

THE NORTHWEST SEAPORT ALLIANCE
MEMORANDUM

MANAGING MEMBERS
STAFF BRIEFING

Item 6A
Date of Meet July 2, 2019

DATE: June 19, 2019

TO: Managing Members

FROM: John Wolfe, CEO

Sponsors: Sandy Kilroy, Director, Maritime Environment & Sustainability, Port of Seattle, and Jason Jordan, Director, Environmental and Planning Services

Project Manager: Jon Sloan, Sr. Env. Program Manager, Port of Seattle

SUBJECT: Orca Task Force Recommendation #22, Underwater Noise Reduction

A. BRIEFING REQUESTED

Port of Seattle staff will brief the Managing Members on the Orca Task Force Recommendation #22, Underwater Noise Reduction. No action is being requested.

B. SYNOPSIS

Governor Inslee's Southern Resident Orca Task Force issued their Task Force Report and Recommendations on November 16, 2018. Task Force Recommendation #22 states, "Implement shipping noise-reduction initiatives and monitoring programs, coordinating with Canadian and U.S. authorities" resulting in the following recommendations:

- Create a program similar to Port of Vancouver's Enhancing Cetacean Habitat and Observation program (ECHO) for Washington State, including participation by ports, whale watching operators, private vessel operators and tribal governments as desired.
- Coordinate with the ECHO Program on transboundary efforts to reduce noise impacts to Southern Residents. Provide funding to complete an underwater acoustic monitoring network for Puget Sound, filling in gaps — such as on South San Juan Island — and supporting acoustic and visual mapping to improve the ability to identify when and where Southern Resident orcas are present.

The implementation details associated with Recommendation #22 encourage collaboration with strategic U.S. and Washington state partners, including the Coast Guard, Washington State Ferries, Puget Sound ports, the Pacific Merchants Shipping Association, the Puget Sound Pilots, Orca Sound, tribal co-managers and others, with a goal to support "parallel and adaptive implementation of ECHO and related shipping noise-reduction initiatives while promoting safe, sustainable shipping practices."

The implementation details also describe the deployment of a scientific-grade hydrophone network on South San Juan Island and in other key areas in Puget Sound. Further, the details include that support should be given to advancement of acoustic and visual mapping efforts by Washington State Ferries (WSF) and others, with the goal to share Washington data with the Southern Resident Killer Whale Report Alert System being developed in Canada by ECHO, Ocean Wise and the Vancouver Aquarium.

The Northwest Seaport Alliance (NWSA), Port of Seattle, and Port of Tacoma (Port Team) are now working to plan and co-convene an underwater noise workshop with stakeholders and tribes to discuss implementation of Recommendation 22. The Port Team is working with partners from WSF, NOAA, Vancouver Fraser Port Authority (BC), and the Puget Sound Partnership (henceforth Planning Team) to plan and co-convene the workshop.

The Planning Team has scheduled the workshop for October 3, 2019.

C. BACKGROUND ON ORCA TASK FORCE AND ECHO PROGRAM

The Orca Task Force (OTF) focused on developing a package of recommendations that would collectively have the impact needed to achieve the vision of a thriving and resilient Southern Resident orca population, emphasizing four goals:

- Increase Chinook salmon abundance.
- Decrease disturbance and risk to Southern Resident orcas from vessels and noise
- Reduce the exposure of Southern Resident orcas and their prey to contaminants
- Ensure that funding, information and accountability mechanisms are in place to support effective implementation

The OTF's work resulted in thirty-six (36) recommendations. The Ports of Seattle and Tacoma, as well as the NWSA, have identified a number of existing projects/programs that support many of the OTF goals and recommendations, as well as potential new projects/programs. One of the new projects/programs relates specifically to OTF Recommendation 22, "Underwater Noise Reduction," and is the subject of this memo. Other new Port/NWSA projects and programs are focused on boater education, habitat restoration, toxics cleanup, innovation, and interpretive signage (these are not the subject of this memo). It should be noted that there are numerous agencies, tribes and stakeholders that are involved in implementation of the various OTF recommendations.

The OTF includes broad agency, tribal, academic, and association representation. Both Commissioner Felleman and Captain Mike Moore of the Pacific Merchant Shipping Association are members of the OTF Vessels Working Group. The OTF included representatives with deep understanding of the impacts of underwater noise on Southern Residents. The OTF *Report and Recommendations* published in November of 2018, in addition to ECHO program documents, include substantial technical detail regarding the underwater noise issue which is summarized below.

