



Metro



Sustainability report

FY 2017-18

December 2018

oregonmetro.gov

If you picnic at Blue Lake or take your kids to the Oregon Zoo, enjoy symphonies at the Schnitz or auto shows at the convention center, put out your trash or drive your car – we’ve already crossed paths.

So, hello. We’re Metro – nice to meet you.

In a metropolitan area as big as Portland, we can do a lot of things better together. Join us to help the region prepare for a happy, healthy future.

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Introduction

We are leaders in demonstrating resource use and protection in a manner that enables people to meet current needs without compromising the needs of future generations, and while balancing the needs of the economy, environment, and society.

- Metro value of sustainability

As a regional government committed to promoting sustainable communities, Metro also strives to make its own operations sustainable. This report describes efforts in fiscal year 2017-18 toward achieving Metro's internal sustainability goals for business operations at the agency's visitor venues, theaters, parks, office buildings and solid waste facilities.

In 2003, the Metro Council set an ambitious target for internal operations to be sustainable within one generation. To this end, the Council adopted goals in five key categories, listed below. Metro established a baseline for these goal areas in 2008 when it established a coordinated sustainability program.

Metro's sustainability goals



Reduce carbon

Reduce direct and indirect greenhouse gas emissions to 80 percent below 2008 levels.



Choose nontoxic

Eliminate the use or emissions of persistent bioaccumulative toxics (PBTs) and other priority toxic and hazardous substances.



Prevent waste

Reduce overall generation of waste, and recycle or compost all remaining waste.



Conserve water

Reduce water use to 50 percent below 2008 levels.



Enhance habitat

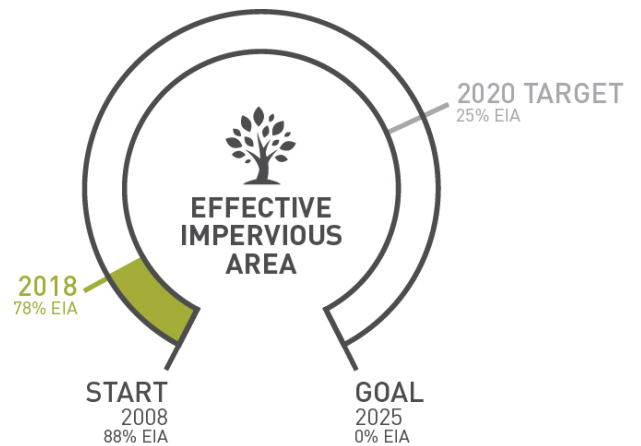
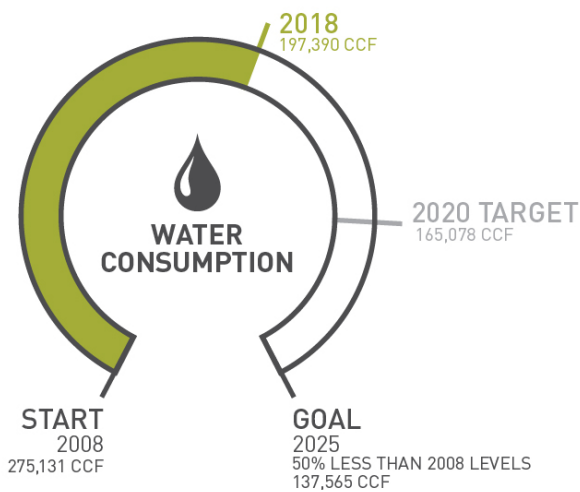
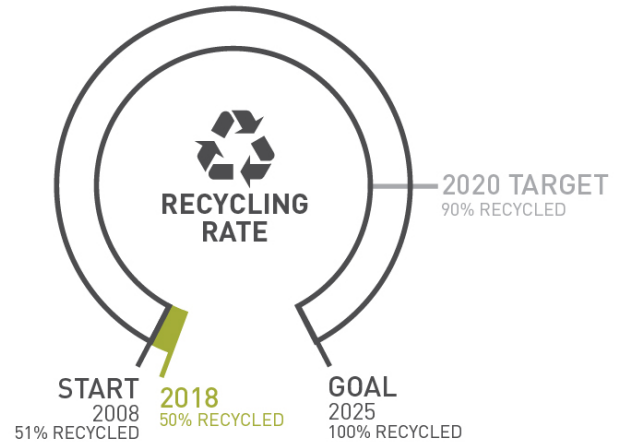
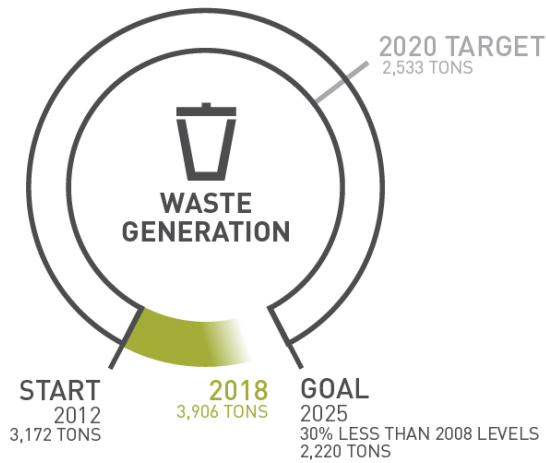
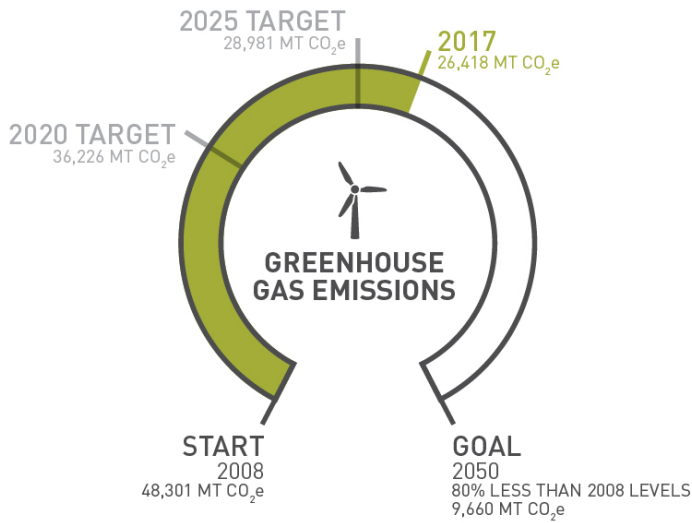
Ensure that Metro's parks, trails, natural areas and developed properties support healthy, functioning ecosystems and watersheds.

Metro's *Sustainability Plan*, adopted by Metro Council in 2010, identifies strategies and nearly 100 actions to accomplish the above goals. The goals are to be achieved by 2025 or, in the case of greenhouse gas emissions, 2050. The plan and past years' progress reports are available online at oregonmetro.gov/greenmetro.

In recognition of the triple bottom line of sustainability, Metro is integrating equity into its *Sustainability Plan*, consistent with Metro's *Strategic Plan to Advance Racial Equity, Diversity and Inclusion* and *Diversity Action Plan*. The results of this work will guide sustainability program efforts moving forward.

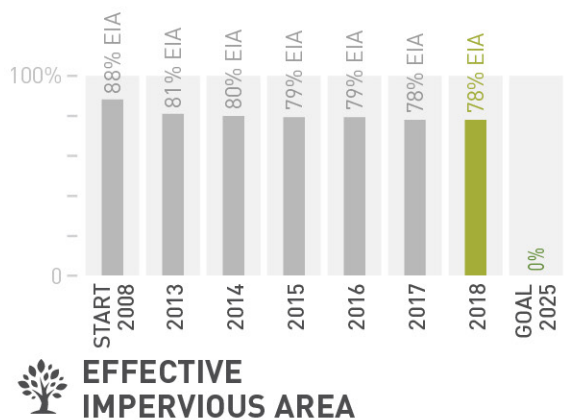
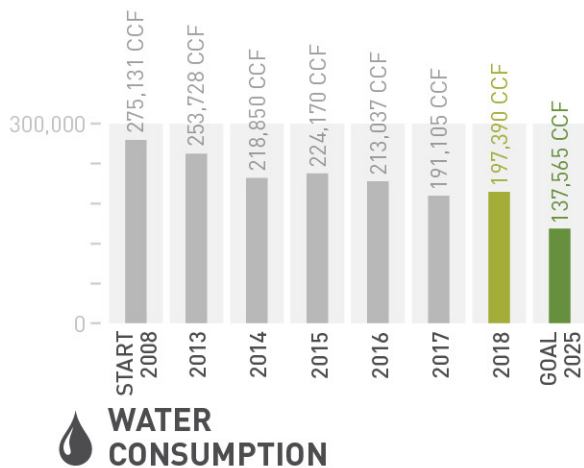
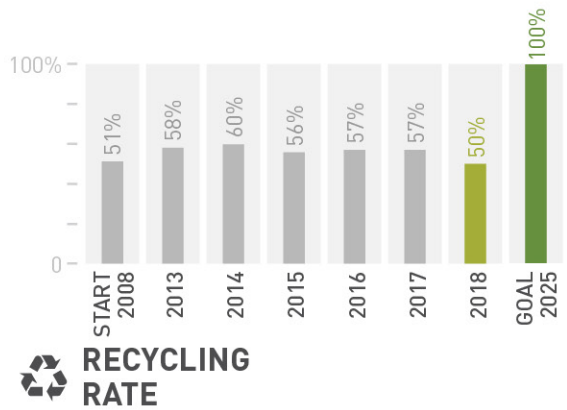
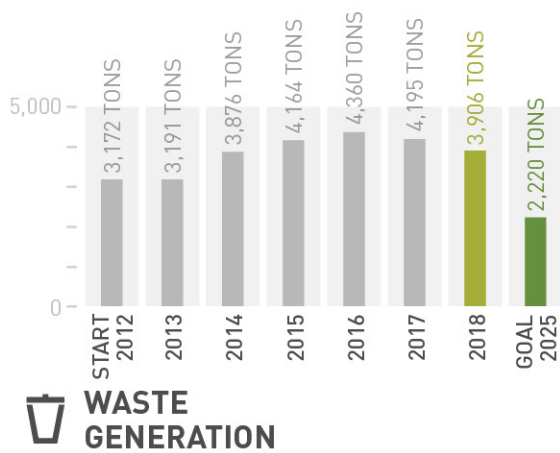
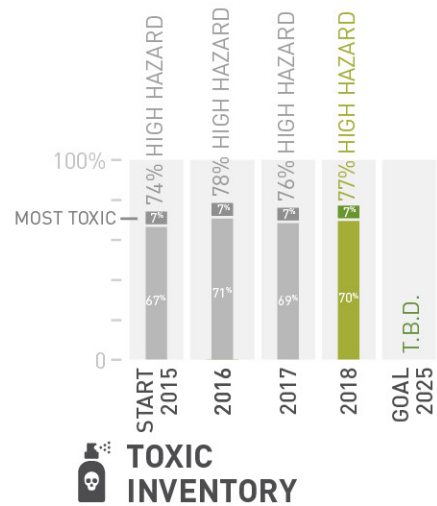
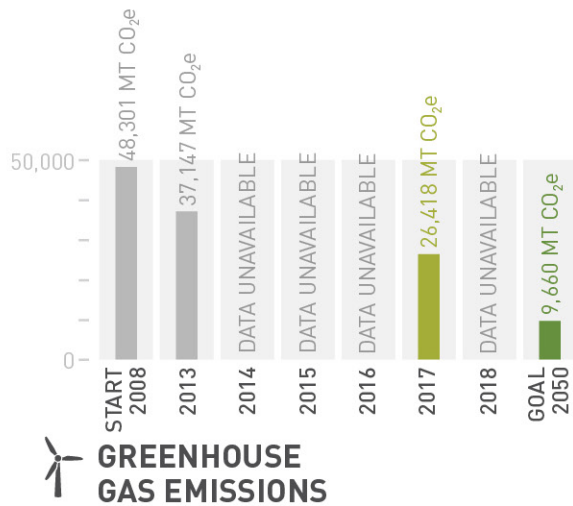
The story of Metro's advancement towards these goals is told by data in key indicators and accomplishments across the agency. Both are included in this report.

