain

Pacific Merchant Shipping Association

Thank you for the opportunity to comment.

My name is Captain Mike Moore, Vice President of the Pacific Merchant Shipping Association whose membership includes ocean carriers, container terminal operators, tug companies as well as vessel agents serving both tank and non-tank vessels.

By way of relevant background, I helped draft the tug escort scheme for the Port of LA/LB in the 90's and the Tug Escort Standard of Care (and updates) as part of the initial Puget Sound Harbor Safety Plan when serving as Captain of the Port Puget Sound. Identifying appropriate areas to tether was part of that process.

We remain committed (personally and organizationally) to objective needs based continuous improvement. The tug escort study should fully update and acknowledge marine safety advancements made over the decades to reduce the risk of incidents/accidents that might be mitigated by a tug escort scheme. Tug escorts are designed to provide immediate response to situations involving a reduction or loss in propulsion and/or steering and so the probability of such incidents should be determined along with the seriousness of each incident type, location and range of conditions (tide, wind, etc.).

The analysis should involve the risk of transporting smaller volumes of oil on vessels with redundant propulsion and steering compared to the value of adding a tug to the transit mix. The only tank vessel collision in this region involved a tanker colliding with its own tug escort. I highlight this fact not to infer getting rid of tug escorts but to highlight there are other considerations around introducing more transits into the mix with respect to collisions, emissions and underwater noise as compared to how much risk mitigation is being provided by the escort.

Lastly, there should be some overlap with the ERTV study as that study should involve determining overall tug presence and availability in that study region. With the increases in tug escort by the State of Washington and the Trans Mountain project, the involved waterways will involve a significant increase in tug presence.

Respectfully Submitted,

Captain Mike Moore
Vice President, PMSA



30 September 2021

Alex Hess
Washington State Department of Ecology
PO Box 47600 Olympia WA 98504-7600
alex.hess@ecy.wa.gov
(360) 867-8064

Comments on Scope of Work for Analysis of Tug Escorts Required by sec 3(5) ESHB 1578

Dear Mr.Hess,

Thank you for the opportunity to provide the following comments on the proposed scope of work Ecology will use in its study to evaluate the potential reduction in oil spill risk resulting from the use of tug escorts by specified tank vessels in waters east of New Dungeness Light/Discovery Island Light called for by ESHB 1587. The undersigned non-profit membership organizations have a long history of efforts to protect the Salish Sea, including particular attention to reducing the risk of oil spills.

We understand that Ecology will consider our input in the development of the scope of work it will be submitting to the Board of Pilotage Commission for its approval to inform the analysis of tug escorts using the model under development by the Department of Ecology. The results of this analysis will be presented in a summary report to the legislature by September 1, 2023 as called for by ESHB 1578 Section 3(1)(d)(iii), passed in 2019, consistent with RCW 43.01.036.

It is our understanding that this analysis is limited to laden tank vessels between 5,000 and 40,000 deadweight tonnage (DWT), including ATBs and tank barges operating within the geographic coverage of the existing tug escort requirement for tankers between 40,000 - 125,000 DWT. It is also our understanding this analysis will not include tank vessels that are engaged in bunkering operations. This excludes from the analysis laden or partially laden barges and ATBs transiting to and from bunkering operations, which still clearly pose a risk of an oil spill.

An important context to these comments is the recognition that a large and diverse group of maritime stakeholders attending the 2016 Salish Sea Oil Spill Risk Mitigation Workshop the Department of Ecology convened found that escorting tank vessels, including oil barges and ATBS in Puget Sound, to be the most effective Risk Mitigation Measure (RMM) of the 225 RMM's considered by the attendees. This work built on a workshop Ecology hosted in 2015 where participants identified the oil spill risk categories reviewed in 2016.

Reducing the oil spill risks associated with the significant number of laden tank vessels transits associated with bunkering operations (the most frequent transits of tank vessels in the study area), without increasing the number of escort tug transits through the waterway, is best addressed through the establishment of a strategically positioned Emergency Response Towing Vessel(s) (ERTV) in the San Juan Islands as called for in RCW 88.46.250 Subsection 2 which will be discussed separately in our comments on the scope of work for that project which are also due September 30, 2020.