Southern Resident orcas' range, during the spring, summer, and fall, includes the inland waterways of Puget Sound, Strait of Juan de Fuca, and Southern Strait of Georgia. These

areas include a major navigation route for the Port of Vancouver Canada's vessel traffic. Underwater noise has the potential to affect marine mammals through behavioral changes, range displacement, communication interference, decreased foraging efficiency, hearing damage, and physiological stress (Southall et al. 2007, Rolland et al. 2012). Vessel noise is known to disrupt behavior and potentially mask sounds required for navigation, communication and detecting prey (Aguilar Soto et al. 2006, Erbe 2002, Lusseau et al. 2009, Williams et al. 2014). The Seattle Times recently published a very thorough report, with excellent graphics and audio, on the impact of vessel noise to the Southern Resident Orcas, which can be found here: <https://projects.seattletimes.com/2019/hostile-waters-orcas-noise/>.

In 2013, Canada's National Energy Board approved a proposal by Kinder Morgan, known as the Trans Mountain project, to expand an oil pipeline with a second span, built roughly parallel to the existing pipeline. The expansion project faced criticism, particularly from environmentalists and First Nations groups over the government's failure to assess the proposed Trans Mountain project's effects on the marine environment. The government-owned project would increase tankers, from five to 34 a month and whale experts argued that existing vessel traffic is detrimental to the 74-member southern-resident orca population's survival. Because of this and concern over vessel traffic effects on marine mammals, the Enhancing Cetacean Habitat and Observation (ECHO) Program was formed in 2014. The Canadian government issued a final approval to the proposal on June 18, 2019.

ECHO is a Vancouver Fraser Port Authority-led initiative aimed at better understanding and managing the impact of shipping activities on at-risk whales throughout the southern coast of British Columbia. The long-term goal of the ECHO Program is to develop mitigation measures that will lead to a reduction in potential threats to whales as a result of shipping activities. The ECHO Program relies heavily on collaboration and has benefited from early input and advice from scientists, shipping industries, environmental groups, First Nations individuals, and government agencies to help the program focus efforts and set goals and objectives.

During ECHO advisory meetings, vessel traffic was one area that was identified as a potential effect on the feeding behavior of the whales. Because of recommendations from the advisory groups, research has taken place in several areas. These areas included:

- Looking at methods that vessel operators could use to physically quiet their ships;
- Researching noise produced by different types of vessels;
- Examining the effects from large commercial vessels and whale watch boats;
- Installing underwater listening stations;
- Sponsoring vessel speed and shipping lane studies, including:
 - In 2017 and 2018, the ECHO program, along with marine industry partners, asked ships to voluntarily slow down to 11 knots in the Haro Strait to measure the level of noise reduction that would occur; and,
 - In 2018, another voluntary study looked at lateral displacement of vessels from orca feeding grounds (moving the ships to a different route).

During the 2018 slow-down study, WSF participated by decreasing their vessel speeds from 16 knots to 11 knots as they transited Haro Strait during their two daily crossings to Sidney, B.C. WSF is also a user of the recently released Whale Report Alert System (WRAS) app for professional mariners. With the help of this notification tool, WSF intends to slow their vessels in real time when Southern Residents are detected in the vicinity of their vessels.

Additionally, in collaboration with the Vancouver Aquarium, Ocean Wise, and Prince Rupert Port Authority, ECHO supported the development of *Mariner's Guide to Whales, Dolphins, Porpoises of Western Canada* which helps mariners identify marine mammals and identifies ways to reduce potential interactions.

The ECHO program has reported that many vessel types contribute to underwater noise, including recreational craft, but large commercial vessels are typically the loudest. Large vessels dominate low-frequency background noise in many marine environments worldwide. Smaller vessels (e.g., recreational craft, jet skis, speed boats, operational workboats) produce sound that is generally highest in the mid-frequency range and at moderate source levels, although this depends on speed. Owing to the generally higher acoustic frequency and near-shore operation, noise from smaller vessels does not extend far from the source (UNGA 2018). In one study (SMRU Consulting 2017) the higher frequency noise contributed the most to loss of foraging ability through loss of echolocation ability (click masking), while the low frequency contributed the most to behavioral changes. Overall, the time for foraging potentially lost due to behavioral responses and click masking totaled 20-23 percent of each whale day (4.9-5.5 hours), with approximately two thirds of this time due to noise from large commercial vessels and one third due to noise from whale watch boats (SMRU Consulting 2017).