FY 2017-18 Sustainability scorecard



MT CO₂e: Metric tons carbon dioxide equivalent
 CCF: Hundred cubic feet, equivalent to 748 gallons
 EIA: Effective impervious area

FY 2017-18 Sustainability scorecard



MT CO₂e: Metric tons carbon dioxide equivalent
CCF: Hundred cubic feet, equivalent to 748 gallons
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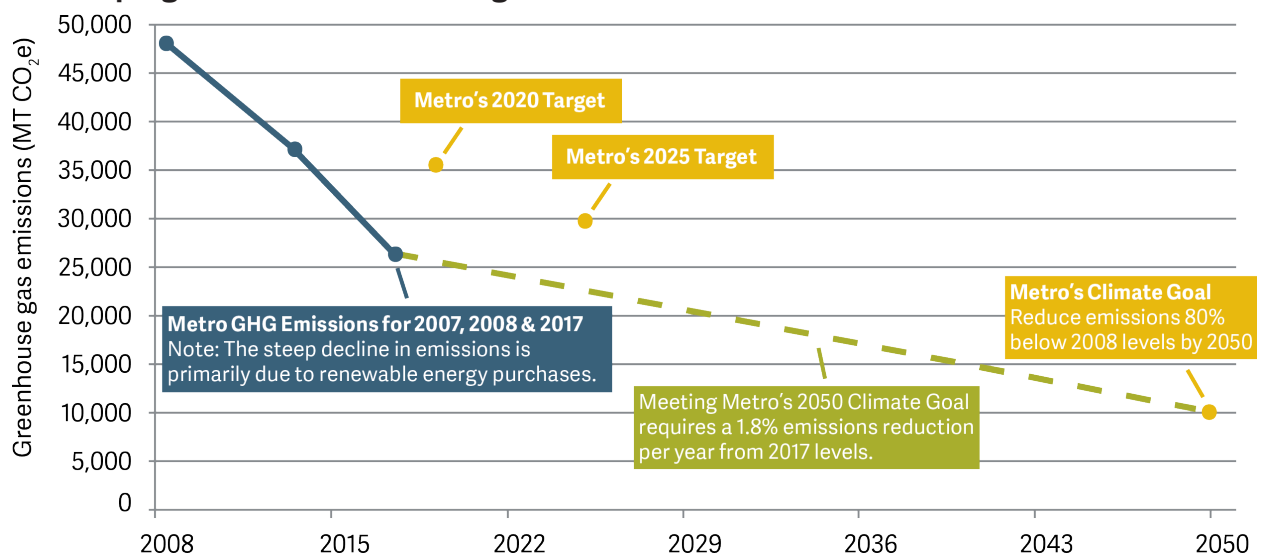
PART 1: KEY ACCOMPLISHMENTS

Metro drives down its greenhouse gas emissions

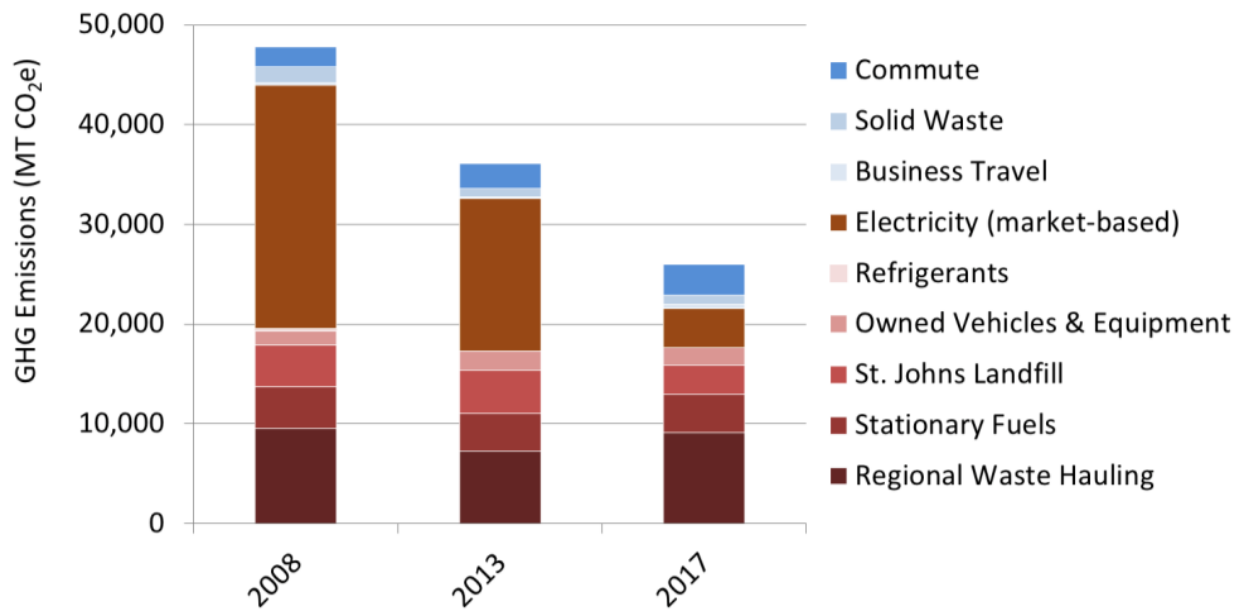
Metro has reduced its greenhouse gas emissions by nearly 46 percent since it first started tracking emissions in 2008. Results from Metro's [2016-17 greenhouse gas emissions inventory](#) for internal operations indicate that emissions decreased from 48,301 metric tons carbon dioxide equivalent (MT CO₂e) in 2008 to 26,418 MT CO₂e in 2017. This progress was largely due to the purchase of renewable electricity and energy-efficiency initiatives like LED lighting upgrades.

Metro's climate goal is to reduce emissions 80 percent below 2008 levels by 2050. The results of the 2017 inventory put Metro ahead of its 2025 interim target. Reaching the goal will require strategic efforts across all sources of greenhouse gas emissions, including additional energy efficiency retrofits, increased generation and purchase of renewable energy, greater use of electric vehicles and low carbon fuels, and sustainable purchasing.

Metro's progress toward its climate goal



Comparison of Metro greenhouse gas emissions by source over time



Roof project at Expo Center reflects Metro values

Metro showed its commitment to triple bottom line sustainability in the Portland Expo Center roof restoration project. Instead of ripping off 200,000 square feet of roofing and replacing it with new material, the project team chose to repair the roof using a liquid roofing system.

The largest roof restoration project of its kind in the Portland area, the Expo project avoided the impacts from manufacturing new roofing material and prevented the equivalent of 240 dump truck loads of roof debris from going to the landfill. Repairing the roof saved \$1.9 million compared to installing a new roof, and, in a time of escalating construction costs, the project was completed \$500,000 under budget.

Metro worked with the project's contractor to secure a veteran-owned [Certification Office for Business Inclusion and Diversity \(COBID\)](#) subcontractor, Stryker Sheet Metal, for the restoration's sheet metal work. In addition, because there weren't any COBID firms in Oregon certified to apply the liquid roofing system, Metro worked with the manufacturer to assist Sterling Pacific to become the first COBID contractor to be certified to apply the liquid system on future roof restorations.





Oregon Zoo reduces energy and water use

In FY 2017-18, the Oregon Zoo made great strides in saving energy, water and money across the Zoo campus. Efforts by operations staff to replace outdated equipment and change operational practices resulted in 20 percent savings in natural gas use, 11 percent savings in electricity use, and 23 percent water savings compared to the previous year. These improvements included replacing water heaters with tankless units, installing a high efficiency boiler in the Swamp building, upgrading to LED lighting, shutting down equipment at night, decommissioning the hippo pool, and fixing water leaks.

Solar energy production also ramped up. The solar array at the new Education Center saved \$300,000 in energy costs in FY 2017-18. The Education Center is in the process of seeking Zero Energy certification from the International Living Future Institute.

Office supply reuse system gets a makeover

Reusing office supplies is now easier than ordering new supplies at the Metro Regional Center. The office supply collection and reuse system (OSCAR) implemented in 2017 offers a marketplace for the exchange of gently-used office supplies. Employees can donate used supplies that are in good condition and shop the store for needed items. OSCAR aims to prevent waste and the health and environmental impacts of manufacturing new items, while reducing purchasing costs.

OSCAR builds on the initial office supply reuse system created several years earlier by the Green Team. In an effort to make the service more accessible and easier to maintain, the area was moved to a more central location. OSCAR includes clearly labeled bins for dropping off items and a retail-like storefront area for shopping for items, as well as a system for donating items that are not needed or usable onsite.





Metro partners with B-Line to recycle polystyrene by trike

The Oregon Convention Center and Metro Regional Center created a new sustainability partnership with local, small business B-Line Urban Delivery. Recent changes in recycling markets meant that garbage haulers were no longer picking up polystyrene from Metro facilities. Through their participation in the Lloyd EcoDistrict, Metro staff learned of a new collaboration between B-Line and Agilyx, the only polystyrene recycler in the region.

Metro contracted with B-Line to pick up bags of polystyrene by trike and deliver them to the B-Line warehouse in downtown Portland. B-Line then transports truckloads to the Agilyx facility in Tigard where the polystyrene is melted down into oil and shipped to refineries to be made into a variety of new products.

Above photo by Carrie Hearne

Inviting indoor bike parking station installed at Antoinette Hatfield Hall

A collaborative effort between teams at Portland's Centers for the Arts resulted in the installation of an inviting indoor bike parking station at Antoinette Hatfield Hall. The Green Team initiated the project, and the operations team installed the rack. Bike commuters now have a secure and convenient area to store their bikes, and resident companies are also encouraged to use it.

One bike rack user reflected, "you start to notice who rides and it is a way to connect with your colleagues."





Oregon Convention Center takes the gold

In FY 2017-18, Oregon Convention Center (OCC) received the City of Portland's Sustainability at Work certification at the Gold level, the highest attainable. Sustainability at Work has helped thousands of Portland businesses advance environmental and social initiatives in the workplace since 2007. OCC is the first Metro visitor venue to achieve the certification; Glendoveer Golf and Tennis was certified at the Gold level in 2015.

Certification requires verification of an extensive list of practices and achievements. Some of the notable achievements that helped OCC meet the Gold level included:

- Generating 25 percent of its electricity needs from a 2-megawatt rooftop solar array
- Donating 21 tons of food in the past year to organizations that feed hungry Oregonians
- Installing a rain garden system to filter stormwater runoff before it reaches the Willamette River
- Donating over 40,000 pounds of usable materials to local nonprofit organizations last year

Upgrades deliver huge energy savings at St. Johns Landfill

Collection and flaring of landfill gas at the St. Johns Landfill uses much less energy after upgrades installed in the spring of 2018. In the 1990s, Metro installed a gas collection facility at the closed St. Johns Landfill to capture the 4,000 cubic feet per minute of gas generated by decomposition of the landfilled material. Originally, three 50 horsepower blowers were installed to create a vacuum to pull the gas from the site and deliver it to four flares that burned the gas.

In 1999, Ash Grove Cement Company built a compressor station on the site to transport the gas to its plant in Rivergate to use for energy. Over time, as the organic material in the landfill breaks down the quantity of landfill gas steadily declines, and in 2017 the landfill produced only about 250 cubic feet per minute of gas. This dwindling supply of gas became economically infeasible for Ash Grove's use, and also meant that the blowers and flares were oversized, wasting energy. In 2018, the remaining flares and blowers were right-sized to fit the amount of gas produced, resulting in significant energy savings.



From high-tech to low-tech, Metro uses smart approaches to manage pests

Metro's Integrated Pest Management program harnesses technology to manage pest problems in the smartest and most sustainable way. A new online Pesticide Application Record system allows centralized tracking of treatments on Metro properties through a user-friendly, cloud-based mobile app, and barcodes on all pest control devices are used to track service data. Nighttime trail cameras catch critters in the act, allowing staff to pinpoint the most effective pest management strategies.

It can be challenging to keep flies at bay at Metro's diverse facilities, from waste transfer stations to Zoo animal exhibits to compost compactors. Rather than use pesticides, Metro installed fly lights last year at many of its buildings. Fly lights use powerful ultraviolet rays to attract flies and other flying insect pests without the use of toxic chemicals.

On the low tech end of the IPM spectrum, dozens of pesticide-free pheromone traps were installed at the Oregon Zoo to lure yellow jacket queens in spring and fall so they cannot spawn new 5,000-wasp colonies. A new low-hazard, botanically-based spray has become a Metro standard for treating nests in areas that threaten the safety of staff and the public.