We recognize that Section 3(5)(b) of ESHB 1578 calls for Ecology’s model to consider vessel safety measures implemented after July 1, 2019. Despite the legislation allowing for qualitative analysis to be used to answer and provide context for research questions, we find the incorporation of this information to be too subjective to be built into a quantitative model.

While there are data documenting that the frequency and size of oil spills have declined over the years, it is rarely possible to account for how specific regulations have contributed to these results. However, near misses occur far more frequently than oil spills and provide a more accurate characterization of oil spill risk than spills themselves. Unfortunately, the lack of consistently collected, stored, and analyzed near miss data results in a significant under-representation of oil spill risk and further obscures the ability to apportion the amount of oil spill risk reduction associated with any specific measure.

Lessons on how trying to incorporate such subjective evaluations of how specific regulations result in reducing oil spill risk in a quantitative model can be gleaned from the 2015 Vessel Traffic Risk Assessment (VTRA) conducted by George Washington University. VTRA 2015 included the evaluation of a suite of regulatory measures with a purported risk reduction value associated with each. This resulted in the finding that the existence of the current and soon-to-be implemented regulatory regime significantly outranked all other potential new safety measures analyzed quantitatively. This arbitrary finding was then used as the only scenario reported in the 2017 Ports and Waterways Safety Assessment (PAWSA) conducted for these waters by the Coast Guard, thereby suggesting that additional measures are not needed to address the changing oil spill risk profile of the region.

While we do not doubt there have been measures instituted to reduce oil spill risk over the years, as borne out by the data, we believe such specific attributions do not belong in a model that is intended to be rigorous and without bias. Given the small number of large spills in the Salish Sea, it is essential that we look at spills that have occurred in the broader region, which is frequented by many of the same vessels, and to put far more emphasis on calibrating the model on near miss, rather than oil spill data.

It has long been recognized that having the Coast Guard collect, analyze, and make publicly available, near-miss and other pertinent data in a systematic matter is fundamental to the accurate characterization of a waterway’s oil spill risk. In fact, several provisions in the 2020 National Defense Authorization Act (NDAA) (H. R. 6395) calls for Coast Guard districts with VTS to do just that. The following excerpt from pages 1325-1327 of the 2020 NDAA is provided below:

“(b) NATIONAL POLICY.—

“(1) ESTABLISHMENT AND UPDATE OF NATIONAL POLICY.—

“(A) ESTABLISHMENT OF POLICY.—Not later than one year after the date of enactment of this section, the Secretary shall establish a national policy which is inclusive of local variances permitted under subsection (c), to be applied to all vessel traffic service centers and publish such policy in the Federal Register.....

“(I) Establishment of data collection, storage, management, archiving, and dissemination policies and procedures for vessel incidents and near-miss incidents.

“(e) *PERFORMANCE EVALUATION.*—

“(1) *IN GENERAL.*—*The Secretary shall develop and implement a standard method for evaluating the performance of vessel traffic service centers.*

“(2) *ELEMENTS.*—*The standard method developed and implemented under paragraph (1) shall include, at a minimum, analysis and collection of data with respect to the following within a vessel traffic service area covered by each vessel traffic service center:*

“(A) *Volume of vessel traffic, categorized by type of vessel.*

“(B) *Total volume of flammable, combustible, or hazardous liquid cargo transported, categorized by vessel type as provided in the Notice of Arrival, if applicable, or as determined by other means.*

“(C) *Data on near-miss incidents.*

“(D) *Data on marine casualties.*

“(E) *Application by vessel traffic operators of traffic management authority during near-miss incidents and marine casualties.*

“(F) *Other additional methods as the Secretary considers appropriate.*

Particularly pertinent to the Salish Sea, the 2020 NDAA also states on page 1326:

“(d) *COOPERATIVE AGREEMENTS.*—

“(1) *IN GENERAL.*—*The Secretary may enter into cooperative agreements with public or private agencies, authorities, associations, institutions, corporations, organizations, or other persons to carry out the functions under subsection (a)(1).*

