

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
STAFF BRIEFING

Item No.	<u>7a</u>
Date of Meeting	<u>June 25, 2013</u>

DATE: June 17, 2013
TO: Tay Yoshitani, Chief Executive Officer
FROM: Stephanie Jones Stebbins, Director Seaport Environmental and Planning
Janice Gedlund, Seaport Air Quality Program Manager
SUBJECT: Draft Northwest Ports Clean Air Strategy Update

SYNOPSIS:

Port staff will provide an overview of the proposed update to the Northwest Ports Clean Air Strategy that is currently undergoing public review. The strategy, a voluntary, collaborative effort between the Ports of Seattle, Tacoma, and Metro Vancouver (B.C.) was originally adopted in 2008 and is currently being updated to incorporate what was learned from the 2011 emissions inventory, which showed considerable across-the-board reductions in pollutants since the base year of 2005.

This 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. Staff will also describe how this relates to the January 4, 2011, Commission motion to accelerate the Clean Air Program. Since 2008, the Port has invested \$5,216,250 to reduce emissions from Port-related maritime operations.

BACKGROUND:

Proposed 2013 update to the Northwest Ports Clean Air Strategy

The Port of Seattle, Port of Tacoma, and Port Metro Vancouver are continuing their collaborative efforts on the strategy. On June 11, 2013, a draft 2013 strategy update was released for public comment. Public comments will be accepted until July 26, 2013, and the Port will host two public meetings on June 26 and June 27. The basic objectives of the strategy have not changed. It creates a harmonized approach to improving air quality and reducing port-related emissions in the shared airshed to reduce 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 informs the strategy update and its key elements, including:

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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.

The Port of Seattle is hosting two open houses/public comment meetings on the draft strategy update. One meeting will be held at Pier 69 at 1:00 p.m. on June 26 and the other at the Youngstown Cultural Arts Center in the Delridge Neighborhood at 6:00 p.m. on June 27. Additionally, Port staff will give briefings on the strategy update at a number of community council and neighborhood association meetings during June and July. Following the public review period, the strategy partners will assess comments and revise the strategy as needed. This process may take several months, after which we will bring the final back to the Commission for review and adoption.

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 DPM emissions per ton of cargo by 75% by 2015 and 80% by 2020.
- Reduce 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 strategy 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.

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

2. Pilot Projects

The strategy 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 strategy 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

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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 strategy 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	✓	✓
Ports and vessels participate in port-designed or third-party certification programs that promote continuous improvement (such as Environmental Ship Index, Green Marine, Clean Cargo Working Group, or others)	All ports and 10% of vessel calls	All ports and 40% of vessel calls	✓	✓

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.

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

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 strategy 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.

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Cargo-Handling Equipment

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

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 strategy 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.

Locomotives

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
Switching locomotive owners participate in an efficiency program	100% of owners institute a program	100% of owners achieve performance objectives of chosen program	✓	✓
Switching locomotive owners upgrade or replace unregulated engines (engine replacements will be Tier 2 or better)	10% of unregulated switching locomotives	20% of unregulated locomotive engines	✓	✓

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

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assisted Puget Sound Clean Air Agency in obtaining grant funds to upgrade switching engines owned by Louis Dreyfus. The strategy 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
Ports own and operate cleaner vehicles and equipment and have fuel-use reduction plans in place that promote continuous improvement	Ports report use of cleaner vehicles and equipment and other relevant information	Ports increase use of cleaner vehicles and equipment	✓	✓
Ports apply clean construction standards to engines used on port-led construction projects (such as AAPA, EPA Best Practices for Clean Diesel Construction, or equivalent best management practices)	Institute clean construction best practices for port-led projects, including idle-reduction and Tier 2 engine emission requirements	Institute clean construction best practices for port-led projects, including idle reduction and Tier 4 engine emissions requirements	✓	✓
Ports facilitate energy studies and conservation projects at port-operated and/or tenant facilities to identify and address energy conservation opportunities in building systems, processes, and yard lighting	Each port conducts 3 energy studies	Each port completes 3 energy conservation projects	✓	✓

This sector covers sources that are operated or governed directly by the ports such as port-owned vehicles and vessels, office buildings, support facilities, and employee functions. The strategy update focuses on several specific categories of port administration: increasing use of cleaner vehicles and equipment; applying clean

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construction standards to engines used on port-led construction projects; 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.

