Budget Proviso (ESHB 1109)

- **Product**: Synopsis of current maritime vessel activity, navigation lanes, and anchorages
- **Due Date**: June 30, 2021
- **Synopsis Requirements**:
  - Compile key findings and baseline information on the spatial and temporal distribution of and intensity of current maritime vessel activity.
  - Participation/Coordination with Canadian agencies, first nations, federal agencies, state agencies, federally recognized Indian tribes, and commercial and recreational vessel operators and organizations
Study Area

- Northern Puget Sound (North of Admiralty Inlet) and the Strait of Juan de Fuca, including vessel transits in Canadian portions of the transboundary waters
Project Timeline

Oct-Dec 2019
- Create project plan
- Research data sources

Jan-Feb 2020
- Create communications and outreach plans
- Begin outreach

March-April 2020
- Continue outreach
- Create webpage to post project updates
- First webinar

May-July 2020
- Second webinar
- Analyze data

Aug-Sept 2020
- Refine data analysis
- Data visualization
- Write synopsis

Oct 2020-June 2021
- Continue writing synopsis
- Data visualization
- Internal synopsis reviews
Our Approach

• Analyze spatial and temporal vessel activities throughout 2018
• Compile a variety of data sources and incorporate both standard and new analysis methods
## Data Sources

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Vessel Activity</th>
<th>Analysis Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Coast Guard Automatic Identification System (AIS) data</td>
<td>Vessel transits</td>
<td>Crossing Lines Method &amp; Operating Hours Method</td>
</tr>
<tr>
<td></td>
<td>Anchorage use</td>
<td>Anchorage Usage Method</td>
</tr>
<tr>
<td>Ecology Advanced Notice of Transfer System</td>
<td>Oil transfers</td>
<td>Data export and review</td>
</tr>
<tr>
<td>U.S. Coast Guard marine event permits</td>
<td>Marine events</td>
<td>Data export and review</td>
</tr>
<tr>
<td>Washington Department of Fish and Wildlife</td>
<td>Washington Fisheries</td>
<td>Data export and review</td>
</tr>
<tr>
<td>Department of Fisheries and Oceans</td>
<td>Canadian Fisheries</td>
<td>Data export and review</td>
</tr>
<tr>
<td>Washington Sea Grant</td>
<td>Recreational boating</td>
<td>Data export and review</td>
</tr>
</tbody>
</table>
AIS Data Analysis Methods

• Crossing Lines
  – Transit counts by vessel type for different areas

• Operating Hours
  – Amount of time spent by vessels in different areas

• Anchorage Occupancy
  – Percentage of time anchorages were occupied
Vessel Categories

• Adding specificity to AIS vessel categories by using additional sources
• Current categories include:
  – Bulk
  – Car carrier
  – Fishing
  – Passenger
  – Ferries
  – Recreational
  – Tanker
  – Tug
  – ATB
  – Container
  – Cargo
  – Other (research, military, etc.)
Crossing Lines
Operating Hours Example (Preliminary Results)
Anchorage Occupancy Example (Preliminary Results)

Vendovi Island East Anchorage Occupancy, 2018

- 0 vessels, 13%
- 1 vessel, 34%
- 2 vessels, 33%
- 3 vessels, 16%
- 4 vessels, 4%
Outreach Highlights

• April 1st Webinar
  – 25 attendees
  – Introduced project and invited input

• May 27th Webinar
  – 43 attendees
  – Provided project updates and invited input on crossing line locations and anchorages

• Participation from tribes, first nations, Canadian agencies, U.S. federal and state agencies, industry, and environmental sectors
More Information

Website: https://ecology.wa.gov/About-us/Get-to-know-us/Our-Programs/Spills-Prevention-Preparedness-Response/Legislative-work/Vessel-activity-synthesis

Contact: Rachel.Assink@ecy.wa.gov
Questions?
Oil Spill Risk Model Development

JD Ross Leahy
Joint PACMAR/PSHSC Meeting
December 2nd, 2020
Legislative background

- ESHB 1578 was passed in 2019 to reduce the risk of oil spills, and protect Southern Resident Killer Whales

- Ecology’s Spills Program tasked to undertake or assist with multiple policy initiatives in the bill, including the development of an oil spill risk model
Modeling Approach

- **Vessel Movement Module**: Vessels move in the system according to their empirical distribution.

