

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**  
**STAFF BRIEFING**

<b>Item No.</b>	<u>7b</u>
<b>Date of Meeting</b>	<u>December 3, 2013</u>

**DATE:** November 19, 2013  
**TO:** Tay Yoshitani, Chief Executive Officer  
**FROM:** Stephanie Jones Stebbins, Director Seaport Environmental and Planning  
Janice Gedlund, Seaport Air Quality Program Manager  
**SUBJECT:** Final Northwest Ports Clean Air Strategy 2013 Update

**SYNOPSIS**

Port staff will provide an overview of the final 2013 update (“Update”) to the Northwest Ports Clean Air Strategy (“Strategy”), following up on a briefing to Commission on June 25, 2013, on the draft Strategy Update. The final version of the Update has been revised based on comments received during the public review period in June-July 2013.

The Strategy, a voluntary, collaborative effort between the Ports of Seattle, Tacoma, and Metro Vancouver (B.C.) was originally adopted in 2008. As a result, the Port implemented several programs which led to successful achievement of the Strategy’s 2010 performance measures, including the At-Berth Clean Fuel program to incentivize the use of cleaner fuels, The Green Gateway Partner Awards, the Clean Truck Program, which eliminated pre-1994 engine trucks from the dray fleet, and exhaust control retrofits to cargo-handling equipment. These projects contributed to the significant reductions in across-the-board air emissions from Port of Seattle sources that were noted in the 2011 Puget Sound Maritime Air Emissions Inventory, such as decrease of 27% in emissions of diesel particulate matter from a 2005 baseline. The 2013 Update includes establishment of additional reduction goals for diesel particulate matter (DPM) and greenhouse gases (GHG); revised 2015 performance targets; establishment of 2020 performance targets; and an increased commitment to conduct pilot and demonstration projects.

Commission consideration to adopt the Update is requested at its December 10, 2013, meeting.

**BACKGROUND**

The Port of Seattle, Port of Tacoma, and Port Metro Vancouver are continuing their collaborative efforts on the Northwest Ports Clean Air Strategy to reduce maritime and port-related emissions from global marine trade and port operations in the Georgia Basin–Puget Sound airshed. In developing and implementing the 2007 Strategy and this 2013 Update, the three ports partnered with government agencies including: Environment Canada and Metro Vancouver in Canada, and the U.S. Environmental Protection Agency, Washington State Department of Ecology, and Puget Sound Clean Air Agency. The port partners and governmental agencies worked together between January 2012 and May 2013 to develop the draft Update.

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### ***Public Outreach on the Northwest Ports Clean Air Strategy 2013 Update***

The Port conducted various stakeholder outreach efforts between September 2012 and May 2013 to get input on key elements of the Update. This included meetings with industrial stakeholders such as trucking companies, truck drivers, cruise lines, container lines, and marine terminal operators; as well as with community groups and the Seattle City Council.

On June 11, 2013, a public review draft of the Update was released. The Ports of Seattle and Tacoma conducted a public comment period from June 11 through July 31, 2013. Port Metro Vancouver posted the draft Update for public comment on June 21 and accepted comments through August 9. Comments were accepted at open houses, in person, by mail, and online.

The Port of Seattle hosted two public meetings (on June 26 and June 27). During that time, briefings on the Update were also given at a number of community council and neighborhood association meetings.

The three ports received comments from 45 respondents. The Port of Seattle received 26 of those comments, 20 of which focused on trucks.

The 45 comments covered:

- Truck owners' inability to afford the price and maintenance of a 2007 or newer trucks, especially in light of the reduced volume of cargo at the port.
- Appreciation for the Port of Seattle's proposed truck scrapping incentive program; but concern that the grant-funded project to provide incentives to scrap and replace 160 trucks does not help enough truck owners, and does not provide a high enough level of financial assistance.
- Concern regarding truck parking in Seattle neighborhoods.
- Concern that the reduction goals should be absolute rather than per ton of cargo.
- A need for a mandatory approach to emission reduction; and appreciation for aligning some targets, such as for ocean-going vessels, with regulations and established, third-party certification programs.
- A need for greater financial support to meet the various targets.
- Suggestion to increase focus on alternative fuels such as natural gas and hydrogen fuel cells.
- A suggestion to expand the scope of the strategy (e.g., fugitive emissions, noise).
- Overall there was positive support of the Update and goals, and the pilot studies and demonstration projects.