Trucks

Actions	2015 Targets	2020 Targets	Reduces	
			DPM	GHG
Trucks meet or surpass EPA emission standards for model year 2007	80% of trucks	100% of trucks (<i>by 2017</i>)	✓	
Ports, terminals, and trucks have fuel-use reduction plans in place that promote continuous improvement	All ports participate	Ports, terminals, and 50% of trucks participate	✓	✓

Follow-up to January 4, 2011, Commission Motion to Accelerate Clean Air Goals

On January 4, 2011, the Port Commission adopted a “Motion to Accelerate Seaport Clean Air Goals to 2015,” directing staff to present options for accelerating the Clean Air Strategy implementation. The motion also directed staff to provide an interim briefing in mid-2011, draft recommendations at the end of 2011, and present final recommendations in mid-2012. Staff briefed the Commission in July 2011, February 2012 and December 2012 on various aspects of strategy implementation and approaches to possible acceleration of the goals.

On December 4, 2012, the Commissioners indicated that, given staff’s evaluation of the alternatives, they did not feel compelled to accelerate the clean truck program. However, the Commission did direct staff to continue discussions with our strategy partners and with the trucking community.

Regarding the 2015 target, the strategy partners have recommended no change to the existing 2015 interim target for 80% of trucks calling at terminals to meet EPA emission standards for 2007 model year engines or equivalent, with 100% of trucks meeting those standards by 2017. Accordingly, the 2015 goal will be an interim target and trucks with pre-2007 engines will not be turned away at terminal gates until after the 2017 deadline (December 31, 2017.)

Per the Commission’s request, Port staff conducted additional outreach with the trucking community. A Driver Advisory Group was formed, consisting of 15 drivers representing a wide range of dray types, which met twice in February 2013. Members were asked to identify their preferred option for implementing the 2007 engine requirement and the

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consensus was to recommend that the new mandate for 2007 engines take effect in 2017. The Drivers Advisory Group gave the following reasons for its recommendation:

- 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 cost 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 and represent a small percentage (7%) of the Port's total DPM emissions.

Additionally, the difference in air emissions between an accelerated target and a soft target in 2015 is relatively small and short-lived, as 100% of trucks will be required to be upgraded by 2017 in any event. During the same time period, the North American ECA 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.

Additional Background: Development of the 2008 Northwest Ports Clean Air Strategy

The Puget Sound Clean Air Agency's first Air Toxics Evaluation (2003) showed that 78% of the public health risk from air pollution in Puget Sound comes from diesel. Following that finding, the Port voluntarily initiated and managed the first effort to quantify sources of maritime air emission in the Puget Sound region. The result was the 2005 Puget Sound Maritime Air Emissions Inventory (2005 emissions inventory) which was developed by a forum of regulatory agencies, ports, industry, and non-governmental organizations. The 2005 emissions inventory, published in 2007, was a comprehensive baseline of all maritime-related emission sources (ocean-going vessels, cargo-handling equipment, trucks, rail and harbor vessels) in the greater Puget Sound region.

In response to these findings, the Port, along with the Port of Tacoma and Port of Metro Vancouver, B.C., developed the Northwest Ports Clean Air Strategy (strategy.) The strategy is a voluntary and collaborative effort between these three ports to reduce maritime and port-related emissions that affect air quality and climate change in the Pacific Northwest. Developed in close collaboration with the Puget Sound Clean Air Agency, Washington Department of Ecology, U.S. Environmental Protection Agency, and Environment Canada with input from stakeholders, customers, and citizens, the strategy was focused on achieving emission reductions to further improve air quality throughout the region. The Port Commission adopted the strategy on January 22, 2008.

