

# Analysis of Emergency Response Towing Vessel – Scope of Work

## Background:

[RCW 88.46.250](#) requires analysis of an emergency response towing vessel

RCW 88.46.250 Subsection (2) states: “Utilizing the model pursuant to subsection (1) of this section, the department must quantitatively assess whether an emergency response towing vessel serving Haro Strait, Boundary Pass, Rosario Strait, and connected navigable waterways will reduce oil spill risk. The department must report its findings to the legislature by September 1, 2023.”

[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. The department must consult with the United States coast guard, potentially affected federally recognized Indian treaty fishing tribes, other federally recognized treaty tribes with potentially affected interests, and stakeholders to: Determine model assumptions; develop scenarios to show the likely impacts of changes to model assumptions, including potential changes in vessel traffic, commodities transported, and vessel safety and risk reduction measures; and update the model periodically.

## Analysis Objective

Quantitatively assess whether an emergency response towing vessel serving Haro Strait, Boundary Pass, Rosario Strait and connected navigable waterways will reduce oil spill risk from covered vessels.

## Research Questions

- The following research questions will be assessed within analysis scenarios:
  - How is oil spill risk distributed geographically in the study area? How does an ERTV serving the study area change this risk distribution?
  - How is oil spill risk distributed across covered vessel types? How does an ERTV serving the study area change this distribution?
  - How do the following variables change these distributions?
    - ERTV stationing locations
    - Tank vessel escort scenarios
    - Tug of opportunity scenarios
- How do key design characteristics of emergency towing vessels affect oil spill risk?

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

## Study Area

Connected US and Canadian marine waters of the Salish Sea, bounded to the west by an arc 20 miles west of the J-buoy at the entrance to the Strait of Juan de Fuca, and to the north by a line from Nanoose to Sechelt in the Strait of Georgia. Some connected waters are excluded, including Upper Howe Sound, Fraser River North, Fraser River South, Duwamish River, and Lake Washington.

## Out of Scope

This analysis focuses on the effects on oil spill risks resulting from a potential new ERTV. These considerations fall outside the scope of this analysis:

- Consideration of underwater noise
- Consideration of air emissions
- Cost of ERTV provision and funding mechanism
- Cross-border jurisdiction
- Vessel traffic impacts to established treaty fishing areas
- Analysis of the potential fate and effects of oil spill scenarios generated by the model.

## Data Inputs

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

- 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.

## Deliverable

Ecology will submit a summary report of the ERTV analysis results to the legislature by September 1, 2023.

## Definitions

### 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.

## 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>

Washington Department of Ecology. (2021). Risk Modeling [website]. Retrieved from:

<https://ecology.wa.gov/Spills-Cleanup/Spills/Oil-spill-prevention/Safety-of-Oil-Transportation-Act/Risk-model>

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>

Wash. Admin Code § 173-182-030, 2020. Retrieved from the Washington State Legislature website:

<https://apps.leg.wa.gov/WAC/default.aspx?cite=173-182-030&pdf=true>