

ENVIRONMENTAL REPORT

2016/17

MISSION

Our mission is to enhance the region's economy and quality of life by providing efficient cargo and air passenger access to national and global markets, and by promoting industrial development.

TABLE OF CONTENTS

About the Port	4
Executive Message	7
About this Report	8
Environmental Management	10
Environmental Planning Environmental Planning Partnerships	. 14 15
Airport Futures	16
Environmental Outreach Community Partnerships	. 17 19
Air Quality	22
Emission Inventories	23
Reducing Air Pollutants	28
Air Quality Partnerships	29
Energy Management	30 32
Encouraging Conservation	34
Energy Management Partnerships	36
Land Quality	38
Waste Minimization	39
Spill Preparedness and Response	44
Reducing Hazardous Waste	45
Site Cleanup and Restoration	46
Land Quality Partnerships	46
Portland Harbor Superfund Area	47
Troutdale Reynolds Redevelopment	48
Natural Resources	50
Cultural and Historical Resources	52
Natural Resources Partnerships	53

Wildlife Hazard Management Program 56
Mitigation Management Program
Water Besources 64
Water Conservation
Water Quality 69
Water Resources Partnershins 71
vvater nesources ratherships
Noise Management Program72
Design for Environment: Port HQ74
Design for Environment: Port HQ74 Awards and Recognition
Design for Environment: Port HQ74 Awards and Recognition
Design for Environment: Port HQ74 Awards and Recognition
Design for Environment: Port HQ74 Awards and Recognition



Approximately 1.28 million people, including both travelers and PDX employees, used TriMet's MAX Red Line for airport light rail access in 2016.

Cover: Portland International Airport (PDX) is located adjacent to the Columbia River in Portland, Oregon. Mt. Hood is visible in the distance. Inside Cover: Terminal 4 serves as a major auto import facility. Port of Portland is a leading gateway on the U.S. West Coast for auto exports and imports.

ABOUT THE PORT OF PORTLAND

WHAT WE DO

For more than 125 years, the Port of Portland has worked with the community to respond to the Pacific Northwest's changing trade and transportation needs. In 1891, the Oregon Legislature created the Port to dredge and maintain a shipping channel from the city of Portland to the Pacific Ocean. Through the years, we acquired the Commission of Public Docks, which operated public-use docks in Portland Harbor and we built Portland's first airport.

Today we own four marine terminals, including Oregon's only deep-draft container port and three airports: Portland International Airport (PDX) and general aviation airports in Hillsboro and Troutdale. We manage five business parks. We also own and operate the Dredge Oregon to help maintain the navigation channel on the lower Columbia and Willamette rivers.

WHO WE ARE

We are a special district encompassing Clackamas, Multnomah and Washington Counties in the state of Oregon. We are directed by a nine-member commission which meets monthly. Commissioners are appointed by the governor and confirmed by the Oregon Senate; they serve four-year terms and can be reappointed. They hire and oversee our Executive Director, who is responsible for day-to-day management.

FINANCIALS

Our financial structure is separated into two primary operating funds: general Port operations and aviation.

General Port operations includes marine, industrial development, navigation, engineering and administrative divisions. It is funded by fees charged to customers for use of Port services and facilities and revenue from land and building leases and property sales. We also receive property taxes which are assessed at seven cents per thousand dollars of assessed property value on property located in Clackamas, Washington and Multnomah counties (an average of \$18 per household per year). Our public mission to connect the region to the global marketplace is achieved while generating 96 percent of our operating revenues from transactions with private sector clients and four percent from property taxes. Aviation operations receive no direct property tax support. Agreements with passenger and cargo carriers at PDX provide the foundation for the aviation line of business and revenues from parking and tenant leases also help fund the aviation division. PDX funds cannot be commingled with any other resources of the Port and are restricted to use at aviation facilities in accordance with FAA regulations and airport revenue bond ordinances. Under special circumstances, PDX funds can be used for general aviation.

ENVIRONMENT

Our mission is only complete if we integrate responsible environmental stewardship into our operations. This means in our day-to-day activities and longer-term planning and implementation we foster a mindset that integrates social, economic and environmental considerations into our strategic planning and business decision-making and each year, we set goals to:

- Minimize impacts to air quality.
- Minimize impacts to water resources.
- Reduce waste generation and hazardous material use.
- Minimize impacts and seek opportunities to enhance natural resources.
- Reduce energy consumption and purchase electric energy from sustainable sources.

COMMUNITY

Building and maintaining strong relationships is a critical part of meeting our mission. We do this by sharing information, engaging in partnerships and collaborating on projects. Communities and interested stakeholders participate in airport planning processes. We offer a robust small business development program with training and mentorship. Events, tours, educational programs and community forums exchange information and provide an opportunity for feedback. Our emerging equity program looks at increasing opportunities and dismantling barriers internally and externally.



The Port of Portland owns 4,592 acres of airport property, 812 acres of marine terminals, 5,501 acres of industrial property and 900 acres of mitigation lands in the state of Oregon. Ownership spans from Troutdale in East Multhomah County to Hillsboro in Washington County, as well as marine terminals on the Columbia and Willamette rivers.

JOBS AND DOLLARS

AVIATION AND MARINE ACTIVITIES:

- Create 26,594 jobs in the Portland metro area. (Aviation-related: 19,462; Marine-related 7,133)*
- Generate \$172 million in state and local taxes*
- Produce more than \$1.75 billion in total income for the region. (Aviation-related: \$1.127 billion; Marine-related \$629 million)*
- Generate at Port facilities nearly \$5.7 billion in revenue for regional businesses. (Aviationrelated: \$5.043 billion; Marine-related \$629 million)*

PORT EMPLOYEES:

• 782 (776 full time equivalent) as of 12-31-2016

*figures based on a 2015 study update

OPERATING STATS 2016

PORTLAND INTERNATIONAL AIRPORT (PDX)

- 3,296 acres
- 3 runways (11,000 ft.; 9,825 ft.; 6,000 ft.)
- 17 commercial carriers
- More than 18 million passengers in 2016
- 9 cargo carriers
- 231,000 tons of Air Cargo
- Atlantic Aviation, a business aviation operator
- Averages more than 450 flights daily with nonstop flights to 70 destinations, domestic and international
- Nearly 228,000 aircraft takeoffs and landings in 2016



Marine Terminal 5.

HILLSBORO AIRPORT (HIO)

- 970 acres
- 3 runways (6,600 ft.; 3,821 ft.; 3,600 ft.)
- 3 fixed-base operators, 2 flight schools, aircraft charters and rentals, private business operators, aircraft storage
- Nearly 198,000 aircraft take offs and landings in 2016

TROUTDALE AIRPORT (TTD)

- 260 acres
- 1 runway (5,400 ft.)
- 1 fixed-base operator, 2 flight schools, aircraft maintenance companies, aircraft sales, private business operators
- More than 118,000 takeoffs and landings in 2016

INDUSTRIAL PROPERTIES/DEVELOPMENT

- 5 industrial parks, home to more than 400 businesses
 - Rivergate Industrial District: 2800 acres, near Interstate 5, two marine terminals, BNSF and Union Pacific Railroads
 - Swan Island Industrial Park: Port Center 430 acres, near Interstate 5, Union Pacific Railroad
 - Troutdale Reynolds Industrial Park: 700 acres, near interstate 84, adjacent to Troutdale Airport
 - Gresham Vista Business Park: 221 acres, near I-84, located in Gresham's strategic investment and enterprise zone

- Portland International Center: 458 acres at PDX along Interstate 205, MAX light rail train, Cascade Station, Alderwood Corporate Center

MARINE TERMINALS

- Terminal 2: 52.5 acres; breakbulk, bulk, project cargoes, maintenance base for federal dredge vessels
- Terminal 4: 261.5 acres; autos, flour mill, liquid bulks, mineral bulks
- Terminal 5: 159 acres; grain, mineral bulks, warehouse/manufacturing
- Terminal 6: 419 acres; containers, autos, intermodal rail yard operations

2016 MARINE CARGO VOLUMES

- Containers (TEUs*): 1,725
- Autos (units): 291,242
- Grain (short tons): 4,650,042
- Mineral Bulks (short tons): 5,031,588
- Breakbulk (short tons): 22,778
- Total tonnage: 10,220,925

2016 NAVIGATION ACTIVITY (COLUMBIA RIVER)

- Cubic Yards dredged: 1,708,404
- Days dredged: 83
- Locations dredged: 5

A MESSAGE FROM CURTIS ROBINHOLD, EXECUTIVE DIRECTOR

Portland is known nationwide as a leader in green practices and sustainability. At the Port of Portland, we share that proud commitment to putting innovative environmental programs in practice with Port employees, customers and facilities. This report includes detail about our performance and environmental investments. From our leadership in reducing carbon emissions to airport waste minimization and brownfield redevelopment, we are working to reduce our environmental footprint and enhance our community.

We connect Oregon to the world and we have big projects on the horizon. Initial work and planning has begun on a suite of large construction projects that will make Portland International Airport better for travelers, airlines and employees. We plan to integrate green building design, environmental goals, financial impacts and social equity considerations into all of our efforts.

Climate change is one of the most important challenges of our time and the Port of Portland wants to play a leadership role in the transportation sector. We will continue to carefully consider our carbon footprint and look for ways to reduce our impact.

Locally, we will continue work with tenants and partners to reduce impacts to air quality. As we navigate the waters of the changing marine terminal business and Portland Harbor Superfund liabilities, we will engage external stakeholders to work with us on solving these big challenges. We want to help apply our expertise to meaningful job opportunities, support our communities and restore Willamette River vitality.

This report is an opportunity to review our environmental programs and to provide us feedback on what is most important to you. We look forward to your partnership on the exciting challenges ahead.

, løluluð

Curtis Robinhold, Executive Director





We operate with a triple-bottom-line approach by making business decisions that support long-term economic health, incorporate stakeholder engagement and integrate environmental stewardship into our plans and operations to benefit future generations. Our Sustainability Policy has been in place since January 12, 2010.

ABOUT THIS REPORT

This document expands on previous reporting by offering a more comprehensive review of environmental programs and activities. In the past, we communicated Environmental Management System objectives and targets through our yearly cycle of goal-setting. While past summaries provided detailed insights on specific projects, this report goes a step further by integrating targets into program history and data with organizational context.

We aim to improve our environmental reporting in three ways:

Transparency: The breadth and detail of information we share in this report provides greater transparency on our environmental stewardship initiatives and results. Our goal is to more openly share information to facilitate dialogue. We hope this report empowers stakeholders to be specific in their feedback on important issues in our community.

Background Information: We generally present information through our 2016-17 fiscal year, but also include a broader range of performance and projects that have occurred in recent history – setting the stage for current activities. Please recognize that for some environmental programs and protocols, there is a lag in information availability due to the third-party data verification process.

Global Performance: The Port of Portland connects the Pacific Northwest to the world. As global ambassador, we want to align with reporting practices used by other large organizations. Aligning to the Global Reporting Initiative (GRI) framework creates a standard way for stakeholders to understand and compare our performance with other ports and airports. This report is a first step in aligning with the GRI sustainability reporting standard.

In future years, the report will evolve as we hear from stakeholders to understand what's most important to them. While this report isn't fully aligned to GRI benchmarks currently, it's a step forward. Our longer term goal is to produce a website that serves as a living document with periodic updates on projects and performance data. We welcome your feedback.

A MESSAGE FROM PHILIP RALSTON, DIRECTOR, ENVIRONMENTAL OPERATIONS AND POLICY

Thank you for your interest in the Port of Portland's 2016/17 Annual Environmental Performance Report.

Every day at the Port of Portland we strive to improve our performance as stewards of the environment. We integrate our commitment to sustainability into our plans, decisions and operations. We know our aviation, maritime and industrial development businesses have impacts on the environment and we diligently work to minimize those. We also look to restore natural resources where we can.

We monitor and measure our environmental impacts and our progress toward meeting our objectives and targets. By reporting on these results, we share our successes and challenges with you and hold ourselves accountable to improve. We can always do better; we can and will do more.

We invite your feedback. As a reader, we would like for you to consider our performance and how we report on it and to then let us know how our priorities and actions align with what is most important to you.

The Port commits to using your input to identify new opportunities for continuous improvement in our environmental performance and reporting. Future reports will be integrated into our website. Your perspective is critical if we are to meet our community's expectations and be the regional, national and even international environmental leader we aspire to be.

Please consider providing feedback on the report via the "contact us" link on our webpage or by e-mail: Enviroldeas@PortofPortland.com.

Shil Pals

Phil Ralston, Director, Environmental Operations and Policy



ENVIRONMENTAL MANAGEMENT PORT OF PORTLAND Performance & Projects

The Port Commission approved a Port-wide Environmental Policy in 2000,

beginning implementation of our environmental management system. Our Sustainability Policy established in 2010, directs us to integrate environmental, community and financial concerns into planning and performance.

980 14001 Certified

The Port of Portland is the only integrated aviation, marine and industrial land organization with port-wide certification to the ISO 14001:2015 environmental management standard in North America.



public participation committees engage citizens and stakeholders in planning processes at Portland International, Hillsboro and Troutdale Airports.



Our environmental planning department is actively involved in project development, providing input on 365 projects in 2016/17.



We partner with 24 environmental organizations across the Portland Metropolitan area to enhance communities we serve.



Our employess regularly volunteer with community organizations, such as SOLVE and Friends of Trees, for litter clean up, tree planting and habitat restoration projects.



The Oregon Land Conservation and Development Commission awarded the

2015 STAR Award

for citizen involvement to the PDX Community Advisory Committee.



The Port's LEED Platinum certified headquarters building is recognized by the City of Portland, State of **Oregon, Northwest Energy Efficency** Alliance, Forbes Magazine, American Council of Engineering **Companies and Airports Going** Green as a leading example of water and energy conservation and life-cycle thinking in green building.



Our headquarters building has Sustainabilty at Work Gold Certification from the City of Portland.







Our LEED Platinum certified headquarters building includes a 10,000-square-foot eco-roof. This feature reduces stormwater flow and insulates the building so it requires less energy to heat and cool.

ENVIRONMENTAL MANAGEMENT SYSTEM & POLICY

"The Port will achieve its mission through responsible environmental stewardship and the implementation of proactive environmental programs. The Port will integrate environmental considerations into all aspects of its strategic planning and business decision-making."

 Port Commission Environmental Policy, February 9, 2000

At the Port of Portland, our approach to managing environmental responsibilities and improving environmental performance is implemented through our Environmental Management System (EMS).

We created the EMS to proactively identify, integrate consideration of and systematically reduce the impact of the Port's activities on the environment. The EMS establishes environmental management as an intrinsic part of the Port's overall business philosophy and management of operations. This provides a consistent approach for assessing, managing and correcting environmental issues and continuously improving environmental performance and stewardship. The Port Commission and Executive Team play a key role in the governance of the Port's Environmental Management System. Additional program-level policies and our Sustainability Policy are available online: http://www2.portofportland.com/Inside/ EnvironmentalPrograms.

EMS Elements



We voluntarily initiated the EMS and we regularly evaluate the significant environmental aspects and impacts of our operations and activities. Our EMS policies and programs apply to all departments, operations, functions and projects and include those working on behalf of the Port.

