



Item No. 7a Report

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SEAPORT AIR QUALITY PROGRAM UPDATE

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Contents

2005 Puget Sound Maritime Air Emissions Inventory	2
Project Management	2
Geographic Boundary	2
Air Pollutants	2
Source Categories	3
Results	3
Proposed 2011 Emissions Inventory Update	5
Northwest Ports Clean Air Strategy Implementation Status	5
Ocean-Going Vessels	5
Cargo-Handling Equipment	6
Cleaner Fuels	6
Retrofits/Replacements	6
Trucks	6
2008 Drayage Truck Fleet Age Analysis	7
PSCAA Buy-Back and Scrap Program	7
Cascade Sierra Solutions	8
Other Retrofit/Replacement Options	8
Office of Social Responsibility Small Business Initiative	8
Truck Parking	8
Rail	9
Harbor Vessels	9
Administration	9
Customer Support Package Lease Amendments	10
Proposed Changes to the Federal Aviation Act Administration Authorization of 1994 ..	10
Port of Oakland National Goods Movement Policy Resolution	11
Community Coalition for Environmental Justice/Change to Win	11
Other Port Clean Truck Program Updates	12
Ports of Los Angeles and Long Beach	12
Port of Oakland	12
Port Authority of New York/New Jersey	13
Port of Tacoma	13
Port Metro Vancouver	14

2005 Puget Sound Maritime Air Emissions Inventory

The Port of Seattle initiated and led a regional effort to locate and quantify all maritime-related emission sources in the greater Puget Sound region. Published in April 2007, the Puget Sound Maritime Air Emissions Inventory (EI) is a 2005 activity-based inventory conducted by Starcrest Consulting in partnership with 13 funding partners that comprised the project Steering Committee.

Project Management

The EI project was managed by the Port of Seattle and guided by a Steering Committee comprised of project funding partners: American Lung Association of Washington, Burlington Northern Santa Fe Railway, Northwest Clean Air Agency, North West CruiseShip Association, Olympic Region Clean Air Agency, Pacific Merchant Shipping Association, Port of Everett, Port of Tacoma, Port of Seattle, Puget Sound Clean Air Agency, U.S. Environmental Protection Agency, Washington State Ferries, Washington Department of Ecology, and Western States Petroleum Association. Total cost of this project was \$1 million (\$500,000 in partner funding and \$500,000 in in-kind partner resources).

Geographic Boundary

The geographic boundary of the EI is the U.S. portion of the Puget Sound/Georgia Basin International Airshed. This area spans approximately 140 miles south from the U.S./Canada border, and 160 east from the entrance of the Strait of Juan de Fuca. Because of the importance of maritime trade to the Puget Sound region, the Steering Committee opted for this extensive study area so that all maritime-related emissions, not just those associated with ports, would be captured.

Air Pollutants

Pollutants in the inventory include U.S. Environmental Protection Agency criteria pollutants and precursors: carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxides (SO_x), volatile organic compounds (VOCs), and particulate matter (PM). The inventory also included emissions of diesel particulate matter (DPM), and greenhouse gases: carbon dioxide (CO₂), methane (CH₄), and nitrous oxides (N₂O).



Source Categories

The EI collected activity-based information for the following source categories: ocean-going vessels, cargo-handling equipment, rail, trucks, harbor vessels, and fleet vehicles; emission from ocean-going vessels, rail, and trucks were further broken out based on activity type.

Ocean-Going Vessels:

- Hotelling: Vessel is at berth or anchor.
- Maneuvering: Slow speed vessel operations while in port.
- Transiting: Vessel is traveling within the study area.

Rail:

- Off-Terminal: Maritime-related rail activity occurring away from the marine terminals but within the study area.
- On-Terminal: Rail activity occurring on or nearby a marine terminal.