Although there is variability in noise generation within a given vessel type, speed range and frequency, multiple studies report that a one knot reduction in vessel speed typically results in greater than 1dB reduction in underwater radiated noise levels. Because sound levels are reported on a logarithmic scale, a 3dB reduction can result in a 50 per cent decrease in sound intensity and a 6dB reduction can result in a 75 per cent decrease in sound intensity.

With regard to vessels, the design stage is widely regarded as the best opportunity for noise reduction. Changes to vessel design, in particular to hulls and propellers, or the use of lightweight or dampening materials, are commonly recommended measures. For existing vessels, operational changes such as speed reduction, modification of shipping routes and regular vessel maintenance to reduce drag and cavitation are recommended (UNGA 2018)

The ECHO studies provided a starting point to assess the cumulative noise effects of large commercial vessels. The studies only covered a specific area and a specific time of year, representing approximately 23 to 33 percent of each pod's time spent annually (SMRU et al. 2014). More studies are needed to complete the estimate of all noise effects experienced by Southern Residents, the effects on whales in areas outside of Haro Strait, and the annual contribution of commercial vessel traffic to effects on Southern Residents.

D. CURRENT STATUS

With input from all Planning Team members, staff will develop and finalize a workshop agenda. The workshop will be described as being co-convened by NWSA, POS, POT, Washington State Ferries, Puget Sound Partnership and NOAA. The draft agenda will be designed to accomplish four objectives:

1. Familiarize attendees with the ECHO program, including how it was established, how it operates (including program costs), and its current focus;
2. Discuss existing conditions in Washington waters (both in terms of Orca behavior and shipping) that may inform the focus for underwater noise reduction initiatives, including unique physical characteristics; geographic and seasonal distribution of orcas; vessel use patterns/projections; and gaps in the underwater noise monitoring network;
3. Define work elements that could be considered for noise reduction initiatives, innovations, and monitoring programs in Washington waters that would coordinate well with ECHO, Washington Maritime Blue, and maritime innovation centers; and,
4. Discuss potential roles for various entities in establishment of an ECHO-like program in Washington waters, and identify next steps for continued discussion.

A draft workshop participant list has been developed to identify a strong cross section of individuals from ports, industry, NGOs, tribes, agencies (Canada and U.S.), and academia, who have been involved and are knowledgeable regarding:

- underwater noise and effects on Southern Residents;
- the program components used in ECHO;
- the Orca Task Force and Vessel Working Group;
- issues specific to Southern Resident's use of Washington Waters; and,
- a range of scientific, policy, and technical issues related to large commercial vessels (note: individuals specifically focused on whale watch and Navy vessels are not included since they are the subject of other Orca Task Force Recommendations).

The draft participant list, included as Attachment 1, was developed through the following:

- decision to invite all Orca Task Force Vessel Working Group members;
- decision to invite all Western Washington tribes with Usual and Accustomed treaty-rights in Puget Sound, Strait of Juan de Fuca, and Southern Strait of Georgia;
- additional research by Shandra O'Haleck (NOAA Affiliate) of knowledgeable people involved in the issue;
- discussion with Todd Hass of Puget Sound Partnership, which included review of Vessel Working Group members and input on additional people to consider;
- discussion with Orla Robinson (ECHO), Kevin Bartoy (WSF), Lynne Barre (NOAA), and Commissioner Fred Felleman about critical people to consider; and,

- inclusion of key representatives from POS, POT and NWSA;

In July 2019, we intend to confirm the list of invitees with the Planning Team, with the intention of sending invitations to a priority subset of invitees first. The invitation to this group, included as Attachment 2, will clarify that we have not yet sent out invitations to the full invite list. As we move forward in the workshop planning process, we will expand the invitations to others, focusing on achieving a balanced representation of knowledge and stakeholder/tribe interests, while also trying to keep the group small enough to generate effective outcomes.

E. PREVIOUS ACTIONS OR BRIEFINGS

An informal briefing memo was included with the Friday information packet received by Commissioners on February 15, 2019. Otherwise there have been no prior actions or briefings related to this issue.

F. STEPS AND SCHEDULE

The next steps include:

- Reach agreement with the Planning Team on priority invitees (done);
- Identify workshop dates that work for Planning Team members, Port Team leadership, likely speakers, and priority invitees (done);
- Confirm date, venue, and logistics (done);
- Send invitation to priority invitees;
- Review invitation list with Port Leadership Team,
- Develop, refine and finalize the workshop agenda with the Planning Team and with input from the Ports/NWSA Leadership Team;
- Invite additional people as recommended and complete invitations by mid-August;
- Continue to evaluate potential roles for Port of Seattle, Port of Tacoma and NWSA;
- Conduct workshop with Planning Team members; and,
- Generate report with workshop outcomes and recommendations.