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The 2008 strategy has three primary emissions reduction objectives:

- Reduce maritime and port-related air quality impacts on human health, the environment and the economy.
- Reduce contribution to climate change through co-benefits associated with reducing air quality impacts.
- Help the Georgia Basin-Puget Sound region continue to meet air quality standards and objectives.

The strategy built on the significant efforts that the Ports of Seattle, Tacoma and Metro Vancouver have invested in emission reductions, and established common short-term (2010) and long-term (2015) performance measures for further reducing emissions from cargo-handling equipment, rail, harbor vessels, ocean-going vessels, and trucks.

Actions taken since adoption of the 2008 strategy

Since its adoption in 2008, the strategy partners have released annual reports documenting progress in implementing the strategy. A 2011 Implementation Report was published in July 2011, and the 2012 Implementation Report will be released in June 2013.

The Port has made \$5,216,250 in investments to reduce emissions from port-related maritime operations. This includes approximately \$1,924,000 for the Clean Truck Program, \$332,000 for cargo-handling equipment upgrades, and \$2,960,000 for ABC Fuels. This does not include expenditures on the air emissions inventory or the staff and consultant time to support the clean air program.

In 2011-2012, the Port worked with its partners of the Puget Sound Maritime Air Forum to conduct a second inventory of all maritime-related air emission sources in the greater Puget Sound region. The second inventory, which was published on October 30, 2012, reports on calendar year 2011 criteria pollutant and greenhouse gas emissions from ocean-going vessels, harbor craft, cargo-handling equipment, trucks, and locomotives. The recent inventories show considerable progress in reducing emissions since the previous 2005 inventories. Puget Sound-wide, maritime emissions of diesel particulate matter fell from 7 percent to 52 percent, depending on sector, from 2005 to 2011. (For the Port, diesel particulate matter emission reduced by 14% to 39%, depending on sector, over the same period. Greenhouse gas emissions also declined by 5% at the Port.) This was a result of mandatory engine and fuel standards but also significant, voluntary investments of the maritime industry and government agencies in cleaner technology, cleaner fuels and more efficient systems of operation that were targeted in the strategy.

OTHER DOCUMENTS ASSOCIATED WITH THIS BRIEFING:

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

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PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

- February 9, 2005 – the Commission adopted Resolution No. 3534, expressing its commitment to Maritime Air Quality.
- 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.
- 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.
- 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.
- April 10, 2007 – the Commission was briefed on the Puget Sound Maritime Air Emissions Inventory Project.
- 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.
- December 6, 2007 – the Commission was briefed on the revised draft of the Northwest Ports Clean Air Strategy.
- January 22, 2008 – the Commission adopted the Northwest Ports Clean Air Strategy.
- April 1, 2008 – the Commission and the public were briefed on the Northwest Ports Clean Air Strategy implementation.
- July 8, 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.
- November 11, 2008 – the Commission was briefed on the Port's Clean Truck 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.
- February 10, 2009 – the Commission held a policy roundtable discussion of the Clean Air Program.
- March 31, 2009 – the Commission was briefed on the customer support package and the Clean Air Program.

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- 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.
- 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.
- June 23, 2009 – the Commission received a briefing on the Northwest Ports Clean Air Strategy 2008 Implementation Report.
- 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.
- August 25, 2009 – the Commission received a Clean Air Update.
- January 12, 2010 – the Commission was briefed on the Seaport’s Air Quality Program.
- 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.
- 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.
- December 7, 2010 – the Commission was briefed on the Northwest Ports Clean Air Strategy Implementation Status.
- January 4, 2011 – the Commission adopted the “Motion to Accelerate Seaport Clean Air Goals to 2015.”
- 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.
- 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.

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- 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.
- 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.
- 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.