Glendoveer Golf and Tennis Center innovates in reuse and recycling

Creative thinking led to repurposed fencing at Glendoveer Golf Course. To direct golf cart traffic on the course, staff had been using rope and stakes for fencing. Coyotes had been chewing through the ropes, requiring hours of labor each week to repair. Replacing the rope with new split rail fencing would have cost \$43,000. After a winter storm downed several tree limbs on the course, staff devised a plan to use the limbs to create fencing. With free material and labor costs of about \$2,000, this creative repurposing saved over \$40,000 and resulted in coyote-proof fencing that allowed staff to re-establish the turf around the green.

Staff also pursued innovative recycling on the tennis side. Nationwide, approximately 125 million used tennis balls wind up in landfills each year. In February, Glendoveer began a partnership with Recycle Balls, an organization that turns used tennis balls into rubber products such as new court surfaces and playground flooring. Glendoveer expects to recycle over 10,000 balls per year.

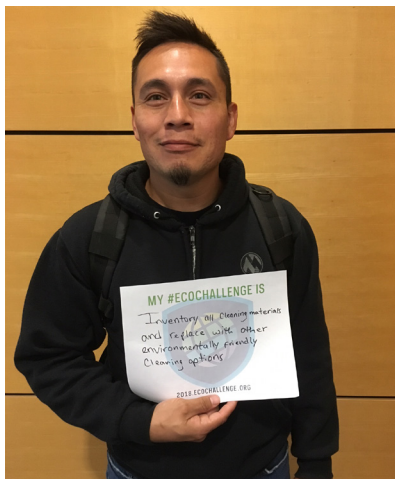


Green Teams take action across Metro

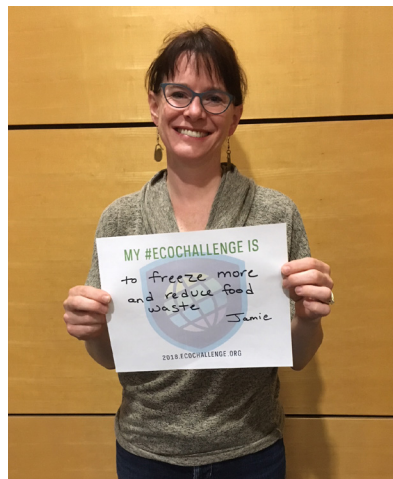
Green teams play an essential role in advancing sustainability across Metro's facilities. Green team projects in FY 2017-18 included:

- Metro Regional Center green team members sponsored the 2017 EcoChallenge, held a household item collection drive to benefit Community Warehouse, and hosted a Northwest Earth Institute discussion course on peace, justice and sustainability.
- The Property and Environmental Services and Parks and Nature green team installed an energy-efficient refrigerator and offered reusable water bottles for temporary employees and remote workers.
- At the Oregon Zoo, a water bottle refill station was installed to encourage the use of reusable water bottles.
- Portland Expo Center installed water- and energy-efficient equipment, including low flow sinks and toilets.
- The Oregon Convention Center green team held a spring e-waste drive and initiated a program to turn "good on one side" paper headed for the recycle bin into notepads.

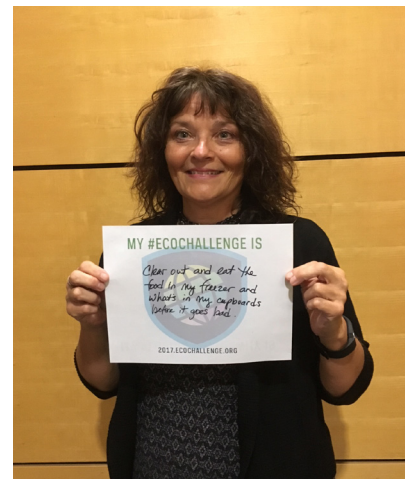
Metro employees and their EcoChallenge goals



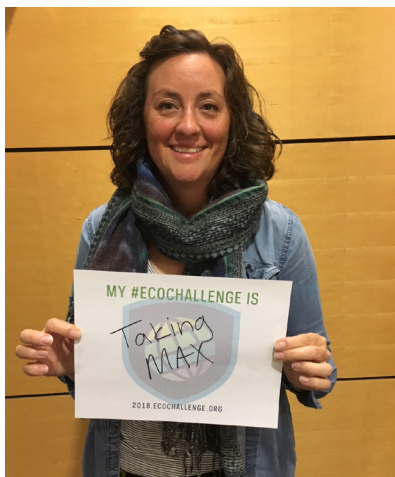
Juan Garcia



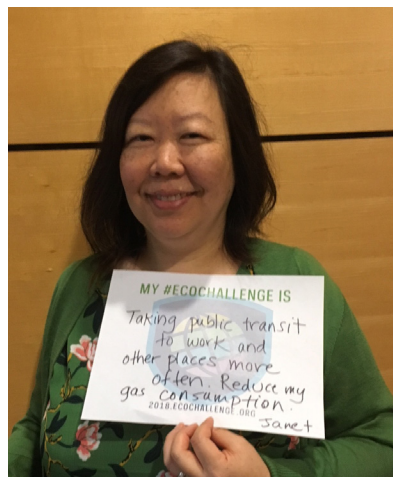
Jamie Repasky



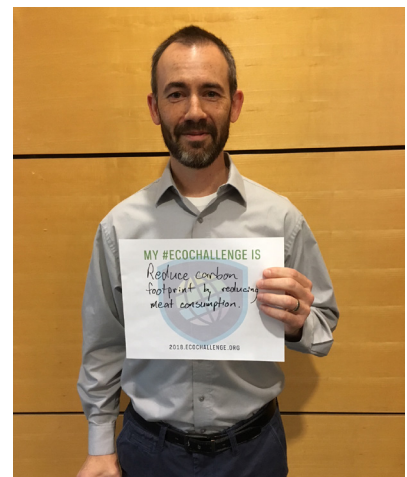
Robyn Brooks



Sara Kirby



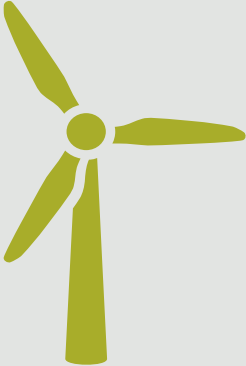
Janet Lee



Matt Snodgrass

PART 2: PROGRESS TOWARD SUSTAINABILITY GOALS

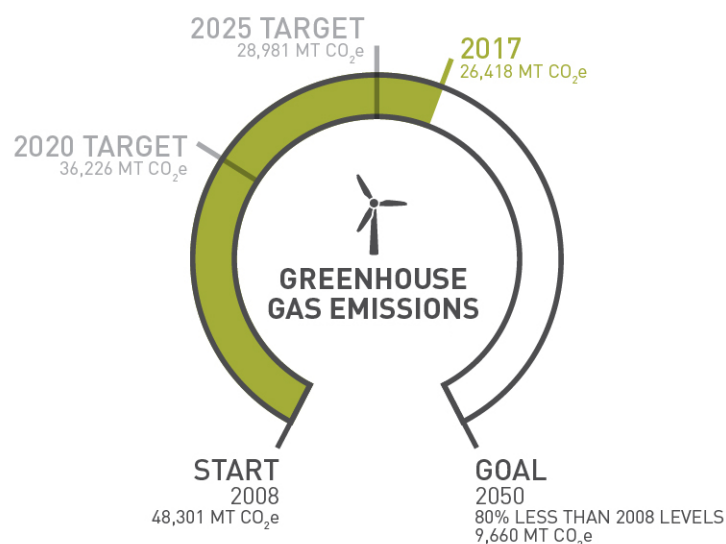
Goal 1: Reduce greenhouse gas emissions

	Goal	Reduce greenhouse gas emissions 80 percent below 2008 levels by 2050.
	Indicators	Greenhouse gas emissions for Scopes I, II and III reported in metric tons of carbon dioxide equivalent (MT CO ₂ e). Electricity consumption from Metro facilities reported in kilowatt-hours consumed (kWh).
	2020 target	25 percent reduction in greenhouse gas emissions (excluding supply chain) from 2008 levels.

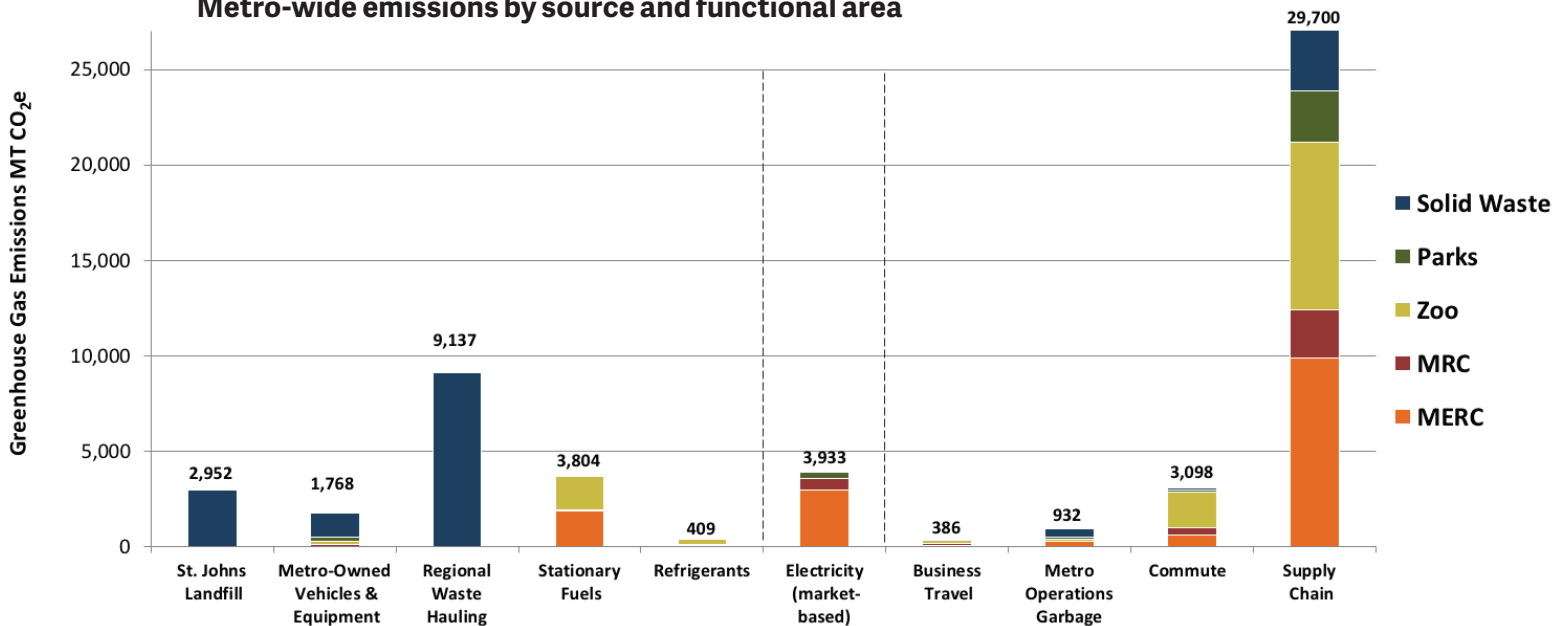
Metro recently completed its third greenhouse gas (GHG) emissions inventory for internal operations using FY 2016-17 data, following on the 2008 baseline and FY 2012-13 inventories (available at oregonmetro.gov/greenmetro). In FY 2016-17, Metro operations generated 26,418 metric tons carbon dioxide equivalent (MT CO₂e) from GHG sources included in Metro's climate reduction goal (non-supply chain emissions), a 46 percent decrease from baseline. This is equivalent to the emissions from energy used by 2,800 homes in one year, or from 5,600 cars driven for a year. The largest source was the fuel used by Metro-contracted trucks to transport community-generated solid waste from transfer stations to landfills. Other significant emissions sources included: building energy use, employee commute, St. Johns Landfill and Metro's fleet.

The most notable change in Metro's emissions for 2017 compared to baseline was an 84 percent reduction in electricity-related emissions from Metro's purchase of renewable energy and implementation of energy efficiency projects. Other notable emissions reductions included an 8 percent reduction in stationary fuel use (primarily natural gas), a 4 percent reduction in regional waste hauling emissions, and a 47 percent decline in emissions from landfilled solid waste from Metro facilities. Metro's emissions that increased compared to baseline included employee commute, vehicles and equipment, and business travel. These increases were due to the significant rise in the number of Metro employees, which almost doubled between 2008 and 2017.