Our EMS includes five environmental programmatic areas:

- Air Quality
- Energy Management
- Land Quality
- Natural Resources
- Water Resources

Each program has a policy and established objectives and targets that drive continuous environmental performance improvement. Program managers, operational staff and other stakeholders develop targets and actions that will minimize our environmental footprint, innovate on current practices or respond to stakeholder concerns. Community engagement informs our programs. Annually, we adopt action plans to achieve these commitments. By setting goals and tracking progress, we can quantify our success. Throughout the environmental program overviews in this report you will find a description of current objectives and targets and information on future actions.

CONTINUOUS IMPROVEMENT

The desired outcome of a management system approach is continuous improvement. To achieve this, we established a robust internal environmental audit program, which utilizes external professional environmental auditors to regularly evaluate our operations, activities and systems from both compliance and management system conformance perspectives.

After nearly 14 years of implementing and continuously improving our EMS, we achieved ISO 14001: 2004 certification in November 2014. ISO 14001 is an international standard that prescribes the requirements for an environmental management system. Building on past performance, we attained certification to the updated ISO 14001:2015 standard in October 2017. Certification reflects our commitment to align our environmental performance to our community's values.



PDX has a multi-use path connected to the regional trail system and offers free bike parking and a repair station at the terminal.

Independent third-party auditors, working on behalf of certification registrars, have audited our operations four times since our first certification in 2014. Most recently the auditors gave us positive feedback on our management team involvement, innovative programs, employee awareness and our pro-active approach to environmental stewardship.

Our internal environmental audit program is paired with periodic employee environmental awareness communications and training to make sure they are aware of the system and how they can contribute to performance in their individual work areas. We also have a proactive preventive and corrective action process to document, track and report on progress towards closure of identified issues. This system ensures we continually improve our environmental performance.

Port of Portland is the only integrated aviation, marine and industrial land port in North America that has all its facilities certified to the ISO 14001:2015 environmental management system standard. Looking ahead, we would like to incorporate more stakeholder input into performance considerations. Our commitment to certification will ensure continuous improvement aligned with a recognized worldwide standard. Meeting and maintaining the ISO 14001 standard is a significant achievement that reflects the initiative and commitment of all Port employees.



Gresham Vista Business Park is a 221 acre site with industrial lots. Pictured is Specht Vista Logistics Park that boasts 100 percent onsite stormwater infiltration. This outcome was part of a broader Eco-Industrial Development Pilot Project between Light House Sustainable Building Centre, City of Gresham and the Port that was funded by Metro to encourage sustainable development.

ENVIRONMENTAL PLANNING

Effectively integrating environmental considerations into our planning and operations ensures the best environmental outcomes in the most cost-effective manner.

The Environmental Planning Program ensures that Port environmental goals, priorities and commitments are incorporated into Port processes and operations. This is accomplished by integrating environmental elements in planning, operations and projects through ensuring compliance and seeking opportunities for environmental improvement. A thorough, methodical and robust evaluation process is applied to construction projects, renovations, industrial land development, repairs and maintenance, operations, as well as other Port actions.

Environmental Planning also provides subject matter expertise for in-water permitting and inwater project execution, NEPA compliance and sustainability certifications. These areas are included in Environmental Planning due to the many environmental media potentially impacted and the intersection of many issues that include integration, regulatory compliance, agency coordination, operations and stakeholder communications. We look at sustainability certification models that align with our projects to guide achievement of enhanced environmental outcomes; for example, we are working on Envision certification for the rental car quick turnaround facility currently under construction.

The Environmental Planning Program continues to evolve to meet the needs of the Port, community stakeholders and a dynamic regulatory environment. Below are areas of future focus:

- Align the environmental review processes with the emerging equity program to ensure equity considerations are integrated into Port actions;
- Develop shared and coordinated environmental goals for upcoming construction projects at PDX;
- Continue to develop and utilize online tools that create an efficient review process;
- Continue to maintain and develop Environmental Profiles and Action Plans for Port facilities;
- Support the master planning process for Hillsboro Airport; and
- Coordinate and obtain authorization for Port sediment projects.

In FY 2016-17, Environmental Planning provided input on 365 official Port projects and actions. These actions are broken down into relevant categories in the table below.

Capital Projects	76
NEPA Actions	29
In-water Projects	18
Tenant Projects	131
Transactions and Other Agreements	111
Total Actions	365



ENVIRONMENTAL PLANNING PARTNERSHIPS

- American Association of Port Authorities
- Columbia Basin Partnership
- Lower Columbia Solutions Group
- Pacific Northwest Waterways Association
- Portland Merchants Exchange
- PSU Executive Leadership Program for Natural Resources
- Western Dredging Association

AIRPORT FUTURES PUBLIC INVOLVEMENT PROCESS

Airport Futures was a collaborative effort between the City of Portland, Port of Portland and the Portland-Vancouver metropolitan community to create an integrated long-range development plan for Portland International Airport. To support the process, the City and Port convened a 30-member Planning Advisory Group comprised of community, government and business interests to serve as an advisory body. As a result of meetings that began in fall 2007 and concluding in spring 2010, an airport master plan was created.

An ongoing PDX Community Advisory Committee (CAC) supports meaningful public engagement,

enabling the community to inform airport decisionmaking and raise public awareness about PDX and impacted neighborhoods.

The plan incorporates principles of sustainability and livability. An agreement associated with Airport Futures includes several Natural Resources commitments. Below is an update on progress towards meeting our commitments.

The PDX Master Plan will be updated approximately every seven to ten years and is subject to change as new information is gathered and as needs change. The Port Commission determines future direction.

SCORECARD		
Commitment	Progress	
Columbia Slough Enhancements	Since 2011, the Port funded seven slough enhancement projects: Cully Community Park North Slope Restoration, Elrod Slough Restoration, Whittaker Ponds Turtle Enhancement Project, Buffalo Slough Turtle Enhancement Project, Better Beaver Behavior Project, Main Stem Bench and Island Planting Project, and the Slough Vegetation Maintenance Project.	
Urban Tree Canopy Enhancements	Since 2011, the Port provided funding to Friends of Trees to plant trees in neighborhoods near or adjacent to the airport to enhance the urban tree canopy. Enhancement areas include: Columbia Children's Arboretum, Piedmont & Woodlawn, Argay, Parkrose, Parkrose Heights, Russell, Wilkes, Cully, Concordia & Vernon, Southeast Vancouver (WA), Madison South, Rose City Park & Sumner, and North/Northeast multi-family properties.	
Portland International Center Wetland Enhancement	The Port completed two phases of native plantings in the Portland International Center wetlands to enhance the quality for wildlife. Phase 1 was completed in 2013 in a 2.45 acre project area where 960 woody plants were installed. Phase 2 was completed in 2014 in a 3.75 acre project site where 1,675 woody plants were installed. Ongoing maintenance and monitoring of the site continues.	
Government Island Grassland Mitigation	The Port initiated the first 50 acre grassland mitigation site in 2012, and site preparation occurred for three years. In 2015, we seeded with a mix of native forbs and grasses and planted Camas bulbs. The Port conducts ongoing maintenance and monitoring throughout the site to control non-native vegetation.	
Annual Mitigation Reporting	The Port provides annual reports to the CAC, which includes information on the Port's Mitigation Program. Past reports and meeting content are available on the website.	
Sustainability: Guiding Principles and Goals	The Port reports at quarterly CAC meetings on sustainability initiatives and highlights sustainability elements of all planning and development projects discussed at the meetings.	
Annual Sustainability Efforts Reporting	The Port provides annual reports on Environmental Objective and Target progress, receives feedback and discusses ideas for future projects. Past reports are available on the website.	
Noise	While the Citizen Noise Advisory Committee is the main body to provide input on noise impacts, the Port also provides periodic noise updates to the CAC. These updates keep the committee current on projects and any upcoming changes to flight patterns.	

For more information, please visit https://www2.portofportland.com/Inside/CommunityAdvisoryCommittee.



Each aviation, marine and land development business line has their own stakeholders, operations and opportunities. Sharing information and listening to stakeholders is essential to building partnerships to meet our mission.

ENVIRONMENTAL OUTREACH

Portland is a national leader and innovator in sustainability. Working with our community is an opportunity to pursue excellence in environmental management.

Through direct community engagement, our goal is to show transparency, build trust and enhance our credibility for the economic growth, environmental innovations and social benefits that we bring to the region. We track and respond to inquiries related to environmental concerns and interests expressed by our community and engaged stakeholders. For example, water quality, climate change, air quality, renewable energy, fossil fuel infrastructure, water quality, threatened and endangered species, contaminated sediments, waste management, trails, social equity and site development are all topics of interest and opportunity.

Stakeholder interests influence our projects and are taken into consideration in decision-making. The Portland-Vancouver metropolitan region has long invested in greenspaces and recreational opportunities. To support that vision, we incorporate recreational features into our projects; for example, our contributions to the 40-Mile Loop Trail and PDX airport bike paths.



STAKEHOLDER COMMUNICATIONS

Information about environmental programs and projects is available through a variety of channels including Port Currents – environmental and community news blog, press releases, social media and website content and bulletins. We also make direct contact with environmental stakeholders through meetings and personal communications.

Given the complexity and scope of our operations, exchanging information is essential to being a good neighbor and to inform the public on the breadth of our current and historical impacts on the environment.

We also participate in, or host, community meetings and forums related to environmental topics and sustainability. We regularly give tours of our LEED Platinum certified headquarters building to support public education on green building.

Communicating with stakeholders on our projects, activities and performance is also integrated into our Environmental Management System. Information about individual projects is shared according to project timelines, the need for public input and ensuring timely information reaches interested audiences.

For annual environmental reporting, we announce new targets and report on results of the past year's objectives and actions. This annual process provides a public reporting mechanism and accountability on our progress in reducing environmental impacts and advancing innovation. Recent objectives and targets documents can be found on our website.

WORKING WITH THE COMMUNITY

Public involvement committees at Portland International Airport, Troutdale Airport and Hillsboro Airport engage stakeholders in airport planning processes and operations. Private citizens, local agency personnel, social and environmental organizations, as well as business partners participate. Committees provide a framework to integrate environmental interests into Port decision-making. Consultants work with Port staff to facilitate meetings and they operate under the core values of the International Association of Public Participation. Our three committees include:

- PDX Community Advisory Committee engages the community in planning, sustainability and development at Portland International Airport. In addition to business updates, the committee's work provides a forum to discuss environmental performance and social equity programs.
- Troutdale Airport Project Advisory Committee completed a comprehensive two-year master planning process in 2016. The outcome of the committee's work is a roadmap for development, operation and investment at Troutdale Airport over the next 20 years.
- Hillsboro Airport Roundtable Exchange has worked collaboratively since 2006, providing a venue to discuss community concerns. They most recently provided input and suggestions for a master planning process and advisory committee to complete a two-year public engagement process. The Master Planning Advisory Committee will continue work on noise and air quality as the process continues through 2018.

All public involvement committee agendas, minutes and presentations are available on the Port of Portland website: http://www2.portofportland.com/Inside/ CommunityOutreach.



We partner with the Columbia Slough Watershed Council and provide funding for watershed education and restoration. Frequent paddling events introduce the community to Portland's hidden waterway.

COMMUNITY PARTNERSHIPS

We have a role in supporting regional environmental goals and initiatives within the context of the Port's mission. This work connects us to broader sustainability efforts and makes a positive difference in the communities we serve.

Engagement also informs us on topics of greatest interest locally and in the Pacific Northwest. Collaboration varies from sponsorships, events and communications to participating on committees or boards.

Our partners include:

- Bicycle Transportation Alliance/ The Street Trust
- Climate Solutions
- Columbia Slough Watershed Council
- Ecotrust
- Friends of Trees
- Green Transportation Expo
- Go Green Conference
- Human Access Project
- Intertwine Alliance
- Levee Ready Columbia/Multnomah County Drainage District
- Lower Columbia Estuary Partnership
- Northwest Earth Institute
- Oregon Environmental Council
- Oregon Invasive Species Council
- Portland Parks Foundation
- Sandy Basin Watershed Council
- SOLVE



Our employees regularly volunteer with community organizations, such as SOLVE, for litter cleanup and habitat restoration projects.



We have worked with Xerces Society to research aquatic insects in our mitigation wetlands and pollinators on Government Island.

- The Freshwater Trust
- The Intertwine Alliance
- The Nature Conservancy
- The Willamette Partnership
- The Xerces Society
- Vanport Mosaic Festival
- Verde
- 1000 Friends of Oregon

PORT OF PORTLAND IN THE COMMUNITY



The Hillsboro Air Fair invites the community to learn about our operations and services, tenants, environmental stewardship and noise program with family-friendly activities.



Over the past 10 years we have planted more than 7,000 trees and shrubs with Friends of Trees in areas where we operate.



Information about our Noise Management Program is a regular feature at community outreach events.



We collaborate with local, state and federal partners to identify emerging invasive species threats and pro-actively address them.



2016 PDX Runway Run



Environmental outreach activities educate the public on invasive vs. native species and our work to manage natural areas on mitigation sites.

OUTREACH AND EVENTS

Public events provide an opportunity to engage, listen and answer questions. We regularly share information on noise, trade, transportation and environmental topics through interactive booths at Sunday Parkways, St. John's Bizarre, Troutdale Summerfest, Celebrate Hillsboro, Explorando El Columbia Slough and the Columbia Slough Regatta, as well as our own Seaport Celebration.

Efforts are made to minimize the waste of our Port-sponsored events. For example, to mark the 125th Anniversary of the Port of Portland and 75th Anniversary of Portland International Airport, we offered the public a once-in-a-lifetime experience to run a 6K on the north runway of the airport by hosting the PDX Runway Run on September 24, 2016. With 2,500 people participating, there was potential to generate a large amount of waste. Early planning resulted in a remarkable 95 percent landfill waste diversion rate – exceeding our initial zero waste goal.



Constructed with airport waste, artist Nancy Judd created the "PDX Weather Advisory" sculpture to feature PDX environmental programs. Eventually this sculpture will travel, with many others, to Jackson-Hartsfield International Airport in Atlanta. Visit http:// recyclerunway.com for more information.

🗞 PORT OF PORTLAND

AIR QUALITY Performance & Projects



Portland International, Troutdale and Hillsboro airports were the **4th**, **5th and 6th airports in North America** to be certified.



 Reduce diesel particulate matter by 75% from
Port-controlled operations from 2000 level.



62,000

tons of carbon emissions eliminated by installing 26 pre-conditioned air units at PDX concourses.





185% in diesel particulate emissions from 2014 Dredge Oregon repower project.

All PDX shuttle buses run on clean-burning compressed natural gas.





1.28

million people used TriMet to get to the aiport in 2016. We were one of the first major aiports to offer light rail in 2002.



We publically register our GHG emissions and were a founding member of The Climate Registry in 2008.



The Port, **City of Portland**, **Multnomah County**, **Metro** and **Clackamas County** are developing new approaches for diesel construction equipment.



We participated in **Sustainable Aviation Fuels Northwest** and are examining fuel delivery infrastructure for biofuels at PDX.

PDX assembly station and **secure bike parking** is available for employees and travelers.



PDX multi-use path connects to the regional trail system.

AIR QUALITY

Maintaining good air quality and making investments to improve it enhances the quality of life for residents and supports a thriving economy.

PROGRAM OBJECTIVE: Minimize impacts to air quality.

