

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
STAFF BRIEFING

Item No. 7b

Date of Meeting December 4, 2012

DATE: November 28, 2012
TO: Tay Yoshitani, Chief Executive Officer
FROM: Stephanie Jones Stebbins, Director Seaport Environmental and Planning
Janice Gedlund, Seaport Air Quality Program Manager
SUBJECT: Accelerating Seaport Clean Truck Program Goals

SYNOPSIS:

In response to the Port of Seattle's Commission's January 4, 2011, motion to "Accelerate Seaport Clean Air Goal to 2015," Port staff will provide an overview of implementation options that were identified and evaluated. The current goal of the Northwest Ports Clean Air Strategy (NWPCAS) calls for an interim goal in 2015 to have 80% of drayage trucks meet the equivalent emissions of a 2007 or newer model year heavy-duty engine, and to have 100% of trucks meet this target in 2017. Port staff looked at five possible ways to implement the NWPCAS goal and/or to accelerate the 2017 goal. These range from "no change to truck goals with soft start in 2015" to "accelerating the long-term truck goal to 2015." For each goal, Port staff estimated associated air emissions and identified legal, operational, and financial considerations, as well as potential impacts on the trucking industry.

BACKGROUND:

On January 22, 2008, the Commission adopted the NWPCAS, a voluntary and collaborative effort of the ports of Seattle, Tacoma, and Vancouver, B.C., to reduce maritime and Port-related emissions that affect air quality and climate change. The strategy established short-term (2010) and long-term (2015) performance measures to reduce emissions from cargo-handling equipment, rail, harbor vessels, ocean-going vessels, and trucks. The strategy followed closely on the heels of the completion of the first Puget Sound Maritime Air Emissions Inventory, released in early 2007. That inventory showed the emissions from all maritime sources in Puget Sound, as well as emissions associated with different sectors of maritime operations. Since that time, the Port has made \$5,216,250 in investments to reduce emissions from Port-related maritime operations. About \$1,700,000 of this total was used for the Clean Truck Program. These funds have been administered by Puget Sound Clean Air Agency and have resulted in removing 280 of the oldest (pre-1994) drayage trucks off the road and emission reduction retrofits on many pieces of cargo handling equipment. These funds also resulted in emissions reduction of over 631 metric tons of sulfur from use of cleaner fuel in 1,023 vessel calls through the end of 2011. This does not include expenditures on the air emissions inventory or the staff and consultant time to support our clean air program.

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Currently, the 2010 and 2015 NWPCAS goals for heavy-duty trucks are as follows:

- 2010: 100% of heavy-duty drayage trucks reach the equivalent particulate matter emissions level of 1994 model year truck engine or newer. This goal was accomplished.
- 2015: 80% of heavy-duty drayage trucks reach the equivalent particulate matter emissions level of 2007 model year engine or newer through vehicle purchase or approved retrofit packages. This is an interim objective on the way to the goal of 100% of heavy-duty drayage trucks meeting this target by 2017.
- 2017: 100% of heavy-duty drayage trucks reach the equivalent particulate matter emissions level of 2007 model year engine or newer through vehicle purchase or approved retrofit packages.

Model years were selected based on U.S. Environmental Protection Agency (U.S. EPA) heavy-duty diesel engine regulations. 1994 was the first year the particulate matter emission standard was lowered; 2007 was the next. A model year 1994 truck is 2.5 to 6 times cleaner than a pre-1994 truck, while a model year 2007 truck is up to 60 times cleaner than a pre-1994 truck.

On January 3, 2011, the Port successfully launched the mandatory Clean Truck Program (CTP), which requires all drayage trucks entering the container terminals to have model year 1994 or newer engines, as stated in the strategy, thus meeting the 2010 performance measure. As currently stated in the NWPCAS, in 2015, the requirement will change to 80% of trucks meeting model year 2007 particulate emission standards or better, with 100% of trucks required to meet the standard in 2017.

In order to ensure drayage truck compliance with this mandatory program, the Port developed and implemented a Drayage Truck Registry (DTR) that requires all drivers to register their truck online. The DTR uses an automatic vehicle identification number (VIN) lookup system to determine the age of a truck engine. Once the drayage truck is determined to be compliant, a sticker is issued that includes the truck license plate number, a barcode, and the unique DTR number. This sticker must be displayed on the driver's side door for access to container terminals. The Port negotiated amendments to the leases with the marine terminal operators to include implementation of the mandatory CTP as a lease requirement.