Supply chain emissions added 29,700 MT CO₂e to the non-supply chain emissions for a total of 56,118 MT CO₂e Metro-wide emissions. Supply chain emissions represent the upstream impacts generated during raw material extraction, production and transportation of purchased goods, energy, food, services and waste disposal. Metro's largest supply chain emissions sources in FY 2016-17 were building construction (37%), upstream energy production (20%), professional services (14%), and food (13%). While supply chain emissions are large in scale, they are very difficult to accurately track over time. In addition, while Metro has choices in purchasing and can leverage its purchasing power to influence vendor practices, Metro's ultimate control over its vendors' practices is limited. Due to these challenges, supply chain emissions are not included in Metro's emissions reduction goal.



Metro-wide emissions by source and functional area



Metro acknowledges the scale of these emissions and is committed to continuing to include supply chain emissions in its GHG inventory and to establish specific supply chain reduction targets.

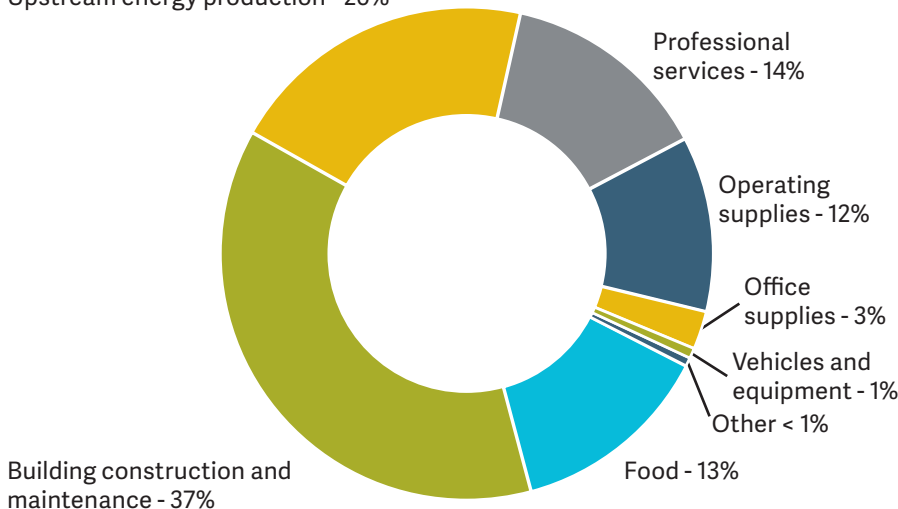
Metro also tracks electricity and natural gas consumption data annually for the purposes of this report. These two sources comprise 29 percent of Metro's non-supply chain emissions. In FY 2017-18, Metro facilities consumed 27.7 million kWh of electricity, a 14 percent decrease from the 2008 baseline and 2 percent lower than the previous year. Metro facilities used 607,151

therms of natural gas in FY 2017-18, a 24 percent decrease from the FY 2010-11 baseline and 14 percent lower than the previous year.

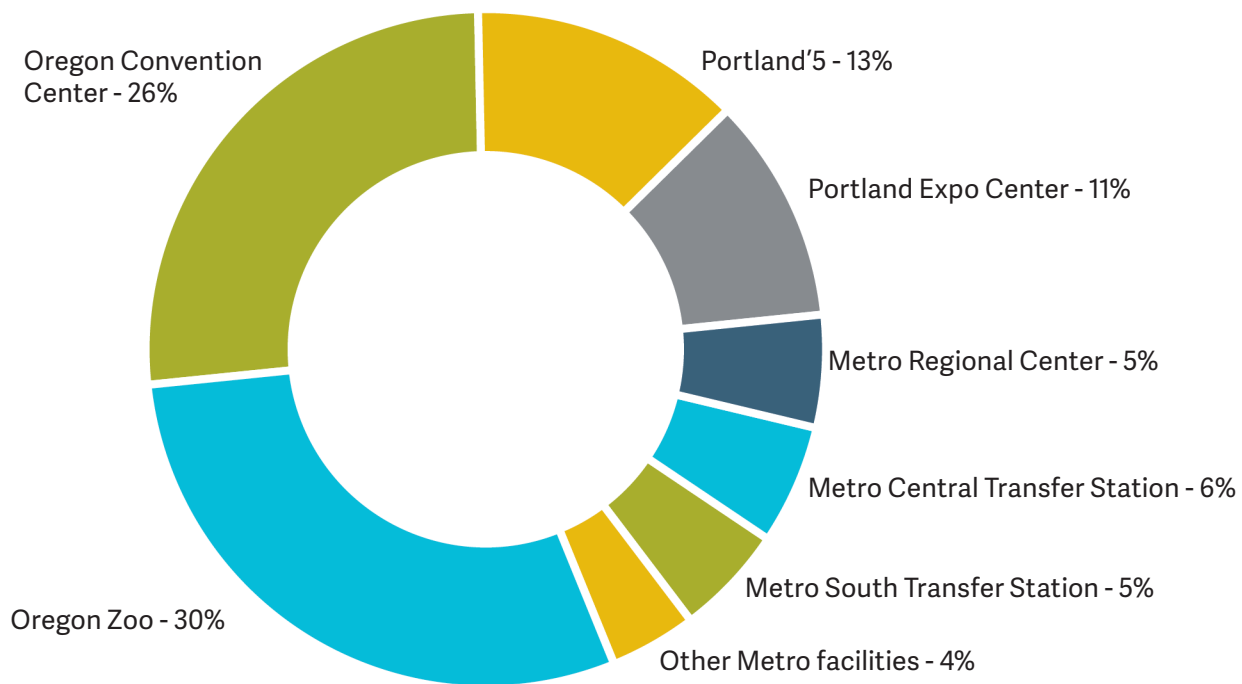
In FY 2017-18, Metro received \$290,000 in funding from Energy Trust of Oregon for projects that are projected to save over 1.4 million kilowatt-hours of electricity and over 20,000 therms of natural gas annually. Metro purchased 19.8 million kilowatt-hours of renewable electricity (71 percent of total electricity purchased) in FY 2017-18, significantly reducing emissions.

FY 2016-17 Metro-wide supply chain emissions by purchasing category

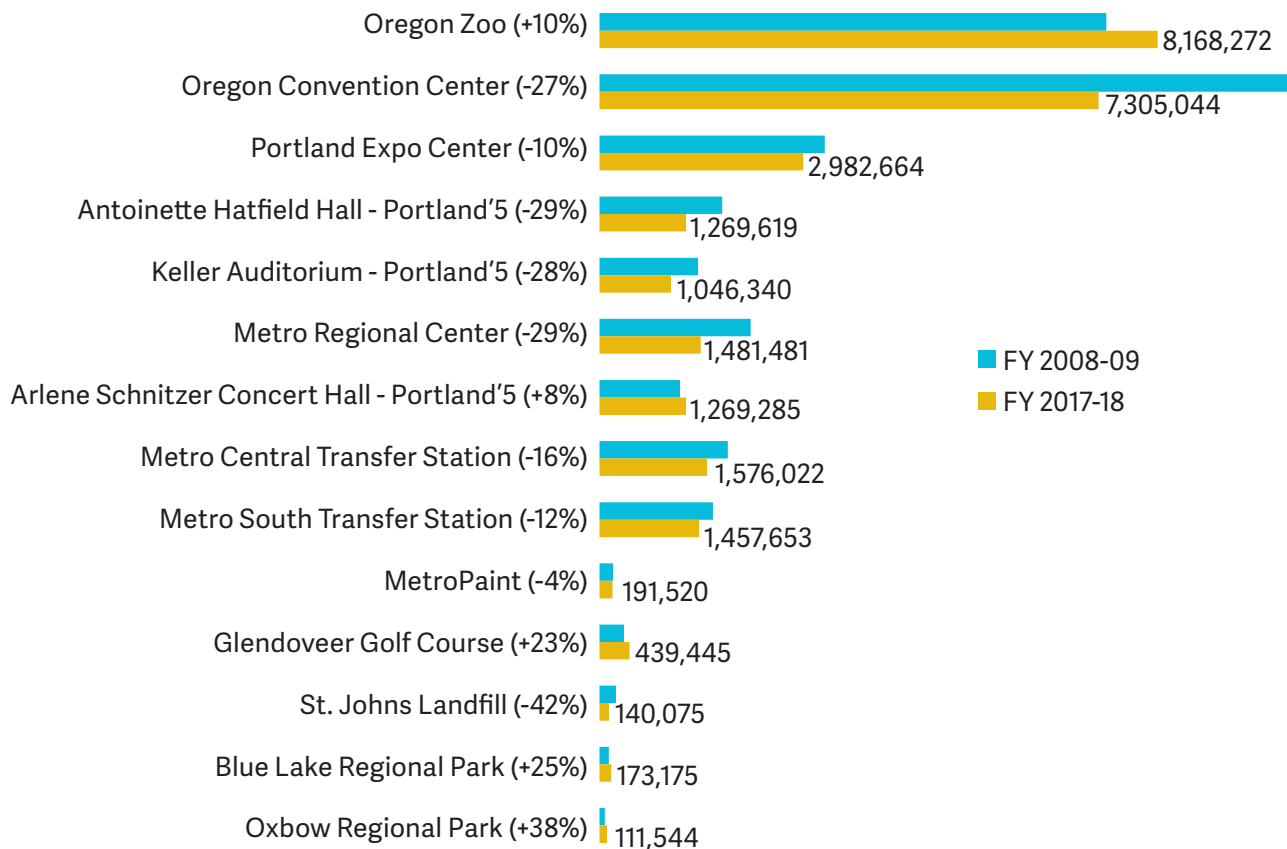
Upstream energy production - 20%



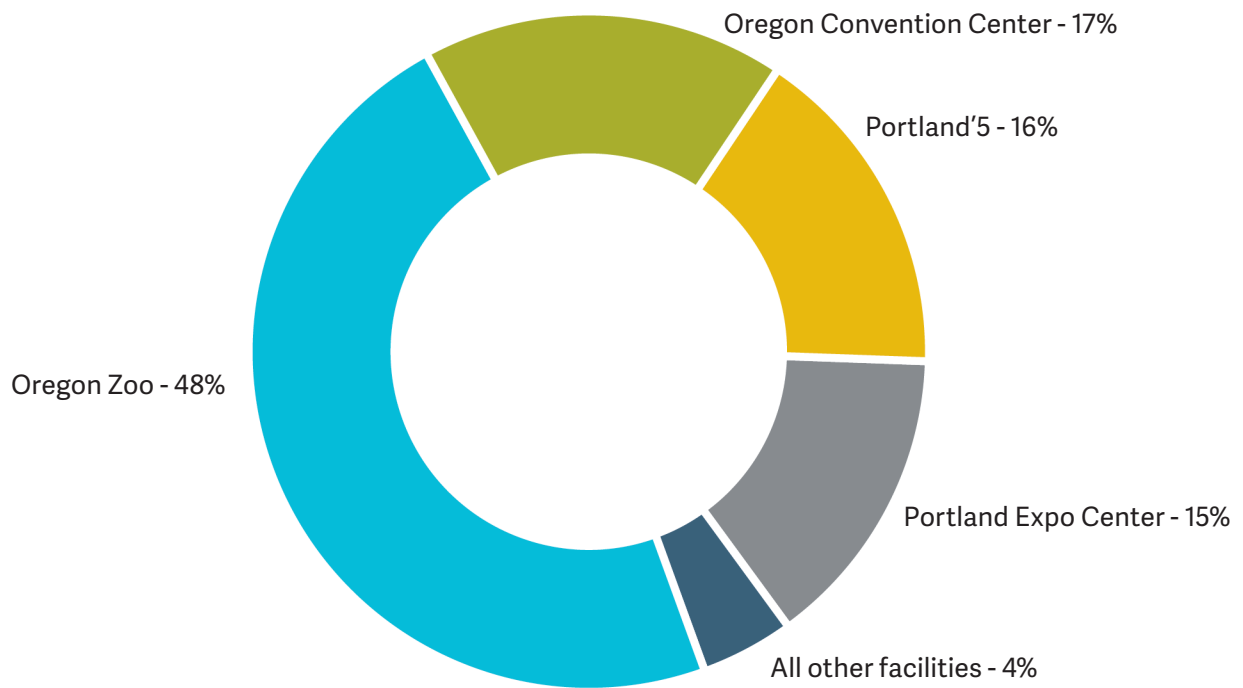
FY 2017-18 electricity use at Metro facilities as a percentage of agency total



