

Port of Portland
Environmental Annual Report (FY21-22)



July 2022

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Annual Environmental Program Performance

AIR QUALITY & ENERGY

Objective: Generate revenue leveraging Oregon's Clean Fuels Program to support investments in diesel and carbon emission reduction strategies.

Target: Maximize opportunities to leverage these credits for Port and non-Port operations.

- PDX parking shuttle busses:
 - Replaced diesel with CNG between 2000 and 2005 generating ~\$202,000 over three years (see table below.)
 - Replaced CNG with RNG beginning July 2021. The Port does not own the environmental attributes of RNG and isn't eligible to generate credits directly, but we do receive a portion of the credit sales (~\$175,000 annually.) This revenue is not reflected in the table below.
- PDX EV charging stations:
 - 128 EV charging stations were registered into the program through early 2022. EV chargers generated approximately \$6,500 in revenue in Q1 of FY22 and are expected to generate approximately \$15,000 to \$30,000 annually.

Date	Buyer	Source	Credits Sold	Amount per Credit	Total Sale
11/30/2018	Hattenhauer Distributing Co.	Shuttle Bus CNG	176	\$91.62	\$16,125.12
2/10/2019	CleanFuture, Inc.	Shuttle Bus CNG	187	\$127.00	\$23,749.00
4/24/2020	CleanFuture, Inc.	Shuttle Bus CNG	859	\$110.00	\$94,490.00
7/27/2020	CleanFuture, Inc.	Shuttle Bus CNG	151	\$122.00	\$18,422.00
1/12/2021	Costco Wholesale	Shuttle Bus CNG	146	\$120.00	\$17,520.00
10/1/2021	ACT Fuels Inc (ACT Commodities)	Shuttle Bus CNG	264	\$123.00	\$32,472.00
4/6/2022	Costco Wholesale	EV Chargers	53	\$123.00	\$6,519.00
				Total to date	\$209,297.12

Objective: Take action to mitigate the region's greatest air toxics health risk, diesel particulate matter, by prioritizing emission reductions that have the greatest benefit to addressing environmental justice inequities and supporting the transition away from fossil fuel combustion to cleaner alternative fuels.

Target: Reduce diesel particulate matter 70% below 2000 baseline levels by 2030 from all Port and non-Port marine and aviation operations. Aspirational target of 90% reduction to achieve regional health-based air quality goals (Portland Air Toxics Solutions).

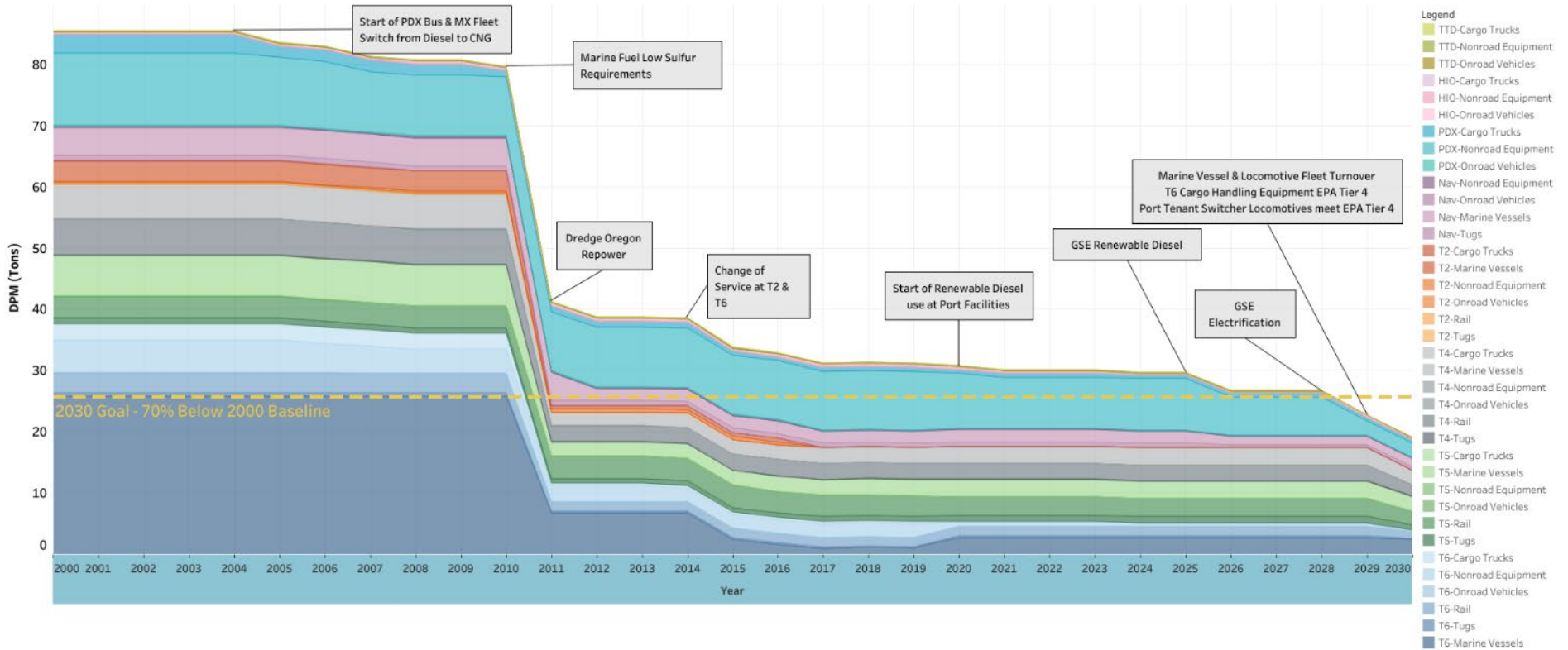
- We cannot calculate results for FY22 because we paused our diesel emissions inventory in 2018; first due to limited staffing resources and then due to financial impacts of COVID. An emissions inventory update will be completed in FY23.
- We believe that we can achieve greater than 70% diesel emission reductions by 2030, provided the following key strategies are implemented.

