**THE NORTHWEST SEAPORT ALLIANCE**
**MEMORANDUM**

**MANAGING MEMBERS**
**ACTION ITEM**

**Item No.** 9C

**Date of Meeting** November 2, 2021

**DATE:** October 20, 2021

**TO:** Managing Members

**FROM:** John Wolfe, CEO

**Sponsor:** Jason Jordan, Director, Environmental and Planning Services

**Project Manager:** Steve Nicholas, Environmental Senior Project Manager

**SUBJECT:** Northwest Ports Clean Air Strategy Implementation Plan and Resolution 2021-08 – First Reading

## A. ACTION REQUESTED

Request that the Managing Members of the Northwest Seaport Alliance advance Resolution 2021- 08 adopting the NWSA's 2021-2025 Clean Air Implementation Plan to a second reading.

## B. SYNOPSIS

The 2020 Northwest Ports Clean Air Strategy (NWPCAS) – unanimously adopted by the Managing Members of The Northwest Seaport Alliance (NWSA) in April 2021 – sets a bold new vision for clean air and climate action by the NWSA: "**phase out emissions from seaport-related activities by 2050.**" This implementation plan outlines the key actions the NWSA will take in the next five years (2021-2025) to advance that vision and the NWSA's interim targets for greenhouse gas (GHG) emission reduction: 50% by 2030, and 70% by 2040. In all, the implementation plan lays out 46 milestones to be achieved by the end of 2025. The NWSA's Air Quality & Sustainable Practices Team will be responsible for coordinating implementation of this plan, tracking progress against these milestones, and reporting annually to senior executives, the Managing Members, and our government, industry, community, and NGO partners and stakeholders. Staff briefed the Managing Members' Environmental Working Group (commissioners Ang, Cho, Felleman, and Meyer) on October 14; the Working Group was very supportive of the final draft of the plan as presented.

## C. OVERVIEW OF NWSA IMPLEMENTATION PLAN

***Context:*** The adoption of the 2020 NWPCAS and the development of associated implementation plans (including this one) are well-timed. As climate impacts increase in both frequency and intensity, so does the spotlight on clean air and climate solutions – internationally, nationally, in Washington state, and locally. As we are approach COP26 (the annual United Nations conference on global climate action), the focus on the role of international shipping and the maritime industry – and pressure on the International Maritime Organization (IMO) to take stronger action – is

increasing. Here in the State of Washington, two recently passed pieces of legislation – the Clean Fuels Standard and the Washington Climate Commitment Act – are heading into rulemaking and program development and implementation. Both policies are expected to significantly change the economics of climate solutions in our state and will create new revenue streams that could help finance emission reduction initiatives at ports, including some of those outlined in this implementation plan. At the same time, promising zero and near-zero emission technologies are under development and advancing in key areas, including ocean going vessels, drayage trucks, tugs, and cargo-handling equipment.

***Goals***: The overarching goals of this implementation plan are as follows:

- ***Do our part to improve local air quality***, especially in places where environmental health disparities exist, according to the Washington Department of Public Health;
- ***Do our part to meet the global climate challenge*** – limit global temperature rise to 1.5°C to stave off what the International Panel on Climate Change (IPPC) calls "severe, widespread, and irreversible impacts"; and
- ***Sustain and strengthen our competitiveness*** in the cargo shipping industry to advance our core mission: facilitating international and domestic trade that supports more than 58,000 jobs and $12.4 billion in business activity in Pierce County and Washington state.

***Sources of Emissions***: About 90 percent of the seaport-related diesel particulate matter and greenhouse gases in the Seattle-Tacoma airshed are associated with cargo shipping operations that the NWSA manages on behalf of the ports of Seattle and Tacoma. The sources of those emissions are identified in the tables below.