We created the Air Quality Program to implement the Port's Air Quality Policy, which has a primary goal of promoting clean air for all who live in the airsheds affected by our activities. To reduce air quality impacts of our current and future activities, we voluntarily invest in cleaner engines, alternative fuels and anti-idling programs. Considerations for air quality are incorporated into planning, development and operational activities.

By maintaining an efficient transportation infrastructure system in Portland, the region's economy and connections to international markets can thrive and take advantage of the most fuel-efficient solutions for moving people and cargo. Reducing emissions to maintain air quality meets our goals for enhancing quality of life and economy.

Recognizing that not all emission sources are under the Port's direct control, we seek opportunities to improve air quality by facilitating and encouraging partnerships, education and outreach to assist customers, tenants and other stakeholders in reducing marine and aviation-related emissions. We support the International Maritime Organization and International Civil Aviation Organization in setting global standards to reduce emissions from marine vessels and aircraft. We also encourage employees to reduce the emissions during local air pollution episodes and provide incentives to employees to use alternative commute options.

EMISSION INVENTORIES

We routinely prepare emissions inventories using best practices to understand the type, location and scale of emissions associated with our facilities. This allows us to measure and our monitor our progress. Emissions are estimated for Port-controlled sources such as equipment, vehicles and facilities as well as sources operating at our facilities outside of Port-control, including oceangoing vessels, cargohandling equipment, aircraft and passenger vehicles at the airport.



Our innovative parking garage indicator light system makes it faster for travelers to find an open parking spot quickly, saving fuel and minimizing idling. In addition, Quick Pay self-service stations have lowered carbon monoxide emissions by over two tons a year.

Emissions inventories are instrumental in identifying and prioritizing areas for reducing emissions. They also serve as a benchmark through which we can measure environmental performance, understand the Port's role in the region's airshed and look for ways to partner with others to promote better air quality throughout Oregon and Southwest Washington.

2016 PDX Permit Capacity Actual Emissions vs. Site Emission Limits

We operate under permitted capacity.



Criteria Air Pollutants

The Federal Clean Air Act regulates ambient air standards to ensure air quality is maintained. PDX operates well below permitted capacity for these standards for criteria air pollutants.



The Dredge Oregon

REPOWERING THE DREDGE OREGON

We operate the Dredge Oregon to maintain the lower Columbia River shipping channel by contract with the U.S. Army Corps of Engineers. In 2014, we replaced three engines with modern engines that meet EPA Tier II and Tier III emissions standards. The project reduced diesel particulate emissions by more than 85 percent and lowered greenhouse gas emissions by more than 25 percent. Previously, the old engine was the Port's single greatest source of diesel particulate and direct greenhouse gas emissions.



Diesel Particulate Emission (Tons)

Emissions cut by 76% since 2000

*2016 Data submitted for third party verification process

REDUCING DIESEL EMISSIONS

Diesel emissions are one of the top air quality health concerns in the region. We have a systematic approach to reducing Port-controlled emissions by replacing older engines with newer, cleaner engines. For example, the entire fleet of PDX parking lot shuttle buses now run on compressed natural gas. The most significant reduction occurred in 2014 through repowering the Dredge Oregon.

TARGET: Reduce diesel particulate matter by 75 percent from Port-controlled operations from 2000 baseline levels by 2020.

TIMEFRAME: 2015-2020

2016-17 RESULTS: We identified and researched external funding opportunities that align with equipment replacement plans, including 1) Replacing the Port's Tug Williams in 2-3 years, cost: \$4,000,000; 2) Replacing the dredge material handling dozer in 2-3 years, cost: \$850,000; and 3) Repowering the Tug Clackamas in 3-4 years, cost: \$470,000. As a result of our research, we prepared and submitted a Diesel Emission Reduction Act grant application to repower the Tug Clackamas.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: To support reaching our goal of a 75 percent reduction, planned projects include: replacing the primary Central Utility Plant emergency generator with a generator certified to EPA Tier IV, the cleanest generator available, cost: \$1,735,200.

REDUCING CARBON EMISSIONS

The Port has reduced greenhouse gas (GHG) emissions by over 70 percent below 1990 levels. We actively work to implement climate change solutions through measuring our footprint and investing in energy efficiency and renewable energy.

To measure our progress, we use The Climate Registry's robust voluntary greenhouse gas reporting program to publicly report and verify our inventory. We were a founding member in 2008 and joined the World Resources Institute, Intergovernmental Panel on Climate Change and the World Business Council on Sustainability to create a common, accurate and transparent GHG reporting standard in North America.

Greenhouse gas emissions tracked include CO_2 , CH_4 , N_2O , Refrigerants (R-22, HFC-134, R-410A) in Scope 1 and 2 categories. We do not report on Scope 3 emissions at this time, but are planning to do so in the future under the ACA program.

TARGET: Reduce Port direct and indirect greenhouse gas emissions 15 percent below 1990 levels by 2020.

TIMEFRAME: 2009-2020

2016-17 RESULTS: We met this target through the purchase of certified Renewable Energy Certificates exceeding 100 percent of Port-wide electric energy usage and completing planned energy efficiency improvements (see Energy Management Program).

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: The Port will continue to meet this target by completing planned energy efficiency improvements and purchasing certified Renewable Energy Certificates exceeding 100 percent of Portwide electric energy use. In addition, we will begin to investigate and adopt a new, more aggressive greenhouse gas emissions reduction target.

Port-wide Greenhouse Gas Emissions The Climate Registry Reporting

We offset Scope 2 emissions with renewable energy.



- 1. 1990 emission estimates include emissions from purchased electricity used by tenants at the PDX Terminal.
- 2. 2016 Scope 2 emissions offset by the purchase of renewable energy certificates (RECs).
- 3. 2016 submitted for third party verification process.

Note: This version has all onroad and offroad and purchased electricity emissions from T-6 removed from 1990 – 2010 to reflect parity with the 2011 transfer of assets to ICTSI.

- Scope 1 emissions include fleet vehicles, utility plant operation and emergency power.
- Scope 2 emissions are from purchased electricity.
- Scope 3 includes indirect emissions that the Port does not control but may influence. Examples include: supply chain, modes of transportation and tenant operations.

Portland International Airport Carbon Accreditation

We monitor and report on our carbon emissions.



400 250 Flight Operations 200 300 MT C02 (1000s) 150 200 100 100 50 2012 2013 2014 2015 Flight Operations Scope 1 Scope 2

Hillsboro Airport Carbon Accreditation

Troutdale Airport Carbon Accreditation



Airport Carbon Accreditation CO2 Emissions per Operational Unit

We evaluate the efficiency of our operations.



AIRPORT CARBON ACCREDITATION

Portland International Airport, Hillsboro Airport and Troutdale Airport are certified through the Airports Carbon Accreditation program (ACA), making them the fourth, fifth and sixth airports in North America to achieve the status.

The Airports Carbon Accreditation program champions the voluntary and collective efforts of airports worldwide in continual improvement. The program has four certification levels to reach carbon neutrality: (1) Mapping, (2) Reduction, (3) Optimization and (4) Neutrality.

We join over 100 other leading airports across the world, in the most credible and internationally-recognized framework for active carbon management at airports.

TARGET: Participate in the Airports Council International (ACI) Airport Carbon Accreditation Program to achieve Level 2 (Reduction) by 2016; Level 3 (Optimization) by 2018 and Level 4 (Neutralization) by 2035 for Portland International Airport, Hillsboro Airport and Troutdale Airport.

TIMEFRAME: 2015-2035

2016-17 RESULTS: We achieved ACA Level 2 certification for PDX and TTD airports. HIO carbon emissions increased due to the parallel runway construction and was certified at Level 1. Work began on achieving Level 3 accreditation for all airports through developing an approved model using the ACI's Airport Carbon and Emissions Reporting Tool, but this work is not complete yet. We began evaluating carbon offset options to develop a strategy recommendation to achieve carbon neutrality.

PROGRESS: The actions for this target are 50 percent complete for FY 16-17.

2017-18 ACTION: This year's action is to achieve Airport Carbon Accreditation Level 3 for PDX, HIO and TTD, which widens the scope of the Port's emissions inventory to include Scope 3 carbon dioxide emissions. This certification level includes registration, inventory preparation and independent third-party verification.

AIRCRAFT-RELATED EMISSIONS

We are working to provide energy infrastructure and fuel options that reduce aircraft-related emissions. Given that jet plane technology relies on liquid fuel, biofuels represent the best opportunity to reduce emissions. In the terminal we are investing in more efficient aircraft support equipment that uses electricity.

TARGET: Reduce aircraft-related GHG emissions at PDX by 25 percent from 2010 levels by 2035.

TIMEFRAME: 2016-2035

2016-17 RESULTS: We prepared and received a Voluntary Airport Low Emissions Program grant to install pre-conditioned air units at 26 loading bridges. We also evaluated biofuel alternatives and continued stakeholder engagement through the Portland Fueling Facility Consortium.

PROGRESS: The actions for this target are 85 percent complete for FY 16-17.

2017-18 ACTION: We will complete the installation of PCA units on 26 loading bridges. We will continue to support an aviation industry clean fuel program by working to ensure PDX can accommodate airlines' needs and interests for using sustainable biofuels. This will include an engineering-level description of PDX aircraft fuel delivery infrastructure and processes that could meet the needs of the Port and airlines.



fuel consumption by approximately 6 million gallons, carbon monoxide emissions by 122 tons and carbon dioxide by 62,000 tons, over the 13 years of their useful life.



SUSTAINABLE AVIATION FUELS

We participated in Sustainable Aviation Fuels Northwest, a regional initiative to develop an aviation biofuels market in the Pacific Northwest. Alongside partner groups Boeing, Alaska Airlines, Seattle-Tacoma International Airport, Spokane International Airport and Washington State University, we contributed to a 2011 study on the feasibility and challenges of creating an aviation biofuels industry. Airports Council International - North America awarded the report its "Environmental Innovation" Award for groundbreaking analysis of aviation biofuel development from planting to harvest to actual use by airlines. The study provides a regional roadmap for steps the industry can take to make aviation biofuel use a reality. We remain engaged to advance market development and are working on fueling infrastructure at PDX. Various biofuel blends have been tested in flights from PDX and partner airports.

PRE-CONDITIONED AIR

We received a \$5.7 million Federal Aviation Administration grant in 2016 to install 26 preconditioned air (PCA) units on Concourses C and D loading bridges at PDX. The new PCA units use electricity and enable the aircraft to turn off auxiliary power units – eliminating onsite emissions of parked aircraft. Installation of the new equipment, along with the existing electric ground power units, will reduce

PDX Pavement Marking Paint



The move to water-based, low volatile organic compound (VOC) paints used for pavement striping at Portland International Airport greatly reduced hazardous air pollutant emissions.

REDUCING AIR POLLUTANTS

We track hazardous air pollutants (HAP) from airport operations and make investments to minimize them. Sources of air toxics include boilers and small natural gas combustion units, diesel emergency generators, deicing treatment, traffic/airfield marking, asphalt paving and gasoline dispensing.

Of the relatively small amount of HAP emitted from these sources, over 97 percent is methyl alcohol associated with traffic/airfield markings. After extensive research and an evolution in paint technology, we were able to switch to water-based paints that meet Federal Aviation Administration standards.

The majority of remaining hazardous air pollutant constituents (three percent) is from natural gas and diesel combustion, as well as gasoline dispensing. For our permitted sources we use diesel on a limited basis as a fuel for emergency generators and boilers.

To minimize diesel emissions we plan to replace the primary emergency generator at the PDX Central Utility Plant with a generator using the cleanest available emissions control technology (EPA Tier IV) in 2018.

LEADED AVIATION FUEL

Certain types of general aviation aircraft use aviation gasoline, called Avgas, that contains lead as an additive ingredient. It is referred to as 100-octane low-lead fuel (100LL). Lead is added to Avgas to help boost fuel octane, prevent knock and engine issues that could result in a loss of compression. Compression loss could lead to engine failure, impacting flight safety. Historically, lead was added to a variety of transportation fuels, including motor vehicle gasoline. In 1996, the Environmental Protection Agency completely phased out lead from highway vehicle fuels. The Federal Aviation Administration will introduce an unleaded aviation fuel in 2018.

The Port does not have the legal authority to restrict or prohibit the sale or usage of 100LL aviation fuels, nor does it have the authority to limit or restrict general aviation aircraft from using the airport. We advocate for the FAA approval of a new unleaded fuel for use in all piston engine (e.g., smaller) aircraft. We have invested in a tank to store and distribute a new fuel option and have policies in place that accommodates the use of a new unleaded fuel.

ADVOCATING FOR UNLEADED FUEL

TARGET: Advocate for unleaded fuel penetration for the Avgas fleet at Hillsboro Airport (HIO) by working with General Aviation Operations to complete an unleaded fuel study and by working with fueling companies at HIO to initiate an unleaded fuel program that can be facilitated through the existing standards.

TIMEFRAME: 2015-2019

RESULTS: We provided an overview on the results of the unleaded fuel study to the Hillsboro Airport Roundtable Exchange in October 6, 2016. We continued to advocate for unleaded fuel penetration for the Avgas fleet at HIO by engaging fueling companies to initiate an unleaded Mogas program that could be facilitated through the existing airport standards. Hillsboro Aviation and Aero Air declined participation due to liability and other concerns, but are interested in making use of a FAA-approved nationwide replacement fuel estimated to be available in 2018.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: We will continue to look for opportunities to offer unleaded fuel at HIO and communicate the results to the community and interested stakeholders.

WORKING TOGETHER

We work with tenants and other partners to implement programs that reduce emissions. Partnerships are critical to maintaining good air quality in the Portland-Vancouver metropolitan region airshed. State-wide, the Port participates in the Oregon Global Warming Commission and contributes to transportation strategy policy-making.

TARGET: Reduce emissions from marine and aviation-related sources not under the Port's direct control, including Port customers, tenants and other stakeholders.

TIMEFRAME: 2016-2018

2016-17 RESULTS: We are working with the City of Portland, Multnomah County, Metro and Oregon Department of Environmental Quality to explore the feasibility of developing an effective, implementable and uniform clean diesel construction specification that could be voluntarily adopted by participating jurisdictions in the Portland metropolitan region. In support, the Port completed a study of existing programs around the U.S. to inform the group's work.

In marine operations, the Port met with Kinder Morgan to evaluate the replacement of switcher locomotives; leasing of locomotives proved to be a barrier in investing in replacements.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Regionally, we will continue to work with partners to explore the feasibility of developing a uniform clean diesel construction specification that could be voluntarily adopted by participating jurisdictions. At marine terminals, we will continue to look for ways to partner with businesses to support the replacement, or retrofit, of older switcher locomotives. At PDX, we will look for opportunities to work with, or support, the replacement of older ground service equipment with cleaner equipment that runs on electricity.



SHORE-SIDE POWER

Providing shore-side power for vessels at berth allows them to turn off their engines while docked and utilize local electricity sources, reducing fuel consumption and emissions. We provide shore-side power capabilities at Terminal 2 for U.S. Army Corps of Engineers vessels. At Terminal 6, the Shaver tugboat facility also has shore-side power. Shore-side power is far more difficult to implement at berths that see a diversity of visiting ships.