“(2) *INTERNATIONAL COORDINATION.*—*With respect to vessel traffic service areas that cross international boundaries, the Secretary may enter into bilateral or cooperative agreements with international partners to jointly carry out the functions under subsection (a)(1) and to jointly manage such areas to collect, share, assess, and analyze information in the possession or control of the international partner.*

Similarly, the lack of information on whether tugs have tows (no less if they are laden) has also hampered quantitative analysis of oil spill risk in the Salish Sea. This has been most recently demonstrated in the Puget Sound Pilotage Commission’s ongoing effort to document whether there have been changes in vessel traffic associated with the addition of a tug escort requirement for laden tank vessels between 5,000-40,000 DWT in Rosario Strait, called for in ESHB 1578.

The Rosario Strait tug escort study would have also been far more informative if the Coast Guard required AIS on barges and to provide near miss data that was collected in a systematic fashion.

In fact, the 2020 NDAA specifically states that Coast Guard Districts:

“(3) *may require vessels to install and use specified navigation equipment, communications equipment, electronic relative motion analyzer equipment, or any electronic or other device necessary to comply with a vessel traffic service or that is necessary in the interests of vessel safety, except that the Secretary shall not require fishing vessels under 300 gross tons as measured under section 14502, or an alternate tonnage measured under section 14302 as prescribed by the Secretary under section 14104, or recreational vessels 65 feet or less to possess or use the equipment or devices required by this subsection solely under the authority of this chapter;*

Despite the limitations of the data being used by the Pilotage Commission and Ecology to monitor the year-long tug escort pilot study, failure to include those findings in this study further reduces the rigor of the model currently under development. It is perplexing why the Department of Ecology would not incorporate such real-world information to inform this analysis given the frequency with which ATBs and barges change their transit to Haro Strait in order to evade Rosario Strait's escort requirement would inform answers to questions specifically called for in this study which are addressed in these comments below.

A summary of the results from this current tug escort study, and that for the ERTV, are do not due to the Washington legislature until September 2023. Therefore, there is ample time to include the findings of the Rosario Strait tug escort pilot study in this evaluation.

In response to the research questions posed by Ecology, we offer the following:

How is oil spill risk distributed geographically? - Turn Point, East. Point, Guemas Channel/Saddlebags and the Port Angeles rotary need targeted analysis. (See 2017 PAWSA)

How does the use of tug escorts change the way that oil spill risk is distributed geographically? - Impacts from the Rosario Strait Study need to be incorporated in order to evaluate this question. Various interventions regarding tanker incidents have clearly indicated risks to Rosario Strait have been reduced since there is now a requirement for tug escorts on tank vessels greater than 50K DWT.

How is oil spill risk distributed across covered vessel types? - The results from the following study by Clear Seas demonstrates the fact that Bulk Carriers are the largest and most frequent covered vessels calling on the study area. They also have the highest incident rates across most of the waterways, which demonstrates the need to address bulk carriers with priority. This will be especially important in the analysis of the ERTV: (Also see 2017 PAWSA).

https://clearseas.org/en/research_project/maritime-commercial-incidents-and-accidents).

Dataset Representation of Vessel Types and Sub-Types (2014-2016)

There were 5,921 individual vessels in the final dataset, representing three years of vessel traffic in the study area.... There were far more bulk carriers (59% of all vessels) than any other sub-type of vessel in the study. Container ships (11%), other cargo (8%), tugs (7%), vehicle carriers (6%), small tankers (5%), large tankers (3%), cruise ships (1%), and articulated tugs (0.3%) follow in order.

The estimated average persistent oil capacity for bulk carriers in 2016 was 2,400 m³ and the maximum was 6,200 m³.

<i>Bulk carrier</i>	<i>DWT range</i>	<i>6,077 - 266,651</i>	<i>N= 3,472</i>
<i>Tanker</i>	<i>DWT range -</i>	<i>50,083 - 193,049</i>	<i>(<50K 288, >50k 195) = 483</i>

Tug escorts should be considered for bulk carriers considering their numbers, size and frequency of incidents compared to tankers. Alternatively, they should help underwrite the cost of an ERTV as described in our comments on the ERTV as called for in RCW 88.46.250 Subsection 2.