Port-wide Diesel Reduction Priorities		Strategies
PDX Ground Support Equipment (eGSE)	Electrification of the largest airlines' (Alaska, Southwest, Delta, American, United) baggage tugs, belt loaders, and narrow-body pushbacks by 2026	- Status of electrical infrastructure needed for charging infrastructure: - The electrical backbone/bus duct is in place across the airport to support future eGSE charging. - A capital project has been created for the installation of electrical equipment and charging infrastructure at four gates operated by Alaska Airlines with installation planned for Q1 2024. - Pursuing funding in hopes of installing charging equipment throughout the terminal (and possibly offsetting some of the airlines' equipment costs) by no later than 2026. - Incorporation of eGSE into Oregon Clean Fuels Program: - The Port prepared a fuel pathway application and was successful in getting eGSE incorporated into Oregon Clean Fuels Program rules. This opens the door to generate significant revenues from the use of eGSE, which will provide additional meaningful incentives for airlines to convert to cleaner equipment at PDX. - This achievement also puts Oregon "ahead" of California regarding clean fuel program design.
	Shift to R-99 for all other airlines and equipment by 2025	The Port is exploring new PDX Fuels (previously PFFC) lease provisions for storing and dispensing renewable diesel as a transition fuel pre-electrification.
Renewable diesel (R-99)	Evaluate all possible applications Port-wide by 2026	- PDX Maintenance (complete March 2020). - T-6 yard hustlers and reach stackers - as a bridge to cleaner equipment (complete February 2022). - HIO and TTD maintenance equipment, Fire and Rescue, and Navigation (pending). - Clean Air Construction program (ongoing): - Small businesses cannot afford costly retrofits for their typically older and dirtier diesel construction equipment. - In FY21 the Port successfully advocated for the use of renewable diesel as an alternative program compliance pathway, which provides small and disadvantaged business with a cost-effective means to reduce their emissions and comply with program requirements. - With limited supplies, renewable diesel availability can be a challenge, particularly for small volume users, and the Port will need to be creative in exploring ways to ensure renewable diesel is available on Port projects for small and disadvantaged contractors. - Explore creating a regional collaborative to expand the voluntary use of renewable diesel, increasing demand/production, and decreasing costs. - The Port paused this work to focus on securing renewable diesel for our own facilities as supplies became scarce in FY22. The Port will start to reach out to marine fuel users in FY23 to understand

		potential interest, opportunities, and challenges to support renewable diesel use when supplies pick up (estimated 2024). The Port provided a letter of support for permitting of a proposed renewable diesel facility in Port Westward that would provide significant volumes of locally sourced renewable diesel to meet growing regional demand and potentially provide PDX with a source of sustainable aviation fuel. The facility is planned to open in 2024 (pending).
Retrofit/ replace to EPA Tier 4	T-6 reach stackers and yard hustlers	- A Marine Terminal 6 fleet/equipment renewal study was completed in June which included an evaluation of cleaner equipment options for asset replacement. - The results of the study concluded that without grant funding, Tier 4 diesel was the best option for cargo handling equipment, but grant funds can make the cleanest alternative, electric equipment, cost effective, particularly yard tractors. - The Port will pursue grant funding this winter for 5 fully electric UTRs and supporting infrastructure.
Transition to cleaner marine vessels and locomotives		80% EPA Tier 4 locomotives: older switcher locomotives are frequently rebuilt without improving emissions. - The Port prepared a memo for our tenants in 2021 which identifies cleaner equipment options and funding opportunities. - In 2022, the Port met with a Terminal 4 tenant to provide information on a funding opportunity that will pay for up to 80% of the cost of a cleaner locomotive. The tenant is currently evaluating if the grant could work under their locomotive leasing structure. 15% cleaner vessels/fuels: due to international standards, marine vessels are transitioning to cleaner engines and fuels. - We plan to explore a regional collaborative to evaluate the feasibility of renewable diesel as an alternative marine fuel, which would further reduce emissions by up to 30%. - There is a current regional supply deficit of R99, which will be alleviated in '24/25 as new sources of imported and locally produced fuel come into the market to meet increasing demand. - The temporary shortage has proved challenging for understanding cost and availability to advance collaborative aspirations this year.

Diesel Particulate Matter (DPM) - Change Over Time

*Emissions estimates are based on industry best practices using a combination of detailed and simplified methodologies. These estimates are subject to change as new information becomes available.



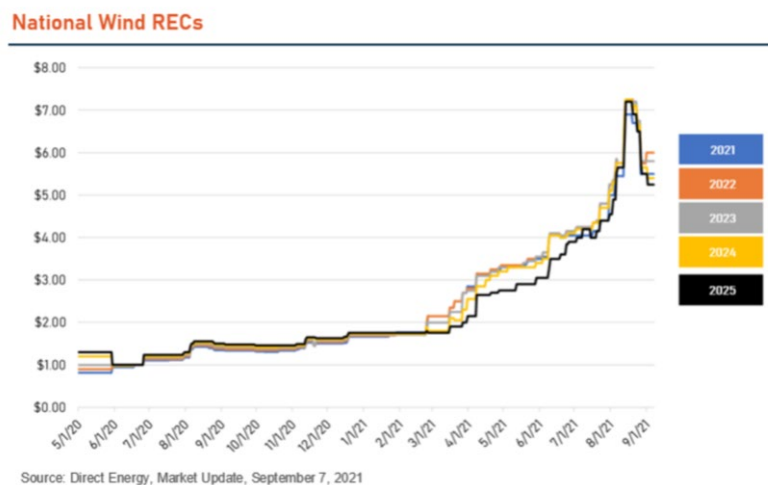
An interactive version of the above dashboard can be found [here](#)

Objective: Respond to the urgent call for action to mitigate the effects of climate change by prioritizing operations with the highest emissions and investing in strategies that reduce our carbon footprint.

