STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
*PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000*
*711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341*

MEMORANDUM

October 31, 2018

To: Southern Resident Killer Whale Task Force

From: Dale Jensen, Program Manager, Spill Prevention, Preparedness, and Response Program

RD for DJ

Subject: Excerpts and Recommendations from the Report of Vessel Traffic and Vessel Traffic Safety: Strait of Juan de Fuca and Puget Sound Area

The Southern Resident Killer Whale (SRKW) Task Force has requested that the Department of Ecology (Ecology) provide a draft of the Report of Vessel Traffic and Vessel Traffic Safety: Strait of Juan de Fuca and Puget Sound Area ahead of the current scheduled submittal to the Legislature no later than November 1, in order for the Task Force to review and consider the report's recommendations when developing its own recommendations. The deadline for Ecology's draft report has recently been moved up one month ahead of the original date of December 1, 2018, in order for the final report to be submitted to the Legislature on January 15, 2019, so the final report can be considered during the upcoming legislative session. Ecology is providing the draft recommendations and excerpts/summary of the report herein to assist with the Tasks Force's work within the limited time they have left to submit their recommendations to the Governor on November 15. We also promote that members of the Task Force review the draft report as time and resources allow.

These excerpts and recommendations from the draft report are still subject to change until the report is finalized in January, 2019. However, the information provided should still be informative to the Task Force given the nature of the report and legislative direction for Ecology regarding the recommendations.

The recommendations with excerpts/summary address four areas that appear most relevant to the Task Force's work:

1) Tug escort requirements
2) Emergency response towing vessels
3) Voluntary speed limits
4) Voluntary crewing

We hope the Task Force finds the information provided helpful.

## Background on Tug Escort Requirements

Within the Salish Sea, Washington and British Columbia require tug escort of tank ships greater than 40,000 DWT carrying oil (Washington) or liquid cargo (British Columbia).

In Washington waters, the escort tug must have a minimum aggregate shaft horsepower of 5 percent of the deadweight tonnage of the tank ship. The Puget Sound Harbor Safety Plan (PSHSP) contains a voluntary Standard of Care (SOC) for tug escort of tank ships, which specifies areas where escort tugs should be tethered, tank ship deck fitting standards, escort speed, tug availability, vessel master responsibilities, pre-escort conferences, tug escort manuals, and provisions for escort tugs to be diverted in case of emergency.

In Canadian waters, the Pacific Pilotage Authority (PPA) established rules which include the number of pilots, areas for tethered escort, tug capabilities and equipment, including minimum bollard pull and safe working loads, escort speeds, pre-escort conferences, and additional procedures for escorting crude oil tank ships.

Escort tugs mitigate the risk of a tank vessel accident (primarily groundings and allisions, but also collisions) when a mechanical failure occurs through their ability to attach to and influence the motion of the afflicted vessel. Modeling results for the Puget Sound indicate adding tug escorts to towed oil barges and articulated tug and barges (ATBs) could result in reductions in potential oil losses. The 2015 Vessel Traffic Risk Assessment (VTRA) modeled untethered tug escorts of towed oil barges and ATBs, and model results showed an approximate 3 percent decrease in potential oil loss, and an approximate 15 percent decrease in potential accident frequency. The greatest decreases in potential oil losses were in the Rosario and the Saratoga/Skagit waterway zones. The greatest reductions in potential accident frequency were in the Puget Sound South and Guemes waterway zones. Potential oil losses increased in four waterway zones: the Guemes waterway zone (2.7 percent increase), the Buoy J waterway zone (0.2 percent increase), the Haro/Boundary waterway zone and the San Juan Islands waterway zone (both with 0.1 percent increase). Experience with escort tugs in Vancouver, BC indicates a twelve-fold increase in protection against tank ship accidents as a result of a system that incorporates escort tugs above the level of protection provided by the use of maritime pilots alone. Additionally, escort tugs may help prevent collisions from human error by providing additional situational awareness and serving as an "auxiliary bridge".

### Recommendation: Conduct rulemaking on tug escort requirements

The BPC has authority to impose pilotage and tug escort requirements for vessels within Washington State waters. As discussed, both tug escorts and pilotage can reduce the risk of a vessel incident that could result in a spill, albeit only tug escorts have the ability to address a loss of propulsion or steering. Therefore, it makes sense that tug escorts and pilotage be considered in tandem as to improve the safety regime as a whole.