Schedule milestones and deliverables are listed below.

Key Milestones/Schedule:

Date	Milestone	Deliverables
June – September 2019	Planning team meetings	<ul style="list-style-type: none">• Final invite list, Invitations• Final event plan• Review speaker presentations• Review RSVPs, Updates
July 2, 2019	Managing Members briefing	<ul style="list-style-type: none">• Draft event plan• Updates
Week of August 12, 2019	Leadership briefing	<ul style="list-style-type: none">• Final event plan• Updates
Week of September 17, 2019	Final leadership briefing	<ul style="list-style-type: none">• Event overview• Looking ahead
Oct. 3, 2019	Co-convene Workshop w/ NOAA, WSF, ECHO, and PSP	
October-December 2019	Follow up and next steps	<ul style="list-style-type: none">• Report w/ recommendations

The schedule includes opportunities for review of draft and final deliverable items.

A letter of support sent to the Orca Task Force from the Port Team is included as Attachment 3.

ATTACHMENT 1 DRAFT INVITEE LIST

Priority	Last Name	First Name	Sector	Primary Employer
A	Bain	David	Academia	University of Washington
A	Giles	Deborah	Academia	University of Washington
A	Nickum	Nora	Academia	Seattle Aquarium
A	Osborne	Rich	Academia	University of Washington
A	Zurk	Lisa	Academia	UW Applied Physics Lab
A	Anderson	Kym	Agency	United States Army Corps of Engineers
A	Barre	Lynne	Agency	NOAA
A	Bartoy	Kevin	Agency	Washington State Ferries
A	Becker	Penny	Agency	WDFW
A	Berger	Josh	Agency	Washington State Dept. of Commerce
A	Bryan	Darrell	Agency	Kitsap Transit
A	Hail	Laird	Agency	U.S. Coast Guard
A	Hanson	Brad	Agency	NOAA
A	Hass	Todd	Agency	Puget Sound Partnership
A	Holt	Marla	Agency	NOAA
A	Hughes	Rick	Agency	San Juan County Council
A	Pelton	Jeff	Agency	Transport Canada
A	Hegstad	Stephanie	Consultant	Floyd Snider - Port of Seattle Consultant
A	Snider	Kate	Consultant	Floyd Snider - Port of Seattle Consultant
A	Wood	Jason	Consultant	SMRU Consulting
A	Brodeur	Paul	Industry	King County Water Taxi
A	Costanzo	Charles	Industry	American Waterways Operators
A	Ford	Denien	Industry	British Columbia Chamber of Shipping
A	Harris	George	Industry	Northwest Marine Trades Association
A	Kirtley	Eleanor	Industry	Green Marine
A	Mihok	Jason	Industry	Victoria Clipper
A	Mize	James	Industry	Golden Alaska Seafoods
A	Moore	Mike	Industry	Pacific Merchants Shipping Association
A	Spalding	Donna	Industry	Cruise Lines International Association
A	Veentjer	John	Industry	Marine Exchange of Puget Sound
A	Von Brandenfels	Eric	Industry	Puget Sound Pilots
A	Olson	Jennifer	NGO	Whale Museum
A	Pratt	Lovel	NGO	Friends of the San Juans
A	Viers	Scott	NGO	Orca Sound
A	Williams	Rob	NGO	Oceans Initiative
A	Beckett	Kurt	Port	NWSA
A	Felleman	Fred	Port	Port of Seattle, NWSA
A	ffitch	Eric	Port	Port of Seattle
A	Gerking	Erik	Port	Port of Everett
A	Jones-Stebbins	Stephanie	Port	Port of Seattle
A	Jordan	Jason	Port	Port of Tacoma
A	Kilroy	Sandra	Port	Port of Seattle
A	Leavitt	Elizabeth	Port	Port of Seattle
A	McCarthy	John	Port	Port of Tacoma, NWSA