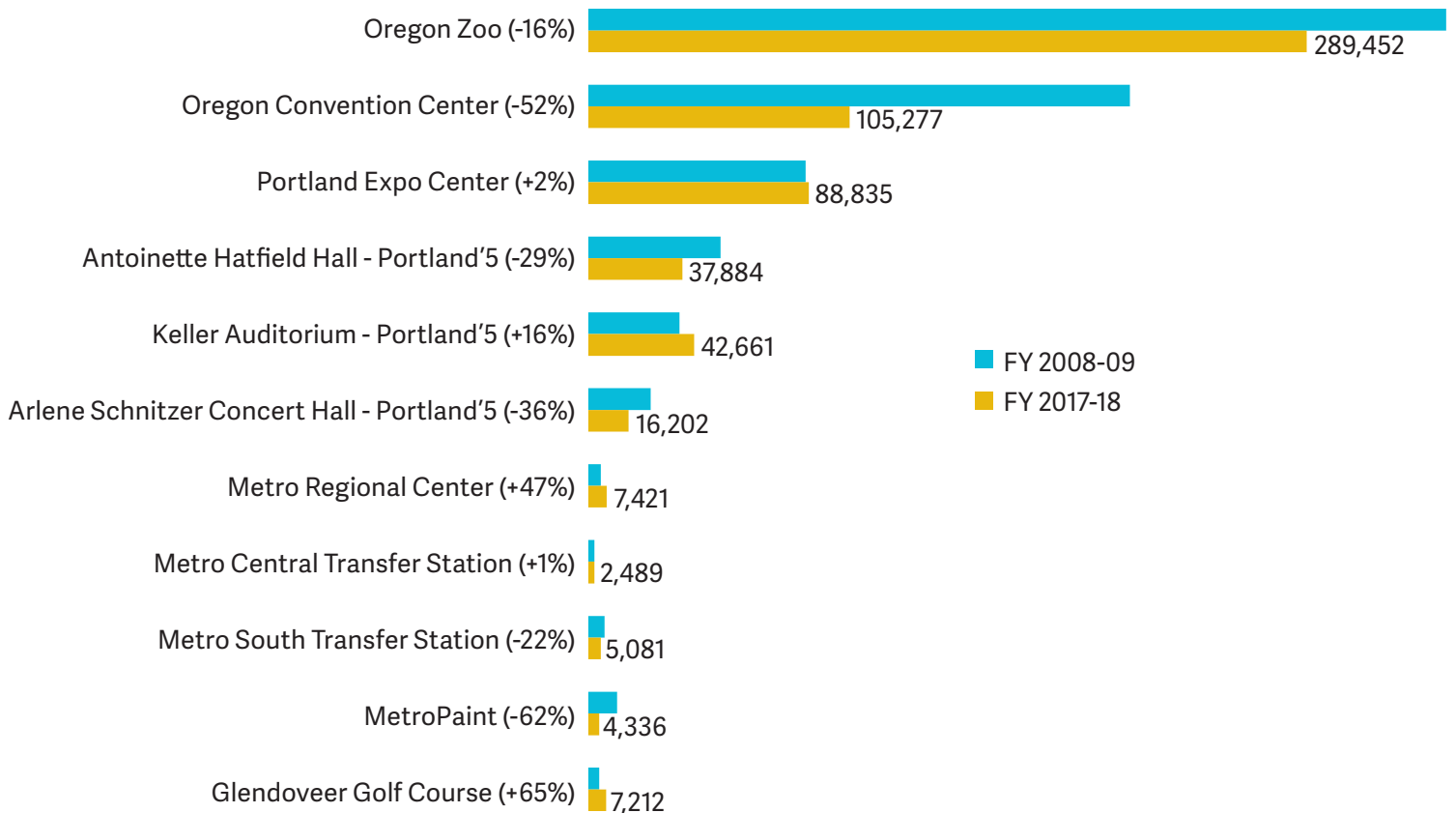
Electricity usage in kWh FY 2017-18 (percent change over baseline 2008-09)



FY 2017-18 natural gas usage at Metro facilities as a percentage of agency total



Natural gas usage in therms FY 2017-18 (percent change over baseline 2010-11)



Goal 2: Choose nontoxic



Goal

Eliminate the use or emissions of persistent bioaccumulative toxics (PBTs) and other priority toxic and hazardous substances by 2025.

Indicator

Percentage of chemical products used at Metro facilities that have ingredients rated as high hazard in any one or more of the following categories: human health, environmental toxicity, physical hazard, persistent, bioaccumulative or inherently toxic.

Metro uses chemical information from product safety data sheets¹ to track the toxicity of products used in internal operations. Metro's Toxics Assessment Tool uses a variety of regulatory chemical lists, cross-referenced with the information contained in safety data sheets, to make toxic hazard determinations.

During FY 2014-15, Metro modified the Toxic Assessment Tool to be more robust and better reflect the intent of the Metro Council's adopted toxics reductions goal. In addition to flagging products rated high hazard for environment, health or physical hazard (the original methodology), the tool was improved to also identify products rated high hazard in the persistent, bioaccumulative or inherently toxic categories. In addition, products which receive a high hazard rating in all six of the hazard categories are identified as the most hazardous, deemed "worst of the worst." Metro's toxics reduction efforts focus on phasing out and seeking safer alternatives to these most toxic products. The change in methodology reset the baseline to FY 2014-15 and triggered the need to set a new goal and interim targets after Metro has a few years of data under the new methodology.

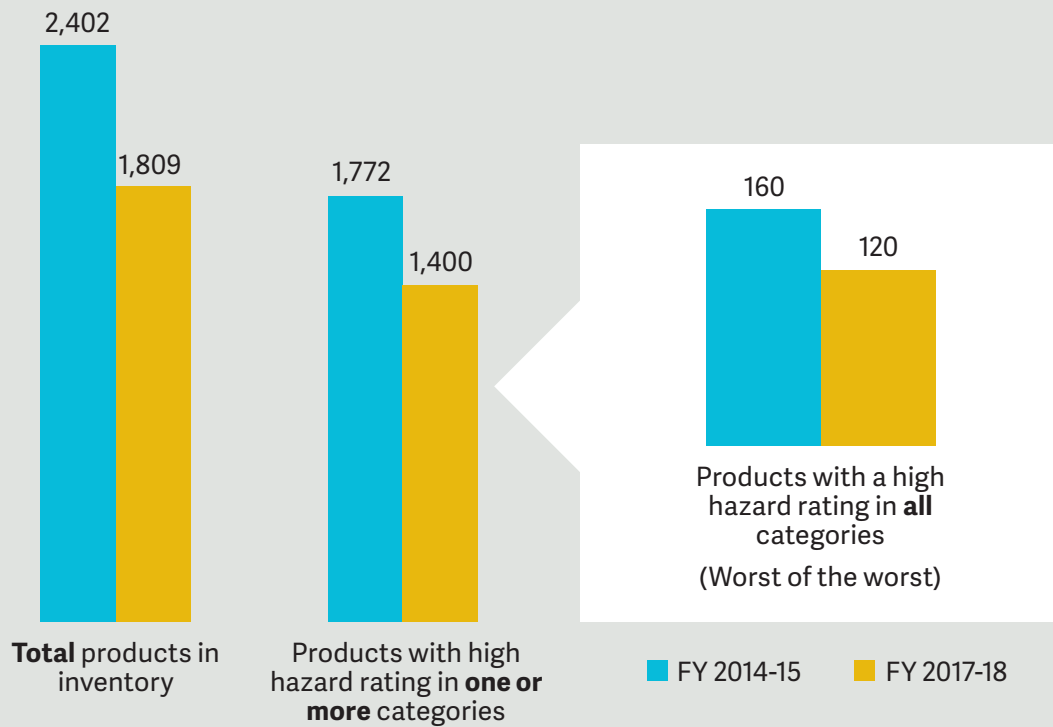
At the time the data was generated for this report, there were a total of 1,809 unique safety data sheets in Metro's database, representing chemical products housed at Metro facilities. In FY 2017-18, the percentage of products in Metro's inventory with a high hazard in one or more

category was 77 percent (compared to 74 percent in FY 2014-15), while the percentage of products deemed "worst of the worst" remained seven percent – unchanged from the baseline. However, Metro reduced the total number of products in its inventory, so while the percentages did not change substantially, the actual number of toxic products decreased significantly. Much progress has been made in reducing Metro's chemical inventory and its toxicity.

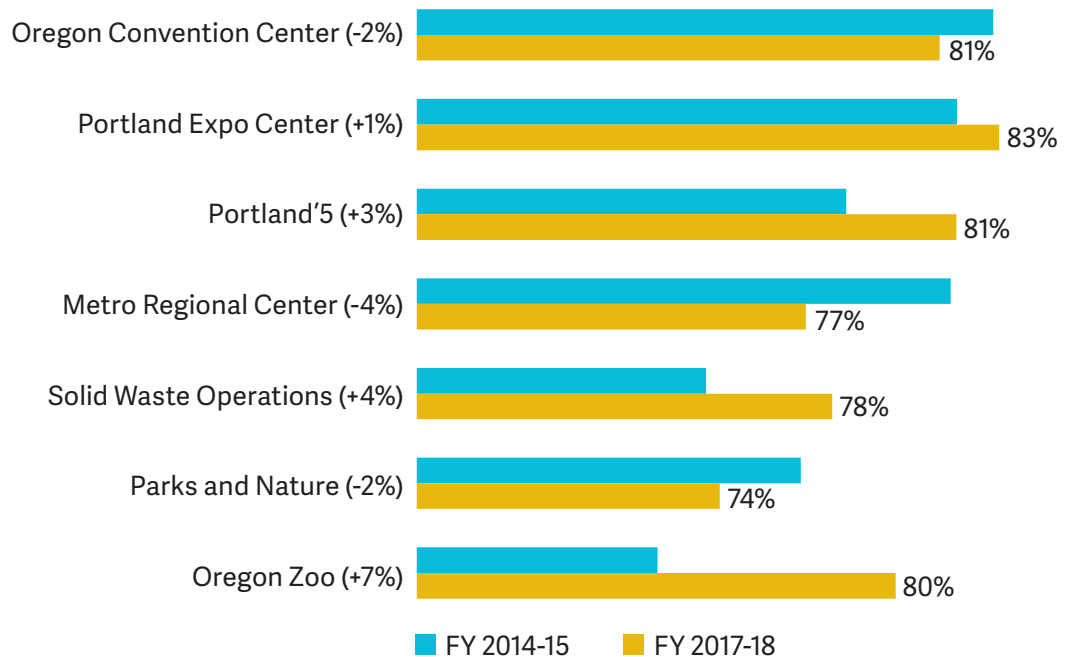


¹ Safety data sheets describe the hazards of working with a chemical and procedures to ensure safety.


FY 2017-18 number of chemical products rated high hazard in Metro's inventory



FY 2017-18 percentage of chemical products with a high hazard rating in one or more category



Goal 3: Reduce waste

	Goals	Reduce overall generation of waste, and recycle or compost all remaining waste by 2025.
	Indicators	Weight (tons) of waste generated (garbage plus recycled materials ¹). Percent of waste recycled.
	2020 targets	Reduce waste generation 20 percent from 2008 levels by 2020. Recycle 90 percent of waste by 2020.