AIR QUALITY PARTNERSHIPS

- American Association of Port Authorities
- Airports Council International
- City of Portland
- Clackamas County
- Cully Air Action Team
- Federal Aviation Administration Voluntary Airport Low Emissions Program
- Metro
- Multnomah County
- Oregon Department of Environmental Quality
- The Climate Registry

Report of Portland

ENERGY MANAGEMENT Performance & Projects





ENERGY MANAGEMENT

We strive to use resources efficiently and apply state-of-the-art technologies to meet our energy needs and the needs of our partners.

PROGRAM OBJECTIVE: Reduce energy consumption and reduce carbon emissions.

The Energy Management Program uses a long-term approach to energy efficiency that includes setting goals, tracking progress and reporting results. We completed the Energy and Carbon Management Master Plan in 2012 as a guide to reach our carbon emissions reduction goal. The plan accounts for the Port's past, current and projected carbon emissions and outlines strategies and financing options for a portfolio of projects. The plan aligns closely with our Air Quality Program and our Energy Management Policy which includes a six-point approach for meeting the Port's greenhouse gas reduction goals by:

- Seeking ways to reduce energy consumption;
- Evaluating emerging distributed generation strategies;
- Upgrading outdated systems with more efficient equipment and optimize the use of natural sources of energy;
- Facilitating efficient use of energy by Port tenants;
- Developing systems that move people and goods more efficiently through Port facilities; and
- Purchasing renewable energy from sustainable sources.

Along with supporting the Port's strategic Carbon Footprint Reduction Initiative, the Energy Management Program acts as a technical resource to all Port operating areas. This includes reviews of proposed local, state and federal energy or carbon regulations, identifying their potential impacts on Port operations or utility services.

Tracking building performance related to energy reduction is an important strategy of the program. Data is used to refine operating systems and prioritize investments that will achieve the greatest efficiencies. The Energy Management Program also researches and coordinates the purchase of Renewable Energy Certificates equivalent or greater to offsetting 100 percent of Port-wide electricity consumption.



Window design at headquarters optimizes the use of sunlight and control strategies to boost lighting energy efficiency.

DESIGN FOR ENVIRONMENT

The Port's LEED Platinum-certified headquarters (HQ) building and PDX long term parking garage serve as a showcase for innovation in energy conservation. The HQ building uses about 36 percent less energy than a typical building of its size and the parking garage uses 78 percent less energy than a similar size garage.

One such sustainable technology the HQ building uses is a closed-loop geothermal heating and cooling system combined with passive radiant ceiling panels to provide energy efficient thermal comfort to the office space.

ENERGY EFFICIENCY

We've collected energy use data since 2001 and began our Carbon Footprint Reduction Initiative in 2009, with a goal of reducing the Port's greenhouse gas emissions 15 percent below 1990 levels by 2020. Energy efficiency projects support Energy Management Program and Air Quality Program targets.

We've reduced Port-wide energy consumption by 16% since 2011.

TARGET: Reduce Port-wide energy consumption by 20 percent from 2011 baseline by 2020.

TIMEFRAME: 2014-2020

ACTIONS: The Portland International Airport-wide lighting upgrade project finished construction, reducing annual energy consumption by 1,383,000 kWh and resulting in a carbon footprint reduction of approximately 1,020 metric tons per year.

Energy conservation opportunities identified by the Energy and Carbon Management Master Plan were evaluated for inclusion in the upcoming PDX Terminal and Concourse Capital Projects expansion work.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: This year we will continue to implement planned energy efficiency projects, including verifying and measuring energy savings of completed marine and aviation projects and beginning the initial design for energy efficiency projects related to infrastructure for airlines. Where applicable, we will add energy efficiency measures to the planning and scope of existing or open projects.

2016 Port Electricity & Natural Gas Consumption



To reduce electricity consumption at PDX, we've upgraded lighting, installed motion-sensing moving walkways and modernized the baggage handling system.



PDX Terminal Total Energy Use vs. Total Passengers



Upgrading roadway lighting on Airport Way.



At PDX, 140 photovoltaic panels supply 100 percent of the energy to the Nike store in the terminal. The PDX stormwater deicing treatment facility includes an additional 152 panels.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: We will continue to install meters for another five years to allow for upgrades over time as new PDX concessionaires sign leases. We are also expanding the system to install standardized meters for marine and general aviation facility tenants.

NEW LED LIGHTING

We began upgrading to new LED lighting across Port facilities in 2016. The project swapped fixtures and bulbs out on existing poles at marine terminals and Portland International Airport parking lots, roadways and maintenance facilities. The new lighting impacts over 80 acres of parking and over 6 miles of roadway (30 acres).

ENCOURAGING CONSERVATION

In 2015, the Port of Portland began implementing a sub-metering system to track real-time PDX food and retail concessions for electricity, natural gas and water use. As a result, we better understand Port versus tenant energy utilization. The meters also enable us to exclude tenant energy consumption from Port-wide carbon footprint accounting.

Implementing sub-metering systems enables the tenants to receive monthly utility bills so they can better understand their daily and monthly energy use. Individual meters encourage conservation and provide the opportunity to more easily identify and fix issues.

TARGET: Develop an energy baseline metering, tracking and analysis system for Portland International Airport terminal complex and other large Port building's or systems utility service.

TIMEFRAME: 2012-2022

ACTION: We continued to install tenant sub-meters at PDX to promote energy conservation, recover operational costs and improve the accuracy of the Port's emissions inventory. We now require tenant metering for all new PDX concession spaces (nonairline) to monitor and bill tenants for their electricity, natural gas and water consumption.

STRATEGIC ENERGY MANAGEMENT

We participate in the Energy Trust of Oregon's Strategic Energy Management (SEM) program. The program provides incentives for reducing electric and natural gas usage through SEM recommendations, reaching milestones and providing education through certifications and additional training to employees. SEM enables us to collaborate with other organizations seeking similar improvements and attend workshops that share best-practices. The ongoing program provides support to refine management practices, which results in improved operating procedures and yearly cumulative energy savings.



TARGET: Develop and deliver a Strategic Energy Management program for the Port's commercial energy improvements in partnership with the Energy Trust of Oregon.

TIMEFRAME: 2015-2018

ACTION: We have completed two-years of participation in the SEM program. An after-hours assessment of our HQ building identified opportunities to reduce energy consumption through guiding employee behavior; we shared audit results through employee communications. Information gained from program participation is used to identify corrective work such as employee outreach, system control set points and the addition of occupancy sensors.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: This target supports broader awareness of how Port employees and tenants can personally contribute to energy efficiency through their daily actions and habits. It will focus on communications, education, facility monitoring and cohort participation in the Energy Trust's SEM Program.

ELECTRIC VEHICLE CHARGING STATIONS



Our fleet includes 32 hybrid and electric vehicles. To further improve our performance, criteria for replacement includes evaluating how a new model will increase fleet fuel efficiency.



Electric vehicle plug-in stations are offered free of charge to the public at PDX. The red economy lot has 42 Level 1 stations. The short-term parking garage offers six Level 2 stations. Employee parking lots offer an additional 15 stations.

Port-wide Energy Use



We purchase RECs exceeding 100% of Port-wide electricity use.

Our Renewable Energy Certificate (REC) purchase includes tenants in the PDX Terminal and a portion of Terminal 6 electricity.

RENEWABLE ENERGY CERTIFICATES

Each year, we commit to 100 percent renewable power by purchasing Renewable Energy Certificates. This target supports us in achieving our greenhouse gas reduction goal.

As a result of this ongoing commitment, we are consistently listed in the Top 10 in the Local Governments category among 100 percent Green Power Purchasers under the U.S. Environmental Protection Agency's Green Power Partner ranking system.



TARGET: Purchase 100 percent of all Port electric energy from renewable sources by selecting costeffective options in the energy market for Renewable Energy Certificates, Vintage Year 2016.

TIMEFRAME: This is an on-going target that began in 2010.

ACTION: We continued to uphold our commitment to 100 percent renewable power by purchasing 75,000 Renewable Energy Certificates last year, equating to about 75 million kWh of electricity consumption. **PROGRESS:** The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Purchase 100 percent of all Port electric energy from renewable sources by selecting cost-effective options in the energy market for Renewable Energy Certificates, Vintage Year 2017.

ENERGY MANAGEMENT PARTNERSHIPS

- Energy Trust of Oregon
- EPA Green Power Partnership


Since 2011, we've completed 23 energy efficiency projects representing over five million dollars in investment to reduce energy consumption.

Report OF PORTLAND

LAND QUALITY Performance & Projects



Over **10** years of tenant outreach has resulted in a remarkable PDX restaurant diversion rate of **63%**

We help **10** airports a year on waste minimization best practices.

ctices.

LESS WASTE MORE WORLD®

15 years of partnership

with Portland State University - Community Environmental Services, giving 35 student interns hands-on experience.



In 2010, the

Environmental Protection Agency awarded Troutdale Reynolds Industrial Park the Phoenix Award for Top Brownfield Redevelopment in the U.S.



We've planted

100,000 native plants to enhance wetlands at Troutdale Reynolds Industrial Park. Site development will close 3 gaps in the **40-mile loop trail**.



49 historically contaminated sites cleaned up since 1988 on Port properties to protect human health and the environment.





Troutdale Reynolds Industrial Park is located between the Columbia and Sandy rivers and bordered by the Troutdale Airport and Marine Drive. This 700 acre brownfield redevelopment has a mix of industrial and natural resource areas.

LAND QUALITY

We restore land to its intended use and minimize waste through innovative partnerships to advance sustainable solutions.

The Land Quality Program encompasses a broad scope of work that includes waste management and minimization, spill and emergency response, petroleum storage tank regulation and management, hazardous building materials, as well as site cleanup and restoration. We evaluate all activities that generate waste, or have the potential for a significant environmental impact and use this information to create minimization strategies. They include:

- Managing hazardous building materials such as asbestos, PCBs and lead-based paint to ensure proper tracking, containment and/or disposal;
- Remediating legacy contamination on sites with historical industrial use and practices; and
- Planning for emergency response to ensure environmental considerations are integrated into emergency response plans.

WASTE MINIMIZATION

PROGRAM OBJECTIVE: Reduce waste generation and hazardous materials use.

Waste management includes the management and minimization of solid, hazardous, universal and special wastes as well as the management of hazardous building materials, construction and demolition wastes. We set annual and multi-year goals to support the Waste Minimization Policy, program objectives and promote continuous improvement. Outreach and engagement continue to be important tools in the program.

2016 Total Waste by Facility



PDX generates most of our waste, this includes tenant, airline and waste generated by travelers. Thus, we focus our waste minimization efforts in the terminal. Note: This graph does not include construction and demolition waste.



PSU student interns solve waste challenges at PDX by conducting waste studies and providing tenants strategic feedback and support.

WORKING TOWARDS ZERO WASTE

Five Years to Zero Waste is our ambitious plan developed in 2014 to create guidance for the actions necessary to reach zero waste status, which the EPA defines as landfill waste diversion of 90 percent or greater. We developed the plan through an ongoing partnership with Portland State University's Community Environmental Services to research innovative, industry-leading waste minimization practices. The plan sets out a framework to achieve zero waste status with specific actions, priorities and targets across Port-wide facilities.

Each year we select two to four areas around the Port to conduct a waste study and look for opportunities to better understand and improve waste minimization and diversion on our path to zero waste. This includes audits of Port, tenant and public areas where the Port has responsibility for waste management. Waste data and analysis are then used to engage tenant and employees to strategically reduce it. Data has helped inform the development of food donation, food waste collection for composting and expanded recycling programs. We also implemented a program in 2014 to reduce construction-related waste for tenant improvement projects.

Changes to regional waste management practices and the dynamic recyclables market have affected our success in reaching our zero waste goal. For example, in 2015 the regional waste authority began requiring commercial food waste collection to compost food waste only, excluding compostable fibers, such as paper towels. This led to an increase in landfillbound waste because compostable packaging and containers were no longer permitted in that waste stream. Lower petroleum prices and changing demand and requirements for recyclable materials in international markets have affected the recyclables market, influencing our ability to recycle certain plastics and mixed papers.

2016 Waste Minimization Stats:

We achieved a 75 percent landfill diversion rate at HQ and 33 percent across all of our facilities. In construction and demolition waste, we divert over 90 percent.

WASTE AUDITS AT PDX

A 2016 PDX Terminal-wide waste audit revealed the relative contribution of waste between different airport users. While concessions produce 37 percent of the waste, they also have the highest diversion rate of 63 percent. This success is a result of more than ten years of engagement that has created a culture of sustainability and support system. In contrast, the public area produces 30 percent of the waste, but only has a 17 percent diversion rate; future outreach efforts will look at how to engage and support the flying public in recycling and reducing waste.

We have incorporated waste minimization goals into PDX Terminal expansion and reconfiguration design and construction. Public, concessions and airline outreach will remain important tools to move toward zero waste.

2016 PDX Waste by Source



The contribution of waste from different stakeholders is split relatively evenly between the flying public, concessions and deplaned material. Deplaned waste includes only the waste that comes off of airplanes. Information based on May 2016 audit.



PDX Terminal Total Waste



Even though our passenger count continues to increase, terminal waste per passenger is trending downward.



TENANT OUTREACH

Regular spring and fall cleanup events at PDX allow all airport tenants and operators to drop-off unwanted items such as retail displays, office chairs, signage, furniture, electronics, decorations and other reusable items for donation or disposal. At the spring 2016 event alone, 20 tons of material was diverted or donated

TARGET: Achieve 90 percent or greater landfill diversion by 2018.

TIMEFRAME: 2013-2018

ACTION: The Waste Management Team (WMT) piloted the Green Plate and HQ Box durable dishware programs for diners at PDX food carts or for Port HQ employees taking their food togo with support from the Oregon Department of Environmental Quality Materials Management Division. Pre- and post-waste audits measured the efficacy of the program in reducing waste from disposable to-go containers; initial results show a reduction. We also gathered feedback from customers, food cart operators, janitorial staff and Port Concessions Operations to evaluate successes and opportunities for improvement in program design. Data from waste audits, stakeholder feedback and pilot program success will be analyzed and synthesized in a report to determine next steps.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Provide signage and conduct outreach in select areas of the PDX terminal to increase public recycling participation.



GREEN PLATE & HQ BOX PROGRAM

To reduce waste from disposable food containers at PDX, we piloted a program to provide durable dishes and a reusable to-go box for employees. The project took place in the pre-security food cart area where we observed that 77 percent of the customers enjoyed their food sitting down. Oregon Department of Environmental Quality jointly funded the pilot project with a materials management grant. We are evaluating options to continue the program based on positive stakeholder feedback and waste reduction potential.

Program results include:

- 73 percent reduction in to-go packaging waste.
- 374 pounds of food waste collected and composted.
- 10,000 dishes reused.



The PDX central waste collection area provides many recycling options including cardboard, mixed paper and plastic, glass, food compost, food oil, plastic buckets with a bucket washing station, lightbulbs, Styrofoam and more. When possible, reusable items are donated to community groups.



FOOD WASTE OUTREACH

Food waste is a significant issue at PDX and around the United States. Since 2003, we've composted more than 2,350 tons of food from PDX. While we are proud of our waste diversion efforts, we recognize that wasted food also represents lost natural resources, profit and efficiency. To investigate the causes of the problem, we conducted interviews and surveys with food concessions partners. Those findings are synthesized in the PDX 2016 Food Optimization Study; results of the analysis will be used to prioritize future projects. **TARGET:** Reduce food waste from PDX terminal restaurants by implementing one or more Food Optimization Study recommendations in coordination with restaurants in the PDX Terminal.