Trucks:

- Off-Terminal: Port-related truck activities (i.e., drayage) occurring near marine terminals and within the boundary of the study area.
- On-Terminal: Truck activities occurring at or on marine or rail terminals, including idling at terminal gates, and idling and traveling within terminals.

Results

Results were reported in tons of emissions per year per source category and aggregated in a number of ways. It is important to note that not all emissions were assigned to a particular port or facility. Only those emissions that occurred within the port or facility physical boundaries were included. In the case of ocean-going vessels, this area encompassed the immediate harbor area only and did not assign transiting emissions to ports or facilities.

- Total emissions by pollutant and by source category for the entire study area.
- Total maritime-related emissions by pollutant and by source category for each county within the study area.
- Total emissions by pollutant and by source category, compared with total pollutant emissions, for regulatory agency jurisdictional areas.
- Total emissions by pollutant and by source category for ports and petroleum refineries within the study area.

Figure 2.60: Port of Seattle 2005 Maritime DPM Emissions by Source Category, tpy

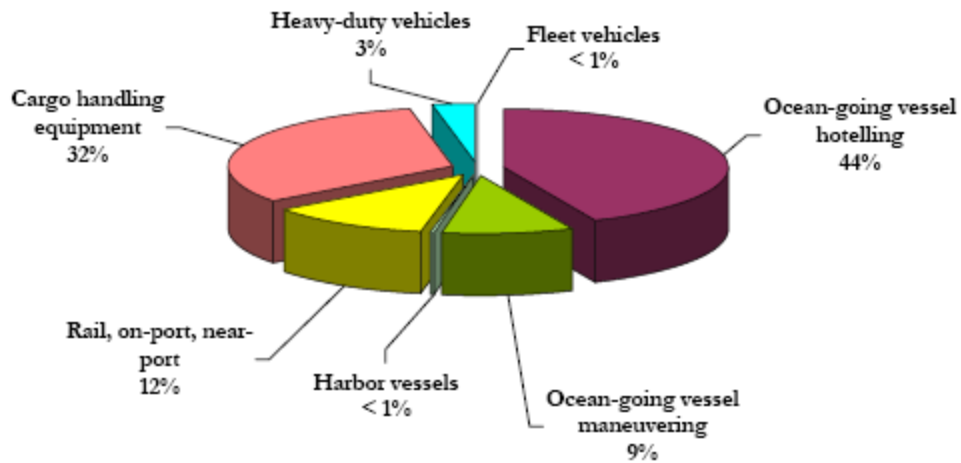
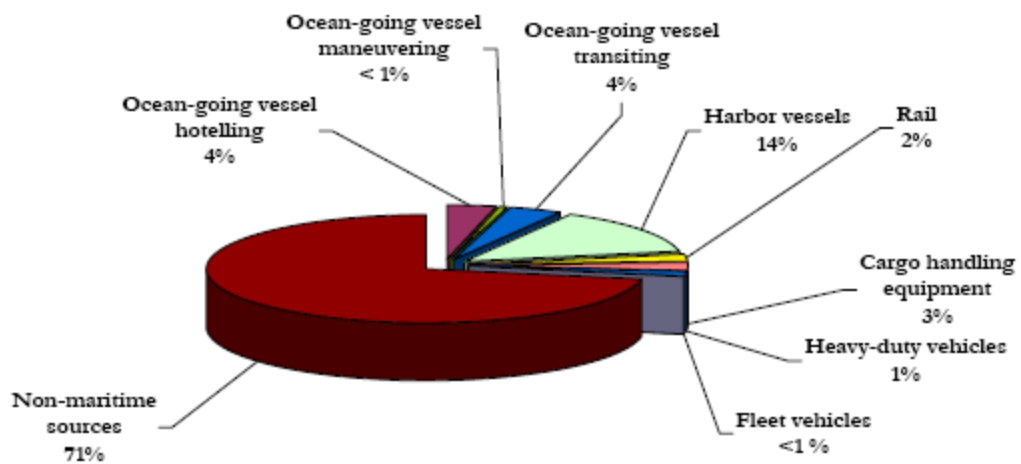