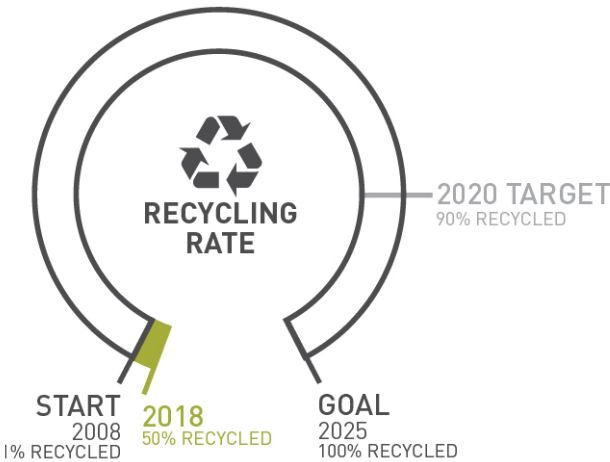
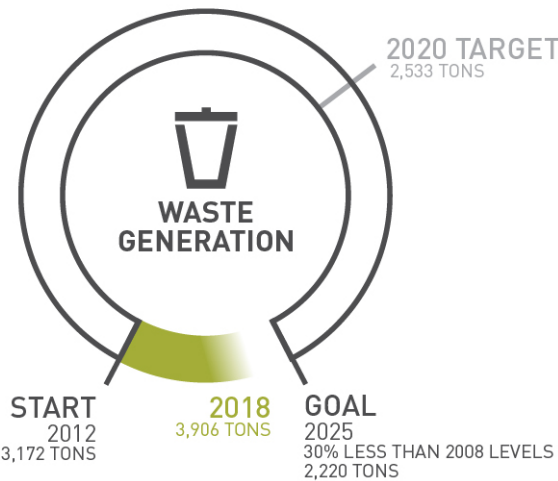
To measure progress toward this goal, Metro tracks overall waste generation and recycling from the major facilities in the agency's portfolio. Metro facilities generated 3,906 tons of waste in FY 2017-18 and recycled 50 percent of total waste.

The FY 2017-18 waste generation rate is the lowest since 2014, despite a dramatic increase in visitors at all of Metro's visitor venues. Overall, however, waste generation across Metro is trending in the wrong direction – 23 percent higher than baseline – and it remains far from the 2020 interim target of 20 percent below baseline.

Progress in waste generation is seen by declining numbers; progress in recycling is seen by increasing ones. Metro's recycling rate has decreased by one percentage point from baseline to 50 percent. In FY 2017-18, the

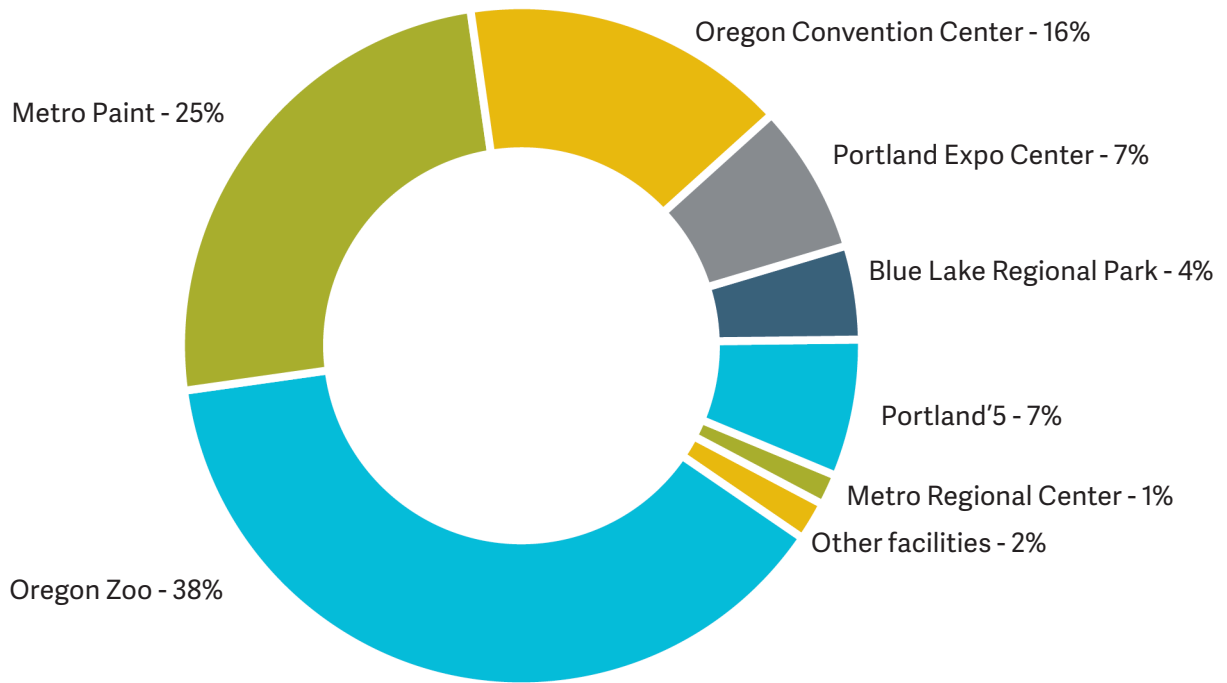
recycling rate increased at the Oregon Convention Center, Portland's Centers for the Arts, Blue Lake Park and Glendoveer Golf and Tennis compared to the previous year, while rates decreased at the rest of Metro's facilities. Metro will not come close to reaching the 2020 interim target of a 90 percent recycling rate.

Some notable factors that affected the overall recycling rate decrease included a reduction in the volume of animal waste composted into ZooDoo due to instances of tuberculosis in the elephant population. At MetroPaint, several factors reduced the recycling of plastic and metal paint buckets, including a lack of space in the facility to store buckets and a shortage in storage cages. In addition, recycling the buckets takes significant time and labor, and at times it has been necessary to suspend recycling to be able to process higher volumes of paint.

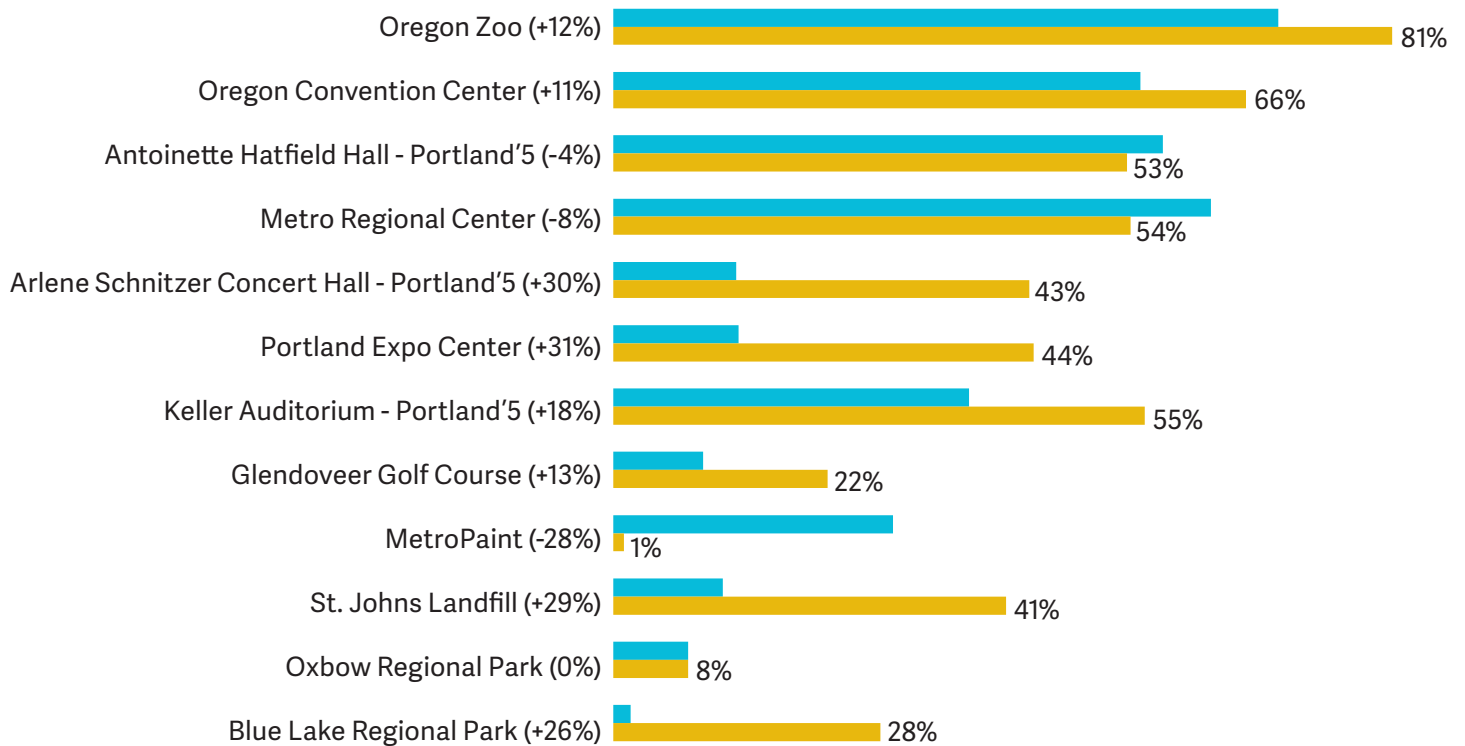


¹ Recycled materials include standard recyclables, as well as yard debris or food scraps that were composted or anaerobically digested.

FY 17-18 total waste generated as a percentage of agency total



FY 2017-18 recycling rate at Metro facilities compared with baseline year (varies)^{1,2}



¹Baseline years for calculating recycling vary based on earliest available complete data set for that facility. The following facilities have a 2008 baseline year: Oregon Zoo, Oregon Convention Center, Portland Expo Center, Metro Regional Center and MetroPaint. FY 2010-11 baseline year: All Portland's Centers for the Arts facilities and Oxbow Regional Park. FY 2011-12 baseline year: Blue Lake Regional Park. FY 2012-13 baseline year: Glendoveer Golf and Tennis, St. Johns Landfill.

²The Zoo's recycling rate includes composting of manure and animal bedding; subtracting those materials out would reduce the recycling rate to 26 percent.

Goal 4: Conserve water



Goal	Use 50 percent less water from 2008 levels by 2025.
Indicator	Gallons of water consumed from water utilities and on-site sources.
2020 target	Use 40 percent less water from 2008 levels by 2020.

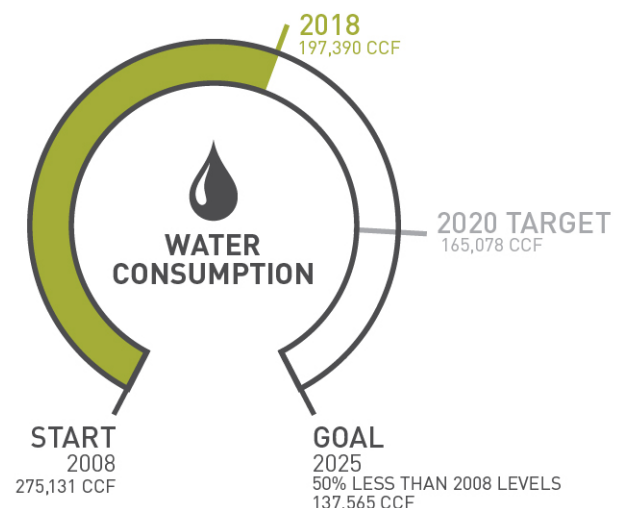
Metro collects water usage data for its facilities from water-providing utilities and from well water records. Water use is reported in CCF, or hundred cubic feet (equivalent to 748 gallons).

In FY 2017-18, Metro facilities consumed 197,390 CCF (148 million gallons) of water, including about 84,729 CCF (63.4 million gallons) from onsite wells. This amount of water equates to about 224 times the volume of an Olympic-sized swimming pool. Water use in FY 2017-18 was 28 percent less than the FY 2008-09 baseline, a substantial reduction but not quite on track to meet the 2020 target of 40 percent reduction (165,078 CCF).