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### ***Revisions Made to the Draft Northwest Ports Clean Air Strategy 2013 Update***

The changes made following internal and public review of the document are listed below:

- The goal of having 100% of trucks meet the 2007 emission standards by year end 2017 was retained. The interim goal of having 80% of trucks meet the 2007 emission standards by year end 2015 was eliminated.
- Actions and targets for clean construction standards for engines used on port-led construction projects were clarified.
- The goal and target due dates referring to the end of a stated year was clarified (i.e. 2015 target means December 31, 2015).
- A statement was added to acknowledge that reduction of black carbon emissions, which contribute to climate change, is a co-benefit of reducing diesel particulate matter (DPM). Black carbon emissions have not been quantified in the ports' emission inventories or in this Update.
- A summary of the public review process and a summary of the key points made by reviewers were added to the document.

### ***Content of the Northwest Ports Clean Air Strategy 2013 Update***

The basic objectives of the updated strategy remain the same and advance the harmonized approach of improving air quality and reducing maritime impacts to public health and the environment while supporting economic growth.

The three ports and the six partner agencies have evaluated data and lessons learned from implementation efforts, advances in emission-reduction technology, and changes in the regulatory landscape over the past five years. This experience set the foundation of the Strategy Update and its key elements, including:

1. Goals for reducing port-related emissions in the Georgia Basin–Puget Sound airshed.
2. Pilot studies and demonstration projects to assess how new emission-reduction technologies can help meet the emission-reduction goals.
3. Performance targets for 2015 and 2020 for reducing emissions in each covered sector.

#### ***1. Emission Reduction Goals***

The proposed 2013 Strategy Update identifies voluntary actions that are intended to complement regulations to reduce air pollution. Together with the regulations, the proposed actions are expected to achieve the following emission reduction goals relative to the 2005 baseline emissions inventories:

- Reduce diesel particulate matter (DPM) emissions per ton of cargo by 75% by 2015 and 80% by 2020.
- Reduce greenhouse gas (GHG) emissions per ton of cargo by 10% by 2015 and 15% by 2020.

Because the size and characteristics of each sector vary across the three ports, the Update does not set emission reduction goals per sector. Rather, each port can determine the appropriate balance of actions to achieve these levels of reduction.

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Every five years, the ports will update their air emissions inventories and analyze progress toward emission-reduction goals.

### ***2. Pilot Projects***

The Update calls for pilot studies and demonstration projects designed to advance emission-reduction technologies for the maritime and port industry. Each port will evaluate or engage in at least one pilot study or demonstration project per year, and share findings with stakeholders and strategy partners. Port staff believes this is attainable. We are currently working with Puget Sound Clean Air Agency, for example, to assess alternative technologies to meet the strategy's truck target to move to 2007 model year engine emission standards.

### ***3. Performance Targets by Sector***

The strategy partners updated and revised the previous 2015 performance measures and set new performance targets for 2020. The Update includes new and updated actions and performance targets for the following sectors: ocean-going vessels, harbor vessels, cargo-handling equipment, trucks, locomotives and port administration (sources that are operated or governed directly by the ports). Significant progress has been made with respect to fuel and engine improvements. It is expected that the next evolution of air quality improvements will focus on efficiency improvements to further reduce DPM as well as GHGs. Each year, the strategy partners will continue to publish implementation reports that summarize their progress on performance targets.

As discussed in the original document and the Update, success relies on significant contributions from port tenants, customers, and other stakeholders who manage port activities and equipment that produce air emissions, as well as regional transportation agencies that can influence freight movement. With their tenants and stakeholders, the three ports seek to manage future growth in a way that improves air quality and supports sustainable port operations.

#### *Ocean-Going Vessels*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
Vessels surpass ECA requirements	Early compliance with 2015 ECA 0.1% fuel-sulfur level (or equivalent) while hoteling before Jan 1, 2015	Ports track number of vessels with Tier 3 marine engines, shore power use, cleaner fuel, or other emission-reduction technologies	✓	✓

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<p><b>Ports and vessels participate in port-designed or third-party certification</b> programs that promote continuous improvement (such as Environmental Ship Index, Green Marine, Clean Cargo Working Group, or others)</p>	<p><b>All ports and 10% of vessel calls</b></p>	<p><b>All ports and 40% of vessel calls</b></p>	<p>✓</p>	<p>✓</p>
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No changes were made to the draft actions and targets for ocean-going vessels that were presented in June 2013. The existing performance measure for ocean-going vessels in 2015 is to meet International Maritime Organization (IMO) standards for sulfur content in fuel. Since these standards now match regulatory requirements that established the North American Emission Control Area (ECA), the strategy's revised target is for vessels to surpass ECA requirements by burning even lower sulfur content fuel while at berth. The Port's At-Berth Clean Fuels (ABC Fuels) program has been promoting the use of cleaner fuels while at berth since 2009. In addition, use of shorepower at T-91 also achieves this target. In 2015, the second phase of the IMO and ECA targets goes into effect that will require ocean-going vessels to burn fuel with no more than 0.1% sulfur content, or achieve an equivalent emission reduction, within the ECA. At that point in time, the ABC Fuels program will sunset. This regulation will dramatically reduce DPM emissions from ocean-going vessels.