Priority	Last Name	First Name	Sector	Primary Employer
A	McGraw	Peter	Port	Port of Seattle
A	Mettruck	Steve	Port	Port of Seattle
A	O'Haleck	Shandra	Port	NOAA
A	O'Keefe	Gerry	Port	Washington Public Ports Association
A	Robinson	Orla	Port	Vancouver Fraser Port Authority
A	Sloan	Jon	Port	Port of Seattle
A	Bowechop	Chad	Tribe	Makah Tribal Council Office of Marine Affairs
A	Forsman	Leonard	Tribe	Suquamish Tribe
A	Russo	Kurt	Tribe	Lummi Nation
A	Williams	Daryl	Tribe	Tulalip Tribe
B	McKesson	Chris	Academia	University of British Columbia
B	Cook	Cyrilla	Agency	Washington State Dept. of Natural Resources
B	Ferrara	Grace	Agency	NOAA
B	Jeffries	Steve	Agency	WDFW
B	Myers	Alan	Agency	WDFW
B	Scarton	Amy	Agency	WA State Ferries
B	TBD		Agency	Canadian Office of Ocean Protection
B	TBD		Agency	Alaska Marine Highway
B	States	Jennifer	Consultant	DNV-GL
B	TBD		Consultant	Glosten
B	TBD		Consultant	Elliott Bay Design Group
B	Clauson	John	Industry	Kitsap Transit
B	Kalboy	Yatzien	Industry	Puget Sound Pilots
B	Meira	Kristin	Industry	Pacific Northwest Waterways Association
B	Stebbings	Heather	Industry	Pacific Northwest Waterways Association
B	Styrk	Linda	Industry	Puget Sound Pilots
B	TBD		Industry	Black Ball Ferry Line (M.V. Coho)
B	TBD		Industry	County/Private Ferry Services?
B	TBD		Industry	Washington Maritime Federation
B	Ashe	Erin	NGO	Oceans Initiative
B	Berta	Susan	NGO	Orca Network
B	Garrett	Howard	NGO	Orca Network
B	McKay	Nan	NGO	Northwest Straits Commission
B	McFarland	Ryan	Port	Port of Seattle
B	Pittis	Kathy	Port	Port of Anacortes
B	Kennard	Haley	Tribe	Makah Tribal Council Office of Marine Affairs
B	Purce	Les		Co-Chair, Orca Task Force
B	Solien	Stephanie		Co-Chair, Orca Task Force

ATTACHMENT 2 DRAFT WORKSHOP INVITATION

Invitation to be sent as a formal formatted invite from NWSA/POS/POT

Dear _____,

The Northwest Seaport Alliance, Port of Seattle, and Port of Tacoma (Port Team) are stepping forward to assist in implementing Governor Inslee's Southern Resident Orca Task Force Recommendation #22. The Ports were asked to work with the State to convene a stakeholder meeting to address underwater noise produced by large commercial vessels.

The Port Team is proposing such a meeting for Fall 2019. Washington State Ferries, NOAA, Vancouver Fraser Port Authority (BC), and the Puget Sound Partnership are collaborating with the Port Team to co-convene the workshop.

The workshop will be held on Oct. 3, 2019 at the Bell Harbor Conference Center (Sound Room) on the Seattle waterfront.

At the workshop, we will:

- Discuss the ECHO program and how it operates.
- Discuss the unique characteristics of Washington waters regarding Southern Resident Orca presence, including geographic and seasonal distribution, vessel use patterns/ projections, and the underwater noise monitoring network.
- Define work elements that could be considered for noise reduction initiatives, innovations, and monitoring programs in Washington waters that would coordinate well with ECHO, Washington Maritime Blue, and maritime innovation centers.
- Discuss potential roles for various entities in establishment of an ECHO-like program in Washington waters, and identify potential next steps for continued discussion. How should we move forward to continue to discuss? Who should be involved?

We are eager for your participation – we see you as an extremely important attendee.

Please let us know as soon as possible whether you will be able to attend and save the date. If this time poses a conflict for you, please let us know if there is someone else in your organization that could attend for you.

Also, please note that we have not yet sent out invitations to the full invite list – **invitations are going out now only to a selected list of individuals that we believe are essential to the success of the workshop.**

As we move forward in the workshop planning process, we will be expanding the invitations, while also focusing on achieving a balanced representation of knowledge and interests – and maintaining the workshop size small enough to generate effective outcomes.

Jon Sloan of Port of Seattle is leading the workshop planning effort, and Kate Snider of Floyd|Snider will be facilitating the workshop on behalf of the Port Team. Please contact Jon or Kate directly at sloan.j@portseattle.org or kate.snider@floydsnider.com if you have suggestions for workshop content, attendees, and advance preparation.

Sincerely,