- **Encounter Module**: Measures and evaluates relationship of each vessel to the shore and other vessels.

- **Accident Module**: Evaluates situations for their potential to lead to accidents.

- **Oil Outflow Module**: Estimates the size of oil spills that result from accidents.
Model Development and Outreach

<table>
<thead>
<tr>
<th>Monthly Discussions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>June – August 2020</td>
</tr>
<tr>
<td>Model Development</td>
</tr>
<tr>
<td>September 2020 – October 2021</td>
</tr>
</tbody>
</table>

- **Sep**: Vessel Movement Module
- **Nov**: Vessel Encounter Module
- **Feb**: Vessel Accident Module
- **Mar**: Oil Outflow Module
- **May**:
- **Aug**:
- **Sep**:
- **Oct**:
Vessel Movement Module Review

- Identify vessel tracks
- Collect tracks into routes
- Statistical analysis of factors that could affect vessel distribution on tracks
- Simulate vessels on tracks based on distribution
- Simulate additional rules and non route based vessels
Vessel Movement Module: Components

- Geographic Area
- AIS Messages
- Track Identification
- Route Identification
- Track Selection Factors
- External Rules
- Dependent Vessels
- Non-AIS Vessels
Track Selection Factors: Vessel Type

List of vessel types for track selection

- Assist/Escort Tug
- ATB (Articulated Tug and Barge)
- Bulk Carrier
- Car Ferries
- Container Ship
- Crude Tanker
- Cruise Ships
- Fast Passenger Ferries
- Fishing Vessel (<40m)
- General/Other Cargo Ship
- General/Other Cargo Vessel (<40m)
- Large Fishing Vessel (>40m)
- Large Rec. Vessel/Yacht (>40m)
- Liquefied Gas Tanker
- Mono-hull Passenger Ferries
- Other/Unassigned
- Other tugboats and workboats
- Pilot Boat
- Pocket Cruise Ship (>40m)
- Product Tanker
- Product Tanker – Bunkering
- Rec. Vessel/ Yacht (<40m)
- Research Vessel
- Search/Mil/USCG (<40m)
- Smaller Harbor Tug
- Sport Fishing Vessel
- Tanker/Chemical Tanker
- Tour Vessel
- Towing Vessel (Non-Oil)
- Towing Vessel (Oil)
- Towing Vessel (Oil) – Bunkering
- Tribal Fishing Vessel
- Military/USCG Vessels (>40m)
- Vehicle Carrier
- Whale Watching Vessels
Track Selection Factors: Others

List of factors

- Current/tide
- Wind
- Sea state
- Time of day
- Visibility
- Presence of a fishing opener
- Presence of a tug escort
- Day of the week
- Domestic vs International Flag
Dependent Vessels

List of dependent vessels

- Vessels providing bunkers
- Escort tugs
- Assist tugs
- Pilot boats
- Crew boats
- Submarine escorts
Vessels Not Represented in AIS

List of non-AIS Vessels

- Recreational vessels
- Commercial fishing vessels
- Small workboats/tugs
- Navy and other military vessels
- Tribal fishing vessels
- Sport fishing vessels
Upcoming events

February 10th, 2021 -- 1 pm to 3 pm
- Presentation on Vessel Encounter Module
JD Ross Leahy
Maritime Risk Modeling Specialist
Prevention Section

Spill Prevention, Preparedness, and Response Program

jd.leahy@ecy.wa.gov
Work Cell: 425-410-9806
Today's Presentation

- Board of Pilotage Commissioners (BPC)
- Marine Pilots
- ESHB 1578 Background
- Timeline of BPC Deliverables
- Oil Transportation Safety Committee
- Interpretive Statement
- Geographic Zones
- Monitoring and Enforcement
- Next Steps
BOARD OF PILOTAGE COMMISSIONERS (BPC)

- Washington State Regulatory Agency – 1935 Legislature
- Primary Mission – Safety
- Statutory Authority – Chapter 88.16 RCW, Pilotage Act
- Nine Member Board, plus 3 staff
  - training, licensing, and regulation
  - Nine Member Board, plus 3 staff
- BPC Website [www.pilotage.wa.gov]
MARINE PILOTS

- High-level maritime professionals
- Local knowledge experts
- First line of safety
- Required on all tankers and foreign flagged vessels
- Two Pilotage Districts:
  - Puget Sound – Puget Sound Pilots
  - Grays Harbor – Port of Grays Harbor
- COVID 19 - Essential workers
2019 Legislative Session – ESHB 1578
Reducing threats to southern resident killer whales by improving the safety of oil transportation.