The 2020 target for ocean-going vessels shifts to efficiency improvements that will increase focus on GHG and reduce fuel use and operating costs for vessels. The target is for ports and vessels to participate in a port-designed or third-party certification program that promotes continuous improvement (such as Environmental Ship Index, Green Marine, Clean Cargo Working Group, or others.)

### *Harbor Vessels*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
<p><b>Strategy partners conduct annual outreach</b> to port-related harbor vessel companies and <b>recognize best practices and engine upgrades</b></p>	<p><b>Partners conduct outreach and 50% of harbor vessel companies</b> report best practices and engine upgrades</p>	<p><b>Partners conduct outreach and 90% of harbor vessel companies</b> report best practices and engine upgrades</p>	<p>✓</p>	<p>✓</p>
<p><b>Ports and harbor vessels participate in port-designed or third-party certification</b> programs that promote continuous improvement (such as Environmental Ship Index, Green Marine, Clean Cargo Working Group, or others)</p>	<p><b>All ports and 10% of harbor vessels</b></p>	<p><b>All ports and 40% of harbor vessels</b></p>	<p>✓</p>	<p>✓</p>

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No changes were made to the draft actions and targets for harbor vessels that were presented in June 2013. For purposes of the Strategy, this sector is limited to harbor vessels that have port-related functions. The ports have not been directly involved in harbor vessel-related projects to date. The Update calls for both ports and harbor vessels to participate in port-designed or third-party certification programs, such as those listed above. In Seattle, Puget Sound Clean Air Agency will take the lead in conducting annual outreach to port-related harbor vessel companies to promote engine upgrades and best practices.

### *Cargo-Handling Equipment*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
<b>CHE meets Tier 4 interim (T4i) emission standards or equivalent</b>	<b>50% of CHE</b>	<b>80% of CHE</b>	✓	✓
<b>Ports and terminals have fuel-efficiency plans</b> in place that promote continuous improvement	<b>Ports and 50% of terminals</b>	<b>Ports and 100% of terminals</b>	✓	✓

No changes were made to the draft actions and targets for cargo-handling equipment that were presented in June 2013. Prior performance measures have focused on use of cleaner fuels and upgrading, repowering or retrofitting existing pieces of equipment with cleaner engines or exhaust controls. The terminal operators have provided in-kind contributions for project oversight, implementation and maintenance costs associated with the retrofitted equipment. They have also purchased newer, clean equipment. Along with continuing to promote cleaner engines, the Update includes a target for fuel-efficiency plans. For diesel-powered equipment, using fuel efficiently will likely reduce DPM emissions; regardless of fuel type, fuel-efficiency measures will likely reduce GHG emissions.

### *Trucks*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
<b>Trucks meet or surpass EPA emission standards</b> for model year 2007	<b>100% of trucks by the end of 2017</b>		✓	✓
<b>Ports, terminals, and trucks have fuel-use reduction plans</b> in place that promote continuous improvement	<b>All ports</b> participate	<b>Ports, terminals, and 50% of trucks</b> participate	✓	✓

One change has been made to the targets for trucks since the draft Update was circulated in June: the interim target for 80% of container trucks to meet model year 2007 emission standards has been removed. The prior target for 100% of trucks to meet model year 2007 emission standards by the end of 2017 has been retained. In assessing comments received

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during the public review period, as well as the Port of Seattle's planned implementation of the truck targets, the Strategy partners agreed to this revision.

At its June 25, 2013 briefing, Commissioners indicated concurrence with Port staff that the 2015 would be an interim, unenforced target at Port of Seattle terminals, and that trucks with pre-2007 engines would not be turned away from terminal gates until January 1, 2018. This decision was based on the following feedback from truck drivers:

- The recession, and the move of the Grand Alliance to the Port of Tacoma, has reduced the amount of work they are getting.
- The reduced number of trips since mid-2012 has likely reduced the total emissions from trucks.
- In 2015, many truck owners will still be paying off loans on trucks purchased to meet the 2010 target.
- The costs and availability of replacement trucks hinders their ability to afford a newer truck without significant financial assistance, which will be exacerbated by an earlier due date (2015 vs. 2017).
- There is difficulty in creating an equitable system for requiring only 80% of trucks to upgrade in 2015.
- There is a potential inconsistency with the Port of Tacoma's clean truck enforcement.
- Truck emissions have been reduced by 53% since 2005 (partially due to the Port-led elimination of trucks with pre-1994 engines from the dray fleet), and represent a small percentage (7%) of the Port's total DPM emissions.

