PORT OF PORTLAND

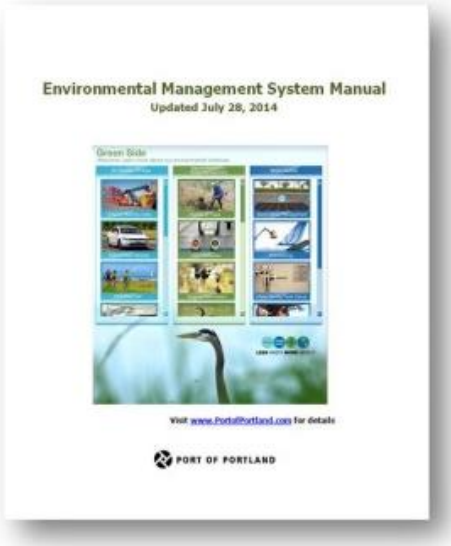
Environmental Programs and Activity Highlights

Environmental Management System

The Port's Environmental Management System, or EMS, is the approach used to manage the Port's environmental compliance, responsibilities and commitments both in day-to-day work and in mid- and long-range planning. The EMS is not something that sits on a shelf for reference, but an integrated cycle with tools and processes that requires the Port to plan before implementing and drives the organization to improve on lessons learned.

ISO 14001
BUREAU VERITAS
Certification

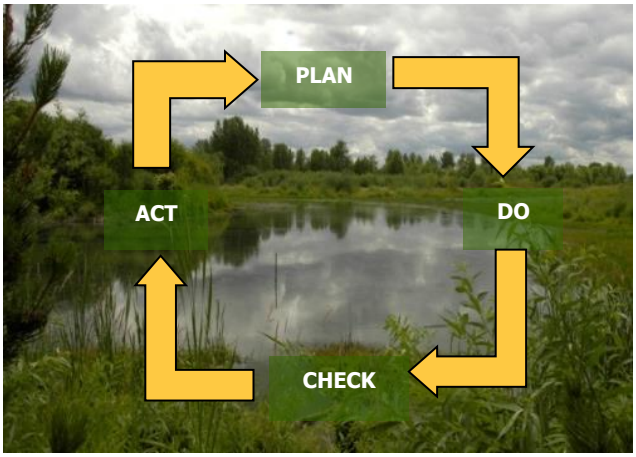
The central purpose of the EMS is to systematically reduce the environmental impacts of the Port's work while protecting and conserving environmental resources, and it also makes good business sense.



In 2014, after 14 years with an Environmental Management System in place, the Port sought and successfully achieved certification to the international EMS standard, ISO 14001, through an independent third-party certification body.

Integrated Tools and Resources

The Port's Environmental Department has built an integrated online resource to ensure Port-wide access to current policies, objectives, targets, procedures, best practices, performance updates, regulatory documents and more. An environmental management calendar links these documents with key dates and the individuals responsible for carrying out important actions so we successfully meet our environmental goals and commitments.



LESS WASTE MORE WORLD
PORT OF PORTLAND

Environmental Programs and Activity Highlights

Air Quality Program

The Air Quality Program prepares emissions inventories to identify and prioritize opportunities to reduce impacts from direct Port emissions and to measure progress toward reducing its emissions. The Port also assists customers, tenants, and other stakeholders to reduce emissions from emission sources not under the Port's direct control. The Port is a founding member of The Climate Registry. Portland International Airport, Hillsboro Airport and Troutdale Airport are certified through the Airports Carbon Accreditation program. Executive Director, Bill Wyatt is a member of the Governor's Commission on Global Warming.

Anti-idling Programs

When visitors leave the parking garages at PDX, they are encouraged to use the Quick Pay system which allows them to pay for parking on foot at conveniently located kiosks. This reduces idling by more than 80% and lowers carbon monoxide emissions by over 2 tons per year. Both the short and long-term parking lots now use a parking guidance system that helps drivers find available parking spots. The Port also installed gate electrification and preconditioned air on 15 jet bridges, which allows aircraft to shut down their engines while at the terminal.

Alternative Fuels

The Port's vehicle fleet for administrative employees includes three electric vehicles and with the remainder composed primarily of hybrid vehicles. Portland International Airport now has 48 electric vehicle chargers, the most of any airport in the country. The charging stations are free to park at and use. the entire fleet of airport parking lot shuttle buses runs on compressed natural gas. All fire-fighting trucks use ULSD, and airport maintenance vehicles use ULSD with a 20 percent blend of biodiesel.

Alternative Transportation

TriMet provides light rail access directly to the terminal building at PDX. The Port has also constructed bike paths and other facilities to encourage cycling, connecting PDX to Portland's already impressive bike network. Improved access benefits not only the traveling public, but also the nearly 10,000 people who work at the airport each day.

In 2014, the Port of Portland completed a two-phase process to repower the Dredge Oregon. The project replaced a WWII-era engine with more modern engines that meet EPA Tier III emission standards. The project reduces diesel particulate emissions by 88 percent and lower greenhouse gas emissions by 40 percent. The Dredge Oregon was previously the single largest source of diesel particulate and direct greenhouse gas emissions owned by the Port.