Table 1: NWSA Diesel Particulate Matter (DPM) Emissions by Source

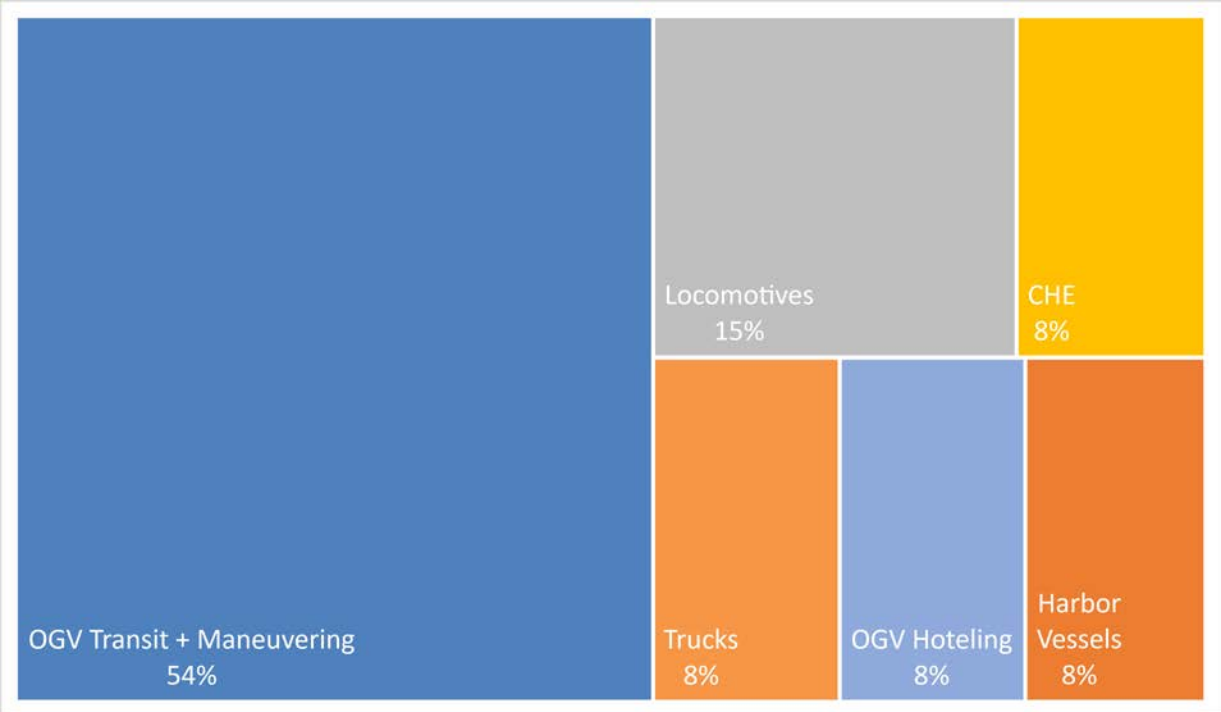