TIMEFRAME: 2015-2017

ACTION: The Waste Minimization Team created outreach materials based on a Food Optimization Study that examined how restaurant business purchasing, inventory and marketing models influence levels of waste generation, while simultaneously assessing new opportunities for food diversion and food waste reduction for PDX concessions. Messages and materials were developed based on stakeholder interviews. The outreach materials are designed to increase restaurant employee involvement in food optimization by providing education and a standard waste-tracking method. This target contributes to the implementation of the Port's Five-year Zero Waste Plan.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Now that the Food Optimization Study and initial outreach is complete, this area of work is being merged with the objective associated with tenant outreach.



Photo credit: Urban Gleaners

FOOD DONATION PROGRAM

Since 2015, Urban Gleaners has brought more than 155,000 meals to the community with food donated from PDX. The partnership helps to feed the community and meet waste minimization goals. PDX food concessions first began donating leftover, quality food in 2011 and it has now expanded to include new restaurants and pick-ups three times a week from a central refrigeration area.

TARGET: Minimize waste generation by providing waste minimization outreach and technical assistance to PDX terminal and non-terminal tenants.

TIMEFRAME: 2015-2020

ACTION: The Waste Minimization Team collaborated with Port and tenant construction departments to determine best practices for minimizing construction and demolition waste and to encourage material diversion and waste tracking. The team continued work with Atlantic Aviation to track waste generated during new facility construction. A report summarizing the findings from the landfill-bound waste assessment and opportunities for waste diversion was completed. The report also included detailed recommendations for waste collection and handling equipment as well as outreach and signage for the new Atlantic Aviation facility.

2017-18 ACTION: Conduct a Grab & Go product study with a PDX concessions partner to understand how purchasing, inventory, marketing and display practices as well as sales and passenger data affect food waste. This action builds on the 2016 Food Optimization Study that assessed how restaurant management practices in the airport affect food waste. We will also continue to develop tenant outreach materials, conduct outreach to non-terminal tenants, identify tenants interested in partnering, perform waste assessments and report the findings and recommendations back to them.



SPILL PREPAREDNESS AND RESPONSE

Our Spill Preparedness and Response Program covers training, preparedness and response for spills at Port operations and managed locations. We also work closely with our Emergency Program Manager to ensure preparedness and alignment of our programs and associated procedures.

The Port is a member of the Maritime Fire and Safety Association (MFSA), a non-profit organization tasked with developing a spill response consortium for vessels transiting the Columbia and Willamette river system. MFSA is responsible for the development and implementation of the regulatory required Oil Spill Contingency Plan for vessels transiting the lower Columbia and Willamette rivers to the various Ports in both Washington and Oregon. Funds collected from vessels calling the Ports go towards the purchase of the oil spill response equipment, training of personnel, payment of dedicated spill response contractors and program administration.

The majority of spills on Port-managed properties, including our own operations, are tenant-related or from unknown sources. We have agreements and resources in place to assist tenants that are unable to adequately respond to their own spills (but retain ultimate responsibility for clean-up and associated costs). Oversight ensures proper notification, reporting clean-up and follow-up, protecting our property and adjacent waterways.

Hazardous Waste Generator Status

We've minimized hazardous materials in our operations.





After 10 years of research and testing, in 2009 we switched to water-based paints for striping on the PDX airfield. Paints must meet specific requirements for use to support operational safety. The new, less hazardous paint formulation contributed to PDX Maintenance achieving VSQG status.

REDUCING HAZARDOUS WASTE

Generally, our operations are very small quantity generators (VSQG) of hazardous waste. This is a distinction made by regulatory agencies based on the relative volume of hazardous waste an operation produces. VSQGs produce less than 100kg of hazardous waste per month (or 1kg of acutely hazardous waste) and may not accumulate more than 1000kg of hazardous waste in at any time. Hazardous waste periodically generated by Port operations may push us above the VSQG threshold, triggering additional training and recordkeeping requirements. VSQG is a status that we must earn. For example in 2016 one of our facilities was vandalized, causing cleanup of broken fluorescent bulbs. This accident triggered small quantity generator status at the site.

Status of Port Cleanup Sites Aviation, Marine and Industrial Development Properties

Over time, we've addressed contamination from historical practices.



Since 1988, we have remediated 49 historically contaminated sites on our properties to protect human health and the environment. When a site has met regulatory requirements for cleanup it is "closed," and it receives a status of "no further action" from the regulatory agency. This does not include Portland Harbor.

SITE CLEANUP AND RESTORATION

Many Port-owned properties have a history of industrial use. Given legacy practices, there is potential for contaminants to be in the soil and water. Underground storage tanks, illegal dumping or emerging contaminants pose additional risk. We actively investigate and cleanup sites where we are aware of or have discovered contamination.

We take a proactive, risk management approach in managing site characterization, cleanup and restoration. When we discover contamination on a site, several phases follow. We first use a scientific approach to collect data and assess the geological and hydrological conditions, define the extent and magnitude of potential contaminants and assess risk to human health and the environment posed by contaminants. That information is used to develop a plan, coordinate remediation and restore the property to meet its future intended use.

We engage stakeholders, such as property managers, tenants and regulators to ensure there is appropriate understanding of the management strategies and remediation plan. Our goal is to cleanup all of our contaminated sites to meet state and federal regulatory requirements that are protective of human health and the environment and facilitate ongoing and future productive use of the property. Over time, we have worked to restore and achieve status of "no further action" for 49 sites in Port ownership.

LAND QUALITY PARTNERSHIPS

- Association of Oregon Recyclers
- City of Portland
- Maritime Fire and Safety Association
- Metro
- Oregon Department of Environmental Quality – Materials Management and Northwest Region
- PDX Concessionaires
- Portland State University Community Environmental Services
- Urban Gleaners
- US EPA



PORTLAND HARBOR SUPERFUND AREA

The U.S. Environmental Protection Agency listed the Lower Willamette River as a Superfund site in 2000. The Port actively supported the 16-year process of studying the river and understanding the risks from the pollution. Contamination of this stretch comes from more than 100 years of industrial activity, including ship building and ship scrapping (dating from both World War I and II to the Korean War), regional development and stormwater discharges, among other things. There are likely 150 parties, including the Port, with potential liability who have been involved with the site.

On January 6, 2017, this process reached a new milestone when EPA issued its final cleanup decision known as the Record of Decision. We are committed to a cleanup of the Lower Willamette River that protects the health of Portlanders and the environment and to finding the most cost-effective way to achieve it.

The Port has already started cleanup in Portland Harbor. In 2008, the Port undertook the first "early action" cleanup at our Marine Terminal 4. The Port dredged approximately 12,800 cubic yards of contaminated sediment, capped approximately 8,000 square feet of sediment and stabilized and improved 850 feet of shoreline. The Port is now ready to work with EPA under the Record of Decision to complete the work at Terminal 4. For more information about the cleanup and our role, please visit: www2.PortofPortland.com/Superfund.



We worked with the City of Gladstone to create new fish habitat, restore shoreline and remove a failing bulkhead at Dahl Beach, a popular winter fishing spot for salmon along the Willamette River. It was a mitigation project for a Terminal 4 early action cleanup that required creation of fish habitat within the urban corridor.



Development of Troutdale Reynolds Industrial Park turned a former privately-owned Superfund site into an award-winning brownfield redevelopment project.



Our team of biologists salvaged amphibians from the TRIP site prior to construction. Of particular interest were the red-legged frog (shown above). Once complete, the site's wetland enhancements will offer a much larger habitat area for reptiles and amphibians.

TROUTDALE REYNOLDS BROWNFIELD REDEVELOPMENT

The U.S. EPA awarded TRIP the Phoenix Award in 2010 for top brownfield redevelopment in the US.

Troutdale Reynolds Industrial Park (TRIP) is a brownfield site that was once considered too contaminated for development. Beginning in 2007, the Port began tackling this complex project to bring the property back to productive use. This challenging site involves legacy contamination, existing utility infrastructure, flood management, air traffic safety concerns and natural resource protections.

The 700 acre site includes a combination of open space and industrial lots that will be home to future businesses and new wetland habitat as part of a mitigation plan. The plan consolidates small, isolated wetlands into a much larger wetland system with greater benefits to wildlife and water quality. The development also includes extending the 40-Mile Loop Trail, a recreational feature in the area. Located at the confluence of the Sandy and Columbia rivers, the site provides a unique opportunity for wetland creation and enhancement, along with many challenges to restore floodplain wetland within a dynamic, riparian environment. The wetland enhancement and creation project included moving 500,000 cubic yards of material to form the Sundial Channel and surrounding wetlands. To stabilize the site, we installed 152,000 square yards of coconut fiber matting over soil hydroseeded with native species. Over 98,000 plants were installed, including 21 different native tree and shrub species.

Site development is happening in several phases. More information is available on our website: https://www2.portofportland.com/Properties.

PORT OF PORTLAND

NATURAL RESOURCES Performance & Projects



assessments conducted since 2005 to protect cultural and historical resources.



5 local, regional and federal organizations partner with us to manage natural resources, including invasive species.



trees and shubs planted in partnership with Friends of Trees in nearby neighborhoods and natural areas.



Award-winning wildlife hazard management program engages the public in tracking raptors captured and released away from PDX.

www.pdxraptors.com

900+

acres of natural areas, mitigation and enhancement sites managed as wildlife habitat, many of which provide connectivity between natural areas in the highly urbanized Portland region.



species of wildlife and **80 plant species** find a home at our **90 acre** Vanport Wetlands mitigation site.

acre Government Island Grassland Enhancement Project included planting 630 lb of native wildflower seed and monitoring for bees and insects in partnership with **Xerces Society**.





The Bobcat Marsh Wetlands Mitigation Project restored and enhanced wetland habitat on nearly 13 acres of Hillsboro's Jackson Bottoms Wetlands Preserve. It is a model partnership project between the Port, Oregon Department of Transportation and City of Hillsboro to develop mitigation credits when development projects affect environmentally-sensitive areas.

NATURAL RESOURCES

For us, home is the rich and diverse ecology of the Columbia, Willamette, Sandy and Tualatin River basins. We play an important role in the stewardship and conservation of these valuable natural resources.

PROGRAM OBJECTIVE: Minimize impacts and seek opportunities to enhance natural resources.

Our Natural Resources Program plays an important role in identifying opportunities to enhance and protect natural resources as part of the Port's planning, development and operational activities. The program works across the range of the built environment, undeveloped lands, mitigation sites and conservation areas and includes the following programmatic focus areas: Cultural and Historical Resources, Wildlife Hazard Management, Mitigation Management and General Natural Resources Management.

As one of the largest landowners in the Portland metropolitan area, which includes approximately 10,000 acres in the historic Columbia River floodplain and upper Willamette Valley, we identify potential impacts to natural resources associated with our operations and develop strategies to avoid, minimize and mitigate impacts where appropriate.

The Natural Resources Program considers habitat type and local ecology in making management decisions. The program monitors birds, wildlife and vegetation (including threatened and endangered species) and implements management activities based on what is observed including invasive species removal, tree planting and habitat enhancement or modification. Engaging with community partners helps us to identify opportunities for enhancement and target species and habitats to support regional conservation goals and initiatives.

Given the Port's mission, not all Port lands are compatible with natural resource conservation. We seek opportunities to enhance natural resources where appropriate and consider strategies to:

- Protect the integrity of the natural environment;
- Promote natural ecosystems that favor native biodiversity, reduce fragmentation and promote connectivity; and
- Protect and enhance natural resources of ecological significance.

We strive for ongoing improvement through reviews, monitoring and adaptive management, which uses science-based methods to evaluate and adjust future actions. Our focus areas include:

- Implementing mitigation methods that restore and maintain ecosystem functions and values;
- Leadership in aviation wildlife management;
- Ensuring significant cultural resources are properly managed, documented and preserved; and
- Building partnerships and considering innovative programs to achieve conservation goals.



Originally built as a corporate jet hangar for Georgia-Pacific, Hangar 8005 is an unusual example of Googie architecture. The dramatically curved Googie roof design appears to have been chosen, in part, as a unique way to accommodate the frame of new jets made available in the early 1960s. Hangar 8005 was dismantled as part of a larger project to redevelop the general aviation ramp at PDX. Historical information is archived on our website.



This cryptocrystalline silicate end scraper is an example of an item typically encountered on Port property. Objects like these are either documented and left in place (if the land is in active use), or curated at the Oregon Museum of Natural and Cultural History.

CULTURAL AND HISTORICAL RESOURCES PROGRAM

The confluence of the Columbia River and the Sandy and Willamette rivers are especially rich zones for archaeological resources given the indigenous peoples use of abundant river and floodplain natural resources. This same area is also prolific in post-contact history given the European settlement pattern along the transportation corridors of rivers and agricultural development of floodplains.

Given this history and the location of our properties along major rivers, we occasionally encounter artifacts and historic structures. We manage them in compliance with federal, state and local regulations. This may include archaeological as well as historical and architectural resources. We assess them for significance under specific criteria in the National Historic Preservation Act to determine next steps.

Our PDX Cultural Resources Management Plan outlines principles and protocols for stewarding these resources. We strive to both engage with the community and Tribes and meet all regulatory requirements. We look for opportunities to be proactive and innovative; an example is the recent development of our Cultural Resources public website for historical and architectural resource reference.

For more information, visit: https://www2. portofportland.com/Inside/CulturalResources.

Additional Actions:

- 2016: Cultural Resources Website
- 2016: Cultural Resources Management Plan
- 2007: PDX Cultural Resources Database
 Development
- 2000: Vanport Radio Towers Site (KGW)
- 1994 2000: PDX and Portland International Center Cultural Resource Surveys



Our biologists have a unique partnership with the Oregon Native Turtle Working Group, collaborating with them and Oregon Department of Fish and Wildlife to develop a best management practices manual. We also host a citizen science website to record public turtle sightings.

NATURAL RESOURCES PARTNERSHIPS

We are an active participant in local, regional and state-wide organizations and programs. Partnerships support coordination on issues that transcend property boundaries, increase our collective capacity to make a positive impact, provide a space to discuss Port operations and build relationships to enhance communication and coordination. Collaboration varies from participating on committees, restoration projects or working closely on the fight against invasive species. Our partners include:

- 4-County Cooperative Weed Management Area
- City of Hillsboro
- City of Portland
- Center for Natural Lands Management
- Columbia Slough Watershed Council
- Metro
- Multnomah County Drainage District
- Oak Prairie Work Group –
 The Intertwine Alliance
- Oregon Department of Agriculture Oregon Department of Environmental Quality – Task Force on Shipping Transport of Aquatic Invasive Species
- Oregon Department of Fish and Wildlife
- Oregon Parks and Recreation Department
- Oregon Department of Transportation
- Oregon Invasive Species Council
- Oregon Native Turtle Working Group Lower Willamette Chapter
- Oregon State Parks and Recreation

- Northwest Youth Corps
- Pacific Birds Habitat Joint Venture
- Sandy River Basin Watershed Council
- Smith and Bybee Wetlands Advisory Committee
- Streaked Horned Lark Working Group
- The Confederated Tribes of the Grande Ronde
- The Xerces Society
- US Department of Agriculture Animal and Plant Health Inspection Service
- US Fish and Wildlife Service
- Willamette Aquatic Invasives Network
- Yakama Nation Federal Resource
 Management Program



As a result of regular monitoring, we have fenced off and redirected access roads to protect active bald eagle nest trees from disturbance on West Hayden Island.



