

Cargo Transportation and Drayage Operations at the Port of Seattle

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International Trade and Cargo Transport

Closer to Asia and Alaska than any other major U.S. seaport, the Port of Seattle is a premier gateway for international trade. About 70% of the Port's containerized cargo originates in or is destined for regions of the country outside the Pacific Northwest, making Seattle a trade gateway of regional, national and international significance. Two major U.S. railroad intermodal yards and two major interstate highways are within minutes of the terminals, providing efficient truck and rail access for inland destinations. Heavy-duty trucks transport containers short distances to and from the intermodal yards, an operation that is also referred to as drayage, providing a critical link in the goods movement chain.

The Port of Seattle is committed to reducing emissions from port operations. Building on the success of a voluntary, proactive approach and using the Puget Sound Maritime Air Emissions Inventory as a baseline, the Port has collaborated with the Ports of Tacoma and Vancouver, B.C. to create the Northwest Ports Clean Air Strategy to further reduce emissions and enhance quality of life in the Puget Sound region.

Where does the Cargo Go?

Cargo is transported on land in two ways: by rail and by truck. At the Port of Seattle, the majority of cargo is transported out of the region: 70% moves by rail to Chicago and points east, 30% is consumed in the Pacific Northwest. Of the truck trips generated, 45% are serving the BNSF Railway Seattle International Gateway (SIG) and Union Pacific ARGO intermodal yards where the cargo container is loaded onto a train. Due to the compact infrastructure in the Seattle harbor, these yards are located at most just 1-2 miles away from the container terminals. In contrast, the intermodal yards in the Los Angeles basin are located 20+ miles from the Ports of Los Angeles and Long Beach. The remaining truck trips are mostly local (e.g. Duwamish Industrial Area, 1-5 miles) and regional (e.g. Green River Valley, 10-35 miles).

The Port works closely with local governments and the trucking community to identify and designate local and regional freight routes as well as to communicate information that could impact freight mobility, such as terminal gate hours and route accessibility.



Drayage Operations at the Port of Seattle

Drayage trucks are Class 8 heavy-duty trucks used to transfer cargo short distances between cargo terminals, near-port rail yards, and local distribution centers in the Green River Valley. In the course of their daily operations the trucks are driven onto and through the terminals, where they deliver and/or pick up cargo, and are operated on public roads near ports and throughout the region. Marine cargo transportation by truck is a complex system – the trucks are not under the control of the ports, the terminal operators, or the shippers but are contracted per move by the cargo owner through a broker. The trucks are typically operated by independent owner/operators.

Puget Sound Maritime Air Emissions Inventory

The Puget Sound Maritime Air Emissions Inventory (EI) is an activity-based, 2005 baseline inventory of all maritime-related emissions in the greater Puget Sound region. To date it is the most comprehensive maritime EI in the U.S., and the first to include greenhouse gases. Public and private sources include ocean-going vessels, harbor craft, cargo-handling equipment, trucks, and rail. Based on this inventory, in the four county Puget Sound Clean Air Agency region emissions from maritime operations account for:



Oxides of nitrogen (NO_x): 11%

Volatile organic compounds (VOC): 2%

Carbon monoxide (CO): 1%

Greenhouse gases (GHG): <1%

Particulate matter 2.5 microns (PM_{2.5}): 4%

Diesel particulate matter (DPM): 28%

Sulfur dioxide (SO₂): 33%

Of these totals, port-related trucking represents:

Oxides of nitrogen (NO_x): 1%

Volatile organic compounds (VOC): 0.06%

Carbon monoxide (CO): 0.04%

Greenhouse gases (GHG): 0.3%

Particulate matter 2.5 microns (PM_{2.5}): 0.2%

Diesel particulate matter (DPM): 1%

Sulfur dioxide (SO₂): 0.3%

Role of the Northwest Ports Clean Air Strategy

The Northwest Ports Clean Air Strategy, a joint plan developed by the Ports of Seattle, Tacoma, and Vancouver, B.C., will result in further reductions of diesel particulate matter and greenhouse gas emissions. The Strategy builds on proactive emission reduction strategies implemented in the past few years by the Ports, industry, and others in the region and will utilize the Puget Sound Maritime Air Emissions Inventory as a baseline. The Strategy establishes short-term (2010) and long-term (2015) performance measures for reducing emissions from cargo-handling equipment, rail, harbor craft, ocean-going vessels, and trucks. The Ports are currently working with the trucking community and others to develop an implementation plan for the drayage truck performance measure.

How old is the Drayage Truck Fleet?

In 2007, the Port of Seattle conducted an age analysis of 1,505 drayage trucks that call to the Port's terminals and compared it to the statewide heavy-duty truck fleet. Based on this analysis, the



average model year of a drayage truck calling to the Port of Seattle is 1996. In comparison, the average model year of the statewide Class 8 heavy-duty truck fleet is 1995, while in the Puget Sound Clean Air Agency region it is 1998. U.S. Environmental Protection Agency establishes emissions standards (or tiers) for engines – in 2007 U.S. EPA strengthened the standard for particulate matter emissions from heavy-duty truck engines, prior to that the standard was strengthened in 1994.

What is the Port of Seattle Doing to Reduce Emissions from Drayage Operations?

In an effort to reduce emissions from drayage truck operations and improve efficiency, the Port has implemented a number of initiatives, including:

- Radio frequency identification (RFID) pilot with SSA at Terminal 18 expedites truck processing and increases efficiency of truck movements at marine cargo terminals, minimizing queues and idling time
- Alerted truck drivers to draw bridge opening times so they can plan routes accordingly and avoid long waits and unnecessary idling
- Built overpasses and improved intersections for better traffic flow and reduced congestion
- Partner in the Freight Action Strategy for the Everett-Seattle-Tacoma Corridor (FAST Corridor)
- Provided on-dock rail to eliminate truck trips
- Partner in regional anti-idling effort