Figure 2.51: Comparison of 2005 Maritime and Non-Maritime DPM Emissions for the Puget Sound Clean Air Agency Region, tpy



Proposed 2011 Emissions Inventory Update

Staff is considering updating the 2005 Puget Sound Maritime Air Emissions Inventory for the year 2011, as this will be the first year that our short-term (2010) goals under the Northwest Ports Clean Air Strategy will be fully implemented. This update will be dependent on staff and financial resources of the Port, as well as our partners. The 2005 inventory was in development for 2 ½ years and cost \$1 million (\$500,000 in consulting costs, \$500,000 in in-kind staff resources), about half of which came directly from the Port of Seattle. Staff anticipates that this update will take a minimum of 1 ½ years to complete, as the update will be conducted for the entire calendar year of 2011, with approximately 3 months for front-end project management and minimum of 3 months for data analysis, quality assurance, and report writing and review.

Northwest Ports Clean Air Strategy Implementation Status

The Northwest Ports Clean Air Strategy is a cornerstone of the Port of Seattle Seaport Air Quality Program. The Strategy is a collaborative effort of the Ports of Seattle, Tacoma, and Vancouver (B.C.) to reduce diesel and greenhouse gas emissions from maritime-related activities in the greater Georgia Basin/Puget Sound region. The Strategy, which was adopted by the Port of Seattle Commission in January 2008, establishes short-term (by 2010) and long-term (by 2015) goals for ocean-going vessels, cargo handling equipment, rail, trucks and vehicles, and harbor vessels. Unlike prescriptive approaches, the Strategy takes into account the many differences in port operations and allows for customers and tenants to choose those strategies that are most cost-effective for their particular business models.

The strategy has three primary emissions reduction objectives:

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

Ocean-Going Vessels

Port of Seattle has partnered with the Puget Sound Clean Air Agency on an incentive program for vessels that use 0.5% (or lower) sulfur fuels in auxiliary engines while at berth. The At-Berth Clean Fuels Vessel Incentive Program (ABC Fuels) provides a \$1,500 per call incentive to vessels that use 0.5% sulfur fuel in auxiliary engines while at berth. Currently, seven lines representing nearly 35% of vessel calls are participating; these lines are Hapag-Lloyd, APL, Matson, Maersk, CMA-CGM, COSCO, and Norwegian Cruise Line. ABC Fuels is expected to reduce emissions of participating lines per call of particulate matter (PM) by 60% and sulfur dioxide (SO₂) by 80%.

In addition, Princess Cruises and Holland America Line vessels have been able to plug in to grid shore power since 2005 and 2006, respectively. The Port was the first to offer shore power infrastructure that allowed two vessels to plug in simultaneously. For those cruise lines that are not able to plug in, the Port's tariff requires use of 1.5% or less sulfur fuel while at berth.

Cargo-Handling Equipment

The Port has been working with the marine terminal operators for many years to reduce emissions from cargo-handling equipment (CHE) through cleaner fuels, equipment replacements, exhaust retrofits, and operational efficiencies.

Cleaner Fuels

All CHE operating at the Port's container terminals was voluntarily switched from off-road high sulfur diesel fuel to ultra-low sulfur diesel and/or 20% biodiesel blend fuels.

Retrofits/Replacements

To assist our terminal operators in meeting this goal, the Port has partnered with the Puget Sound Clean Air Agency, Washington Dept. of Ecology, and U.S. EPA to successfully apply for state and federal grant funding to retrofit cargo-handling equipment with advanced emission controls. Additionally, the marine terminal operators have specified cleaner, on-road standard engines when replacing CHE. However, due to the economic downturn, CHE replacements have been put on hold indefinitely.