Employees and their families participate as volunteers in planting events.

FRIENDS OF TREES PARTNERSHIP

TARGET: Extend partnership with Friends of Trees by sponsoring and participating in tree plantings in neighborhoods adjacent to or near Port facilities to offset impacts from our operations. Events include an employee service opportunity.

TIMEFRAME: This is an on-going target that began in 2008.

ACTION: We funded Friends of Trees planting projects for tree canopy enhancements in areas impacted by airport operations, which included the following community-based volunteer events: SE Vancouver, WA (11/19/16), Sandy River Delta (2/4/2017) and Jackson Bottom Wetland Planting (3/25/17).

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Extend partnership with Friends of Trees by sponsoring and participating in tree plantings in neighborhoods adjacent to, or near, Port facilities to help offset impacts from our operations.



We are funding a three-year study to investigate Pacific Lamprey (Thaleichthys pacificus) presence, migration timing and relative abundance using eDNA analysis near Port properties in the lower Columbia River.

PACIFIC LAMPREY MONITORING

TARGET: Develop a Pacific lamprey monitoring plan in conjunction with the US Fish and Wildlife Service and the US Army Corps of Engineers for locations near Port Marine Terminals. This is a two-year target that is intended to meet the Port's obligation under the 10-year terminal-wide berth maintenance permit.

TIMEFRAME: 2015-2017

ACTION: We completed fabrication of a Larval Lamprey Electrofishing System and preliminary testing at the Yakama Nation fish hatchery. This included lamprey tissue sample collection to be used in eDNA primer for future eDNA analysis. Work was summarized into a technical memorandum: Larval Lamprey Sampling Equipment and Method Development.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Actions will continue in this project; however, it is not a formal target within the Environmental Management System.



In fall 2015, we planted 50 acres of grassland on Government Island with 630 pounds of wildflower seed and 2,000 Camas bulbs. The Xerces Society conducted pre- and post-project insect monitoring to quantify the benefits of grassland enhancement to pollinators. Other pollinator conservation projects include research with Bridgetown Bees, beneficial wildflower plantings and bee block installation at mitigation sites.

AIRPORT FUTURES NATURAL RESOURCES PROJECTS

TARGET: Implement projects in support of the Airport Futures Intergovernmental Agreement for environmental improvements around Portland International Airport.

TIMEFRAME: 2010-2035

ACTION: The Natural Resources Team conducted site maintenance and monitored birds and vegetation and the Xerces Society monitored pollinators on the 50 acre native grassland mitigation site at Government Island to evaluate the success of the enhancement project and guide future management.

ACTION: Working in partnership with the PDX Community Advisory Committee (CAC) Natural Resources Sub-committee, we selected a project for funding to enhance the ecological health of the Columbia Slough Watershed.

ACTION: The CAC approved funding to support the work with Friends of Trees for urban tree canopy enhancements, which included: Columbia Children's Arboretum (1/21/17), Piedmont and Woodlawn neighborhoods (1/28/17), Argay,

Parkrose, Parkrose Heights, Russell and Wilkes neighborhoods (2/25/17) and Concordia and Vernon neighborhoods (3/11/2017). Employees participated as planting volunteers.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTIONS: We will continue Phase I of the Government Island Grassland Mitigation Project through monitoring and maintenance activities, select and fund one Columbia Slough Enhancement Project in partnership with the PDX Community Advisory Committee and complete one Tree Canopy Enhancement Project.



To discourage Great Blue Heron from the airfield, we manage prey species and have a prescriptive mowing schedule.

WILDLIFE HAZARD MANAGEMENT PROGRAM

The overall objective of our Wildlife Hazard Management Plan (WHMP) is to develop an integrated and adaptive program that manages risk at all of the Port's airport facilities by reducing the probability of wildlife and aircraft collisions.

A major milestone occurred in 1997 when we installed wildlife exclusion fencing around the PDX airfield perimeter. The fence has reduced the incursion of terrestrial wildlife onto the airfield to a manageable level. Avian species, however, remain a statistically higher risk for aircraft at PDX, especially during the critical phases of takeoff and landing.

Consequently, the risk evaluation process of the WHMP focuses on avian wildlife. It is recognized that the risk of a bird strike at PDX can never be completely eliminated. PDX is located on the Pacific flyway and at the confluence of two major river systems, all of which serve as major movement corridors for migratory and resident bird species. The underlying premise of the WHMP is that it is possible to manage the risk to an acceptable level. The intent of the program is to provide the necessary direction to do so, in a scientifically sound manner, utilizing non-lethal means whenever possible.

We are working internationally to share bestmanagement practices that minimize harm to wildlife to support program development at other airports.

PDX RISK ASSESSMENT MODEL

PROBABILITY									
SEVERITY		Very High	High	Moderate	Low	Very Low			
	Very High		Mallard	Osprey Canada Goose		Green-winged Teal Northern Pintail Turkey Vulture Wood Duck [Bald Eagle] [Deer]			
	High	Red-tailed Hawk	Great Blue Heron	Rock Pigeon American Crow Gull spp.	Coyote Great-horned Owl				
	Moderate								
	Low		Barn Owl European Starling		Short-eared Owl	Killdeer Northern Harrier			
	Very Low	American Kestrel	Swallow spp.						

The PDX Wildlife Hazard Management Plan uses a risk evaluation approach built on the body of work of Dr. J.R. Allan. The risk matrix has been adapted to site specific issues using probability and severity as key indicators. Probability of occurrence is derived from PDX strike data. Severity of damage is derived from the Federal Aviation Administration national database. The matrix is updated yearly based on five-year rolling averages.

Aircraft Wildlife Strikes - PDX

Increased reporting helps refine our program.



Frequency of aircraft strikes varies from year to year. The upward trend is due to the increase in reporting as we engage all airport users to submit complete and accurate reports. To encourage participation, we distribute strike kits at outreach events.



Raptor translocation is an ongoing management practice at PDX due to the area's attractiveness to hawks. Trapping primarily occurs during the spring and fall migratory periods when an influx of non-resident migratory and transient raptors flies through.

RAPTOR MONITORING

Red-tailed hawks (*Buteo jamaicensis*) are common North American raptors. Because of their relative abundance, wide distribution and affinity for open areas, they are one of the raptor species most frequently encountered at airports.

At PDX, red-tailed hawks occur as year-round residents, spring and fall migrants and wintering and transient birds. Active capture, banding and translocation from the airfield is one on-going method used to reduce the number of them and the incidence of strikes, particularly during spring and fall migration when non-resident red-tailed hawks are most numerous.

An important component of our Raptor Translocation Program is knowing where the birds settle after they are released. We gather data by engaging the community through our PDX Raptors website. Participants log raptor sightings from around the region. The citizen science data supports the selection of successful release sites to lower raptor return rates to PDX. Engaging the birding community is an important element to our success and protects birds, keeping them away from the dangerous airfield environment. We have captured and released approximately 1,600 red-tailed hawks since 1999. While not as frequent, the program manages other raptor species as well, such as American kestrels. In total, we have translocated thirteen different species and 2,530 individual raptors between 1999 and 2016.

For more information, visit our Raptor Translocation Program website: https://www.pdxraptors.com/.



Our Hillsboro Air Fair provides an opportunity to share information about the Wildlife Hazard Management Plan, providing education on tools and techniques used to reduce bird strikes to aircraft.

ENGAGING STAKEHOLDERS

We have taken a collaborative approach to building and designing the PDX Wildlife Hazard Management Program through the PDX Aviation Wildlife Advisory Committee. The committee provides feedback on our program and an opportunity to coordinate on mitigating wildlife hazards. An educational partnership provides a hands-on internship opportunity to Mt. Hood Community College students. Members include:

- Audubon Society of Portland
- US Fish and Wildlife Service
- Oregon Department of Fish and Wildlife
- Federal Aviation Administration
- Oregon Department of Aviation
- Oregon 142nd Fighter Wing ORANG
- City of Portland Bureau of Environmental Services
- Oregon Parks and Recreation Department
- Mt. Hood Community College
- Oregon Humane Society
- Portland State University
- Multnomah County Drainage District
- Pacific Habitat Services



In recognition of the 100th Anniversary of the International Migratory Bird Treaty Act in 2016, we placed a display at PDX to educate travelers on the important role this treaty plays in conserving the nation's birdlife.

We monitor birds on our properties in accordance with the International Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act in cooperation with the US Fish and Wildlife Service. Additionally, we delay or sequence work scheduling on construction projects to avoid impacts to active nests.

Mitigation Site Status



We continue long-term stewardship on all mitigation property.

While some of our mitigation sites are under current state and federal compliance requirements (designated as "regulated" in the graph), most sites have met success criteria and are released from regulation.

MITIGATION MANAGEMENT PROGRAM

We manage over 900 acres of wetland and upland mitigation and enhancement sites. These managed natural areas provide compensation for temporary and unavoidable, permanent impacts to wetlands and other natural resources from our development or operational activities. Their benefits include:

- Increasing habitat value by enhancing or creating nesting, foraging and resting habitat;
- Improving connectivity between wildlife areas;
- Improving or restoring wetland hydrological functions;
- Reducing and controlling the spread of invasive weeds;
- Improving air and water quality; and
- Providing valuable "greenspace" in a highly urbanized area.

We initiated the Mitigation Management Program in 1997 to respond to mitigation requirements and mandates from regulatory agencies. The program continuously evolves to incorporate the latest science and technology. We report annually on sites under compliance and conduct reporting every two years for stewardship on all sites. Visit our website to access reports: https://www2.portofportland.com/Inside/ MitigationManagement.



More than 160 species of wildlife use the 90 acre Vanport Wetlands mitigation site, including 98 species of birds, 12 mammals and six reptiles or amphibians.



Government Island, on the Columbia River adjacent to PDX, contains significant mitigation acreage. Oregon State Parks manages the public recreation permitted on shoreline areas.

Mitigation and enhancement sites are managed as natural areas under the program to maintain site ecology and improve wildlife habitat. To further demonstrate our commitment to stewardship, we are developing Long-Term Management Plans for most sites, especially those with a high potential for transfer to a land trust or some other entity. The plans summarize our knowledge about the site to provide a new steward with a valuable tool for management and to ensure the site's value and function over time.

STRATEGIC NATURAL RESOURCES MITIGATION

TARGET: Develop a Port-wide Strategic Natural Resources Mitigation Plan that will identify mitigation needs and potential mitigation options.

TIMEFRAME: 2016-2018

ACTION: We developed a draft Port of Portland Mitigation Demand Forecast for a 10-year planning window based on business and operations planning. We will continue to research and develop a Portwide comprehensive mitigation strategy that aligns with regional mitigation banking needs. **PROGRESS:** The actions for this target are 90 percent complete for FY 16-17.

PORT OF PORTLAND MITIGATION AND ENHANCEMENT SITES

If new development is proposed where wetlands or other regulated natural resources are impacted, federal, state and local laws and regulations require that project alternatives be evaluated to 1) avoid the impact; 2) minimize the impact; and 3) mitigate or compensate for the impact to these natural resources. Mitigation is usually in the form of restoration, establishment (creation), enhancement, or preservation of the habitats and functions lost through the proposed development activities.

Permitting and compliance responsibilities for all mitigation sites are primarily enforced by the US Army Corps of Engineers, Oregon Department of State Lands and Oregon Department of Environmental Quality, with associated federal, state and local agencies having influence and comment on permit compliance. Mitigation may also be required through the City of Portland's land use process as a condition of project approval or Clean Water Services in Washington County.

AIRPORT FUTURES MITIGATION AND ENHANCEMENT SITES

In 2011, the Port and the City of Portland signed an Inter-Governmental Agreement (IGA) for natural resources related to the Airport Futures Project, a collaborative effort to create an integrated long-range development plan for PDX. The IGA requires that the Port mitigate for 300 acres of upland grassland resources in lieu of having four PDX properties (totaling approximately 268 acres) zoned as environmental overlays.

Grassland mitigation began on Government Island in 2011 and will be phased in six 50 acre allotments through 2035. The IGA states that the first 50 acres of mitigation must occur in advance of any development on one or more of the four PDX properties identified in the IGA. Future grassland mitigation on the island, above the initial 50 acres, would be triggered when development on the four properties is proposed to exceed 25 acres.

In addition, the Port agreed to undertake the conversion of the 6.2 acre Portland International Center Wetland



Enhancement Site from a mixed wetland and upland area to an area with native shrub cover. The site was planted in 2014 and seeded in 2017. Plantings included 14 different species of native shrubs and wildflowers.

SLOUGH ENHANCEMENT SITES

Oregon DEQ has designated the Columbia Slough as a 303(d) water quality-limited stream under the Clean Water Act. The Port entered into an IGA with Portland's Bureau of Environmental Services (BES) in 2000 to fund work on revegetating portions of the Columbia Slough owned by the Port. The revegetation projects were undertaken to improve water quality within the Columbia Slough and adjacent tributaries. The Columbia Slough revegetation sites are also important with regard to the Willamette Basin Temperature Total Maximum Daily Load (TMDL). As of fall of 2007, BES fulfilled their planting, maintenance and monitoring obligations under the IGA. The Port continues to manage these sites for invasive species and conducts regular inspections. Slough enhancement projects total 73.5 acres in north and northeast Portland, primarily along the Columbia Slough.

RIVERBANK ENHANCEMENT SITES

The Port's Marine Operations section manages a variety of constructed and natural riverbanks and has initiated a Riparian Zone Management Program to address conditions along the Willamette and Columbia rivers in association with its other programs. A number of these projects involve vegetation enhancements or stabilization improvements and do not have mitigation permit requirements. These projects are managed entirely by Marine Operations Property Maintenance, with natural resource guidance and regulatory monitoring provided by Mitigation staff. Riverbank sites total approximately 13 acres.

RIVERGATE ENHANCEMENT SITES

The Rivergate Enhancement Sites are a result of a federal consent decree settling a citizen lawsuit against the Port (Jones vs. Thorne et al., 2001) and several other agencies. The consent decree was signed on January 31, 2001 and it specifies mitigation actions for wetland fills that occurred during the development of the Rivergate Industrial Park over the past 30 years. The 43.7 acres of wetland mitigation has restored and enhanced wetland and riparian habitat for native plants and wildlife in the Rivergate area adjacent to the Columbia Slough, an important wildlife corridor.

STREAKED HORNED LARK MITIGATION

Listed as a threatened species under the Endangered Species Act, streaked horned larks are early successional habitat specialists and are now only found on sparse, recently disturbed grasslands in western Washington and Oregon. Given the natural processes of fire and flood that create their open habitat are absent, they now occupy sites regularly disturbed by human activities such as dredge material placement, agricultural practices, industrial site development and airfield maintenance. In 2017, the Port entered into a Habitat Conservation Plan with the U.S. Fish and Wildlife Service to mitigate for the loss of streaked horned lark habitat on Port industrial properties and at PDX. The 32 acre Sandy Island Conservation Area, an old dredge placement site, is the first site that will be solely managed for their conservation. Research conducted at the site will inform future management and conservation actions to benefit the species.

TROUTDALE REYNOLDS INDUSTRIAL PARK

For information on Troutdale Reynolds Industrial Park (TRIP) mitigation sites please see pages 48 and 49.