Target 1: Beginning in 2020, achieve carbon neutrality for Port emission sources (Scope 1) and indirect emissions from purchased energy (Scope 2) at PDX, through renewable energy certificates (RECs) and carbon offsets while we work to reduce our carbon footprint.

In FY21, 79,000 MWh of RECs were purchased, offsetting all scope 2 electricity use but due to the financial impacts of COVID, carbon offsets were not purchased for scope 1 emissions. Market cost of RECs and carbon offsets have increased exponentially (see chart below.) Organizations' 2020 carbon reduction goals created increased demand for RECs and carbon offset credits. However, renewable energy projects require years to develop, so supply cannot accommodate spikes in demand, thereby increasing costs.

To ensure the most impactful results, we decided to redirect funds for these "one time" credit purchases to direct carbon emission reduction strategies that will have lasting impacts.



Target 2: Prioritize and strive to achieve the emission reduction targets listed below for the Port’s PDX operations, using offsets as necessary for the remaining emissions to maintain carbon neutrality.

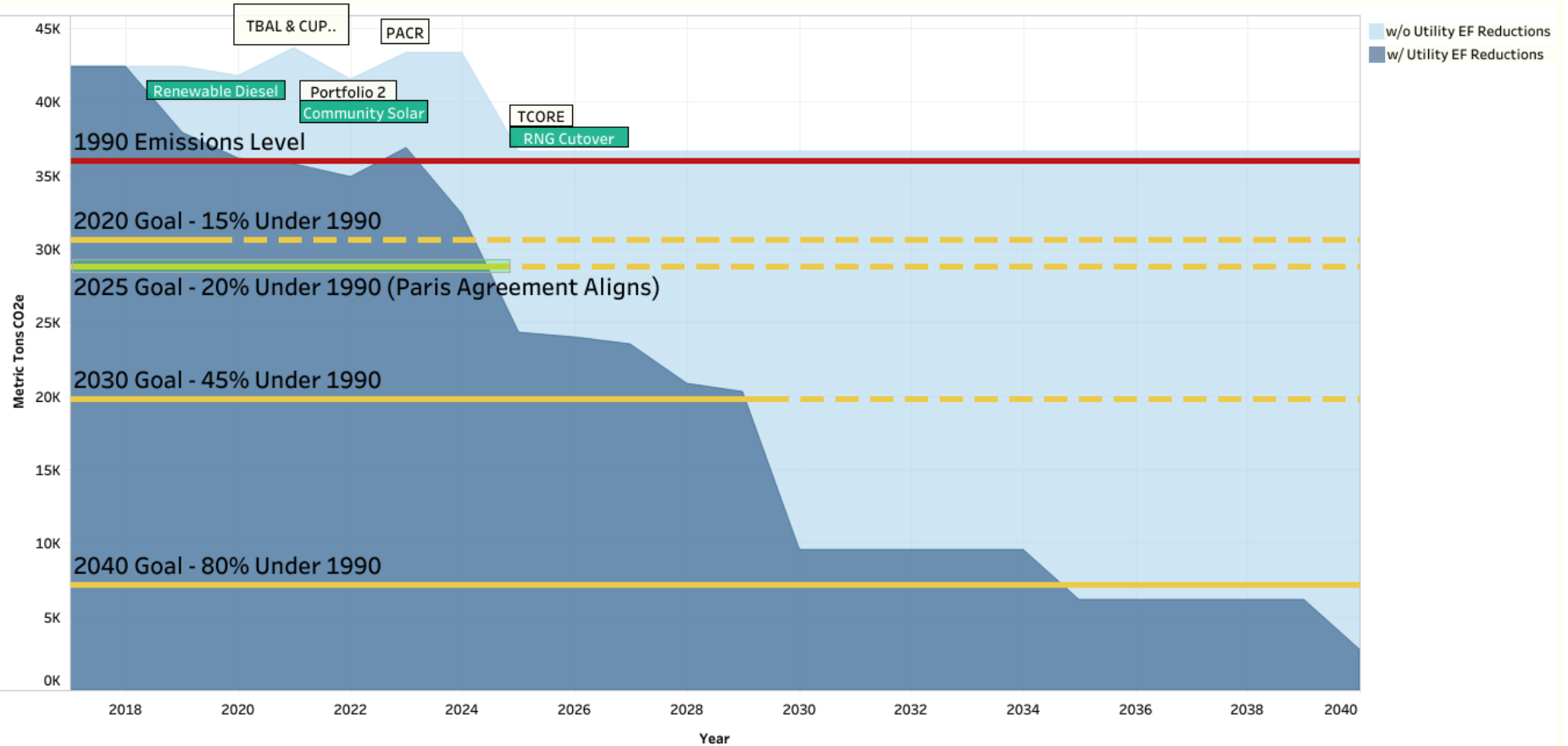
PDX Carbon Reduction Targets	Expected Results ¹
By 2020: 15 % below 1990 levels	We did not achieve this target due to passenger growth and capital projects (e.g., TBAL, CUP asset renewal, terminal expansion, and PACR) increasing electricity use while our electric utility still has a heavy reliance on coal generation. However, we wanted to set ambitious goals to reflect the urgency of the global climate crisis.
By 2025: 20 % below 1990 levels	On track to meet this target due to TCORE investment in energy efficiency.
By 2030: 45 % below 1990 levels	Achievement of this target will be supported by increased moves away from fossil fuel (renewable fuels, electrification), on-site renewable energy, and electric utility clean(er) energy requirements established in 2021 ² . Annual utility reporting requirements will allow the Port to evaluate our electricity provider’s progress in meeting state goals and their emissions reductions will be captured in our greenhouse gas emissions inventory.
By 2040: A. 80 % below 1990 levels B. Achieve net zero energy for the Port’s PDX operations by applying net zero energy design, ongoing energy conservation and efficiency measures, and on-site generation of renewable energy	A. Achievement of this target should be feasible with energy efficiency investments, electrification, on-site renewable energy, subscribing to Community Solar, and clean(er) energy provided by electric utility. B. Achievement of this target will be dependent on significant investments in PDX facility design/operation and onsite renewable energy. This target also becomes more challenging to achieve as we increase electrification of combustion sources. ○ Advanced energy efficiency design will allow future buildings at PDX to not only save money and electricity, but also more easily operate during utility outages potentially providing vital services during natural disaster recovery, supporting resiliency at PDX. ○ Striving to meet this target will increase feasibility of achieving net zero carbon by 2050.
By 2050: net zero carbon (i.e., shift from carbon offsets to carbon removal)	Pursue all potential reductions of carbon emissions and investigate emerging technology for carbon sequestration. Sequestration technology investment is today magnitudes more expensive than emission reduction investments.