Environmental Programs and Activity Highlights

Energy Management Program

The Energy program focuses on the implementation of energy efficiency opportunities and the purchase of renewable energy.

The Port purchases renewable energy certificates equivalent to 100 percent of electricity use and is a partner in the Energy Trust of Oregon's Strategic Energy Management program. Portland International Airport now has 48 electric vehicle chargers, the most of any airport in the country.

Carbon Footprint Reduction and Energy Management Strategy and Master Plan

In 2013, the Port completed a long-range carbon footprint reduction and energy management master plan for Port-wide operations including aviation, marine, navigation and industrial properties. The goal was to develop a strategy to reduce the Port's direct and indirect greenhouse gas (GHG) emissions to 15 percent below 1990 levels by 2020. The goal goes beyond the required standard for state agencies of a 10 percent reduction by 2020.

The master plan created a framework for the Port to assemble portfolios of the most cost effective energy conservation opportunities and sets the stage for planning and implementation. With this framework, the Port has initiated many energy conservation measures over the past years. From July 2010 through June 2015, the Port has reduced or avoided 22,162,262 kWh of electricity consumption and 65,504 therms of natural gas consumption, which is a total of 18,691 metric tons of CO2 emission reduction.

The Port has already budgeted and capital planned more energy efficiency measures to be implemented in the next few years, which includes lighting upgrades and control improvements in the PDX terminals and concourses. The total electricity consumption reduction of these efforts is estimated to be 12,394,000 kWh, which is equivalent to 13,000 Metric tons of CO2 emission reduction.

The Port continues to implement various energy efficiency measures. A project currently underway is to convert old lighting to new LED lighting, swapping out lights on existing poles at marine terminals, Navigation base, Hillsboro airport, Portland International Airport parking lots, roadways and maintenance facilities. The new lighting affects over 80 acres of parking lot and 30 acres of roadway and includes wireless lighting control capabilities. This project is estimated to reduce more than 1.3 million kWh of electrical consumption and 1,020 metric tons of CO_2 emissions.

Environmental Programs and Activity Highlights

Water Resources Program

The Port's Water Resources program focuses on reducing water use and enhancing water quality. At several marine sites, stormwater is managed through porous pavement and bioswales. Irrigation systems use real-time meteorological data to determine watering needs. At the PDX terminal, low-flush toilets have dramatically reduced water usage, while an innovative aircraft deicing system treats runoff on-site.

Port-Wide Stormwater Master Plan

The Port recently completed a Port-wide stormwater master planning process. This proactive approach will evaluate hydraulic capacity and water quality requirements and develop Port-specific stormwater design standards. The effort is important because it will allow the Port to more efficiently coordinate stormwater management efforts amid necessary infrastructure replacements and upgrades, asset management, future operational needs and regulatory requirements.

At PDX, it will build on the master planning effort started during the Airport Futures process to pursue the goal of achieving a sustainable stormwater approach. The process included input from a wide variety of internal and external stakeholders through a coordinated outreach process including the PDX Community Advisory Committee, City of Portland and environmental advocacy groups.

PDX Deicing Treatment Facility

Water Resources Program

Water Conservation Strategy Development

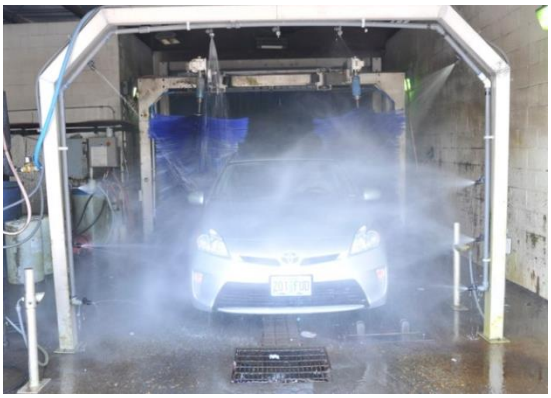
Water conservation is a key element of the Port's Water Resources Program and is required by the Port's Water Management and Conservation Plan to support the Port's municipal water rights.

The Port has implemented a number of projects to reduce potable water use for irrigation and tenant operations. To prioritize the project selection process, the Port is engaged in the implementation of an organization-wide Water Conservation Strategy completed in 2014.

The Water Conservation Strategy provides a framework for comparison of water conservation opportunities across the different operating areas of the Port. The strategy development included a data gap analysis, facility-specific water audits, data collection, development of a prioritization tool, and finalization of the strategy based on the most sustainable opportunities. These opportunities are practices, programs and projects that will be incorporated into future operations and capital projects.

The Port uses native and water efficient plants and drip irrigation where practicable to conserve water.

The Living Machine™ is an onsite water treatment system that accepts all wastewater generated by the building's 500 employees and produces water that is reused to flush toilets and supply the cooling towers in the building. The building has demonstrated a 75 percent reduction in water use.