To date, there are over 14,000 trucks registered in the DTR. Because the registration system was free and simple and is required for even single calls at Port of Seattle terminals, many trucks that are infrequent callers have registered. For instance, about 44% of the trucks registered are from out of state. Therefore, the Port's core drayage fleet is much smaller than the total number of trucks registered. When radio frequency identification (RFID) for Port drayage trucks is implemented at all of Port terminals in February 2013, staff will know more precisely the size of our core Port drayage fleet.

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A significant component of the development and launch of the CTP was the extensive outreach effort aimed at ensuring that all drayage truck drivers and companies were informed of the program requirements and helping to register compliant trucks. In 2009-2010, the Port engaged in significant education and outreach efforts including over 120 meetings with the various stakeholders (truckers, community and environmental groups, rail, marine terminal operators, shipping lines, shippers, community groups, labor, regulatory agencies, and elected officials).

The Port partnered with the PSCAA to concentrate on maritime air emission reduction programs. PSCAA, as part of its programs, contracted with Cascade Sierra Solutions to implement the ‘Scrappage and Retrofits for Air in Puget Sound’ (ScRAPS) Program, a buy-back, scrap, and replacement program for pre-1994 model year engine trucks. ScRAPS provided a \$5,000 (or blue-book value, whichever was greater) incentive to scrap pre-1994 model year trucks that perform drayage at the Port of Seattle. Launched on November 18, 2009, and concluded on January 31, 2011, ScRAPS successfully removed 280 pre-1994 model year drayage trucks (27 in 2009; 253 in 2010). Through this program and other fleet turnover, all pre-1994 trucks have been eliminated from our drayage fleet.

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; specifically, the goals for the truck sector. (Attachment A.) The Port Commission’s January 4, 2011, motion adopted a modification to the NWPCAS and stipulated that we aspire to achieve our clean air goals by 2015. The Commission directed the Chief Executive Officer (CEO) to present several options for accelerating the clean air goals articulated in the NWPCAS, aimed at achieving the currently stated clean air goals no later than 2015. Port staff provided an interim briefing in public session on July 12, 2011, which covered opportunities and challenges associated with an accelerated clean air strategy; emerging technologies that affect affordability; and related issues, per Item 1 of the motion. Port staff presented draft recommendations and associated financial costs to the Commission in public session on February 7, 2012, in accordance with Item 3 of the motion. Also per Item 3, Port staff conducted the 2011 air emissions inventory update, and presented draft recommendations to the Commission in public session on February 7, 2012. This briefing responds to the Commission direction for recommendations, incorporating the final results of the 2011 air emissions inventory; and including information on trade competitiveness, associated schedules, and financial costs.

2011 Northwest Ports Clean Air Strategy Implementation Strategy findings

The Port of Seattle’s success in reaching NWPCAS goals for the drayage truck sector in calendar year 2011 are as follows:

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- As in 2010, 100% of trucks met the equivalent particulate matter emissions level of a 1994 or newer model year heavy duty engine. (This represents 100% achievement of the 2010 performance measure.)
- An estimated 10% of trucks met the 2015 performance measure to have equivalent particulate matter emissions level of a 2007 or newer model year heavy duty engine. (This estimate was based on limited 2011 truck call data on model year 2007 or newer trucks.)

2011 Puget Sound Maritime Air Emissions Inventory findings

A separate briefing memo for the December 4, 2012, Commission meeting provides details on the results of the recently-released 2011 Puget Sound Maritime Air Emissions Inventory. The applicable Century Agenda goal is to reduce air pollutant emissions by 50% from 2005 levels over the next 25 years. Inventory findings relevant to the drayage truck sector are as follows:

- Airshed-wide diesel particulate matter (DPM) from drayage trucks calling at the Port of Seattle decreased 53% from 2005 levels. In 2011, total Port of Seattle DPM from trucks was 25 tons.
- Of the Port of Seattle's 2011 maritime air emissions, the drayage truck sector contributed 7% of the diesel particulate matter emissions.