¹ See table below on page 8, outlining priority strategies to reduce PDX carbon emissions.

² In 2021, Oregon passed HB 2021 Clean Energy Bill which changes Oregon’s Renewable Portfolio Standard (RPS) to 80% by 2030, 90% by 2035, and 100% by 2040. The new RPS will further reduce the carbon intensity of PDX’s electricity use, which will help us towards achieving our carbon reduction targets.

PDX CO2e Forecast - With and Without Utility Emission Reductions (7/6/2022)

**Emissions estimates are based on industry best practices using a combination of detailed and simplified methodologies. These estimates are subject to change as new information becomes available.*



An interactive version of the above dashboard can be found [here](#).

PDX CO ₂ Emissions Reduction Priorities	Strategies	
Convert fossil fuels to renewable fuels as a bridge to electrification	Procure renewable natural gas to power PDX shuttle busses in 2021	• Completed in July 2021. • No up-front costs and generates clean fuel credit revenue every time vehicles fill at the compressor station through 2024, an estimated \$250,000 - \$500,000 total revenue.
	Deploy any amount of sustainable aviation fuel (SAF) via existing jet fuel delivery system by 2027 and 10% SAF by 2030	• There is currently no supply to fuel PDX and global production of SAF is still extremely limited (~1% of global demand). All airports have an essential role to play in global climate change mitigation strategies. Ultimately, however, SAF sourcing and usage comes from the airlines, so the Port is focused on: ○ Continuing the dialogue with airlines and fuel producers and exploring opportunities for regional collaboration and partnerships. ○ Supporting state/region/US work to bridge the cost gap, and ○ Trying to influence supply chain/distribution partners to get ready for this change. • One of the biggest SAF challenges is to get the fueling infrastructure in place and ready in time to receive, blend, and deliver SAF to the airport once it is available. Fuel terminals and refineries represent the best options, but it could take many years to finance, permit, and build new infrastructure. • The Port is participating on a multi-agency SAF Grand Challenge Roadmap that will attempt to reduce the cost and expand the production and use of SAF. • The Port partnered with Airlines for America and were successful in petitioning the Oregon Department of Environmental Quality to bring sustainable aviation fuel into parity with renewable diesel within the Clean Fuel Program which is critical to leveling the playing field with renewable diesel and making SAF development more competitive in state.
	Renewable Diesel (R-99)	See diesel emission reduction strategies above
Electrification	Ground support equipment	See diesel emissions reduction strategies above
	Increase EV charging stations	• 128 completed: Public parking (70), transportation providers (5), Port fleet and maintenance vehicles (15), and employee parking (38). .

	Investigate new sources of electrification and infrastructure support	• Electric aircraft. • Tenant electrification goals. • Investigate infrastructure support for electrification including backup power and energy storage to manage operations during utility outage and financial and operational impacts of peak demand, and to lower the carbon intensity of electricity (examples may include microgrid, battery backup, and hydrogen fuel cell). • Maximize revenue opportunities through Clean Fuels Program
Zero Emissions Technologies	Investigate opportunities	• Working with national laboratories, with Department of Energy grant funding, to study risk and economic analysis of electric battery and hydrogen fuel cell technology for the PDX bus fleet. • Investigate the feasibility of hydrogen production on-site and use for distributed energy resources. • Studies will conclude in 2024 and will inform Port strategy and capital projects.

PDX CO ₂ Emissions Reduction Priorities	Strategies	
Energy Efficiency	Portfolio Projects	No projects are currently underway because we've executed on all portfolio projects identified. Every three years, a consultant performs a complete energy analysis to ensure that all systems are working correctly and to identify opportunities to increase energy efficiency of our existing operations.
	Strategic Energy Management	Participation in Energy Trust of Oregon's Strategic Energy Management program.
	New construction and major retrofit projects	• Participation in Energy Trust of Oregon's Path to Net Zero program. • T-Core investment in ground source heating and cooling system: ◦ Reduces energy use intensity by ~54% (from 206 to 94 kBtu/sq ft). ◦ Electrified 130,000 MMBtu of annual natural gas – a major step away from fossil fuel use.
Renewable Energy	On-site renewable energy	Worked with the National Renewable Energy Lab in 2021 to evaluate the best option(s) that support carbon emission reduction, resiliency strategies, and emerging technologies. • Large scale solar on-site is limited due to state rules on net-metering. • On-site hydrogen fuel cells for electricity may be a feasible option when sources of clean hydrogen made from renewable sources are available. Potential applications include hydrogen fuel cell bus fleet and emergency power sources would also support resilience.
	Community Solar – Supporting Solar in Oregon	• Pursuing contracts with Oregon Shines to serve as an anchor subscriber across multiple solar developments in Southern Oregon through the PUC Community Solar Program. As a large quantity subscriber of the solar power for a 20-year duration, the Port enables these projects to be more easily funded and financed, playing a direct role to increase renewable energy in the state. • The Port is estimated to contract for approx. 6,000 MWh annually over 20 years for clean energy from 6 solar developments for PDX electricity needs at no additional cost, while reducing carbon emissions and increasing access to clean power for Oregonians.
	Community Solar at PDX – Goodling Annex	Working with Bonneville Environmental Foundation (BEF) and Verde to develop 1MW solar project on the Goodling Annex property on the west region of the PDX campus through the Community Solar Program. 40% of electricity will be available to PDX, 60% to local businesses and residents with focus on low income.