🗞 PORT OF PORTLAND

New PDX rental car facility uses non-potable and recycled water instead of treated drinking water to wash cars.



New restroom efficiency signage increased proper flush valve use by 28%, saving thousands of gallons daily.



2017 Best "Green" Concessions Practice Award from Airports Council International – North America for the newly-installed fats, oils

and grease removal system at PDX.





Our PDX deicing stormwater runoff collection system protects the Columbia Slough through treating stormwater runoff that contains deicing materials.



porous pavement at Terminal 6 allows 100% of stormwater to infiltrate on site.



We partnered with KOIN 6 Clean Water Partners to produce TV commercials for the public that

provide pollution prevention tips to the public. New signage educates drivers about the Columbia Slough and how to protect water quality at PDX.



LEED Platinum certified HQ Building includes a living machine. The treatment system uses natural, wetland-like processes to treat and recycle wastewater, resulting in 75% water savings.





Port of Portland operates four marine terminals, including Terminal 5 pictured here on the lower Willamette River. Terminal 6 can be seen in the distant background on the Columbia River.

WATER RESOURCES

Water is a critical and valuable resource for our region. We strive to manage it sustainably through reducing water consumption and managing stormwater.

PROGRAM OBJECTIVE: Minimize impacts to water resources.

Our Water Resources Program works to protect water quality and reduce water consumption related to our own operations and those we enable. We have facilities located in the Columbia Slough, Columbia River, Willamette, Sandy and Tualatin river watersheds.

We take a holistic approach to identifying the best sources of water for particular uses, facilitating the use of non-potable water including water recapture and reuse where feasible. In doing this, we work to ensure that our activities are protective of the public water supply through promoting and implementing water conservation measures. Our operations, land management and development activities also impact water resources. To minimize these impacts, we consider alternatives and evaluate new technologies and practices in water quality management.

We also encourage and facilitate partnerships, education and outreach to assist customers, tenants and community stakeholders in protecting and conserving water resources.

2016 Port-Wide Operations Water Use



Activities at Portland International Airport and the surrounding campus, comprise 82 percent of our water use.



Port-wide Operations Water Use

Use of non-potable water saves drinking water and energy.

PDX Terminal Water Use in Gallons & Per Passenger Trends



Water efficiency continues to improve.

Although passenger count continues to increase at PDX, overall water efficiency per passenger continues to improve through water efficient fixtures, native landscaping and tenant outreach.

WATER CONSERVATION

Water conservation can be defined as any action that eliminates waste or loss of water or improves the efficiency of water uses. This includes opportunities to conserve potable water by substituting with non-potable water sources. Regardless of the source, reducing water use and minimizing waste are essential.

Water conservation is essential to the sustainable development and operation of our facilities. While water and sewer fees continue to increase every year, past investments in water conservation provide reductions in operating costs for virtually every Port facility.

The demand for water includes two general categories:

- 1. Potable water for drinking and human contact; and
- 2. Non-potable water for industrial and irrigation uses.

Growing pressure on water resources requires ongoing evaluation of the sources used to meet water needs. Sustainable solutions to the management of water resources are those that consider all potential water sources to meet a particular need. Use of potable water, supplied by the local municipality, should be limited to consumptive and other restricted uses. Non-potable demands can be met by a variety of sources such as surface water or well water, rainwater, stormwater, or reuse of wastewater.

When potential water shortages threatened to impact operations at Port and tenant facilities in the early 1990s, we examined ways to conserve and better manage water use. At that time, we began securing municipal water rights as a foundation for developing non-potable water systems within select services areas to meet industrial and commercial property needs, such as landscape irrigation. Ultimately, our objective is to provide a lower cost water supply for appropriate uses and to relieve pressure on the limited drinking water supplies of the City of Portland.

We continue to integrate water conservation into the Port's daily operations, business planning, maintenance and capital projects with a goal to eliminate waste, improve efficiency and use alternative water sources across the Port. Past projects include:

- Rain/stormwater harvesting systems;
- Upgrading plumbing fixtures with waterefficient models;
- Planting native plants and replacing lawns with ground cover;
- Installing drip irrigation systems and upgrading irrigation equipment;
- Converting irrigation systems and other nonpotable uses, such as toilet flushing, from expensive drinking water sources to a more economical non-potable water source; and
- Using sub-meters for leak detection.



Restroom signage provides instruction for water conservation.

PASSENGER OUTREACH

Using a social marketing campaign, we piloted new signage in PDX terminal restrooms to increase passenger use of the water efficiency feature. New signs are less technical and use colors and graphics accessible to non-English speakers. New signage resulted in a 28 percent increase in use of the water efficiency feature, saving thousands of gallons of water each day in a region where water conservation is of particular importance.



The Port's Platinum LEED certified headquarters building includes a Living MachineTM located in the ground-floor lobby. It results in a 75 percent reduction in water use compared to a building of similar size. The ecological wastewater treatment system uses natural, tidal-like processes to recycle graywater for toilet flushing.

REDUCE WATER CONSUMPTION

TARGET: Reduce water consumption at PDX by completing a pilot education and outreach campaign aimed at optimizing water use reduction through proper use of restroom water efficiency features at PDX.

TIMEFRAME: 2016-2017

2016-17 ACTION: We surveyed the travelling public and airport employees to understand the efficacy of current signage to guide the use of dual-flush handles in terminal restrooms. Based on survey results and feedback, we created a new design and tested it in two restroom areas in the terminal.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

MAXIMIZE WATER CONSERVATION

TARGET: Support the water conservation program through activities that maximize efficiency, eliminate waste and use alternative sources.

TIMEFRAME: This is an ongoing target that began in 2017.

2017-18 ACTIONS:

- Conduct a non-potable water use survey for PDX and Portland International Center to identify water uses that are currently being served by potable water supply and planned future water uses, that could be replaced or sourced with non-potable water.
- Develop a Data Management Plan for water use. The plan will consist of protocol for data collection, management, reporting and quality assurance/quality control.
- Update existing specifications for Port projects to optimize water conservation opportunities in design (above existing code).



We regularly monitor outfalls on our industrial facilities.

WATER QUALITY

One of the biggest water quality aspects for the Port is stormwater management. With about 3,000 acres of impervious surface, the Port manages miles of collection systems.

Our Stormwater Management Program is designed to prevent, reduce and eliminate the discharge of polluted stormwater to the Columbia Slough, Willamette, Columbia and Tualatin (tributary) rivers. Source control is a strategic part of our program to prevent pollution in the first place. We completed a Stormwater Master Plan in 2015 to guide future investments in infrastructure.

Port tenants play a critical role in helping protect local water quality. We've developed technical resources to help them identify potential sources of pollutants and improve stormwater management at their facilities. Fact sheets on permitting, pollutants and bestmanagement practices are available on our website.

IMPROVE STORMWATER QUALITY

TARGET: Improve stormwater quality by evaluating the potential contribution of zinc from galvanized metals at Port facilities and implement recommendations for potential source control measures.

TIMEFRAME: 2016-2018

2016-17 ACTION: A preliminary evaluation of potential zinc sources was completed with the following recommendations for consideration to limit it in stormwater: policy change to limit, or ban, the installation of galvanized construction materials;

replacement of older galvanized material in pipes, downspouts, rooftops and fences for source control; use of roof coatings that can be effective in preventing zinc from entering runoff; in some areas it may be appropriate to disconnect downspouts and allow runoff to infiltrate; and, effective treatment systems that target zinc removal directly at the source by connecting to downspouts or underground vaults.

PROGRESS: The actions for this target are 100 percent complete for FY 16-17.

2017-18 ACTION: Complete evaluation report on the potential contribution of zinc from galvanized metals at Port facilities to stormwater pollution and implement recommendations for source control measures.

WORKING WITH TENANTS

TARGET: Improve stormwater quality by designing and implementing a social marketing campaign for Port tenants working in outdoor locations to encourage good housekeeping and spill response and cleanup.

TIMEFRAME: 2016-2017

2016-17 ACTION: We initiated a social marketing campaign directed towards users of the Port's newly constructed Ground Transportation Lot to engage taxi, shuttle buses and transportation network service drivers in good housekeeping practices to prevent stormwater pollution. We completed an audience analysis, analyzed barriers and benefits to desired behaviors and developed messages based on audience knowledge and attitudes. We developed a Columbia Slough watershed map and posters sharing best practices to educate drivers.

PROGRESS: The actions for this target are 90 percent complete for FY 16-17.

DEICING TREATMENT AT PDX

PDX is the largest airport in the state and its operations, such as deicing and anti-icing, can have major effects on the environment. A number of variables can impact the amount of material collected and treated. This includes weather patterns and severity, variation in application rates, operational variations such as glycol recovery vehicle operation and deicing system dynamics.

The Federal Aviation Administration and the United States Air Force regulate flight safety, including antiicing and deicing of aircraft and airport pavements. Anti-icing and deicing is required for safe uninterrupted operation of the airport, for safe aircraft operation and the protection of human life.

Aircraft must be free of ice, snow and frost to develop the aerodynamic lift necessary to take off, fly and land safely. Airport pavement must be free of ice, snow and frost for aircraft to safely take off and land and for safe operation of ground equipment and vehicles.

Although the Port utilizes mechanical means such as snow plows to remove accumulated snow and ice from pavement surfaces, mechanical means alone are not sufficient to prevent or remove ice accumulation on pavement surfaces. Similarly, the air carriers are responsible for deicing and anti-icing aircraft in accordance with their FAA-approved deicing plans.



Deicing Treatment Facility at PDX.

Discharges to the Columbia Slough reduced significantly once the enhanced collection system began treatment in 2011. The new treatment facility brought the Port into compliance with the Columbia Slough discharge requirements established by the Oregon Department of Environmental Quality.



Deicing and Anti-icing Fluid Treatment and Discharge (Ib BOD)

Deicing treatment by season. BOD = Biochemical Oxygen Demand.



POROUS PAVEMENT

Porous pavement allows for rainwater to infiltrate the ground, filtering out pollutants and lowering water temperatures before reaching nearby waterbodies. It also does not require seal-coating, minimizing potential pollutants and reducing maintenance costs over time. We completed construction of an 18 acre porous pavement finished vehicle storage lot in 2017 to accommodate export vehicle volume expansion. We have an additional 35 acres of porous pavement at Terminal 6.



STORMWATER OUTREACH

Tenant and community outreach is important to reducing stormwater pollution. Beginning in 2015, we joined forces with the KOIN 6 Clean Water Partners group, which includes Metro, City of Portland, City of Gresham, Clean Water Services and other government agencies. Together, we created an ongoing series of TV commercials about stormwater best management practices. For example, at the Port, we helped produce a video on how to clean out storm drains for industrial and commercial applications. Videos and more information is available on their website.

WATER RESOURCES PARTNERSHIPS

- American Public Works Association
- Association of Clean Water Agencies
- Clean Rivers Coalition
- Clean Water Services
- Columbia Slough Watershed Council
- KOIN 6 Clean Water Partners
- Sandy River Basin Watershed Council
- Stormwater Technology Testing Center

NOISE MANAGEMENT PROGRAM

Our mission is to minimize, to the extent possible, the noise impacts from aircraft utilizing airports operated by the Port of Portland.

Since 1979, when the noise management program was founded, there have been significant improvements in aircraft technology, resulting in quieter, more efficient aircraft. However, noise remains a critical concern for airports and surrounding communities both in our region and across the globe. Our noise management program supports both our aviation and community partners by facilitating safe, efficient and convenient air travel options that minimize the impacts of aircraft noise.

Our program focuses on impacts from aircraft operations at the three airports owned and operated by the Port: Portland International Airport, Hillsboro Airport and Troutdale Airport. Our geographic focus is on communities within Multnomah, Washington and Clackamas counties in Oregon and Clark County in Washington.



We engage a volunteer Citizen Noise Advisory Committee to provide input and make recommendations on policies, procedures and other communications related to noise impacts at PDX. A Hillsboro Airport Roundtable Exchange provides similar input.

Our noise management program continually seeks to balance those needs with operational safety and efficiency. This demonstrates our commitment to triplebottom-line sustainability.

For more information and to view our latest reports, please visit: http://www2.portofportland.com and click on the link to our noise program webpage.

Stakeholder Engagement Events (Community and Industry)								
	2013	2014	2015	2016				
Portland International Airport (PDX)	13	30	23	27				
Hillsboro Airport (HIO)	13	4	7	13				
Troutdale Airport (TTD)	5	2	1	2				
Other/Non-Airport Specific	0	13	0	2				
Total	31	49	31	44				

The table above summarizes the number of stakeholder outreach activities over the past four calendar years. We encourage cooperation and collaboration with internal and external partners.



Outreach and education is an important component of our Aviation Noise Management Program.

TRACKING COMMUNITY CONCERNS

Our noise program tracks the number of contacts, by airport, related to noise. Additionally, some contacts related to noise are not airport-specific. These graphs represent the tracking of contacts for our three airports over the last four calendar years including the total number of complaints and comments, number of households submitting complaints/comments and the percentage of contacts from the top five households making contact related to noise. The number of flight operations over this time period is also provided for context.


Hillsboro Airport Noise Contacts and Complaints 500 230 450 220 400 Flight Operations (1000s) 210 350 300 Contacts 200 250 190 200 150 180 46% 88% 72% 72% 100 170 50 0 160 2013 2014 2015 2016 Complaints, # Households % Contacts from **Flight Operations Comments Submitted** Submitting Complaints **Top 5 Households**



Troutdale Airport Noise Contacts and Complaints



Port of Portland Headquarters interior; photo credit: Nick Merrick, Hedrich Blessing.



DESIGN FOR ENVIRONMENT: LEED PLATINUM PORT HEADQUARTERS

Awarded LEED Platinum certification in May 2011, the Port of Portland headquarters building is a showcase for innovation in water and energy conservation, indoor air quality, life-cycle thinking and natural resource preservation.

We completed building construction in 2010. The new headquarters consolidated most of the Port's marine and industrial lands personnel with aviation staff in one location. It has a 205,000-square-foot office space with 478 work spaces, conference rooms and a public meeting space. The long-term parking garage offers 3,500 parking spaces.

The award-winning project represents an integrated approach from all of the Port's environmental program focus areas.

Energy Management

- 200 pipes more than 300 feet under the building provide closed-loop ground source heating and cooling. Passive radiant ceiling panels regulate temperature.
- Daylighting controls reduce the number of light fixtures needed during the day, window glazing and exterior shades help keep interiors cool.
- Occupancy sensors are used throughout the building so that lights turn-off when a room is not occupied.

Air Quality

• Non-toxic materials with low or zero volatileorganic compounds, such as paint, linoleum and carpet are used throughout the building. Waste Minimization

- Reclaimed old-growth fir from the Port's Terminal 4 was reused for paneling in the building entry lobby.
- Metal cubicle frames are made of recycled metal.
- Carpet tiles are made from recycled material and can be recycled at the end of their lifecycle.
- Office chairs can be deconstructed at the end of their lifespan and components recycled or reused.

Water Resources

- The Living Machine[™], an ecological wastewater treatment alternative, decreases water usage by 75 percent compared to a similar-size office building.
- A 10,000-square-foot eco-roof reduces stormwater and insulates the building

Natural Resources

- Over 90 percent of the wood used in the building is Forest Stewardship Council certified.
- The eco-roof features a honeybee hive maintained by employee volunteers.
- Native plants are used in campus plantings.

