

Synopsis of Changing Vessel Traffic Trends

Scope of Work

Background: ESHB 1578 requires vessel trends synopsis

ESHB 1578 requires tug escorts for laden tankers between 5,000 – 40,000 DWT, and laden ATBs and oil barges greater than 5,000 DWT operating in Rosario Strait and connected waters to the east, starting September 1, 2020.

ESHB 1578 Section 3(ii) requires that “By December 31, 2021, [the Board of Pilotage Commissioners] complete a synopsis of changing vessel trends.” The intent of the synopsis is to look at how vessel traffic patterns change following the implementation of the Rosario tug escort requirement.

BPC and Ecology roles and responsibilities

BPC and Ecology signed an interagency agreement (IAA) for work related to ESHB 1578. For the vessel trends synopsis, the IAA includes the following responsibilities:

- BPC Staff will develop the scope.
- Ecology will provide technical assistance to BPC by producing a draft of the scope.
- BPC Board will vote to approve the scope.
- Ecology will draft the synopsis.
- BPC Board will review and approve the synopsis.
- BPC Staff will submit the final synopsis to the legislature.

Purpose

The intent of the synopsis is to review vessel transits pre- and post-bill implementation to identify changes after Section 2 of the bill is implemented. The synopsis will report on vessel trends for Washington waters east of a line extending from Discovery Island light south to New Dungeness light. It will also include vessel trends for the transboundary waters of Haro Strait, Boundary Pass, and the southern Strait of Georgia.

Research questions

- What changing vessel traffic trends do we see for vessels that newly fall under an escort requirement?
- What changing vessel traffic trends do we see for deep draft and tug traffic that have no additional escort requirements?
- What changing vessel traffic trends do we see for tug escorts?
- How does the overall number of transits (by vessel type) change pre- and post-bill implementation?

Methods

- Use Geographic Information System analysis of Automatic Identification System (AIS) data to determine the routes and number of transits of vessels.
- Combine Advance Notice of Transfer (ANT) reports, AIS data, and known tug-barge pairings to estimate the routes and number of transits of laden tank vessels (towed oil barges, Articulated Tug Barges, and tank ships).
- Compare number of vessels acting as escort tugs pre-and post-bill implementation.

Data sources

- **Advance Notice of Transfer (ANT)**
 - Under WAC 173-184-100, delivering vessels involved in an oil transfer of more than one hundred gallons must provide prior notice of the oil transfer to ecology.
- **Automatic Identification System (AIS) Data**
 - AIS transceivers on vessels transmit basic information like location, course, destination, and other vessel characteristics. The data can be requested from the USCG.
- **Vessel characteristics and deadweight tonnage**
 - Deadweight tonnage is specified in the WAC to be “the maximum summer deadweight tonnage that was assigned to the vessel at the time of construction as reported in Lloyd's Register of Ships.” WAC 363-116-500
 - For some vessels and barges deadweight tonnage can be identified using commercially available databases. Deadweight tonnage may be available from vessel operating companies. Where deadweight tonnage data is not available, Ecology will attempt to determine whether vessels require escorts based on information such as gross tonnage, ANT data, and observations of vessel transits (i.e., did the vessel travel with an escort?).
- **Marine Exchange Crossing Line Data**
 - The Marine Exchange compiles data on vessel counts for specific crossing lines, organized by vessel type, for the passage of vessels past a series of geographic “gates.” Ecology will consider whether this data could inform the synopsis.

Data Challenges

- ANTs use barge names and AIS uses vessel names.
- Towed oil barges are not always towed by the same vessel.
- Linking vessel routes to ANTs could be prohibitively time consuming if not automated.
- Marine Exchange crossing line data does not provide route information, or information on laden or unladen status.

Data Timeline

- The synopsis will compare a year of pre-bill implementation data (September 1, 2019 – August 31, 2020) to a year of post-bill implementation data (September 1, 2020 – August 31, 2021).

Deliverables

The synopsis will comprise a report describing:

- Route selection and number of vessel transits for pre-and post-bill implementation for the following vessel types. Ecology will explore ways to compare transits on a common scale.
 - vessels that newly fall under an escort requirement
 - deep draft and tug traffic that have no additional escort requirement
 - vessels that are providing bunkering or refueling services
- Routes compared will include, but will not be limited to transits of Rosario Strait and Haro Strait/Boundary Pass.
- Review of tugs engaged in escorting tank vessels in Rosario and connected waters east, including but not limited to number of transits, names of vessels, and operating companies.
- Number of oil transfers per terminal and per anchorage pre- and post-bill implementation.
- A review of the last 5 years of existing vessel transit data, to provide context as to the overall trend in vessel movements, based on vessel types. Determining the laden/unladen status of tank vessels, deadweight tonnage of vessels, and details on vessel occupation (i.e., bunkering) would require a manual evaluation of each transit, and is outside the scope of this review.

Opportunities for Review and Comment

Ecology will be available to provide updates to the BPC as requested. Potential updates include:

- Progress report after 6 months of post implementation data collection
- Presentation after post implementation data collection is complete

Ecology will address one set of comments from the BPC after submitting the draft report. Comments will be incorporated to the extent possible and will be included in the final report to the Board. No new data collection or analysis will result from review comments.

Amendments

The BPC board must approve by vote any additions or other changes to this scope of work. Any changes approved by the BPC will be attached to this scope of work.

Timeline

- September 1, 2019 Start of pre-implementation data collection timeframe
- August 31, 2020 End of pre-implementation data collection timeframe
- September 1, 2020 Implementation of new tug escort requirements
- September 1, 2020 Start of post-implementation data collection timeframe
- August 31, 2021 Data collection complete
- October 14, 2021 Submitted for internal Spills Program review
- November 4, 2021 Ecology delivers initial draft synopsis to BPC
- November 11, 2021 BPC Board Meeting
- December 2, 2021 Ecology delivers final draft to BPC
- December 9, 2021 BPC Board Meeting
- December 31, 2021 BPC publishes the Synopsis and submits to the legislature