Target 3: Support the aviation industry in meeting its goal to reduce greenhouse gas emissions 50% below 2005 levels and achieve net zero carbon by 2050.

Target 4: Support the marine industry in meeting its goal to reduce greenhouse gas emissions 50% below 2008 levels by 2050.

The Port will support industry goals through its work on sustainable aviation fuel and renewable diesel. A process to track industry progress toward attainment of industry goals will be developed through emissions inventory updates in FY23.

NATURAL RESOURCES

Objective: Provide meaningful stewardship of the mitigation sites and vacant lands beyond what is required by regulation.

Target 1: Seek enhancement opportunities to support species diversity with a focus on sensitive species (Oregon Conservation Strategy Species, state protected wildlife and federally listed species).

Sensitive Species Habitat Enhancement and Monitoring

- Completed seeding and planting of 3 acres of the south pollinator field adjacent to 1290 Trees in Troutdale. This site will serve as valuable pollinator habitat and is reserved for future tree mitigation needs. Pollinators, including bees, flies, beetles, and moths, help in the production of nearly 75 percent of crops and roughly 80 percent of all flowering plants.
- Completed site prep and planting for an Oregon White Oak woodland restoration within the north field at Vanport Wetlands. Oak woodland and Oak savanna habitats are part of a “rare and declining” habitat type. For every 100 acres of oak habitat that previously existed in the Willamette Valley, only 7 acres of woodland and 1 acre of grassland or prairie, remain.
- Completed site prep and planting in a 2-acre area adjacent to the Leadbetter Mitigation site. This project was done in partnership with Metro who provided 600 locally sourced Oregon Ash trees. The Port provided site prep and planted an additional 4,500 native shrubs and herbaceous plants within the area. This site was a vector for invasive species into the Leadbetter mitigation site for many years and restoration will make the Port site more resilient to invasive species and ultimately less expensive to maintain in the long term. The restoration site will also provide valuable habitat for local wildlife including western painted turtles (an Oregon Sensitive Species).
- Supported CREST on Government Island with equipment transport and secured a one-year non-potable water right for plant establishment in restoration areas. Water will be pumped from the river to use as irrigation for the plantings.
- A western painted turtle nest was already observed in the newly restored 2-acre section of land adjacent to the Leadbetter Mitigation Site.
- Northern red-legged frog egg masses documented at West Sundial Wetlands during amphibian egg mass surveys. Frogs are considered indicator species because they are extremely sensitive to changes in the environment. The presence of this Oregon Sensitive species is a positive sign of good wetland function.

Target 2: Seek opportunities for coordination/collaboration & information sharing by:

Conducting Research to Inform Best Management Practices

- Supporting turtle studies at Port mitigation sites:
 - Ramsey Lakes conducted by the City of Portland and TRIP Company and East Lakes conducted by a student.
 - Coordinated and collaborated with Ecostudies Institute to develop an adaptive approach to improve habitat for streaked horned larks (SHL) on Sandy Island.
 - Coordinated with USACE on SHL surveys on Sandy Island to eliminate redundant monitoring efforts and to provide necessary data to inform their Habitat Suitability Model.

Exploring Outreach Opportunities on Mitigation Sites

- Natural Resources staff led an outdoor career fair at Vanport wetlands with Rosemary Anderson High School.
- Natural Resources staff along with staff from Noise, Land/Water and GIS departments, gave presentations to Rosemary Anderson High School students about the work they do and what training/schooling lead to their careers. Rosemary Anderson High School is committed to the success of at-risk youth and adults, providing the highest quality services in education, mentoring, family outreach, employment training, and placement.

Managing Local and Regional Partnerships

- Aquatic Invasive Species
 - Port Natural Resources staff participate in the Columbia River Basin Aquatic Invasive Species Team, providing data and monitoring information from T4 and T6 for invasive aquatic mussels. The Port has been surveying for invasive aquatic invertebrates at T4 and T6 for over a decade; to date no invasive mussels have been found.
 - In 2021, the Port began sharing monitoring data and expertise in support of a City of Portland effort to develop an aquatic invertebrate invasive species monitoring and response strategy. If these species become established in this area there could be widespread cost and operational impacts to City and Port infrastructure including to stormwater and water treatment facilities, marine terminals along with environmental impacts.
 - Port staff engaged in a plan audit with the City of Portland, PSU, and USGS intended to develop more robust monitoring of aquatic invasive species.
- Natural Resources staff were asked to participate in several initiatives that enhance coordination with other regional groups, both public and non-profit, and allow us an opportunity to promote our mitigation sites.
 - Provided input to Columbia Slough Watershed Council (CSWC) for Healthy Industrial Lands Initiative.
 - Provided input to Metro Protect and Restore Land stakeholder sessions.
 - Provided review/input to MCDD/City of Portland Bureau of Environmental Services for the PEN 1 Drainage Water Quality Management Plan (DWQMP).

Enhancement and habitat projects proposed in master plan involve Vanport Wetlands and surrounding areas.

- Partnered with MCDD and University of Portland Capstone students to develop preliminary plan for Vanport pump replacement; Natural Resources staff provided extensive input.

Target 3: Explore opportunities and prepare to selectively divest the Port’s inventory of mitigation sites which will reduce the resources being expended by the Port while preserving long term protection.