Including grants we have been awarded but are in the process of receiving, by the end of 2009 we expect 41% (155 out of 381) of CHE to have made progress toward the 2010 Strategy goal, while 32% (120 out of 381) to have met the goal. Port staff continues to work with the marine terminal operators, PSCAA, and WA Dept. of Ecology to assess the CHE fleets to further reduce emissions and strive to meet the 2010 Strategy goal. Staff is aware that current economic conditions and compatibility of advanced exhaust retrofits with existing CHE may limit success in achieving the 2010 goal.

Trucks

Our Clean Truck Program is the first developed collaboratively with stakeholders, implemented by industry, and fee free. By December 31, 2010, trucks entering the Port must be model year 1994 or newer, a requirement that will be enforced at the gates by the marine terminal operators.

The Port received approval from the Federal Maritime Commission (FMC) on June 23rd to discuss program implementation with the Marine Terminal Operators (MTOs); the first discussion was held via teleconference on July 28th. Staff has reactivated the Supply Chain Work Group, which is comprised of shippers, carriers, MTOs, truckers, railroads,

and third party logistics companies, to work with Port to implement the Clean Truck Program into their respective operations.

Currently, the Port is working with the MTOs and the Supply Chain Work Group to develop the gate access system to prevent pre-1994 trucks from entering the container terminals after 1/1/2011, as well as outreach and education for the trucking community.

2008 Drayage Truck Fleet Age Analysis

In 2007 and 2008, staff conducted a drayage truck fleet age analysis. The data source was the radio-frequency identification (RFID) pilot program with SSA at Terminal 18. The analysis utilized license plate information from 1,416 trucks registered with the program and cross referenced with the WA Dept. of Licensing system to determine model year. The 2008 analysis showed that 24% (or 346 trucks) are older than 1994 and need to be replaced in order to meet the 2010 Strategy goal for trucks. In 2007, this number was 26% (or 391 trucks).

Additionally, staff was able to compare the drayage truck fleet age to the overall fleet age of heavy-duty trucks registered in Washington.

- Average age of a drayage truck calling to the Port of Seattle: 1996
- Average age of a heavy-duty diesel truck registered in Washington: 1996
- Average age of a heavy-duty diesel truck registered in the PSCAA region: 1998

PSCAA Buy-Back and Scrap Program

In partnership with Puget Sound Clean Air Agency, the Port of Seattle is creating a buy-back and scrap program for pre-1994 trucks. Starting in November, eligible truck owners will be able to turn in their old trucks for scrap and receive \$5,000 or blue book value, whichever is greater. PSCAA staff will issue a request for proposal (RFP) for one or more operators to administer the program. Current timeline is as follows:

- July/August: Develop RFP, obtain stakeholder input
- September: Issue RFP for 3-4 weeks
- October: Select operators, execute contracts
- November: Anticipated program launch date

Staff feels that the successful development and implementation of the buy-back and scrap program is critical to the Clean Truck Program because:

- We legally can't fund a retrofit/replacement program.
- This gets the oldest trucks off the road first (the main purpose of our efforts).
- Gives the owners fair compensation for their old truck, with which they can purchase a newer truck or do whatever they'd like with the money. Without this compensation, the ability to purchase a newer truck is greatly limited.
- The Port doesn't support one replacement program over another, which is a concern that has been voiced by all stakeholders.

- The buy-back and scrap program is simpler to design and implement because it is the Port and PSCAA working together with an approved funding source. We aren't relying on a third party that may not have secured funding.

Cascade Sierra Solutions

- The Seattle CSS center is scheduled to open in September, which was achieved using \$50,000 in seed money from PSCAA.
- The availability of newer trucks (MY 2001-2004) scheduled for scrap in California is on hold indefinitely due to their state budget crisis.
- CSS applied for 56 grants nationwide, including a U.S. DOT grant for \$2 million and a U.S. EPA Region 10 grant. Staff has heard that CSS will receive the \$2 million U.S. DOT grant for level 2 and 3 exhaust retrofits for MY 1994-2006 trucks operating in the Tacoma area, but that CSS was not selected for the U.S. EPA Region 10 grant. Additionally, CSS has some funding for exhaust retrofits from WA Dept. of Ecology.