The rental car Quick Turnaround (QTA) Facility, a wash facility used by the PDX terminal rental car companies, is one of the largest water users at PDX. The Port partnered with airport rental car companies to implement water conservation measures. In phase 1, improvements reduced water use by 49 percent per vehicle and provided a gross savings of $41,000 in water/sewer billings over a six month period, saving an estimated $330,000 over the term of the lease. Phase 2 improvements, implemented in 2014, will reduce water use by an additional 5 million gallons per year.

Environmental Programs and Activity Highlights

Waste Minimization Program

Five Year Zero Waste Plan

The Port continues to strive for a Zero Waste headquarters facility and has created a five-year plan to achieve Zero Waste at all Port facilities. Zero Waste requires a 90 percent or greater diversion of waste from landfills. At the end of 2015, the Port achieved 79 percent landfill waste diversion at its headquarters. In March of 2015, Metro began requiring commercial food waste collection to compost food waste only rather than include compostable fibers, which led to an increase in landfill-bound waste at HQ. However, the Waste Minimization Team has secured a DEQ grant that will fund a pilot program designed to decrease HQ employee's landfill-bound waste by supplying durable to-go boxes that can be used at PDX restaurants. The grant will also fund a durable dish pilot study at the Oregon Market food carts as a way to decrease landfill-bound waste produced by PDX passengers.

After 10 years of research and testing, the Port switched to water-based paints for striping on the PDX airfield – significantly contributing to PDX Maintenance achieving shift to Conditionally Exempt Status for Hazardous Waste Generation (CESQG).

Food Waste Program at PDX

The food waste collection program began in 2003 to remove organics from the landfill-bound waste stream. In 2012, the Port initiated a food waste collection campaign focusing on concessions tenants at PDX to improve program performance.

In 2013, the Port expanded the program to include a food donation program which has been highly successful. In December of 2015, the food donation program was featured on local TV news stations, KGW and Koin 6, recognizing PDX for their work to decrease waste and support the community. Since its inception, the food donation program has provided over 118,000 pounds or about 80,000 meals to the local community.

The Port also implemented a program in 2014 to reduce construction-related waste for tenant improvement projects.

Environmental Programs and Activity Highlights

Natural Resources Program

The Port manages properties with an emphasis on protecting natural resources, drawing from the best available science and research in the field. The PDX Wildlife Hazard Management program uses a variety of non-lethal tools to control species around airfields to prevent flight hazards. The Port manages over 900 acres in its mitigation program, including the award-winning Vanport Wetlands. It is currently restoring rare grassland to enhance habitat for pollinators on Government Island.

Mitigation Site Management

The Port works in areas with abundant wildlife as well as critical waterways and wetlands. Therefore, how the Port manages industrial areas, marine facilities, and airports is important. The Port focuses on protecting native species, controlling non-native species and promoting habitat connectivity.

The Port Mitigation Management Program encompasses almost 800 acres, including high-quality wildlife habitat that is ecologically connected to other open spaces in the metropolitan area; 207 of those acres are within Portland city limits.

Vanport Wetlands

The Port purchased the Vanport Wetlands site in 1999 as compensatory mitigation for wetland impacts from development on Port-owned property.

Restoration enhancements at the 90.5-acre award-winning mitigation site reflect the Port's environmental policy of responsible environmental stewardship. Work at the site was completed to fulfill regulatory requirements, but the way the work was done has created a permanent natural resource. The Port demonstrates environmental stewardship through ongoing management of the site, above and beyond regulatory requirements.

Restoring this urban wetland complex is important not only for the wildlife and vegetation found here, but also for its ability to absorb and filter pollutants before they reach the nearby Columbia River. Upon purchase, the site was dominated by invasive reed canary grass. The Port has now increased the diversity of plants and wildlife and succeeded in establishing a native-dominated wetland community surrounded by a vegetative buffer.

Over 160 species of wildlife and more than 80 species of native plants, trees and shrubs on its mix of wetland and upland habitat, show the success of the Port's restoration efforts at the Vanport Wetlands site.

Environmental Programs and Activity Highlights

Investing in Sustainability

In 2010, the Port completed a new consolidated headquarters building (HQ) and parking garage at Portland International Airport. The LEED Platinum-certified facility showcases innovative green building techniques designed to reduce water and energy use, improve indoor air quality, and minimize waste. It features an eco-roof and Living Machine wastewater treatment system.

Recent Awards

- **Green Power Partner Program, U.S. Environmental Protection Agency (EPA) -** Ranked in the Top 10 in the Local Governments category and in the Top 100 (at #72) among 100% Green Power Purchasers, 2015.

- **Airports Carbon Accreditation** program certification for Portland International Airport, Hillsboro Airport and Troutdale Airport – making them the fourth, fifth and sixth airports in North America to achieve the status.

- **Sustainability at Work** Gold recertification at the HQ building from the City of Portland, 2015-18.

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