How does the use of tug escorts change the way that oil spill risk is distributed across covered vessel types? Without evaluation of the Rosario Strait tug escort pilot study, the only evaluation that can be made empirically is for tankers greater than 50K DWT. However, the waters of Eastern Juan de Fuca Strait, Haro Strait and Boundary Pass and Puget Sound are likely to have higher risks of oil spills from oil barges and ATBs due to the fact that tug escorts are not required for these vessels in these waterways.

How does the 2020 expansion of tug escorts in Rosario Strait and connected waters to the east change oil spill risks from covered vessels? – This question illustrates our previously stated point why Ecology needs to incorporate the results of that analysis in this study.

How does oil spill risk change if the escorts are tethered versus untethered? - This depends significantly on the characteristics of the tug, training of the crew, and type of vessel to be tethered. In general, teathering increases the speed and capacity for a tug escort to alter the course of a disabled vessel. There are also risks associated with such activities that can be minimized by crew training and the use of an appropriated outfitted tug.

How do key design characteristics for escort tugs affect spill risk? - Maneuverability, sea keeping, ability to work in indirect modes, bollard pull, and crew training are all critical. These characteristics need serious consideration if evaluating potential value of tugs of opportunity.

In closing, we believe the geographic expansion of tug escorts for barges and ATBs in combination with a strategically positioned and operated ERTV(s) is likely to contribute to our region's ongoing commitment to improving maritime safety and reducing oil spill risk.

However, unless the aforementioned data from the US Coast Guard (USCG) and Ecology/Pilotage Commission are incorporated in the model, it will remain an under-representation of risk in the Salish Sea. It will also hinder the ability to accurately evaluate the benefits of risk mitigation measures being considered for this and the ERTV studies.

In the mean-time the use of the study conducted by Clear Seas quantifying vessel traffic in Canada, including the Salish Sea should be useful in filling some of the information gaps and helpful to inform various questions in this analysis: *Vessel Traffic in Canada's Pacific Region* December 2020 which can be found at: https://clearseas.org/en/research_project/vessel-traffic-in-canadas-pacific-region/

We hope you find this feedback on the scope of your study evaluating the potential benefits of expanding the use of tug escorts within the study area. Please contact us if you have any questions.

Thank you,

Marcie Keever
Oceans & Vessels Program Director
Friends of the Earth

Lovel Pratt
Marine Protection and Policy Director
Friends of the San Juans

Rein Attemann
Puget Sound Campaigns Manager
Washington Environmental Council

Tom Glade
Evergreen Islands

Stephanie Hillman
Northwest Campaign Rep, Our Wild America-Dirty Fuels
Sierra Club

Janet Marino
Program Director
RE Sources

Alex, Along with my comments at the Aug. 30 OTSC meeting, please consider my following thoughts, questions, and suggestions for the Scope of Work.

- Text that looks like it should be linked to a webpage (is blue and underlined) are not actually linked, in version viewable/downloadable here -
<https://fortress.wa.gov/ecy/ezshare/sppr/prevention/Tug%20Escort%20Analysis%20-%20Scope%20of%20Work.pdf>
- Scope of Work (SOW) or at least the summary report would benefit from additional sections on:
 - o Definitions
 - Zones, as per defined by the BPC for ESHB 1578 Section 3(5)(d)(i)
 - Covered vessel, as per:
<https://app.leg.wa.gov/rcw/default.aspx?cite=88.46.010> (5)
 - Tank vessel
 - Risk – is this the combination of likelihood and consequence?
 - At least reference those used in the model, as in: Encounter, Accident, Outflow,
 - Reference the Interpretative Statement from the BPC,
<https://pilotage.wa.gov/oil-transportation-safety.html>
 - <https://nebula.wsimg.com/2e0c94a21d0285c4ed21a3d5eb31280a?AccessKeyId=F86D0A1E7A0091C2061F&disposition=0&alloworigin=1>
 - As per Section 3(8)
 - o Methodology
 - ESHB 1578 Section 3(5)(a) states: “Develop **scenarios** and subsets of oil tankers, articulated tug barges, and towed waterborne vessels or barges that could preclude requirements from being imposed under the rule making for a given zone or vessel;”
 - Estimated number of scenarios – perhaps present a matrix that isolates pairwise comparison by zones, by escorted vessel types, etc; provide explanation for how/why scenarios were selected
 - o Available inputs – model and data, as per Section 3(3)(e)
 - o Model and Data limitations; Assumptions
 - o What’s out of scope, ex. as per Section 3(4)?
- Will the analysis be able to address the additional impacts from additional tug escorts related to:
 - o underwater radiated noise, as per Section 3(6)(b)
 - o bunker demand and transfer
 - o air emissions
 - o cost, as per Section 3(2)(e)?