Other Retrofit/Replacement Options

Staff has been investigating other retrofit/replacement program and funding options, including:

- Funding via ShoreBank Cascadia
- Independent truck dealers (i.e. Valley Freightliner, Husky, International, PACCAR/Kenworth) advertising MY 1994 and newer trucks for sale that comply with the Clean Truck Program.

Office of Social Responsibility Small Business Initiative

The Office of Social Responsibility continues to work with the drayage truck community through their Trucker Liaison duties. On June 3rd, OSR held a Trucker Resource Fair at the South Seattle Community College Georgetown Campus. This Fair brought together health insurance, community resources, financial resources, and gave a briefing of the Clean Truck Program. OSR plans to hold a second Fair in November to coincide with the launch of PSCAA's truck buy-back and scrap program.

Truck Parking

The Terminal 25 South drayage truck parking facility opened on July 1st, and so far has been a success. This free facility allows for truckers to park their rigs overnight and their personal cars during the day, alleviating parking pressures on neighborhoods and reducing fuel consumption. To date, this 100 space facility is accommodating 75 trucks and 15 cars on an average 6 AM weekday. Port staff continues to work with neighborhood representatives to determine if the Terminal 25 South truck parking facility is addressing parking issues in neighborhood hot spots.

Rail

The Port of Seattle reached its 2010 performance measure of supporting partner rail operators' participation in the U.S. EPA SmartWay initiative, of which BNSF Railway and Union Pacific have made commitments. Both railroads work to reduce fuel consumption through switcher engine anti-idling and operational efficiencies. BNSF installed the first wide-span, electric rail-mounted gantry cranes in North America at the North Seattle International Gateway intermodal facility. Additionally, the Port is supporting PSCAA's application for American Reinvestment and Recovery Act (ARRA) funding via U.S. EPA to repower 3 BNSF switcher locomotives operating in Seattle and Tacoma.

Louis Dreyfus has also made strides in reducing rail-related emissions at the Terminal 86 grain facility. Louis Dreyfus voluntarily switched from off-road high sulfur diesel fuel to ultra-low sulfur diesel fuel for their two switcher locomotives, ahead of EPA's 2012 requirement. PSCAA will be working with Louis Dreyfus in 2009 to implement anti-idling technologies on the switcher locomotives to further reduce emissions and fuel consumption.

Harbor Vessels

Due to the fact that the Port has little to no jurisdiction over harbor vessels, the Puget Sound Clean Air Agency has assumed responsibility for developing and implementing the Strategy's harbor vessel performance measures. The Port is working with PSCAA to address emissions of harbor tug operations. Foss Maritime and Crowley both voluntarily switched their harbor tug operations in Elliott Bay from off-road high sulfur fuel to ultra-low sulfur diesel fuel. The Port is supporting PSCAA's application for ARRA funding via U.S. EPA to retrofit one Foss harbor tug operating in the Puget Sound.

Administration

As part of the goal to continue to look for ways to reduce administrative emissions the Port of Seattle has accomplished the following:

- Used biodiesel/ULSD blend, including B99 and B20 in all Port-owned diesel equipment.¹
- Converted two Toyota Priuses to plug-in hybrid electric.
- Included 29 hybrid vehicles in its Seaport fleet.
- Reduced electricity consumption by 43% at the Pier 69 headquarters.
- Diverted 32.2 tons of solid waste from landfills.
- Diverted 17.5 tons of organic waste from landfills.
- Is a founding reporter of The Climate Registry.

¹ In 2008, the Port used 25,500 gallons of biodiesel blends.