Ecology recommends amending RCW 88.16.190 (1994) to direct the BPC to conduct rulemaking on tug escort requirements for oil laden tank vessels between 5,000 and 40,000 DWT when traveling beyond a point east of a line extending from Discovery Island Light south to New Dungeness Light. The rulemaking would direct the BPC to develop zones in Puget Sound to apply these rules. The rulemaking must require tug escorts for Rosario Strait and connected waterways to the east. The BPC would be authorized to require a state pilot for a given zone in-lieu of or in addition to a tug escort. As part of the rulemaking, the BPC could develop subsets of oil laden tank vessels between 5,000 and 40,000 DWT and/or situations which could preclude the requirements of the rulemaking for a given zone or vessel. The rulemaking should also evaluate potential impacts of increased marine noise as a result of additional vessel traffic and consider mitigation for underwater noise, especially on solo tugs returning from escort duty, to reduce impacts to Southern Resident Killer Whales.

Ecology should collaborate with the PSHSC to update the PSHSP and develop SOC for tug escort capabilities (e.g., bollard pull, tug equipment) and escort procedures to reflect this change. Ecology strongly encourages the British Columbia Pilots to take an equivalent posture for Haro Strait and Boundary Pass for oil laden ATB and tug tow tank vessels calling to British Columbia ports. Ecology anticipates that the British Columbia Coast Pilots would continue their practice of honoring the escort requirements of Washington, as a safety partner.

## Background: Emergency Response Towing Vessel

The risk reduction provided by an emergency response system would be highly dependent on a variety of factors, including where a new emergency response towing vessel (ERTV) was stationed; the distance from the ERTV to a vessel in need of assistance when an incident occurred; weather and tidal current conditions during an incident; and how quickly the ERTV could get underway, transit to the incident vessel, and begin providing assistance.

There are also significant differences between the waters surrounding the San Juan archipelago and the Strait of Juan de Fuca, which should be considered when comparing a potential new emergency response system to the existing ERTV at Neah Bay. These differences include the relatively narrow and navigationally complex waterways of Haro Strait, Boundary Pass, and Rosario Strait; the lack of an immediately identifiable location within Washington to station an ERTV; and the distances between Haro and Rosario Straits, which would likely preclude one ERTV from effectively providing a benefit to both areas.

The 2015 VTRA examined the potential effects of stationing additional ERTVs to complement the existing ERTV at Neah Bay. Results showed a 1.2 percent reduction in potential oil loss for the entire VTRA study area by stationing an additional ERTV at Sidney, BC. The 2015 VTRA also provides graphical representations of the approximate escort coverage provided by ERTVs modeled at Sidney, Victoria, and Bedwell Harbor. An ERTV stationed at Sidney could provide some benefit for vessels in Haro Strait and Boundary Pass, although the coverage provided would not be as extensive as the protection offered by the Neah Bay ERTV for the Strait of Juan de Fuca and the adjacent coastal waters. Comparing the graphical representations, the model predicts that an ERTV stationed in Victoria, BC and in Bedwell Harbor, BC would provide

better escort coverage for Haro Strait, Boundary Pass, and the Southern Gulf Islands, relative to a single ERTV stationed at Sidney, BC (Van Dorp & Merrick, 2015).

However, another study concluded that, due to the narrow geography of Haro and Rosario Straits, voluntary speed reductions would be more effective than placement of an ERTV in these areas (Kirtley, 2014).

In considering the potential effectiveness of an ERTV in Rosario Strait, Ecology considered existing traffic patterns. Most commercial vessels transiting Rosario Strait are tank ships, which are currently escorted, and tugs towing tank barges and ATBs, which are being recommended for escort in this report. This escort scheme could affect the potential utility of an ERTV in Rosario Strait. Most of the ERTV information Ecology reviewed focused on an ERTV in Haro Strait/Boundary Pass. Given the lack of analysis of an ERTV in Rosario Strait, Ecology does not have enough information to draw a conclusion about the potential effectiveness of such a system in that area.