The following pages were from a pdf to .docx conversion on which I added some edits and comments for your review.

Thank you,

Commissioner Kirtley

Board of Pilotage Commissioners, Vice-Chair; Oil Transportation Safety Committee (OTSC)

Kirtlee@wsdot.wa.gov

Analysis of Tug Escorts – Scope of Work

Background: ESHB 1578¹ requires an analysis of tug escorts

[ESHB 1578](#) Section 3(5) states: “To inform rule making, the board of pilotage commissioners must conduct an analysis of tug escorts using the model developed by the department of ecology under section 4 of this act.”

ESHB 1578 Section 3(1)(d)(iii) states: “By September 1, 2023, the department of ecology must submit a summary of the results of the analysis required under subsection (5) of this section to the legislature consistent with RCW 43.01.036.”

ESHB 1578 considerations for tug escort analysis:

- Vessel type and geographic zone – Section 3(1)
 - Includes tank vessels between 5,000 and 40,000 DWT
 - Includes ATBs and tank barges
 - Excludes tank barges engaged in bunkering
 - Excludes vessels in ballast
 - Includes waters east of a line from Discovery Island Light to New Dungeness Light
- ~~operational and functionality requirements for tug escorts, such as aggregate shaft power and operational (tethering) and functionality requirements~~ – Section 3(3)(c)
- Vessel safety measures implemented after July 1, 2019 – Section 3(5)(b)
 - avoiding or minimizing – Section 3(6)(b):
 - additional underwater noise from vessels in the Salish Sea, focusing vessel traffic into established shipping lanes.
 - vessel traffic impacts to established treaty fishing areas, and respecting and preserving the treaty-protected interests and fishing rights of potentially affected federally recognized Indian tribes.

BPC and Ecology roles and responsibilities

Board of Pilotage Commissioners (BPC) and Ecology signed an [Interagency Agreement](#) (IAA)² for work related to ESHB 1578. For the analysis of tug escorts, the IAA includes the following responsibilities:

- BPC Staff will develop scope of work for the tug escort analysis.
- Ecology will provide technical assistance to BPC by producing a draft of the scope of work.
- Board of Pilotage Commissioners will vote to approve the scope of work
- Ecology will perform tug escort analysis and related outreach activities based on the scope with input from BPC.
- Ecology will write and submit a summary of the tug escort analysis to the legislature by September 1, 2023.

¹ ESHB 1578. Sess. Of 2019 (WA 2019), [1578-S.SL.pdf \(wa.gov\)](#).

² Board of Pilotage Commissioners and Washington Department of Ecology. IAA No. C2000090, Washington: BPC, 2019. [IAA, Interagency Agreement \(wsimg.com\)](#).

Commented [EK1]: <https://app.leg.wa.gov/bills/summary?BillNumber=1578&Year=2019&Initiative=false>

<http://lawfilesexternal.wa.gov/biennium/2019-20/Pdf/Bills/House%20Passed%20Legislature/1578-S.PL.pdf#page=1>
(p. 6 Line 21)

Commented [EK2]: full text:

(b) Consider the benefits of vessel safety measures that are newly in effect on or after July 1, 2019, and prior to the adoption of rules under this section; and

Commented [EK3]: Additional consideration, as per Section 3(6)(b)

Analysis Objective

The objective of the analysis is to evaluate the potential reduction in oil spill risk from covered vessels resulting from the use of tug escorts by specified tank vessels in waters east of New Dungeness Light/Discovery Island Light.