Even without this interim 2015 target, the Port will continue making progress in reducing truck emissions. A new grant-funded truck scrap and replace project for at least 180 trucks will be launched in 2014, accompanied by additional outreach to the trucking community; upgraded trucks will meet 2007 emission standards and be 10 times cleaner than those with model year 1994-2006 engines. Port staff continues to monitor truck parking in the South Harbor area and has engaged in renewed discussions with the City of Seattle to keep truck parking out of residential areas. The successful transition from a sticker system to use of radio frequency identification (RFID) tags earlier this year enables better tracking of fleet characteristics; currently, about 18% of trucks calling at the Port have 2007 model year engines.

Additionally, during the 2015-2017 time period, the North American Emission Control Area regulations will drastically reduce particulate emissions, since ocean-going vessels currently emit 78% of the Port's DPM emissions, and will overshadow any gains made in the trucking sector.

### *Locomotives*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
<b>Switching locomotive owners participate in an efficiency program</b>	<b>100%</b> of owners institute a program	<b>100%</b> of owners achieve performance objectives of chosen program	✓	✓

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<b>Switching locomotive owners upgrade or replace unregulated engines</b> (engine replacements will be Tier 2 or better)	<b>10% of unregulated switching locomotives</b>	<b>20% of unregulated locomotive engines</b>	✓	✓
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No changes were made to the draft actions and targets for locomotives that were presented in June 2013. The Puget Sound Clean Air Agency and the Washington State Department of Ecology have conducted several grant-funded projects to reduce locomotive emissions. The Port assisted Puget Sound Clean Air Agency in obtaining grant funds to upgrade switching engines owned by Louis Dreyfus. The Update set targets for switcher locomotives to participate in an efficiency program such as the EPA SmartWay program, to reduce fuel and emissions, and for upgraded engines on switcher locomotives.

### *Port Administration*

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
<b>Ports own and operate cleaner vehicles and equipment and have fuel-use reduction plans</b> in place that promote continuous improvement	<b>Ports report use of cleaner vehicles and equipment</b> and other relevant information	<b>Ports increase use of cleaner vehicles and equipment</b>	✓	✓
<b>Ports apply clean construction standards</b> to engines used on port-led construction projects (such as American Association of Port Authorities' Sustainability Checklist, U.S. EPA Best Practices for Clean Diesel Construction, or equivalent best management practices)	<b>Ports adopt clean construction practices</b> for port-led projects, including idle-reduction requirements, and enact a plan to address <b>Tier 2</b> engine emission requirements	<b>Ports continue to apply clean construction practices</b> for port-led projects, including idle-reduction requirements, and enact a plan to address <b>Tier 4</b> engine emission requirements	✓	✓
<b>Ports facilitate energy studies and conservation projects at port-operated and/or tenant facilities</b> to identify and address energy conservation opportunities in building systems, processes, and yard lighting	<b>Each port conducts 3 energy studies</b>	<b>Each port completes 3 energy conservation projects</b>	✓	✓

Minor wording changes were made to the targets for port administrations in the final version of the Update. Based on additional internal discussion within each port, the Strategy partners revised the wording for the clean construction practices targets to clarify that each port will



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develop and carry out a plan to address emissions from diesel-powered equipment used on port-led construction projects.

The targets for port administration also focus on increasing use of cleaner vehicles and equipment and conducting energy studies and energy conservation measures at port-operated and tenant facilities. The Port of Seattle already has most of these items underway, but these targets will encourage more rigorous programs and continuous improvement.

## **ATTACHMENTS TO THIS BRIEFING**

- PowerPoint presentation.
- Northwest Ports Clean Air Strategy 2013 Update.