Status of U.S. EPA Air Quality Standards

There have been no changes in U.S. EPA air quality standards related to emissions of diesel particulates or other harmful air emissions from heavy-duty trucks. However, on August 1, 2012, the North American Emission Control Area (ECA) went into effect, which restricts sulfur content of fuel used by ocean-going vessels traveling within 200 nautical miles of shore.

OPTIONS EVALUATION:

Port staff identified a range of approaches to implement Phase 2 of the CTP, i.e., having 100% of drayage trucks meet 2007 emission standards. These options cover various "how and when" scenarios ranging from a no action alternative, ways to arrive at 80% of the truck fleet being upgraded in 2015 (which is the interim goal for 2015 in the NWPCAS), to accelerating the goal to 100% implementation in 2015 or 2016. Even if accelerated goals were not under consideration, it would be necessary to evaluate optional ways to achieve the current NWPCAS interim 2015 goal to have 80% of the truck fleet upgraded to 2007 engines. When this goal was developed, it was considered an interim goal on the way to 100% achievement, and there was no definition of how to implement such a target.

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Trucking Industry Outreach:

An outreach effort was undertaken to identify and evaluate these options. In September 2012, the Port formed a Clean Truck Advisory Group (CTAG) composed of supply chain stakeholders including drayage trucking companies, importers, exporters, railroads, and container terminal operators. The CTAG held two meetings, one in September and one in November, attended by a dozen supply chain stakeholders. Additionally, a Port Trucker Meeting aimed at independent owners/operators, was held on November 28, 2012.

Key messages from the trucking industry include the need to have plenty of advance notice of targets, e.g., 3 years or more, to allow for ample time to comply. The recession, as well as the move of the Grand Alliance to the Port of Tacoma, has reduced salaries, availability of work, and cut into profits. This has affected trucking companies and independent truck owners as well as shipping companies and shippers. Some trucks are still under loan from the first phase of the CTP.

The cost of a used 2008 truck (typically, a 2008 truck will have a 2007-compliant engine) is of concern. Currently, a truck of this age is selling for \$45,000 - \$60,000. Although the market value is expected to decrease in the 2013-2016 timeframe, it will still be relatively more costly to buy a truck with a 2007 or newer engine than the post-1994 models that were required to meet the 2010 goal.

There is a high level of interest in another ScRAPs program. The need for other types of information and referral services to help truck owners' access loans and leasing options, business development planning assistance, and job retraining was also stressed. Another issue raised by the industry is that they would prefer that the Port's program be consistent with the Port of Tacoma's Clean Truck program, since a number of trucks work at both ports.

Competitiveness Considerations:

It is our understanding that the Port of Tacoma (POT) does not intend to accelerate the NPWCAS truck goals for 2015/2017, creating the potential for cost differentials for drays from each port, and putting the Port at a competitive disadvantage. There is variable enforcement of the POT Clean Truck Program at its terminals, which is already creating a competitive differential between the POS and the POT.

Financial Considerations:

The core fleet of frequent callers is between 1,000 and 2,500 trucks. Port funding options to assist with upgrading these trucks are as follows:

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- **No Port funding.** This would require private investment. It would allow the Port to invest in other emission reduction programs. However, lack of funding assistance to drayage truck owners will likely cause delays in implementation.
- **ScRAPS 2.0.** The Port is a finalist for a \$3.5 million federal Congestion Mitigation Air Quality (CMAQ) grant in 2013-2014 that would provide 86.5% of the funding needed to implement a scrappage and replacement program for pre-2007 model year engine trucks. The Port would be required to provide 13.5% matching funds. If a financial incentive of \$20,000 per truck was offered, a ScRAPS program of this size could replace about 175 trucks. This level is on par with incentives offered by other clean truck programs around the country that are designed to cover 1/3 to 1/2 of the cost of a used truck with a model year 2007 engine. Alternatively, if the incentive level was set at \$10,000 per truck, about 350 trucks could be replaced under a scrappage and replacement program.
- **Evaluating alternative technologies and implementing pilot projects.** Port staff, working with the PSCAA, continues to look for retrofits and technology/fuel options that are equivalent to a 2007-compliant diesel engine. Some solutions, such as alternative fuels, have the potential to reduce operational costs to drivers, as well as reduce emissions. No obvious low-cost option has yet been identified; however, we continue pursuing options. We anticipate that the PSCAA will issue an RFP/RFQ to pursue alternative technology and start a pilot project within the next few months, with results expected in the fourth quarter of 2013. Conducting pilot/demonstration projects of new truck technologies in actual Port of Seattle drayage applications could assist with the deployment of new, lower-cost options. However, even a successful pilot may not address the needs of the entire core fleet.