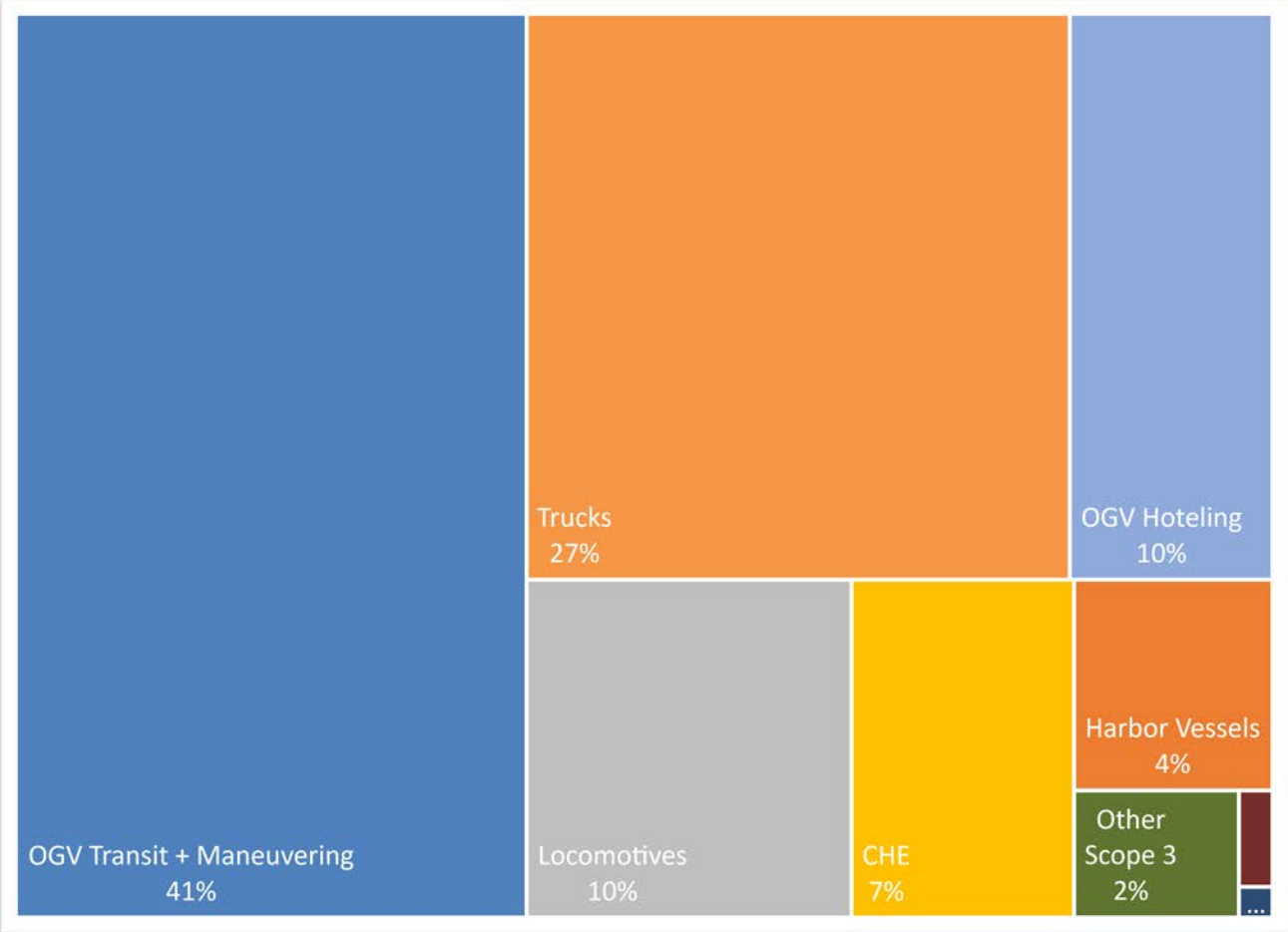
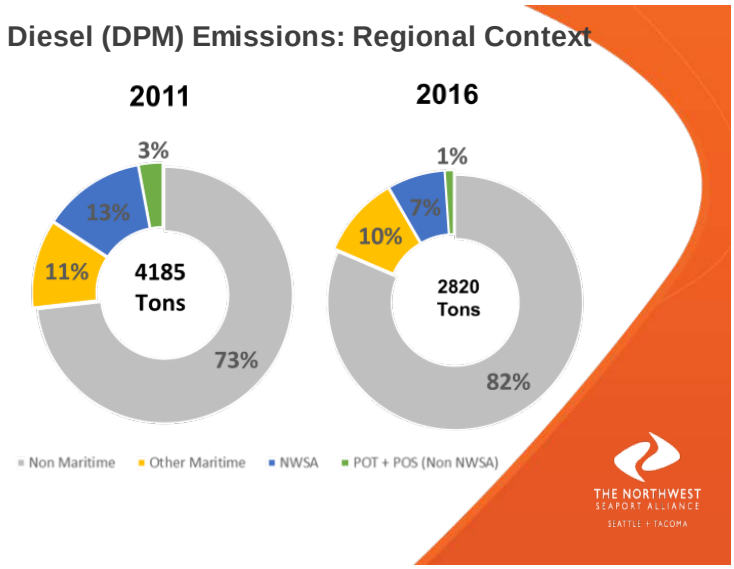