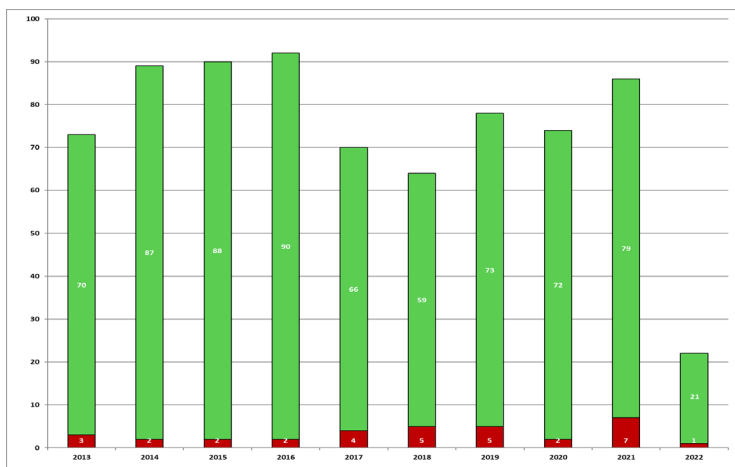
- sites were prioritized for divestment based on site size, site conditions, open/greenspace connectivity, and any constraints. Long-term management plans will be developed for prioritized site which will make it easy for the next land manager to take over management.
 - TRIP Phase I Mitigation Site (pending)
 - [Randall](#) (completed 2016)
 - [Vanport Wetlands](#) (completed 2018)
 - [Rivergate Enhancement Sites](#) (completed 2022)

Objective: Maintain the “best in class” status of the Wildlife Hazard Management program by 1) providing a safe airfield environment by reducing the risks that wildlife poses to aircraft and 2) investing in research and development and next generation technology to inform development of proactive adaptive management strategies.

Target 1: Manage to an acceptable level of risk at PDX by reducing the probability of strikes with the species of greatest concern to safe airport operations.

Strikes (Damaging vs Non-Damaging)

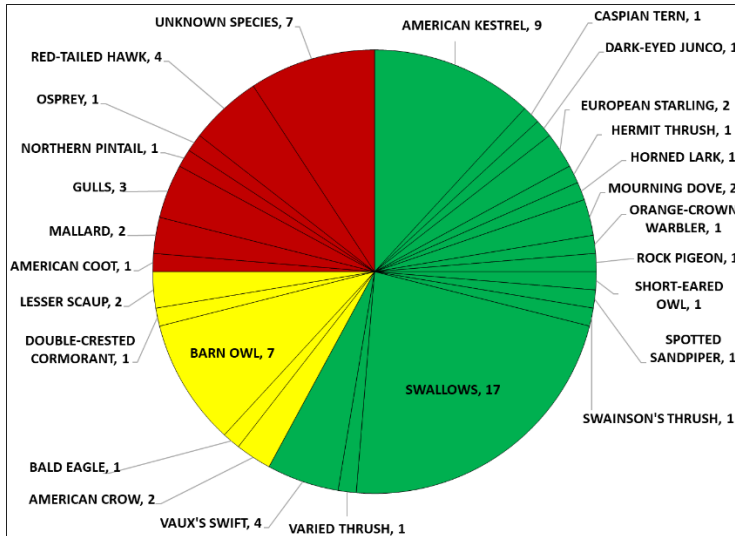
Chart data 01-01-2013 to 07-01-2022



After an unusually high number of strikes in 2021, we appear to be back to normal numbers in 2022. The 7 damaging strikes during calendar year 2021 were the highest number recorded in over 10 years, likely due to the reduction and/or changes in air traffic which may provide a deterrent effect under normal conditions. Year to date, 22 strikes (1 causing damage to the aircraft) have been documented.

Strikes by Risk Category

Chart data 01-01-2013 to 07-01-2022

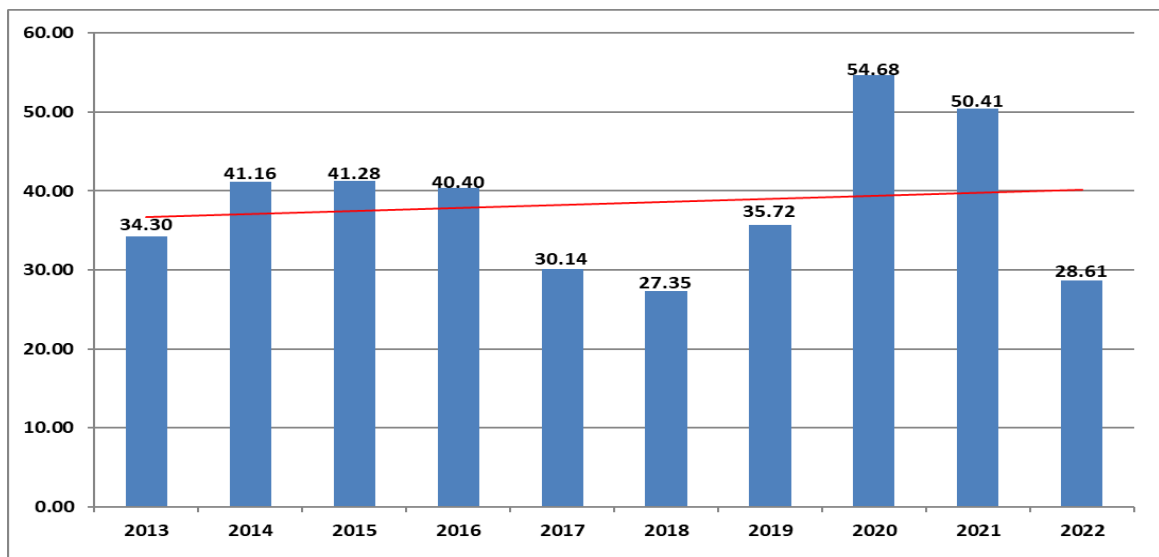


76 strikes have been documented in FY22; 6 caused damage to the aircraft and many were unknown species. We continue to work with airlines to promptly report all strikes with the goal of getting this category to zero. A strike involving a Bald Eagle was the highest damaging strike cost (~\$735,000.) 4 Red-tailed hawks were struck during this period including a resident bird. With this resident gone, a pair of unbanded adult Red-tails appear to have taken up occupancy and will need to be monitored closely.