Options Identified:

With input from stakeholders, staff developed the following options to implement and/or accelerate the CTP goals, taking into account legal, operational, and funding considerations as well as trucking industry impacts. These options are listed below in order of increasing stringency. They are also summarized on Attachment B.

- **Option A: Voluntary soft target in 2015 (no action).** This option is premised on the 2015 interim goal of 80% compliance with model year 2007 engines. Drayage trucks with pre-2007 engines would not be turned away at terminal gates until 2017.
 - **Air quality considerations:** Would result in approximately 60% reduction in particulate matter emissions in 2016, compared to 2005 baseline; and 98% reduction in emissions in 2018 compared to 2005 baseline.ⁱ
 - **Legal considerations:** Current lease agreements with marine terminal operators would not require amendment.
 - **Operational considerations:** Administratively simple.

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- Industry impacts: Allows more time for trucking industry to upgrade.
 - Financial considerations: A ScRAPs incentive, as well as other information and referral services, could be employed to encourage truck owners to meet the goal.
- **Option B: Require all drayage trucks to meet 2007 emission standards in 2015 with 2-year exceptions based on financial need.** This option would require drayage truck owners to request a 2-year grace period to upgrade to 2007 or newer engines, based on demonstration of financial need. This would be designed to achieve 80% compliance with the 2007 engine requirement in 2015. It would likely delay replacement of the oldest trucks in the fleet. One criterion to establish need could be whether the current truck was purchased and still being paid for, in order to meet the 2010 goal (e.g. they participated in the Seattle or Tacoma ScRAPs program.) All exceptions would expire by the end of 2017, requiring all trucks to meet the 2007 model year emissions standards.
 - Air quality considerations: Would result in approximately 80% reduction in particulate matter emissions in 2016, compared to 2005 baseline; and 98% reduction in emissions in 2018 compared to 2005 baseline.ⁱ
 - Legal considerations: Current lease agreements with marine terminal operators would require amendment.
 - Operational considerations: Administratively complex; could be difficult to ensure equity in granting exceptions. Would require changes to Drayage Truck Registry and RFID signals for older trucks.
 - Trucking industry impacts: Allows more time for truck owners with financial need to finance truck replacements.
 - Financial considerations: A ScRAPs incentive, as well as other information and referral services could be employed to encourage truck owners to meet the goal.
- **Option C: Require all drayage trucks to meet 2007 emission standards in 2015 with 2-year exceptions based on model year of truck. Drayage trucks with MY 2003 engines or newer would get a 2-year grace period to upgrade to 2007 or newer engines.** This option would delay replacement of newer, cleaner drayage trucks and require older trucks to upgrade sooner.
 - Air quality considerations: Would result in approximately 90% reduction in particulate matter emissions in 2016, compared to 2005 baseline; and 98% reduction in emissions in 2018 compared to 2005 baseline.ⁱ
 - Legal considerations: Current lease agreements with marine terminal operators would require amendment.
 - Operational considerations: Administratively simple compared to Option B. Would require changes to Drayage Truck Registry and RFID signals for older trucks.

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- Trucking industry impacts: Introduces a new model year engine cut-off with relatively short notice. Doesn't help those with older trucks.
 - Financial considerations: Allows more time for trucking industry to finance truck replacements. A ScRAPs incentive, as well as other information and referral services could be employed to encourage truck owners to meet the goal.
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- **Option D: Accelerate goal to require 100% of drayage trucks to meet 2007 emission standards by end of 2016.**

This option includes eliminating the interim 80% goal in 2015, and accelerates the due date for 100% compliance by 1 year, rather than 2 years as previously proposed by the Commission.