### Recommendation: Evaluate effectiveness and funding of an emergency response system

A review of existing risk analyses and studies indicates that an emergency response system in Haro Strait and Boundary Pass similar to the ERTV stationed at Neah Bay has the potential to reduce oil spill risks, but the studies reviewed were not specifically designed to support a final determination, nor did the studies address the issue of funding an ERTV system. The majority of vessels that would benefit from an ERTV would be inbound and outbound to and from Canada. Ecology recommends a collaborative process to determine the potential effectiveness of ERTVs in Haro Strait and Boundary Pass. The process should include U.S. and Canadian stakeholders, tribes, and First Nations, and should result in recommendations to the legislature and other governmental bodies, including tribes and First Nations.

The process should address the following topics:

- Stakeholder, tribal, and First Nation interests in stationing additional ERTV(s).
- Types of vessels and casualties the potential ERTV(s) would be expected to respond to.
- Required capabilities and equipment of the ERTV and towed vessels.
  - Including consideration of multi-mission capabilities (e.g., emergency response, towing, firefighting, preliminary oil spill response, personnel rescue and recovery), which could be roving in nature.
- The suitability, acceptability, and feasibility of candidate locations for hosting an ERTV.
- The potential benefits of an emergency response system for a given location.
  - Ecology's literature review provides a summary of existing high-level modeling of three potential locations.
  - More detailed analysis would be needed to consider a wider range of potential sites, determine optimal ERTV coverage and potential benefits, conduct cost/benefit analysis, and inform decision-making.
- Procedures for operations, administration, and logistics.

- Cross-boundary response considerations.
- Funding and contracting roles, responsibilities, and commitments.

Regarding the current ERTV at Neah Bay, Ecology recommends engagement with Canadian federal and provincial governments to propose a cost-sharing arrangement for vessels transiting to Canadian ports. These vessels currently receive the benefit of having an ERTV at Neah Bay without supporting its continued presence. Projected increases in vessel traffic through the Strait of Juan de Fuca to Canadian ports will exacerbate this situation.

## Background: Speed limits

Although predominately addressed at the federal level, vessel speed limits can improve vessel safety, may reduce underwater noise, and reduce air pollution from ships. Washington code addresses vessel speed limits by requiring that tank ships not exceed the service speed of their escort tugs, but neither the Revised Code of Washington (RCW) nor the PSHSC SOC addresses speed limits for cargo and passenger vessels, towed oil barges, or ATBs.

### Recommendation: Develop Standard of Care for voluntary vessel speed limit program

Ecology recommends the PSHSC consider updating the PSHSP and develop SOC for a voluntary vessel speed limit program. This program should complement the Vancouver Fraser Port Authority's voluntary vessel slowdown trial in British Columbia as part of their Enhancing Cetacean Habitat and Observation Program (ECHO). The voluntary program should focus on Haro Strait, Boundary Pass, and Rosario Strait. The primary purpose for this new SOC would be for reducing oil spill risk, with a strong secondary purpose of potentially reducing noise impacts to affected orca populations.

## Background: Manning

Although under full purview of the federal government through the U.S. Coast Guard, changes to crewing levels on ATBs and tugs towing tank barges have been discussed as a potential way to reduce human error and decrease the likelihood of accidents. Currently, tug escort companies are strongly encouraged to have one other crew member in addition to the boat operator on the bridge of the escorting tug during escorts.

### Recommendation: Develop Standard of Care for Wheelhouse Watch Stander

Ecology recommends the PSHSC consider updating the PSHSP and develop SOC for a second watch stander in the wheelhouse of ATB and tug towed tank vessels on certain routes and in specific conditions. The intent of this voluntary standard is to use existing crew to assist the watch stander in charge of navigation as a lookout in the wheelhouse. The applicability of this voluntary standard may be considered for all Puget Sound pilotage waters, east of a line extending from Discovery Island Light south to New Dungeness Light. However, the primary areas of focus for this voluntary standard should be on Haro Strait, Boundary Pass, and Rosario Strait and connected waters to the east.

The SOC should consider operating conditions where the second lookout would apply, e.g., during hours of darkness, in restricted visibility conditions, heavy weather, increased waterway traffic situations, Rules of Road (COLREGS), and possibly other situations or conditions. The primary purpose of this new SOC is to raise situational awareness and reduce the potential risk of marine casualties and oil spills.