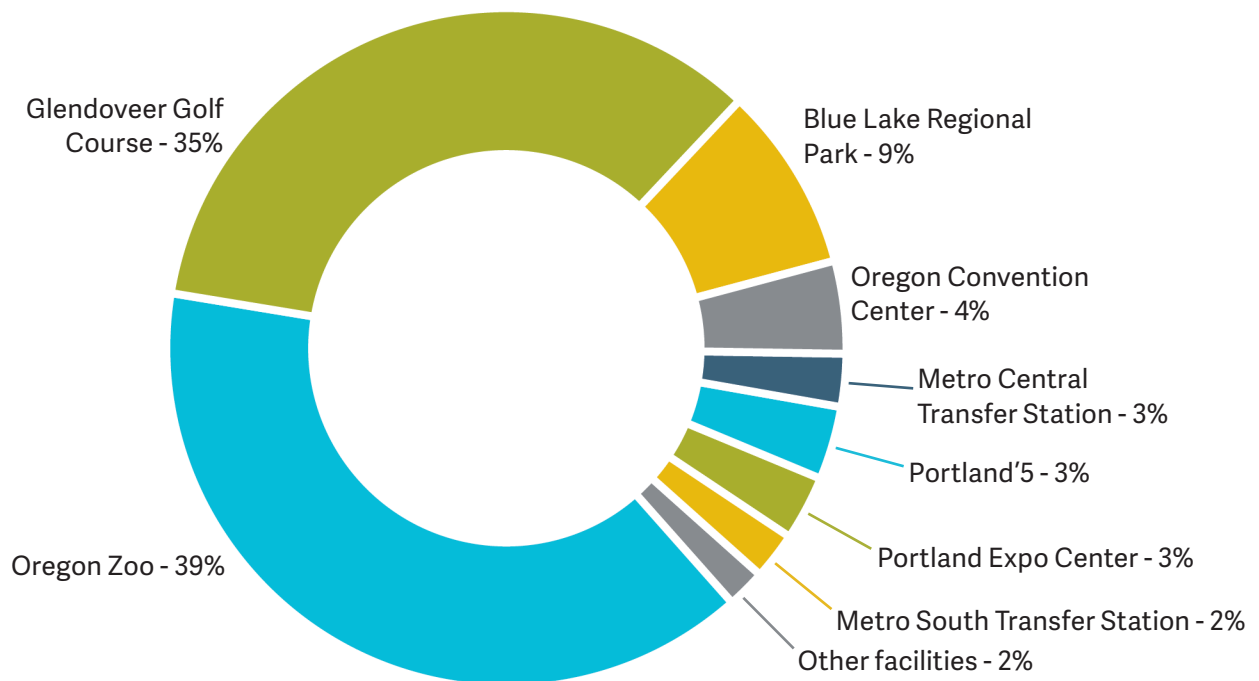
Oregon Zoo and Glendoveer Golf and Tennis Center continue to be Metro's top water users, comprising 74 percent of Metro's total water consumption. Reaching Metro's water conservation goal hinges on further reductions at these two facilities. Efforts at the Oregon Zoo to fix leaks and decommission the hippo pool

reduced water use substantially in FY2017-18, achieving a 29 percent reduction in water use compared to baseline. Glendoveer Golf and Tennis saw a significant increase in well water use compared to last year, primarily due to increased irrigation needs to maintain the greens during high summer temperatures.

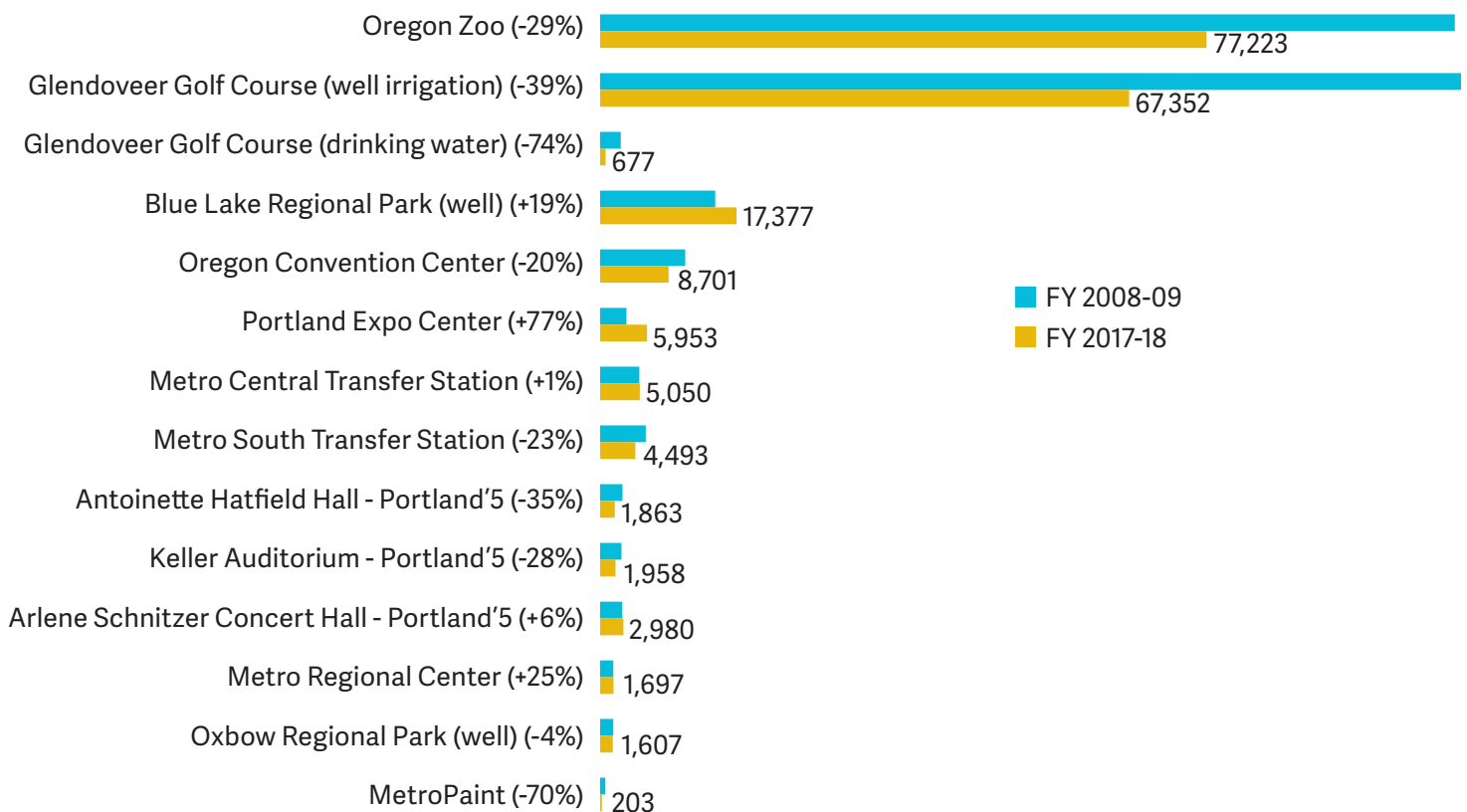
The hotter, drier summers predicted as a result of climate change will continue to place increasing demands on water supplies for irrigation and indoor water use at Metro facilities. Meeting this challenge will require implementation of innovative approaches and practices across Metro, such as water smart landscaping, rainwater and greywater harvesting, and high efficiency plumbing fixtures.



FY 2017-18 water usage as a percentage of agency total



FY 2017-18 water usage compared with FY 2008-09 baseline (CCF)



Goal 5: Enhance habitat and reduce stormwater

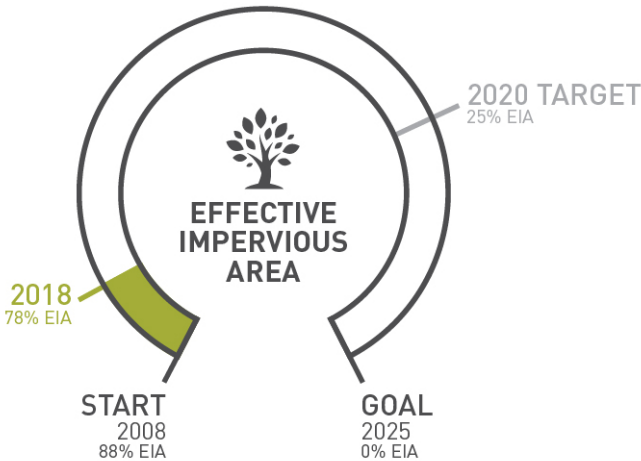
	Goals	Ensure that Metro's parks, trails, natural areas and developed properties positively contribute to healthy, functioning ecosystems and watershed health by 2025.
	Indicators	Percentage of effective impervious area on Metro's developed properties; impervious surfaces directly connected to a stream or drainage system and not directed to a green roof, swale or other pervious area.
	2020 target	Reduce effective total impervious area on developed properties to 25 percent. Identify habitat-friendly improvement opportunities for developed properties.

Tracking effective impervious surface area is a way to monitor stormwater runoff from Metro's developed properties and resulting impacts to habitat health. Effective impervious area measures the amount of hardscape on a developed property (e.g., roofs, parking lots, sidewalks) that sends water directly to a waterway or sewer without being treated by an ecoroof, bioswale or other stormwater treatment facility. The higher the amount of effective impervious area, the more significant the property's negative impact on water quality and wildlife habitat.

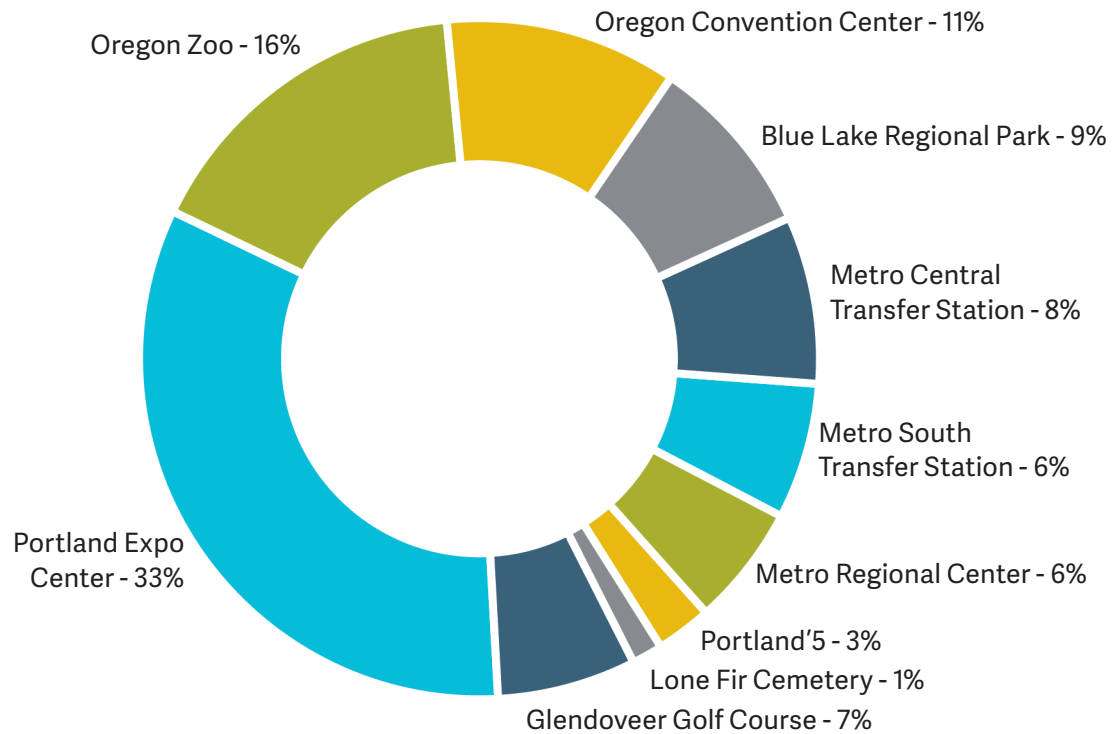
In FY 2017-18, the overall percentage of effective impervious area on Metro's developed properties was 78 percent, unchanged from the previous year. This is far from the 2020 target of 25 percent. Reducing effective impervious area is a particularly challenging goal given the nature of many of Metro's developed properties. For instance, space limitations on several of Metro's properties restrict the ability to install bioswales, and some older buildings lack the structural integrity to support ecoroofs. Other properties offer significant opportunities to reduce effective impervious area, such as the extensive parking lot at the Expo Center, that have not yet been realized due to cost barriers.