 - Air quality considerations: Would result in approximately 80-90% reduction in particulate matter emissions in 2016, compared to 2005 baseline; and 98% reduction in emissions in 2017 compared to 2005 baseline.¹
 - Legal considerations: Current lease agreements with marine terminal operators would require amendment.
 - Operational considerations: Administratively simple.
 - Trucking industry impacts: Shortens perceived deadline to upgrade trucks by one year; allows less time for trucking industry to finance truck replacements. May be difficult for owners to upgrade within less than three years.
 - Competitiveness considerations: More stringent than POT approach; may create competitive differential.
 - Financial considerations: Condenses timeline for Port to execute financial incentives such as ScRAPs.
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- **Option E: Accelerate goal to require 100% of drayage trucks to meet 2007 emission standards by end of 2015.**
 - Air quality considerations: Would result in approximately 98% reduction in particulate matter emissions in 2016, compared to 2005 baseline; and 98% reduction in emissions in 2018 compared to 2005 baseline.¹
 - Legal considerations: Current lease agreements with marine terminal operators would require amendment.
 - Operational considerations: Administratively simple.
 - Trucking industry impacts: Shortens perceived deadline to upgrade trucks by two years; allows less time for trucking industry to finance truck replacements.
 - Competitiveness considerations: More stringent than POT approach; may create competitive differential.
 - Financial considerations: Condenses timeline for Port to execute financial incentives such as ScRAPs.

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Other Considerations:

Balancing economic, environmental, and social responsibilities in determining the pace and manner in which the Clean Truck Program advances is a very complex matter. In addition to drayage truck interests, there is a high level of community interest in reducing pollution from trucks.

The difference in air emissions between the options is relatively small, and would occur over a relatively short (two-year) time period. By the year 2018 all options would result in the same dramatic emission reductions of approximately 98% from the 2005 baseline. Whether or not the goal is accelerated, it will be consistent with the Century Agenda goal to reduce air pollutant emissions by 50% from 2005 levels.

Additionally, for Port-related maritime air emissions, trucks account for 7% of particulate matter emissions and ocean-going vessels account for 78%. Over the 2015- 2017 timeframe under discussion for trucks, the North American Emission Control Area (ECA) regulations will reduce particulate emissions from ocean-going vessels by approximately 74%ⁱⁱ.

OTHER DOCUMENTS ASSOCIATED WITH THIS BRIEFING:

- Attachment 1 (Port of Seattle Commission Motion)
- Attachment 2 (identifying options)
- PowerPoint presentation

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.

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- 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 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 Programs for drayage operations at West Coast Seaports.
- November 11, 2008 - the Commission was briefed on the Port's Clean Truck Program.
- December 2, 2008 - Commission authorized a transfer of \$500,000 to the Puget Sound Clean Air Agency for maritime emission reductions. This funding was ultimately used by the 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.
- February 24, 2009 - the Commission was briefed on the Port's first emission reduction credits banked with the Puget Sound Clean Air Agency.
- March 31, 2009 - the Commission was briefed on the customer support package and the Clean Air Program.
- 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 & \$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 Terminal 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 funds to support maritime emissions reductions by \$541,500, for a total 2010 annual

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- 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 funds for support of maritime emission reductions by \$110,250, for a total 2010 annual program budget of \$951,750.
 - December 7, 2010 - the Commission was briefed on the Northwest Ports Clean Air Strategy Implementation Status.
 - January 4, 2011 - the Commission adopted a motion to “Accelerate Seaport Clean Air Goals to 2015.”
 - February 1, 2011 - the Commission authorized signing of 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 would increase 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.
 - February 7, 2012 – the Commission was briefed on the status of implementing the Northwest Ports Clean Air Strategy and Accelerating Seaport Clean Air Goals.
 - May 1, 2012 – the Commission authorized signing of Amendment 5 to Agreement 20090046 with the Puget Sound Clean Air Agency to transfer \$1,050,000 in funds to support 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.

ⁱ These are preliminary estimates based on EPA’s DrayFLEET tool. These estimates do not reflect projected growth in cargo movement or complex air modeling inputs. However, they provide a sense of scale in reviewing options. For reference, the 2011 Puget Sound Maritime Air Emissions Inventory calculated that diesel particulate matter from Port of Seattle truck activity in 2004 was 54 tons, and in 2011 was 25 tons (a 53% reduction from the 2005 baseline).

ⁱⁱ Washington State Department of Ecology, “North American Emission Control Area Low-Sulfur Fuel Requirements” fact sheet, August 16, 2012.