Strikes per 100,000 Operations

Chart data 01-01-2013 to 05-31-2022

With a high number of strikes in calendar year 2021, the strike numbers per operations are currently trending slightly up.



Target 2: Increase proactive aviation wildlife hazard management strategies.

Trapping:

- 38 raptors were trapped during this fiscal year (32 Red-tailed hawks, 1 Red-shouldered hawk, 1 Barred owl, 1 Barn owl and 3 American kestrels).
- 1,480 European Starlings were trapped and euthanized. The majority are given to the Portland Audubon to feed birds of prey at the rehab center.

Target 3: Remain leaders in research & development to inform safe proactive adaptive management strategies.

Nick Atwell is the current Chairperson of the Bird Strike Committee USA and has organized a national conference in Salt Lake City Utah where subject matter experts and other stakeholders can exchange management strategies/approaches to advance aviation safety.

LAND QUALITY

Objective: Understand and manage risk to human health, the environment and business transactions posed by contaminants on Port property. Conduct work in compliance with applicable state and federal regulations and in a way that promotes safe redevelopment and seek to allocate costs to responsible parties.

Target 1: Complete efficient environmental due diligence to identify the range of environmental liabilities associated with Port projects and business transactions to minimize risk and maximize profitability.

- Perfluorinated (PFAS) contamination at the PDX Fire Training Facility
 - Contaminated groundwater is entering the stormwater system through leaky pipes and deep ditches and is eventually migrating to the Columbia Slough.
 - The Port is proactively assessing ways to keep PFAS-contaminated groundwater from entering the stormwater system.

WASTE MANAGEMENT

Objective: Manage material consumption and waste generation to reduce disposal volumes, environmental impacts, and greenhouse gas emissions.

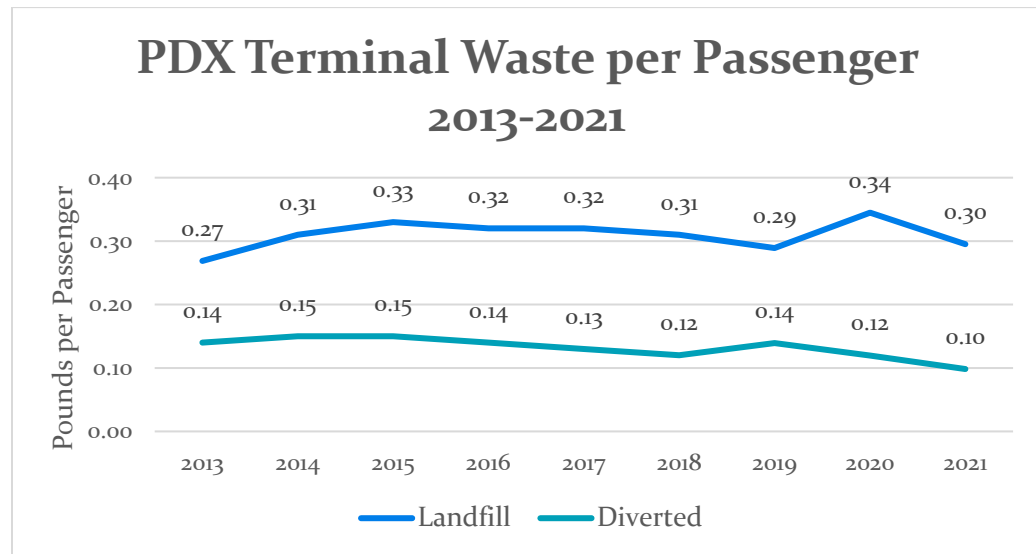
Target 1: Identify and prioritize opportunities at PDX to reduce energy consumption and greenhouse gas emissions associated with waste and materials management practices.

- Oregon DEQ's research on the life cycle environmental impacts of packaging and food service ware indicated minimal differences between the types of food packaging from PDX but emphasized the opportunity to achieve greater reductions using reusable or durable service ware as demonstrated by the Green Plate Program.
- The Green Plate program is budgeted for expansion into Concourse C in FY23, TCORE service will be back online in 2025 and plans are in place to expand into

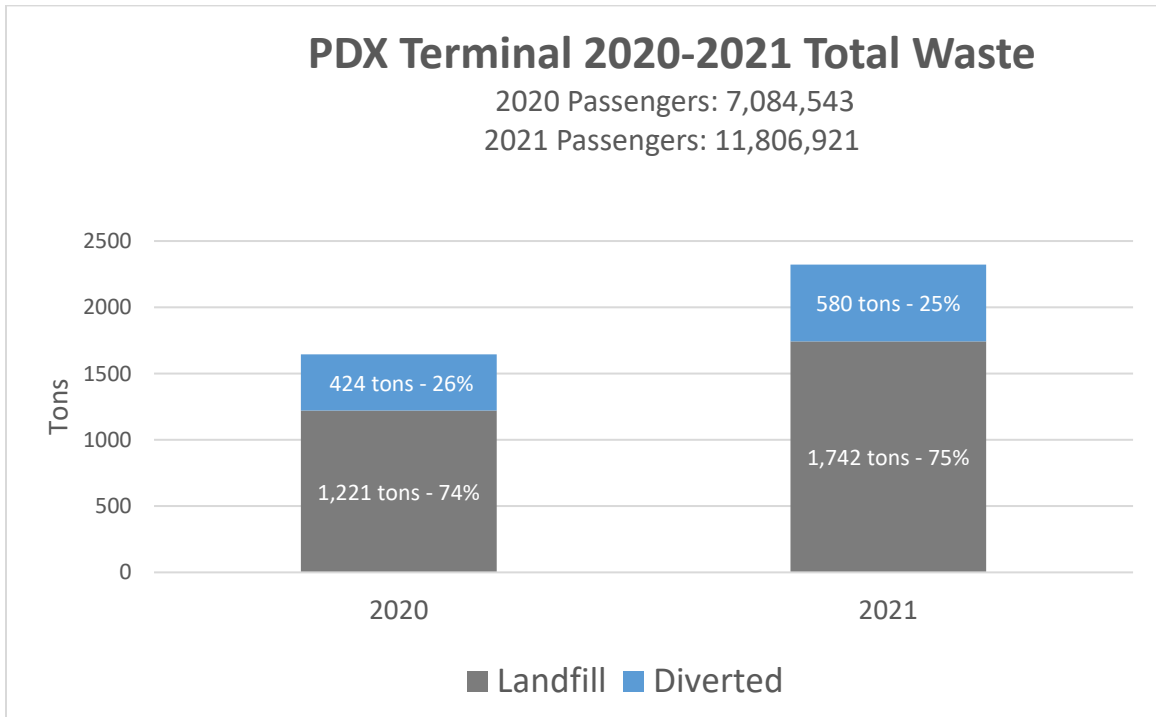
Concourse E sometime after TCORE wraps up. At this time, dish washing infrastructure will be in place throughout the terminal.