Table 2: NWSA Greenhouse Gas (GHG) Emissions by Source

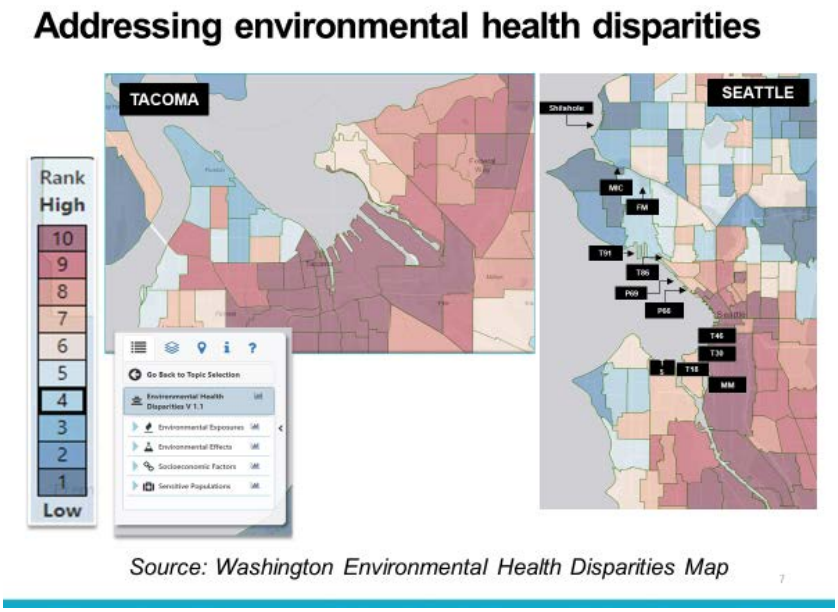



***Progress to date:*** The NWSA has made significant progress in reducing emissions since the NWPCAS was first adopted in 2008. For example, between 2011 and 2016, emissions of diesel particulate matter in 13 western Washington counties were reduced by more than 30 percent – from 4185 tons to 2820 tons – and the NWSA's share of those emissions fell from 13 to seven percent.




***Exposure & Impact:*** To better understand the impacts of port-related emissions on exposure to air pollution, the NWSA commissioned Washington State University (WSU) to do modeling and estimate how much each source contributes to human exposure. The results of that study indicate that, when the dispersion of emissions and population data are factored in, actions to

reduce emissions from ocean-going vessels at berth, drayage trucks, and cargo-handling equipment are likely to be the most impactful ways for the NWSA and its partners to reduce the impacts of port-related diesel emissions.




*Source: Washington Environmental Health Disparities Map*

***Environmental Health Disparities:*** The NWSA understands that, according to the WA Department of Health, environmental health disparities exist in both harbors in which we operate. The rankings featured on this map combine some 19 factors across four categories – including everything from diesel and ozone pollution to proximity to highways and hazardous waste sites to demographic such as race and unemployment rates. As the NWSA continues its efforts to reduce and ultimately eliminate emissions of diesel particulate matter from its activities, it continues to make a positive contribution toward reducing these disparities.