Customer Support Package Lease Amendments

The Customer Support Package, which was approved by the Commission on April 14th, set forth the vehicle upon which the mandatory component of the Clean Truck Program could be implemented. Through this package, the marine terminal operators (MTOs) have committed to turning away pre-1994 trucks beginning on 1/1/2011 via lease amendments with the Port.

Since receiving approval from the Federal Maritime Commission on June 23rd, the Port and the MTOs have engaged in discussions regarding implementation of the Clean Truck Program. These meetings will help develop the specific plans for how the truck program will be implemented, managed and enforced. These plans will be communicated to the trucking community as they are developed.

Proposed Changes to the Federal Aviation Act Administration Authorization of 1994

Staff is monitoring efforts in Washington, D.C. to amend the Federal Aviation Act Administration Authorization of 1994 (FAAAA). The proposed amendments would affect *49 U.S.C. § 14501(c)*, which places limitations on state and local regulation of trucking.

“A state [or] political subdivision of a state...may not enact or enforce a law, regulation, or other provision having the force and effect of law related to a price, route, or service of any motor carrier...with respect to the transportation of property.”

The FAAAA includes exceptions for the following:

- Motor vehicle safety;
- Size, weight, or hazardous cargo of motor vehicles;
- Insurance requirements for motor vehicles;
- Cargo liability, bills of lading, and cargo credit.

The proposed amendments would add the following exceptions to the FAAAA:

“Does not apply to the authority of a State or a political subdivision of a State or other municipal authority of a State to condition entry to Port Facilities for the purpose of addressing (1) environmental, safety, security or congestion concerns at the Port Facilities or nearby areas, or (2) efficient utilization of the Port Facilities.”

Port of Oakland National Goods Movement Policy Resolution

On July 30th, the Oakland Board of Port Commissioners approved a resolution supporting a national goods movement policy. The resolution primarily focuses on promoting a national freight policy for funding and investment in port infrastructure tied to goods movement, such as intermodal freight connectors, federal navigation channels, and marine highways. However, the resolution also supports the proposed FAAAA amendments.

Community Coalition for Environmental Justice/Change to Win

The Community Coalition for Environmental Justice (CCEJ) has teamed up with Change to Win/Coalition for Clean and Safe Ports to conduct door to door voter registration in anticipation of the November elections. As a part of their outreach campaign, these organizations have included information on an upcoming study they will be releasing prior to the elections on the state of port trucking in Seattle. The exact timing of the study is not known. Staff anticipates the study will mirror those produced via partnerships between Change to Win/Coalition for Clean and Safe Ports and local environmental/community groups in other west coast port areas such as Oakland, Vancouver B.C., and Los Angeles/Long Beach. The Vancouver and Los Angeles/Long Beach reports can be found at: <http://www.cleanandsafeports.org/index.php?id=60>. The Oakland report can be found at: <http://www.oakland.cleanandsafeports.org/>.

Other Port Clean Truck Program Updates

Ports of Los Angeles and Long Beach

Truck Ban

Currently, all trucks older than 1988 are banned from accessing the ports. The next ban date is set for 1/1/2010, when all pre-1993 trucks and unretrofitted 1994-2003 trucks will not be allowed access to the ports. On 1/1/2012, all trucks older than 2007 will be banned.

Truck Replacements

The Port of Los Angeles reports that for the period of June 1-30, 2009 58.64% of the 177,920 cargo moves at its terminals were made by clean trucks that meet or exceed the U.S. EPA 2007 emissions standards. Since the October 1, 2008 launch of the Clean Truck Program (CTP), more than 5,000 model year 2007 or newer trucks have come into drayage service at the Port. Many of these newer trucks have been acquired through private industry purchase and have not utilized port or state funding sources.

Legal Issues

On April 29, the U.S. District Court ruled against the program elements related to concessions in the L.A. program (fees, LMC financial requirements, off-street parking, employee mandate). The lawsuit filed by the American Trucking Association (ATA) continues to be fought in court, with a full trial date set for December 15, 2009. The FMC dropped their legal challenge in June; however, this action has no impact on the ATA lawsuit.