Target 2: Maintain or reduce the amount of waste generated per passenger at PDX during TCORE construction.

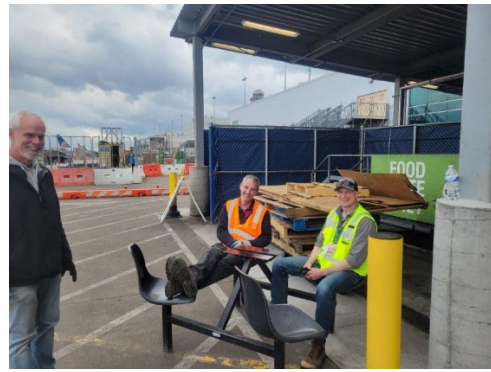
- Waste generation increased in calendar year 2021 but was still 65% less than pre-COVID tonnage in 2019.



- COVID and TCORE construction continue to effect waste generation:
 - Food & Beverage Concessionaires continue to adapt to COVID by adjusting seating capacities and how food is packaged for both in-house and to go items.
 - Fewer passengers are buying food at the airport due to COVID concerns.
 - Triggered by labor and product supply challenges, some restaurants reported that they over-ordered certain products but then could not sell through their inventory which ended up as landfill waste.
 - The Food Donation and the Green Plate Programs have not yet resumed, so more waste is going to the landfill that previously was diverted.



The PDX Spring Cleanup Event was held for the first time since 2019, providing tenants an opportunity to donate, recycle, and dispose of bulky items. Because of construction, two separate events were held for tenants on the North and South side of the terminal. Participation and volume of materials was less than previous years, but many tenants and airlines had utilized the Waste Minimization Team for assistance managing unwanted items throughout the year.



Target 3: Maintain *Very Small Quantity* hazardous waste generator status (lowest level and lowest cost) at all Port facilities.

- All Port facilities remained Very Small Quantity Generator status.
- Port Maintenance continues to limit the use of hazardous materials and utilize products that can be reclaimed or recycled when they become waste.

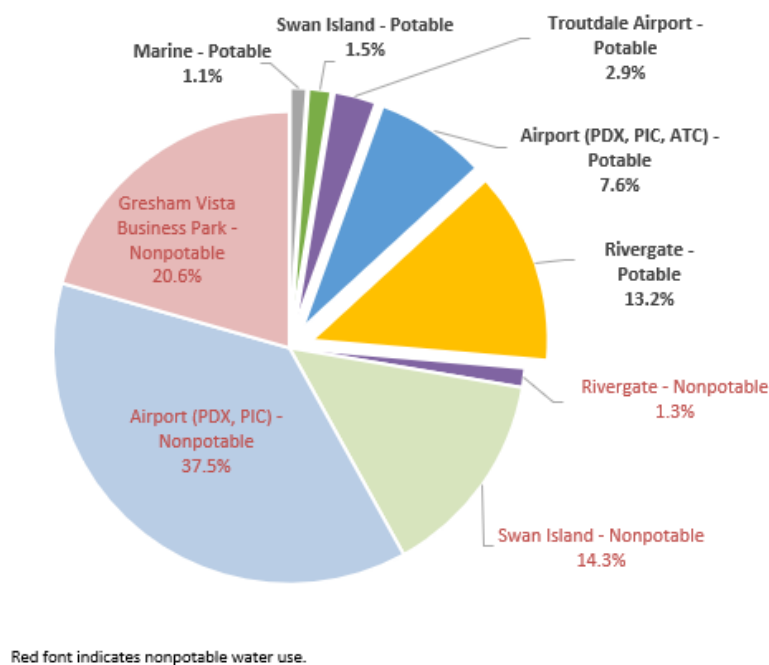
WATER RESOURCES

Objective: Protect water quality and reduce water use through actions that eliminate waste, use alternative sources, support resiliency, and avoid costs or generate revenue.

Target 1: Promote the replacement of potable water with non-potable water for all non-potable uses where feasible. This includes but is not limited to toilet and urinal flushing, wash water, construction water, and irrigation (ongoing).

In 2021, non-potable water comprised just over 13% of Port-wide water use and almost 12% of occupant's water use (see chart below). Non-potable water use resulted in an annual cost avoidance of \$456,052. The most significant contribution to these savings is due to ~70% of irrigation needs being met with non-potable water, avoiding \$375,400.

Irrigation Water Use by Source - 2021



Target 2: Reduce PDX passenger water use from the 2015 baseline by 25% by 2030.

PDX water use per passenger continues to decline due primarily to the installation of dual flush handle toilets and low-flow fixtures, as well as increased water use efficiency by the new rental car wash facility. Water use per passenger in 2021 declined by 4% when compared to 2020. Between 2015 and 2021, water use per passenger declined by a total of 22%. See chart below for more details.

Terminal Water Use and Passenger Trends