Community

• The building features the work of well-known Pacific Northwest artists, including Linda Beaumont, Norie Sato, Jim Blashfield, Pete Beeman and Tony Johnson and Adam McIsaac.

PDX Carpet Replacement Project Scores Goal for Sustainability!



AWARDS AND RECOGNITION

The Port of Portland works in partnership with outside organizations to verify our accomplishments and to share environmental management innovations.

2017

- STAR Award for Citizen Involvement for the PDX Community Advisory Committee from the Oregon Land Conservation and Development Commission
- 2017 Best "Green" Concessions Concept or Practice from the Airports Council International-North America for the newly-installed Fats, Oils and Grease removal system at PDX for efficient wastewater treatment

2016

- Recycler of the Year "Carpet" Diem Award, Association of Oregon Recyclers
- PDX Carpet Replacement Project received 3rd Place in the Public Works category, Daily Journal of Commerce 2016 Top Projects
- PDX Carpet Replacement Project received Gold in Environmental Achievement, Starnet Commercial Flooring Design Award
- PDX Carpet Replacement Project received Silver in People's Choice, Starnet Commercial Flooring Design Awards
- Environmental Equity Award Presented by the N/NE Business Association for the Port's ongoing commitment to fostering sustainability in business practices and in the community
- Airports Sustainability Declaration Airports Going Green Conference, October 2016

2014

- Port-wide ISO 14001 EMS independent third-party verified certification was achieved November 2014. Independent thirdparty auditors commented: "This EMS is the most comprehensive, advanced and effective to be audited by this audit team with a combined 38 years of experience auditing the ISO 14001 standard."
- Environmental Improvement Award Stakeholder Awareness, Education and Involvement, "Environmental Initiatives at Seaports Worldwide: A Snapshot of Best Practices" White Paper, American Association of Port Authorities

- Special Recognition, BNSF Porous Pavement Installation, Oregon Association of Clean Water Agencies
- Sustainability Partnership Award, Partnership with Community Environmental Services program, Portland State University
- Top 100 Best Green Workplaces in Oregon (#58), Oregon Business Magazine
- Green Concessions Award, PDX Food Donation Program, Airports Council International–North America

2013

 Environmental Achievement Award, Portland International Airport Deicing System Enhancements, Columbia Slough Watershed Council

2012

- Community Partner of the Year, Friends of Trees
- Ranked 3rd in Top Projects List for Public Works - Infrastructure and Transportation, Portland International Airport Deicing Treatment Facility, Daily Journal of Commerce
- Eco-Partnership of the Year, Sustainable Aviation Fuels Northwest partnership, Air Transport World Magazine
- Airports Going Green Award, Headquarters Building, Airports Going Green (Chicago Department of Aviation)

2011

- Honor Award, Oregon Chapter of the American Society of Landscape Architects Design Awards
- Green Building Award, City of Portland's Businesses for an Environmentally Sustainable Tomorrow
- State of Oregon Sustainability Award
- American Council of Engineering Companies (ACEC) Engineering Excellence Grand Award
- BetterBricks Award, Northwest Energy Efficiency Alliance
- Smart Environments Competition recipient, International/ Interior Design Association/ Metropolis Magazine

CERTIFICATIONS



Port-wide ISO 14001 Environmental Management System independent third-party verified certification, 11/2014 -Present.



Climate Registered[™] – We use The Climate Registry's robust voluntary greenhouse gas reporting program to measure, publicly report and provide third-party verification of our carbon footprint, 2008 - Present.



LEED Platinum Certification – Port Headquarters and PDX Long Term Parking Garage.



Top 10 in the Local Governments category among 100 percent green power purchasers in the U.S. Environmental Protection Agency's program.



Airports Carbon Accreditation Program – Certification for PDX, TTD and HIO airports that recognizes reductions in carbon emissions from airport operations with the goal of becoming carbon neutral.

GOLD
2915-2918
TWORK
J

Sustainability at Work Gold Certification – Port Headquarters (HQ), City of Portland Bureau of Planning and Sustainability, 2012 – Present.



Vince Granato, Chief Operating Officer, accepts Airport Carbon Accreditation Certificates at the 2017 ACI-NA Annual Conference and Exhibition.



We achieved and maintain Gold Certification through the City of Portland's Sustainability at Work program.

ADDITIONAL INFORMATION

PORT COMMISSIONERS:

- Jim Carter Commission President
- Tom Chamberlain Commission Vice President
- Linda M. Pearce Commission Treasurer
- Robert L. Leavy Commission Secretary
- Michael C. Alexander Commissioner
- Alice Cuprill-Comas Commissioner
- Pat McDonald Commissioner
- Tom Tsuruta Commissioner
- Gary Young Commissioner

EXECUTIVE TEAM:

- Curtis Robinhold Executive Director
- Daniel Blaufus General Counsel
- Vince Granato Chief Operating Officer
- Keith Leavitt Chief Commercial Officer
- Kristen Leonard Chief Public Affairs Officer
- Cindy Nichol Chief Financial Officer
- Bobbi Stedman Chief Administration & Equity Officer
- Stan Watters Chief Project Delivery & Safety Officer

Port of Portland: 7200 NE Airport Way, Portland, OR 97218

Mailing Address: P.O. Box 3529, Portland, OR 97208-3529

Headquarters Phone: 503.415.6000/800.547.8411

Website: www2.portofportland.com

Portland International Airport General Information: 1.877.PDX.INFO (1.877.739.4636) TTY: 800.815.4636

Noise Management Hotline: Oregon: 503.460.4100; 800.938.6647

Noise Management Website: http://www2. portofportland.com/Inside/NoiseManagement

PDX Community Advisory Committee and Airport Futures: https://www2.portofportland.com/Inside/ CommunityAdvisoryCommittee **Director, Environmental Operations and Policy:** Philip Ralston

Environmental Programs Website: http://www2. portofportland.com/Inside/EnvironmentalPrograms

Wildlife Hazard Management - Raptor Relocation Program Website: https://www.pdxraptors.com/

Natural Resources Turtle Conservation Website: https://www.oregonturtles.com/

Cultural Resources: https://www2.portofportland. com/Inside/CulturalResources

Director, Harbor Environmental: Jessica Hamilton

Portland Harbor Website: https://www2. portofportland.com/Superfund



Dredge Oregon operations on the Columbia River.

GLOBAL REPORTING INITIATIVE REFERENCE

Below is a table summarizing reporting elements from the Global Reporting Initiative (GRI) standard and information where this information is shared (if available). In future reports we will strive to further align to this reporting standard.

GRI 101 - 103: Foundation; General Disclosures; Management Approach

A general overview of the organization and governance is provided in the first section of this report (pages 4 - 6) and touched on in the overview of our Environmental Management System (pages 11 - 13), Environmental Planning (pages 14 - 15), Environmental Outreach section (pages 17 - 21). Additional information, including a summary of key leadership and related resources is provided on page 79.

GRI 201 - 206: Economic Categories

A brief summary of key financial data for the 2015/16 fiscal year is provided on page 5. Additional information is available on the Port's website at http://www2.portofportland.com.

GRI 30	11: Materials	Section in This Report	Page (s)
301-1	Materials used by weight or volume	Not applicable	N/A
301-2	Recycled input materials used	Not applicable	N/A
301-3	Reclaimed products and their packaging materials	Not applicable	N/A
GRI 30	2: Energy	Section in This Report	Page (s)
302-1	Energy consumption within the organization	Energy Management	30 - 37
302-2	Energy consumption outside the organization	Not applicable	N/A
302-3	Energy intensity	Energy Management	33
302-4	Reduction of energy consumption	Energy Management	36
302-5	Reductions in energy requirements of products and services	Energy Management	30 - 37
GRI 30	3: Water	Section in This Report	Page (s)
303-1	Water withdrawal by source	Not reported at this time	-
303-2	Water sources significantly affected by withdrawal of water	Water Resources	64 - 71
303-3	Water recycled and reused	Water Resources	64 - 71
GRI 30	4: Biodiversity	Section in This Report	Page (s)
GRI 30 304-1	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Section in This Report Natural Resources	Page (s) 49 - 63
GRI 30 304-1 304-2	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity	Section in This Report Natural Resources Natural Resources	Page (s) 49 - 63 49 - 63
GRI 30 304-1 304-2 304-3	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored	Section in This Report Natural Resources Natural Resources Natural Resources	Page (s) 49 - 63 49 - 63 49 - 63
GRI 30 304-1 304-2 304-3 304-4	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported)	Page (s) 49 - 63 49 - 63 49 - 63 49 - 63
GRI 30 304-1 304-2 304-3 304-4 GRI 30	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report	Page (s) 49 - 63 49 - 63 49 - 63 49 - 63 Page (s)
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report Air Quality	Page (s) 49 - 63 49 - 63 49 - 63 9 - 63 22 - 29
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1 305-2	 4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions Energy indirect (Scope 2) GHG emissions 	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report Air Quality Air Quality	Page (s) 49 - 63 49 - 63 49 - 63 49 - 63 22 - 29 22 - 29
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1 305-2 305-3	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions Energy indirect (Scope 2) GHG emissions Other indirect (Scope 3) GHG emissions	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report Air Quality Air Quality Not reported at this time	Page (s) 49 - 63 49 - 63 49 - 63 22 - 29 22 - 29 -
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1 305-2 305-3 305-4	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions Energy indirect (Scope 2) GHG emissions Other indirect (Scope 3) GHG emissions GHG emissions intensity	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources Natural Resources Natural Resources Section in This Report Air Quality Not reported at this time Air Quality	Page (s) 49 - 63 49 - 63 49 - 63 22 - 29 22 - 29 - 26
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1 305-2 305-3 305-3 305-4 305-5	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions Energy indirect (Scope 2) GHG emissions Other indirect (Scope 3) GHG emissions GHG emissions intensity Reduction of GHG emissions	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report Air Quality Air Quality Not reported at this time Air Quality Air Quality Air Quality	Page (s) 49 - 63 49 - 63 49 - 63 22 - 29 22 - 29 - 26 22 - 26
GRI 30 304-1 304-2 304-3 304-4 GRI 30 305-1 305-2 305-3 305-4 305-5 305-6	4: Biodiversity Operating sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas Significant impacts of activities, products and services on biodiversity Habitats protected or restored IUCN Red List species and national conservation list species with habitats in areas affected by operations 5: Emissions Direct (Scope 1) GHG Emissions Energy indirect (Scope 2) GHG emissions Other indirect (Scope 3) GHG emissions GHG emissions intensity Reduction of GHG emissions Emissions of ozone-depleting substances (ODS)	Section in This Report Natural Resources Natural Resources Natural Resources Natural Resources Natural Resources (partially reported) Section in This Report Air Quality Air Quality Not reported at this time Air Quality	Page (s) 49 - 63 49 - 63 49 - 63 29 - 63 22 - 29 22 - 29 - 26 22 - 29 22 - 29 22 - 20

GRI 30	D6: Effluents and Waste	Section in This Report	Page (s)
306-1	Water discharge by quality and destination	Water Resources (partially reported)	64 - 70
306-2	Waste by type and disposal method	Land Quality	38 - 45
306-3	Significant spills	Land Quality (partially reported)	44
306-4	Transport of hazardous waste	Not reported at this time	-
306-5	Water bodies affected by water discharges and/or runoff	Water Resources	64 - 70
GRI 30	07: Environmental Compliance	Section in This Report	Page (s)
307-1	Non-compliance with environmental laws and regulations	Env. Mgmt. System (referenced)	11 - 13
GRI 30	08: Supplier Environmental Assessment	Section in This Report	Page (s)
308-1	New suppliers that were screened using environmental criteria	Not reported at this time	-
308-2	Negative environmental impacts in supply chain and actions taken	Not reported at this time	-
GRI 40	D1 - 418: Social and Community Categories	Section in This Report	Page (s)
Stakeh (pages	older and community environmental outreach is covered in the similarly titled section 12 – 15) and highlighted throughout the report.		17-21
Secto	r-specific Disclosures Airport Operations (environmental focus)	Section in This Report	Page (s)
Energy	,		
• Pro	grams to reduce energy consumption	Energy Management	30 - 37
• Rec	luction of energy consumption	Energy Management	30 - 37
• Bes	t practices for energy consumption and conservation	Energy Management	30 - 37
Water			
• Sto	rmwater management and irrigation	Water Resources	64 - 71
• Initi	atives to minimize the amounts of chemicals and pollutants entering stormwater	Water Resources	64 - 71
• Initi	atives to capture and reuse stormwater	Not reported at this time	-
• Qua	ality of stormwater by applicable regulatory standards	Not reported at this time	-
Biodiversity			
• Pol min	cies and procedures to reconcile wildlife management with aviation safety and imize the impact of aviation development and operations on natural land	Natural Resources	50 - 63
• Mar valu	nagement of buffer areas, lands set aside for future airport expansion, ecological le of land not in use	Natural Resources (partially reported)	50 - 63
Emissi	ons		
Rec con	duction of emissions from onsite transportation and policies to encourage the airport nmunity to reduce emissions	Air Quality	22 - 29
• Rec	luction of GHG Emissions: ACI-ACA Airport Carbon Accreditation Program	Air Quality	26
• Am	bient Air Quality Levels According to Pollutant Concentrations	Not reported at this time	-
Effluer	its and Waste		
• Res	ponsibly handling sources of waste	Land Quality (partially reported)	30 - 45
• Airp ser	port-specific issues (confiscated materials, de-icing effluent, airline and vice-provider waste	Land Quality (partially reported)	41 - 44
• Ma	nagement of waste from international vs. domestic flights	Not reported at this time	-
• Tota	al weight of waste by type and disposal method (intl. flights)	Not reported at this time	-
Airc	raft and pavement de-icing/anti-icing fluid used and treated	Water Resources	70
Noise			
• Noi	se targets/requirements applicable to the airport (indicating required or voluntary)	Noise Management (partially reported	72 - 73
• Nur	nber and percentage change of people residing in the areas affected by noise	Not reported at this time	-





ENGAGING EMPLOYEES

We use employee communications and signage to encourage behaviors that reduce energy consumption, conserve water and help achieve our zero waste goal. In addition, each new employee receives training on our environmental management system and policies during orientation. Our participation in the Northwest Earth Institute's EcoChallenge inspires the adoption of new, healthy habits for people and planet amongst employees.

Report Contributors:

- Phil Ralston Director, Environmental Operations & Policy
- Shannon Tocchini Environmental Management System Manager
- Lisa Appel Environmental Outreach Manager
- David Breen Senior Manager, Air Quality
- Tanya Starr Senior Facilities Engineering Manager and Energy Program Manager
- Stan Jones Senior Manager, Land Quality
- Dana Green Senior Manager, Natural Resources
- Dorothy Sperry Senior Manager, Water Resources
- Marla Harrison Senior Manager, Environmental Planning
- Sean Loughran Senior Manager, Long Range Planning
- Ann Gravatt Environmental Strategies
 Manager
- Phil Stenstrom Manager, Noise Program
- Scott Drumm Director, Research & Strategic Analysis
- Jerry McCarthy Photo/Multimedia Project Coordinator
- And environmental program staff and employees Port-wide that enable our leadership performance.

Opposite page: Government Island is home to two large mitigation sites, including grassland mitigation which began in 2011. Additional highlights are provided within this report.