Security

The Clean Truck Program does not provide enhanced terminal security. Rather, it provides commonality between the program's drayage truck registry with the federal TWIC system. This commonality is utilized to assist drivers in applying for TWIC.

Port of Oakland

The Port of Oakland Board approved the Clean Truck Management Plan (CTMP) on June 16, 2009. The CTMP closely mirrors the CARB Drayage Truck Rule timeline for truck bans; the first truck ban will go into effect on 1/1/2010, when pre-1994 trucks will no longer be allowed access to the port. CTMP creates a separate drayage truck registry called the Secure Truck Enrollment Program (STEP).

The local air agency, the Bay Area Air Quality Management District (AQMD), received \$2 million in ARRA funding via U.S. EPA to retrofit 81 trucks with diesel particulate filters and replace 22 old trucks with cleaner, newer ones that operate at and around the Port of Oakland.

Port Authority of New York/New Jersey

The Port is in the process of developing an air quality management plan similar to the Northwest Ports Clean Air Strategy. This plan will include a program to reduce emissions from drayage truck operations. On July 23rd, the Port Authority of NY/NY approved a \$28 million program to assist in the replacement of pre-1994 drayage trucks. This \$28 million includes \$7 million in ARRA funding via U.S. EPA. The balance of the funds will support low-interest loans that truckers will repay over five years. The port expects to recoup \$26 million through loan repayments.

Port of Tacoma

The Port of Tacoma Commission approved the Drayage Truck Emissions Improvement Program on March 11, 2009. This program is designed to meet the Northwest Ports Clean Air Strategy goals for trucks through the use of market-based best management practices. According to their 2008 drayage truck fleet age analysis, 14% (or 433) trucks that call to the Port of Tacoma are older than model year 1994. The Port will not provide funding to assist the drayage truckers to meet the 2010 Strategy goals.

The main objectives of this program are to:

- Generate and promote a Best Management Practice list of pre-qualified drayage trucking companies and owners that meet the [Northwest Ports Clean Air Strategy](#) goals and achieve EPA SmartWay certification.
- Create and maintain a database of trucks serving the Port, including truck age and owner information.
- Partner with trade and nongovernmental organizations to identify funding opportunities and options to modernize and retrofit drayage fleets.
- Communicate with the local trucking community through:
 - Real-time, "push" telecommunications
 - Quarterly meetings to share best practices
 - A dedicated website allowing truckers to receive such information as turn times at terminals and vessel arrivals
- Form a council made up of representatives from the maritime industry, air agencies, beneficial cargo owners, trucking companies, community and nongovernmental organizations.
- Promote truck transportation efficiencies such as terminal gate technology and congestion management methodologies.
- Use GPS tracking technology to investigate Port traffic flow management.
- Investigate the feasibility for a common chassis pool to increase truck movement efficiencies.
- Explore other options for congestion relief, such as friendly and secure drayage truck pre-gate parking facility.

Port Metro Vancouver

Port Metro Vancouver implemented their Container Truck Licensing System (TLS) in response to congestion and labor issues, and is authorized via the federal Canada Marine Act. This mandatory system requires that all drayage trucks that call to the port to be registered in the TLS as one of the following:

- Full Service Operator: Licensed Motor Carriers (LMCs) that has a direct relationship with cargo interests. Granted access to Container Terminal Reservation System.
- Independent Operator: Gains the majority of cargo via subcontracts with other drayage firms. No access to Container Terminal Reservation System.

Port Metro Vancouver is utilizing the TLS to implement the Northwest Ports Clean Air Strategy truck goals. Currently, all trucks must be 1994 or newer to access the terminals. By 2013, all trucks will need to be 2007 or newer. The Port does not provide funding assistance to drayage truckers to meet these requirements.