

## APPENDIX A | PERFORMANCE METRICS

### Northwest Ports Clean Air Strategy Reporting Metrics

The Port will report on the following metrics identified in the 2020 Strategy as part of annual reporting requirements. These metrics apply to Maritime Activity sectors and a subset of Port Maritime Administration sectors: Building and Campus Energy and Fleet Vehicles and Equipment.

Sector	Metrics	Targets / Objectives
Overall emissions <sup>^</sup>	Absolute emissions (GHG, black carbon, DPM, PM2.5, SOx, NOx, VOC, CO)	Vision: phase out to zero emissions for all GHG and air pollutants by 2050
	Percent change in GHG emissions relative to 2005/2007/2010	Port, federal and state/provincial GHG targets 2030, 2050
Efficiency <sup>^</sup>	GHG emissions per MT of cargo moved	Continuous improvement
	Impact of supply-chain efficiency programs on emissions, as available	Information only
Infrastructure	Percent of terminals with sufficient infrastructure in place to support uptake of zero-emission CHE, trucks, rail, harbor vessels	100 percent by 2030
	Total investments in zero-emission infrastructure	Information only
Ocean-going Vessels	Percent vessel calls with Tier 3 marine engines, cleaner fuel, or other emissions-reduction technologies while underway (e.g., wind or battery assistance)	Continuous improvement
	Percent major cruise and container berths with shore power installed	100 percent by 2030
	Percent of shore-power-capable ships that plug in and percent of total ships that plug in to shore power	Continuous improvement
Cargo-handling Equipment	Percent of CHE that meets Tier 4 emission standards (in progress)	80 percent of CHE meets Tier 4i equivalent by 2020 <sup>**</sup>
	Percent zero-emissions CHE adopted	100 percent by 2050
	Total cost of ownership of zero-emissions CHE relative to diesel CHE	Information only

Sector	Metrics	Targets / Objectives
<b>Trucks</b> N/A ***	Percent of container trucks that meet or surpass U.S. EPA standards for model year 2007 for particulate matter (in progress)	100 percent of container trucks meet or surpass U.S. EPA standards for model year 2007 by 2017 *
	Percent zero-emissions container trucks adopted	100 percent by 2050
	Total cost of ownership of zero-emissions container truck relative to diesel truck	Information only
	Percent renewable fuels adopted	Information only
	Percent tugs by tier level	Information only
<b>Harbor Vessels</b>	Percent commercial vessels with hybrid engines or using renewable fuels	Information only
	Percent zero-emissions commercial vessels	100 percent by 2050
	Total cost of ownership of zero-emissions tug relative to diesel tug	Information only
	Percent of unregulated engines known to be upgraded (in progress)	20 percent upgraded by 2020, relative to 2013 *
	Percent switcher engines that use renewable fuels	Information only
<b>Rail</b>	Percent zero-emissions switcher engines adopted	100 percent by 2050
	Absolute GHG emissions from buildings and lighting	Zero by 2050
<b>Port Administration &amp; Tenant Facilities</b>	Percent of light-duty passenger fleet vehicles that are zero-emissions or use renewable fuels	100 percent by 2030
	Percent of entire port authority fleet (including all vehicles, equipment, vessels) that are zero-emissions	100 percent by 2050

^ Overall emission and efficiency metrics will be reported to coincide with port emission inventories. Currently emission inventories are completed every five years, with the next inventory years planned for 2020 (Vancouver), and 2021 (US Ports).

\* Existing metrics that have not yet been met from the 2013 Northwest Ports Clean Air Strategy and remain relevant. Ports will continue to track progress until they are met.

\*\* The Port has met this target.

\*\*\* The 2020 Strategy metrics are limited to container trucks that move cargo to and from marine terminals. Container trucks operating in Seattle-area terminals are associated with the Northwest Seaport Alliance rather than the Port of Seattle, so the metrics listed are not applicable. This Plan expands the definition of trucks to include shuttle vans on cruise terminals, buses providing ground transportation for cruise passengers, and heavy-duty trucks that serve cruise ships and commercial fishing fleet. The Port may establish truck-related metrics after evaluating these sources.

### Port Maritime Administration Reporting Metrics

In addition to the metrics above, the Port will share findings from its annual Maritime GHG Emissions Inventory, which measures emissions annually for Port Maritime Administration sources. Because the Plan includes sources outside of the scope of the 2020 Strategy, the Port has identified additional reporting metrics specific to the Port Maritime Administration sectors.

Sector	Metrics	Targets / Objectives
<b>Annual Maritime GHG Emissions Inventory</b>	Percent change in absolute GHG emissions by sector and GHG Scope, relative to 2005/2007 levels	<b>Port of Seattle Century Agenda:</b> Scope 1,2 3: 50 percent below 2005 levels by 2030 Scope 1 & 2: (currently) carbon-neutral or carbon-negative by 2050, or (under consideration) net-zero or better by 2040 Scope 3: (currently) 80 percent below 2007 levels by 2050, or (under consideration) carbon-neutral by 2050
<b>Building &amp; Campus Energy</b>	Percent change in fossil natural gas use (therms) relative to 2005/2007 levels Percent change in electricity use (kWh) relative to 2005/2007 levels Percent of total energy use (MMBtu) that is renewable energy kWh of renewable energy generated Annual change in Energy Use Intensity by building type for buildings over 20,000 sqft	<b>Port of Seattle Century Agenda:</b> Meet all increased energy needs through conservation and renewable sources
<b>Fleet Vehicles &amp; Equipment</b>	Percent of light-duty passenger fleet vehicles that are zero-emissions or use renewable fuels Percent of liquid and gaseous fuel purchased that is renewable Percent of entire fleet (including all vehicles, equipment, and vessels) that is zero-emission	<b>2020 Strategy:</b> 100 percent of light-duty passenger fleet vehicles are zero-emissions or use renewable fuels by 2030; 100 percent of entire fleet is zero-emission by 2050

Sector	Metrics	Targets / Objectives
Employee Commuting	Drive alone rate at CTR-affected worksite (Pier 69) <sup>25</sup>	Continuous improvement
	Percent of employees utilizing telework or flexible work arrangements at CTR-affected worksite (Pier 69)	Continuous improvement
Solid Waste	Percent change in absolute waste tonnage relative to 2007 level	Continuous improvement
	Percent of solid waste tonnage recycled or composted	Continuous improvement
Habitat Restoration & Carbon Sequestration	Number of acres of habitat restored (Port-wide)	<b>Port of Seattle Century Agenda:</b> Restore, create, and enhance 40 additional acres of habitat in the Green/Duwamish habitat

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<sup>25</sup> 2020 Northwest Ports Clean Air Strategy: 100 percent of light-duty passenger fleet vehicles are zero-emission or use renewable fuels by 2030