Analysis of Tug Escorts – Scope of Work

Background

The Pilotage Act (RCW 88.16) requires an analysis of tug escorts

RCW 88.16.260 Subsection (1)(a) requires the Board of Pilotage Commissioners, in consultation with Ecology, to adopt rules regarding tug escorts for certain tank vessels by December 31, 2025.

Interim Milestones

To achieve the rule adoption deadline, RCW 88.16.260 Subsection (1)(d) directs a series of interim milestones.

RCW 88.16.260 Subsection (1)(d)(iii) states "By September 1, 2023, consult with potentially affected federally recognized Indian treaty fishing tribes, other federally recognized treaty tribes with potentially affected interests, and stakeholders as required under subsection (6) of this section and complete the analysis required under subsection (5) of this section. 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."

Analysis Requirements

RCW 88.16.260 Subsection (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 RCW 88.46.250. The board of pilotage commissioners may:
(a) 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;
(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
(c) Enter into an interagency agreement with the department of ecology to assist with conducting the analysis and developing the rules, subject to each of the requirements of this section."

Oil Spill Risk Model

RCW 88.46.250 Subsection (1) states: "The department must develop and maintain a model to quantitatively assess current and potential future risks of oil spills from covered vessels in Washington waters, as it conducts ongoing oil spill risk assessments."

BPC and Ecology roles and responsibilities

BPC and Ecology signed an Interagency Agreement (IAA) for work related to RCW 88.16.260. 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.

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- Ecology will write and submit a summary of the tug escort analysis to the legislature by September 1, 2023.

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

- 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?
- 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?

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

Study Area

The study area for this analysis consists of all connected marine waters east of a line from Discovery Island light to New Dungeness light in the Strait of Juan de Fuca and south of the 49th Parallel in the Strait of Georgia. The BPC has divided this area into 13 geographic zones. Waterways within the study area that are not explicitly contained in the BPC zones will be included.

Out of Scope

This analysis focuses on the effects on oil spill risks resulting from the use of tug escorts for specified tank vessels. The summary of the results of analysis will be one input to the rulemaking process described in RCW 88.16.260. Other requirements of RCW 88.16.260 are out of scope for this analysis, including:

- Consideration of underwater noise
- Vessel traffic impacts to established treaty fishing areas
- Estimates of expected costs and benefits of draft rules

Additional topics that are out of scope for this analysis include:

- Consideration of air emissions from tug escorts
- Analysis of the potential fate and effects of oil spill scenarios generated by the model
- Tug escorts for vessels specifically excluded in RCW 88.16.260.

Data Inputs

Primary data sources are listed below. Other sources of data may be identified during the analysis.

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

Outreach

Ecology will seek the participation of tribes and stakeholders throughout the project. Outreach events will include a mixture of webinars, meetings, informational briefings, technical discussions, and informal discussions. Ecology will offer consultation to potentially affected Indian treaty tribes.

Ecology will announce project outreach events on our website, and using the Ecology Spills Program electronic mailing list, the Ecology Oil Spill Model Development project electronic mailing list, and the BPC Oil Transportation Safety Committee electronic mailing List.

Definitions

Ecology will use the following definitions for the purposes of this analysis:

Geographic Zones

The Washington Board of Pilotage Commissioners (BPC) has defined 13 geographical zones related to RCW 88.16.190, Oil Tankers-Restricted Waters-Requirements. The summary report describes analysis results in the context of these geographic zones.

Covered Vessel

Covered vessel means a tank vessel, cargo vessel or passenger vessel according to paragraph 5 of RCW 88.46.010. The expanded definitions quoted below are contained in WAC 173-182-030 paragraphs 7, 42, and 63.

Tank Vessel

"Tank vessel means a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue…"

Cargo Vessel

"Cargo vessel means a self-propelled ship in commerce, other than a tank vessel or a passenger vessel, three hundred or more gross tons including, but not limited to, commercial fish processing vessels and freighters."

Passenger Vessel

"Passenger vessel means a ship of greater than three hundred gross tons with a fuel capacity of at least six thousand gallons carrying passengers for compensation."

Risk

Risk is the combination of the likelihood of an event and the consequence if the event occurs (DNV GL, 2017, p. E3). For the tug escort analysis, we define events as oil spills from covered vessels and consequence as the volume of oil spilled to water. This representation of consequence allows the

analysis to focus on quantifying the effectiveness of tug escorts for tank vessels. It will not include analysis of the potential fate and effects of oil spill scenarios generated by the model.

Additional Definitions

The BPC has developed an Interpretive Statement for Oil Transportation Safety Act of 2019 terms (Washington Board of Pilotage Commissioners, 2020). We will use these definitions in our analysis summary report.

References

DNV GL. (2017) Report to the Legislature on Columbia River Vessel Traffic Evaluation and Safety Assessment. (Washington Department of Ecology Publication No. 17-08-010). Retrieved from the Washington Department of Ecology website: https://apps.ecology.wa.gov/publications/documents/1708010.pdf

ESHB 1578, 66th Legislature 2019 Regular Session. (Wa. 2019). (enacted). Oil Transportation Safety. Retrieved from the Washington State Legislature website: https://lawfilesext.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/House/1578-S.SL.pdf?q=20210719092146

State of Washington Board of Pilotage Commissioners. (2020). Geographic Zones Per the Directives of ESHB 1578 Reducing the threat to southern resident killer whales by improving the safety of oil transportation and Chapter 88.16 RCW Pilotage Act. Retrieved from the Washington Board of Pilotage Commissioners website: https://nebula.wsimg.com/a0c4bc354f3ca9d89232d290d537fcf8?AccessKeyId=F86D0A1E7A0091C2061F&disposition=0&alloworigin=1

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Wash. Rev. Code § 88.16.190, 2019. Retrieved from the Washington State Legislature website: https://app.leg.wa.gov/rcw/default.aspx?cite=88.16.190

Wash. Rev. Code § 88.16.260, 2019. Retrieved from the Washington State Legislature website: https://app.leg.wa.gov/rcw/default.aspx?cite=88.16.260

Wash. Rev. Code § 88.46.010, 2015. Retrieved from the Washington State Legislature website: https://app.leg.wa.gov/RCW/default.aspx?cite=88.46.010

Wash. Rev. Code § 88.46.250, 2019. Retrieved from the Washington State Legislature website: https://app.leg.wa.gov/RCW/default.aspx?cite=88.46.250

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