***Process:*** The NWSA's Air Quality & Sustainable Practices (AQSP) team lead the development of this implementation plan, working closely with an interdepartmental Climate & Clean Air Action Team (C-CAT) consisting of representatives from the major business units across the Alliance. In addition, a wide range of external partners and stakeholders – government agencies, tenants and other industry partners, near-port residents and community groups, and NGOs – were intensively engaged in the process, through a series of workshops, focus groups, one-on-one consultations, and on-line surveys. The six themes that emerged from engagement with external partners and stakeholders are as follows:

- Strong consensus on the need to achieve zero emission operations by 2050 and to prioritize the clean energy transition
- Divergent feedback on timelines for achieving zero emissions in some sectors and the need for interim targets
- Desire for ports to lead-by-example and prioritize climate/clean air investments to address environmental health disparities
- Desire for more accountability, communication, and transparency in reporting and decision-making
- Consensus on the importance of reducing emissions from trucks; concerns about cost, feasibility, equity
- Concern about ocean-going vessels as a major source of emissions and impacts on marine life

Based in part on this input, the following improvements were made to this final draft of the NWSA's clean air implementation plan:

| | |
|---|---|
| Interim Targets | • Added reference to NWSA's existing 2030 target: 50% reduction (Resolution 2017-2)<br>• Added support for state-wide 2040 target for 2040: 70% reduction (RCW 70.235.050) |
| Shore Power Usage | • Added requirement that shore power-capable ships plug in as infrastructure is installed |
| Accountability Framework | • Strengthened emphasis on 5-year milestones and more clearly articulated reporting regime and adaptive management process |
| Community Engagement | • Added reference to Duwamish Valley Community Equity Program<br>• Strengthened community engagement actions:<br>➢ Quarterly community updates<br>➢ Community Guide to Clean Air & Climate Solutions<br>➢ Collaborate with community groups to develop on-going engagement program |

***Strategy & Approach:*** The NWSA's strategy for reducing and ultimately eliminating these remaining emissions is two-pronged: continue and strengthen our work to reduce emissions from existing fleets of mostly diesel-powered vessels, vehicles, and equipment; and, at the same time, facilitate and accelerate the transition to zero-emission fuels and technologies, including the development of the necessary fueling and charging infrastructure. Our approach is threefold: 1) take direct action where possible, such as the installation of shore power infrastructure on NWSA-managed terminals; 2) collaborate closely with tenants and industry partners – through lease agreements, pilot projects, and other means – to identify, finance, and implement emission-reduction initiatives, such as the purchase of cleaner or zero-emission vehicles and equipment; and 3) track, engage in, and influence international, federal, state and local policies and programs that support clean air and climate solutions in the NWSA gateway.

***Milestones***: The key milestones against which the NWSA's success over the next five years will be gauged are as follows:

| Timeline | Key Milestones |
|---|---|
| **Community & Industry Engagement** | |
| Q1 2022 | Begin providing quarterly updates on NWPCAS progress. |
| End 2022 | Complete a Community Clean Air and Climate Resource Guide. |
| End 2022 | Develop and begin implementing a community engagement and partnership program in both the Seattle and Tacoma harbors. |
| Q2 2022 | Develop and begin implementing a tenant engagement program. |
| Q2 2022 | Complete review of climate and sustainability programs and goals of major customers and identify new partnership opportunities. |
| **Technology & Infrastructure Advancement** | |
| Q2 2023 | Complete the South Harbor Electrification Roadmap. |
| End 2022 | Complete the Seattle Waterfront Clean Energy Strategic Plan |
| End 2023 | Create infrastructure development plan |
| 2022 | Begin zero-emission technology assessments |
| **Policy Engagement & Advocacy** | |