However, Metro has implemented low impact development features on properties as opportunities have arisen. For instance, in FY 2016-17, stormwater planters were installed to treat all of the stormwater runoff from the Zoo

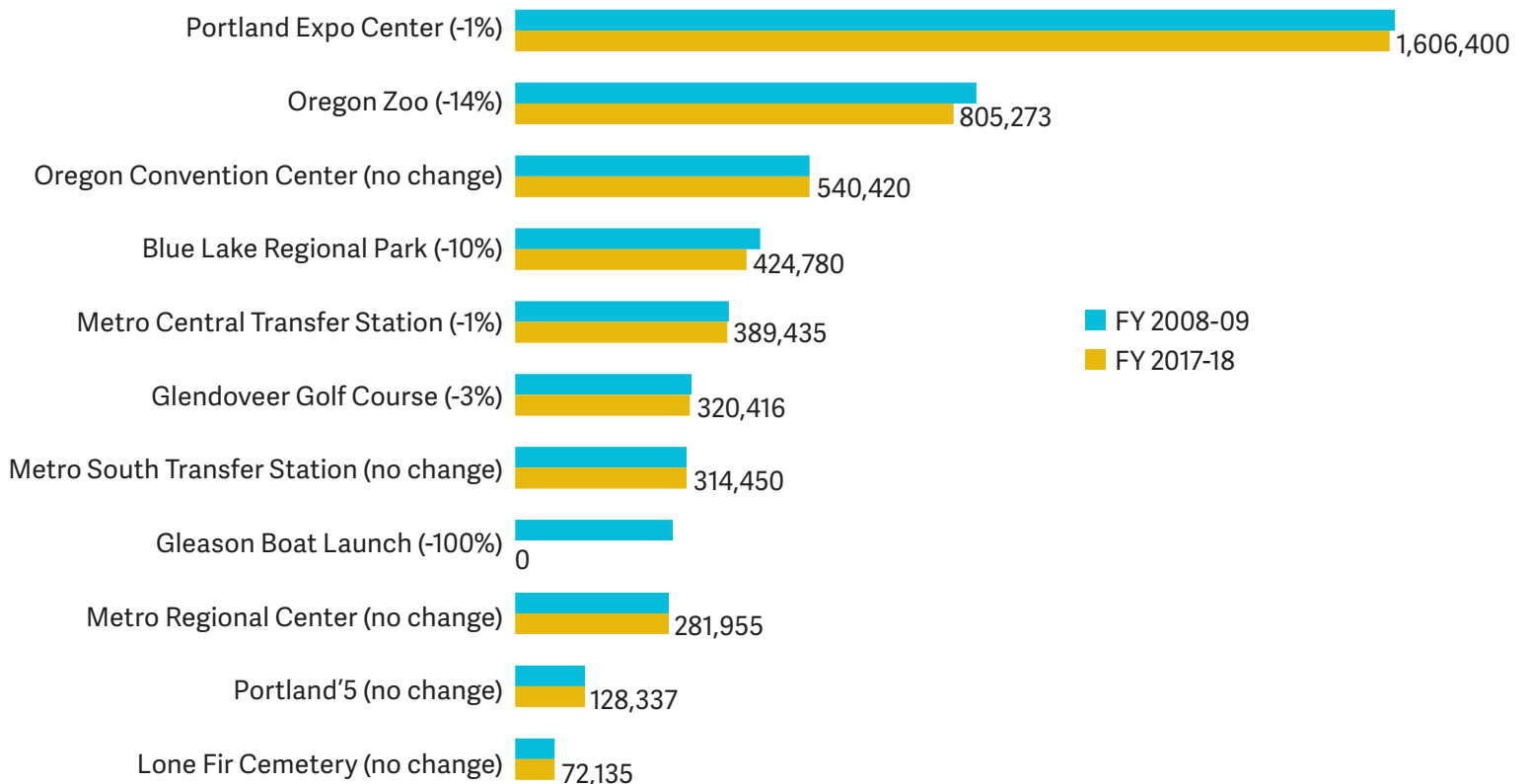
Education Center, and improvements to the maintenance yard at Blue Lake Regional Park included bioswales that treat runoff from all impervious surfaces. This builds on previous work, including rain gardens planted at Blue Lake Regional Park restrooms in FY 2015-16 and a stormwater green wall installed at the Portland Expo Center in FY 2013-14.



FY 2017-18 effective impervious areas as a percentage of agency total



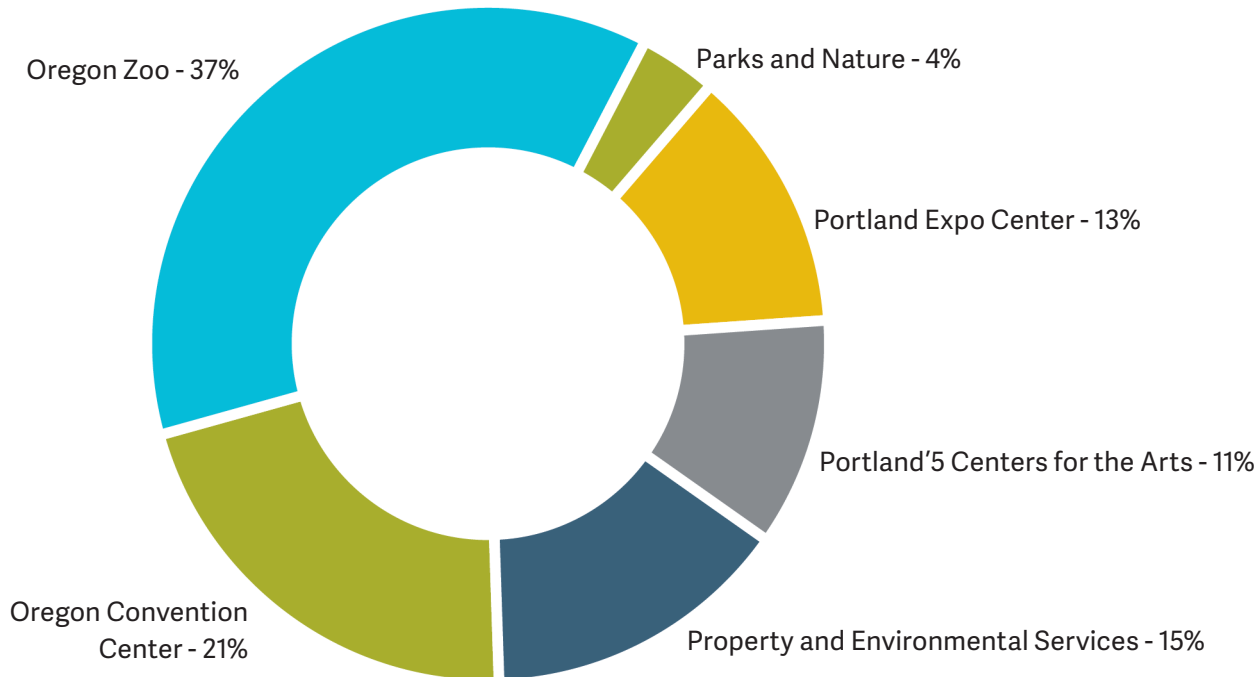
FY 2017-18 effective impervious area in square feet (change compared to baseline 2008-09)



Utility Costs FY 2017-18

Many of Metro's sustainability activities revolve around improving facility systems and operations to make them more energy and water efficient, as well as reduce costs. The following charts provide information on how much Metro pays for its utilities and the scale of savings possible from conservation and efficiency efforts.

FY 2017-18 utility consumption costs for Metro facilities*



*Percentages do not add up to 100 percent due to rounding.

Department/Facility	Electricity	Natural gas	Water	Wastewater	Stormwater	Total utility expenses
Oregon Convention Center	\$773,671	\$91,131	\$58,401	\$94,239	\$101,611	\$1,119,053
Oregon Zoo	\$680,897	\$177,119	\$343,531	\$667,013	\$78,019	\$1,946,579
Parks and Nature	\$108,987	\$7,075	\$19,918	\$15,834	\$36,948	\$188,762
Portland Expo Center	\$331,242	\$74,614	\$31,480	\$61,631	\$162,380	\$661,347
Portland's 5	\$376,091	\$79,672	\$36,678	\$66,875	\$16,716	\$576,032
Property and Environmental Services	\$508,064	\$17,024	\$62,253	\$85,115	\$105,865	\$778,321
FY 2017-18 totals	\$2,778,952	\$446,635	\$552,261	\$990,707	\$501,539	\$5,270,094
FY 2016-17 totals	\$2,790,131	\$539,524	\$543,062	\$1,063,409	\$485,816	\$5,421,942
FY 2015-16 totals	\$2,652,896	\$420,046	\$510,564	\$1,025,734	\$426,838	\$5,036,078

Energy efficiency and renewable energy project incentives FY 2017-18

Metro works closely with the Energy Trust of Oregon to implement energy efficiency and renewable energy projects at Metro facilities and visitor venues. In FY 2017-18, Metro received over \$290,000 in funding for projects that are projected to save over 1.4 million kilowatt-hours of electricity and over 20,000 therms of natural gas annually.

Summary of incentives from Energy Trust of Oregon, FY 2017-18

Program, Project and Products	Incentive Received (\$)	Electricity savings (kWh)	Natural gas savings (therms)
Blue Lake Regional Park			
LED lighting	3,437	18,390	0
Occupancy sensors	720	4,982	0
Subtotal	\$ 4,157	23,372	0
Metro Regional Center			
Occupancy sensor plug strips	480	2,928	0
Subtotal	\$ 480	2,928	0
Oregon Convention Center			
Existing buildings			
LED Lighting	12,999	84,073	0
Custom variable frequency drives	23,959	314,519	0
Occupancy sensors	8,370	63,378	0
Equipment	908	8,639	0
Retro-commissioning	39,225	44,186	20,573
Study	7,700	0	0
Strategic Energy Management Program	5,000	0	0
Subtotal	\$ 98,161	514,795	20,573
Oregon Zoo			
Existing buildings			
LED lighting	7,328	37,077	175
Custom chillers	91,325	365,300	0
Custom motors	7,332	86,475	0
Generator block heater	1,500	14,000	0
Occupancy sensors	375	1,101	0
New buildings			
Early design assistance	2,500	0	0
LEED - New construction assistance	50,666	126,666	0
LED lighting	196	1,306	0
Study	11,250	0	0
Strategic Energy Management Program	14,949	273,735	0
Solar-ready assessment	1,530	0	0
Subtotal	\$ 188,951	905,660	175
Grand total	\$ 291,750	1,446,755	20,748



About Metro's Sustainability Program

Metro's Sustainability Program coordinates implementation of the agency's Sustainability Plan for Internal Operations.

Sustainability Steering Committee

A steering committee of representatives from Metro's major facilities and venues and key departments provides oversight and accountability for implementation of the Metro Sustainability Plan. Committee members in FY 2017-18 were:

- Julie Bunker and Ed Williams, Portland's Centers for the Arts
- Lydia Neill and John Sterbis, Oregon Zoo
- Ryan Harvey and Matthew Uchtman, Oregon Convention Center
- Chuck Dills and Alicia Crawford, Portland Expo Center
- Nicole Lewis and Jen Keisler Fornes, Parks and Nature
- Michael Guebert and Debbie Humphrey, Property and Environmental Services, Solid Waste Operations
- Nancy Strening, Property and Environmental Services, Construction Project Management Office
- Rory Greenfield and Susan Boase, Property and Environmental Services, Metro Regional Center operations
- Tracy Fisher and Riko Tannenbaum, Finance and Regulatory Services, Procurement Services division
- Benjamin Rowe and Cinnamon Williams, Finance and Regulatory Services

Green Teams

Six green teams advance implementation of sustainable practices at Metro workplaces.

The following Metro employees served as chairs of the green teams during FY 2017-18:

- Patrick Morgan, Metro Regional Center
- Sarah Vaca, Property and Environmental Services/ Parks and Nature
- Ryan Harvey, Oregon Convention Center
- Andrea Abbott, Portland's Centers for the Arts
- Chuck Dills, Portland Expo Center
- Carolyn Sherman, Glendoveer Golf and Tennis Center



Conclusion

This report highlights just a portion of the work done in fiscal year 2017-18 to advance Metro's progress towards its internal sustainability goals. Data on sustainability indicators signals that Metro will need to take stronger actions if it is to meet all of the adopted sustainability goals within the target time frame.

While increased visitors at Metro's venues and other factors pose challenges to Metro's progress toward these goals, Metro's commitment remains steady. The prosperity of our region depends on healthy and functional ecological, social and economic systems, and Metro continues to seek ways to reduce the impacts of its operations on these systems. Given the urgency of the climate crisis, Metro's recent focus has been on reducing greenhouse gas emissions.

The progress shared in this report results from the vision and leadership of the Metro Council and the commitment and ingenuity of hundreds of staff across the agency, in particular operations staff and those serving on Metro's Sustainability Steering Committee and green teams.

Learn more about Metro's internal sustainability program at:

oregonmetro.gov/greenmetro