Tug Escort Requirements as of 9/1/2020 on the following laden vessels between 5,000 and 40,000 deadweight tons

1) Laden oil tankers
2) Articulated tug barges (ATBs)
3) Towed waterborne vessels or barges
TIMELINE OF BPC DELIVERABLES

9/1/2020
- Rosario Strait & Connected Waterways East Tug Escort Implementation
- Identification of Geographic Zones

12/31/2021
- Synopsis of Changing Vessel Traffic Trends

9/1/2023
- Consultation
- Risk Model Analysis

12/31/2025
- Adopt Rules for Tug Escorts in Puget Sound

10/1/2028
- Review Rules Every 10 Years Thereafter
OIL TRANSPORTATION SAFETY COMMITTEE (OTSC)

- 12/16/2019 - OTSC Charter Adopted by the Board
- 1/16/2020 – OTSC Membership Adopted by the Board
- Statement of Purpose:
  To conduct analysis and provide recommendations for the Board concerning the responsibilities outlined in ESHB 1578.
- OTSC Meeting Minutes can be found at:
  https://pilotage.wa.gov/resources.html
Phase I – 9/1/2020 Deliverables:
Rosario Strait and
Connected Waterways East
Tug Escort Implementation
and Geographic Zone Identification
- February 13, 2020
- March 17, 2020
- April 6, 2020
- April 21, 2020
- May 6, 2020
- June 16, 2020

RESULTS
- Interpretive Statement for ESHB 1578
  - For Board Adoption
- Geographic Zones
  - For Board Adoption
TUG ESCORT IMPLEMENTATION – INTERPRETIVE STATEMENT

- ESHB 1578 terms analyzed and defined by OTSC.
- OTSC developed recommendations for BPC consideration and adoption.
  - Development of definitions – practical, on the water perspective
  - Existing published definitions considered.
- BPC adopted the Interpretive Statement at the June 18, 2020 regular public meeting of the Board.
GEOGRAPHIC ZONES

- Determination of Zones based on Potential Hazards including:
  - Vessel distance to the ground
  - Vessel traffic
  - Weather conditions
  - Currents
  - Vessel capability
- Delivered to Ecology per ESHB 1578

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
88.16.190 Oil Tankers: Restricted Waters:Requirements

The following geographic zones for the waterways of Puget Sound were developed taking into account potential hazards including vessel distance to the ground, vessel traffic, weather conditions, currents, vessel capability, etc. Subzones are the critical spots in each passage and are indicated in the darker color of the overall zone.

Notes:
1) The colors for each zone were chosen to distinguish them from one another and are not related to risk.
2) The written descriptions are the zone definitions. The visuals are provided as an aid to help visualize the zones.
3) The BPC recognizes that the U.S. and the state of Washington cannot regulate Canadian waters and that the Canadian VTS manages traffic in the areas of Hario Strait and Boundary Pass.

1. Strait of Georgia

- **South:** A line from Puffin Island light to Point Migeley on Lummi Island.
- **West:** From Puffin Island light, NE to Lat. 48° 45.48 N, Long 122° 47.53 W then to the South Alden Bank buoy, then to the North Alden Bank buoy, then to Alden
MONITORING AND ENFORCEMENT

- BPC investigates cases of potential Pilotage Act and Pilotage Rules non-compliance.
- Tank Vessel Movement Form
- The Pilotage Act contains enforcement provisions.
Synopsis of Changing Vessel Traffic Trends

Scope of Work with Department of Ecology

Timeline:

- **9/1/2019**
  - Start pre-implementation data collection

- **8/31/2020**
  - End pre-implementation data collection

- **9/1/2020**
  - Start post-implementation data collection

- **8/31/2021**
  - Data collection complete

- **10/14/2021**
  - Submit for internal Spills Program review

- **11/04/2021**
  - Ecology delivers draft synopsis to BPC

- **12/02/2021**
  - Ecology delivers final synopsis to BPC

- **12/31/2021**
  - BPC publishes synopsis and submits to Legislature
Thank you!

Jaimie C. Bever, Executive Director
Board of Pilotage Commissioners

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