| Timeline | Key Milestones |
|---|---|
| By 2023 | The state Clean Fuel Standard and Climate Commitment Act contain funding mechanisms to support NWPCAS implementation |
| End 2025 | Federal, state, and/or local/regional funding is secured to fill funding gaps for projects in this implementation plan |
| End 2025 | Stronger emission standards for international shipping are developed |
| **Cargo Ships & Other Ocean-Going Vessels** | |
| End 2023 | Complete shore power installation at T-5 |
| End 2023 | Complete shore power installation at Husky Terminal |
| End 2023 | Complete design of a shore power system at T-18 |
| End 2024 | Bring in grant funds to support the T-18 shore power installation |
| End 2023 | Update cost estimates, begin planning shore power systems at WUT, PCT, T-30 |
| As shore power is installed | Incorporate lease requirement for shore power capable ships to plug in |
| End 2022 | Complete vessel emission reduction study |
| End 2022 | Strengthen and implement international engagement strategy |
| **Drayage Trucks** | |
| End 2023 | Scrap 50 trucks through our scrap and replace program |
| End 2022 | Form a Puget Sound Zero-Emission Truck Collaborative |
| End 2025 | Extend clean truck rule to domestic terminals; install RFID technology to facilitate compliance and enforcement |
| End 2025 | Launch demonstration project involving at least 10 zero-emission trucks |
| End 2025 | Complete a regional zero-emission truck infrastructure needs assessment |
| End 2022 | Complete a port truck parking and fleet and trip assessment |
| End 2022 | Begin providing financial support to trucking community |
| **Cargo-Handling Equipment** | |
| Ongoing | Require new CHE purchases to be Tier 4 or better in any new or amended lease |
| End 2022 | Develop and begin implementing a tenant engagement program |
| Q2 2022 | Complete project to bring six all-electric yard tractors to South Intermodal Yard |
| End 2025 | At least 25 pieces of zero or near zero emission CHE operating in the gateway |
| **Tugs & Trains** | |
| End 2025 | Support at least one project to upgrade locomotive engine(s) to Tier 3 or better |
| End 2022 | Develop advocacy agenda related to locomotive emission reductions |
| End 2025 | Support deployment of at least 1 hybrid or zero emission tug in the gateway |
| End 2022 | Develop an advocacy agenda to secure funding for tug emission reduction initiatives |
| **NWSA Fleets & Facilities** | |
| End 2021 | Complete the EB1 and NIM Yard LED lighting upgrade projects |
| End 2022 | Identify other cost-effective energy efficiency opportunities |
| End 2025 | Complete at least three additional energy efficiency projects |

## D. ACCOUNTABILITY FRAMEWORK

The NWSA Air Quality & Sustainable Practices (AQSP) Team will coordinate the execution of this implementation plan, guided by the interdepartmental Clean Air & Climate Action Team and in continued partnership with a wide range of government, industry, community, and NGO partners. The AQSP Team will be responsible for tracking progress against the milestones listed in Table 3, and report annually to senior executives and Managing Members, as well as our external partners. The NWSA also will work closely with its port partners – Port of Tacoma, Port of Seattle, and Vancouver-Fraser Port Authority – to track and report annually on our collective progress toward the "zero emissions by 2050" vision of the 2020 NWPCAS.

In addition, the partners will continue to closely track relevant developments in public policy, zero-emission technology advancement, and infrastructure development, and adjust our implementation strategy and approach accordingly. We will update the Puget Sound Maritime Air Emissions Inventory and renew the NWPCAS every five years.

## E. ESTIMATED BENEFITS

The benefits of taking these actions are fourfold: 1) to measurably reduce emissions of diesel particulate matter and greenhouse gases from NWSA activities (see table below); 2) to do our part to improve air quality in and around the Seattle and Tacoma Harbors and achieve associated public health benefits, and to address environmental health disparities as depicted in the WA Department of Public Health's Environmental Health Disparities Map; 3) to do our part to reduce greenhouse gas emissions that exacerbate climate change; and 4) to position the NWSA well vis-à-vis recent and anticipated public policy changes, technology advances, and external funding opportunities.