Research questions

- How is oil spill risk distributed geographically? How does the use of tug escorts change the way that oil spill risk is distributed geographically?
- How is oil spill risk distributed across covered vessel types? How does the use of tug escorts change the way that oil spill risk is distributed across covered vessel types?
- How does the 2020 expansion of tug escorts in Rosario Strait and connected waters to the east change oil spill risk from covered vessels?
- How does oil spill risk change if the escorts are tethered versus untethered?
- How do key design characteristics for escort tugs affect spill risk?
- Are there new safety measures adopted since July 1, 2019? If so, what are the benefits of these measures?

Qualitative analysis may be used to answer and provide context for research questions which cannot be adequately assessed quantitatively.

Outreach

Ecology will consult with tribes and stakeholders and lead outreach activities throughout the project to include a mixture of webinars, informational briefings, technical discussions, and informal discussions.

Deliverable

A summary report of the results of the tug escort analysis submitted to the legislature by Ecology before September 1, 2023.

Commented [EK4]: The analysis intent, I do not believe is limited to risk reduction. For example, the consideration of benefits in Section 3(5)(b). Purpose: "To inform rule making, the board of pilotage commissioners must conduct an analysis of tug escorts using the model developed by the department of ecology under section 4 of this act."

Commented [EK5]: Where possible, relate this to zones as defined in Section 3(1)(d)(i)

Commented [EK6]: Can the model do this? Or will this question be answered more anecdotally or qualitatively, rather than quantitatively from the model? If so, perhaps re-organize Qs under sentence "Qualitative analysis..."

Hess, Alex (ECY)

From: Mike Doherty <doherty_mike@yahoo.com>
Sent: Thursday, September 30, 2021 16:18
To: Hess, Alex (ECY)
Cc: Mike Doherty
Subject: Scope of Work for Analysis of Tug Escorts required by Sec. 3(5) ESHB 1578.

THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link

Dear Mr. Hess.

Thank you for the opportunity to provide comments on the above cited matter. In the development of the Scope of Work, please consider the following comments on the potential reduction of oil spill risks from covered vessels by the use of escort tugs by specified vessels in waters east of New Dungeness Light.

For well over three decades, the public record in oil shipment matters reflects strong public support for escort tugs assisting tank vessels laden with crude oil and product. The record also reflects that the public understands that they may be paying a bit more at the pump for protections against spills and spill risk.

"Near misses". While the record of actual oil or product spilled on Washington waters has declined, the record of "near misses" and "other incidents" has failed to be maintained adequately for the development of sound public policy through analysis. Please increase the "near miss" data subject to the analysis.

Geographic Area. In the area to be studied, please include a thorough analysis of the area known as the "Port Angeles Rotary". Projections for the increases in maritime traffic at this rotary continue to increase.

Geology. Please provide analysis of the shoreline and bottom geology of the areas of the San Juan Islands subject to the study. Past spill risk studies have generally involved soft shoreline and bottom sediments. In the area of the San Juan Islands the shorelines and bottoms contain much more solid rock, which would increase the risk of serious hull damage and spills in grounding incidents.

Covered Vessels. In the "Clear Seas" study, bulk carriers are the largest and most frequent covered vessels transiting the study area. Please assess risks of bulk carrier accidents in the analysis.

Teathered Vessels. Please include in the study the values of increased efficiency in controlling a disabled vessel, by teathered escort tugs. Additional crew training and improved equipment may be involved to limit risks/tradeoffs involved with required teathering escort tugs.

Spills happen! My residence is in Port Angeles, WA. Folks in this area will long remember the ARCO Anchorage spill of ANS crude (235,000 gallons).

Thank you for working during COVID 19 and for providing the opportunity to comment. And, thank you for your consideration of this submission.

Sincerely, mike doherty 360 457 9135
617 So. B. St.
Port Angeles, WA 98363