## **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- June 25, 2013 – the Commission was briefed on the draft 2013 update to the Northwest Ports Clean Air Strategy.
- December 4, 2012 – the Commission was briefed on the results of the 2011 Puget Sound Maritime Air Emissions Inventory and options for accelerating the NWPCAS truck goals.
- May 1, 2012 – the Commission authorized to sign agreement 20090046 Amendment 5 with the Puget Sound Clean Air Agency to transfer \$1,050,000 in funds to support the implementation of the Northwest Ports Clean Air Strategy. Amendment 5 increased the total amount transferred from the Port to PSCAA since 2009 to \$5,216,250.
- February 7, 2012 – the Commission was briefed on the Northwest Ports Clean Air Strategy and on the Port's current air quality program effort, and draft recommendations on options for accelerating Seaport Clean Air Strategy goals.
- July 12, 2011 – the Commission was briefed on the Northwest Ports Clean Air Strategy 2010 Implementation Report and interim report on Accelerating Clean Air Goals.
- February 1, 2011 – the Commission authorized to sign agreement 20090046 Amendment 4 with the Puget Sound Clean Air Agency to transfer \$1,160,250 in funds to support the implementation of the Northwest Ports Clean Air Strategy, and to extend the end date from June 30, 2011, to June 30, 2013. Amendment 4 increased the total amount transferred from the Port to PSCAA since 2009 to \$4,166,250.
- January 4, 2011 – the Commission adopted the “Motion to Accelerate Seaport Clean Air Goals to 2015.”
- December 7, 2010 – the Commission was briefed on the Northwest Ports Clean Air Strategy Implementation Status.
- November 9, 2010 – the Commission authorized to increase the amount of the At-Berth Clean Fuels Vessel Incentive Program by \$110,250, for a total 2010 annual program budget of \$951,750, to cover participation by the projected number of qualifying vessel visits for the remainder of the year.
- June 8, 2010 – the Commission authorized to supplement the value of the At-Berth Clean Fuels Vessel Incentive Program by \$541,500, for a total 2010 annual program budget of \$841,500. Within the \$541,500, \$135,000 represents funds that were originally approved in 2009, but were not used until 2010.

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- January 12, 2010 – the Commission was briefed on the Seaport’s Air Quality Program.
- August 25, 2009 – the Commission received a Clean Air Update.
- August 25, 2009 – the Commission authorized a revised Customer Support Package lease amendment with Total Terminals Inc.; and authorized the Port to purchase energy efficient light fixtures and related equipment for T-46, for an amount not to exceed \$680,000.
- June 23, 2009 – the Commission received a briefing on the Northwest Ports Clean Air Strategy 2008 Implementation Report.
- April 14, 2009 – the Commission authorized an agreement with Puget Sound Clean Air Agency, to transfer \$2.3 million (\$1.15 million in 2009 and \$1.15 million in 2010) from the Port’s operating budget to support the implementation of the Northwest Ports Clean Air Strategy.
- April 14, 2009 – the Commission authorized the execution of lease agreements with Total Terminals Inc. for Terminal 46, SSAT (Seattle) for Terminal 25/30, SSA Terminals for Terminal 18, and Eagle Marine for Terminal 5, to incorporate the Customer Support Package and the Ports Clean Air Program into those leases.
- March 31, 2009 – the Commission was briefed on the customer support package and the Clean Air Program.
- February 10, 2009 – the Commission held a policy roundtable discussion of the Clean Air Program.
- December 2, 2008 – the Commission authorized a transfer of \$500,000 to the Puget Sound Clean Air Agency for the At-Berth Clean Fuels Vessel Incentive Program.
- November 11, 2008 – the Commission was briefed on the Port’s Clean Truck Program.
- September 2, 2008 – the Commission was briefed on the Port’s Clean Truck Program for drayage operations at West Coast Seaports.
- July 8, 2008 – the Commission was briefed on the Port’s Clean Truck Program.
- April 1, 2008 – the Commission and the public were briefed on the Northwest Ports Clean Air Strategy implementation.
- January 22, 2008 – the Commission adopted the Northwest Ports Clean Air Strategy.
- December 6, 2007 – the Commission was briefed on the revised draft of the Northwest Ports Clean Air Strategy.
- August 28, 2007 – the Commission adopted Resolution No. 3585, endorsing the U.S. Proposal to the International Maritime Organization seeking more stringent air emissions standards for ocean going vessels.
- April 10, 2007 – the Commission was briefed on the Puget Sound Maritime Air Emissions Inventory Project.
- March 27, 2007 – the Commission authorized the amendment of the existing contract for the Air Emission Inventory in the amount of \$25,000, and to receive and spend supplemental funding for the Puget Sound Maritime Air Emissions Inventory Project.
- February 16, 2007 – the Commission passed a series of environmental motions that required, in part, that staff present an air quality action plan for Commission approval.
- April 26, 2005 – the Commission authorized joint development of the Puget Sound Maritime Air Emissions Inventory and \$500,000 for support and implementation of the project.

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- February 9, 2005 – the Commission adopted Resolution No. 3534, expressing its commitment to Maritime Air Quality.