| | Action | GHG Emission Reductions (tons/yr) | Percentage of Sector GHG Emissions | DPM Emission reductions (tons/yr) | Percentage of Sector DPM Emissions |
|---|---|---|---|---|---|
| **OGVs at Berth** | T-5 Shore Power[a] | 1,666 | 2.5% | 0.55 | 4.1% |
| | Husky Shore Power | 3,660 | 5.5% | 1.20 | 9.0% |
| **Trucks** | Scrap and replace 50 pre-2007 trucks | 0 | 0.0% | 1.76 | 13.1% |
| | Demonstrate 10 zero emission trucks | 838 | 0.5% | 0.36 | 2.7% |
| **Cargo-Handling Equipment** | SIM Yard electric terminal tractor project | 670 | 1.5% | 0.33 | 2.4% |
| | Seattle ZE/NZE CHE demonstration | 1,741 | 4.0% | 1.35 | 10.0% |
| | Tacoma ZE/NZE CHE Demonstration | 743 | 1.7% | 0.99 | 7.3% |
| **Harbor craft** | Hybrid tug demonstration | 351 | 1.5% | 0.12 | 0.9% |
| **Locomotives** | Switching locomotive repower | 0 | 0.0% | 0.11 | 0.4% |
| **TOTAL** | | 9,669 | | 6.77 | |

[a] The emission reductions follow assumptions made in the T-5 Modernization project's Environmental Impact Statement (EIS). If actual vessel traffic is greater than projected and connection rate is greater than 30%, then emission reductions could be larger.

## F. ESTIMATED 5-YEAR IMPLEMENTATION COSTS

| | Total Cost | NWSA Funding | Industry Partner Funding Needed | Industry Partner Funding Secured | External Funding Needed | External Funding Secured | Combined Funding Gap |
|---|---|---|---|---|---|---|---|
| **Crosscutting Actions** | $2.1M | $1.6M | $0 | $0 | $.45M | $.25M | $.2M |
| **OGVs**[a] | $38.M | $14M | $0 | $0 | $24.8M | $5.1M | $19.8M |
| **Trucks** | $10.8M | $1.1M | $1.7M | $0 | $8M | $.85M | $8.8M |
| **CHE** | $34.2M | $4.5M | $6.3M | $1.3M | $23.4M | $.9M | $27.5M |
| **Fleets and Facilities** | $3.8M | $1.4M | $.75M | $0 | $1.6M | $.1M | $2.2M |
| **Total** | **$89.8M** | **$22.6M** | **$8.8M** | **$1.3M** | **$58.4M** | **$7.2M** | **$58.6M** |

[a] Includes costs for the T-18 shore power project, which is not projected to be completed within the 5-year implementation period.

## G. ATTACHMENTS TO THIS REQUEST

- Computer slide presentation.
- Draft of Resolution No. 2021-08
- Final Draft of the NWSA 2021-2025 Clean Air Implementation Plan

## H. PREVIOUS ACTIONS OR BRIEFINGS

| Date | Action |
|---|---|
| October 14, 2021 | Briefing for NWSA Managing Members Environmental Working Group |
| April 6, 2021 | NWSA Managing Members, conduct second reading of Joint Resolution 2021-01; resolution is unanimously adopted by Managing Members, Port of Seattle Commission, and Port of Tacoma Commission |
| February 2, 2021 | NWSA Managing Members conduct first reading of 2020 NWPCAS Resolution 2021-01 and were briefed on 2020 NWPCAS proposed implementation plan development |
| January 12, 2021 | Port of Seattle commission briefed on final 2020 NWPCAS and Port of Seattle's proposed implementation plan |
| December 11, 2020 | Briefing Memo to NWSA Managing Members |
| September 1, 2020 | Third briefing for NWSA Managing Members |
| August 6, 2019 | Second briefing for NWSA Managing Members |

| Date | Action |
|---|---|
| July 3, 2018 | First briefing for NWSA Managing Members; authorization of ILA with Vancouver-Fraser Port Authority |
| December 2018,<br>June 2019,<br>January 2020,<br>June 2020,<br>August 2020,<br>November 2020 | Briefings for NWSA Managing Members Environmental Working Group |
| December 2013 | Port of Seattle and Port of Tacoma Commissions adopt NWPCAS 2013 update |
| January 2008 | Port of Seattle and Port of Tacoma Commissions adopt original NWPCAS |