



Sustainability report appendices FY 2016-17

November 2017

oregonmetro.gov/greenmetro

Sustainability report appendices

FY2016-17

Table of Contents

Goal 1: Reduce greenhouse gas emissions	1
Goal 2: Choose non-toxic	4
Goal 3: Reduce waste	6
Goal 4: Conserve water	8
Goal 5: Enhance habitat and reduce stormwater	10
Energy efficiency and renewable energy incentives	12
Sustainable procurement	13

Goal 1: Reduce greenhouse gas emissions

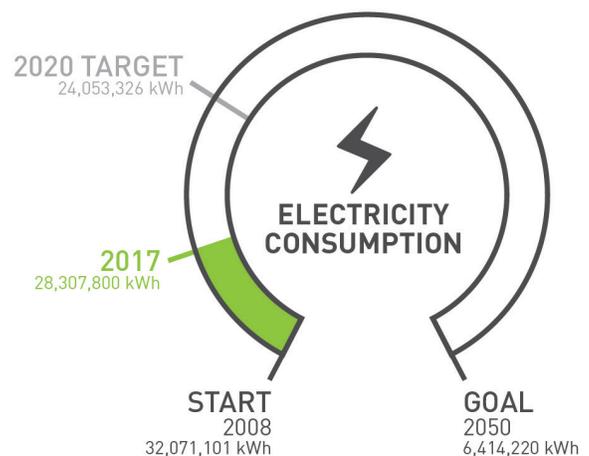
	Goal	Reduce greenhouse gas emissions 80 percent below 2008 levels by 2050.
	Indicators	Greenhouse gas emissions for Scopes I, II and III reported in metric tons of carbon dioxide equivalent (MT CO ₂ e). Electricity consumption from Metro facilities reported in kilowatt-hours consumed (kWh).
	2020 target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

Metro completed a comprehensive greenhouse gas emissions inventory for internal operations in 2008 and again for FY 2012-13 (available at oregonmetro.gov/greenmetro). An updated inventory for FY 2016-17 is under way. In lieu of a complete greenhouse gas inventory, Metro tracks electricity and natural gas consumption data for the purposes of this annual report. These two sources comprise 46 percent of Metro’s non-supply chain emissions, according to the FY 2012-13 greenhouse gas inventory.

In FY 2016-17, Metro facilities consumed 28.3 million kWh of electricity, a 12 percent decrease from the 2008 baseline. However, electricity use rose compared to last year, primarily due to the addition of two new buildings at the Zoo: Elephant Lands and the Education Center. Metro facilities used 708,400 therms of natural gas in FY 2016-17, an 11 percent decrease from the FY 2010-11 baseline¹. Natural gas use also increased compared to last year, largely due to increased heating demands resulting from unusually cold winter temperatures. Both electricity and natural gas use have trended upward for the past three years.

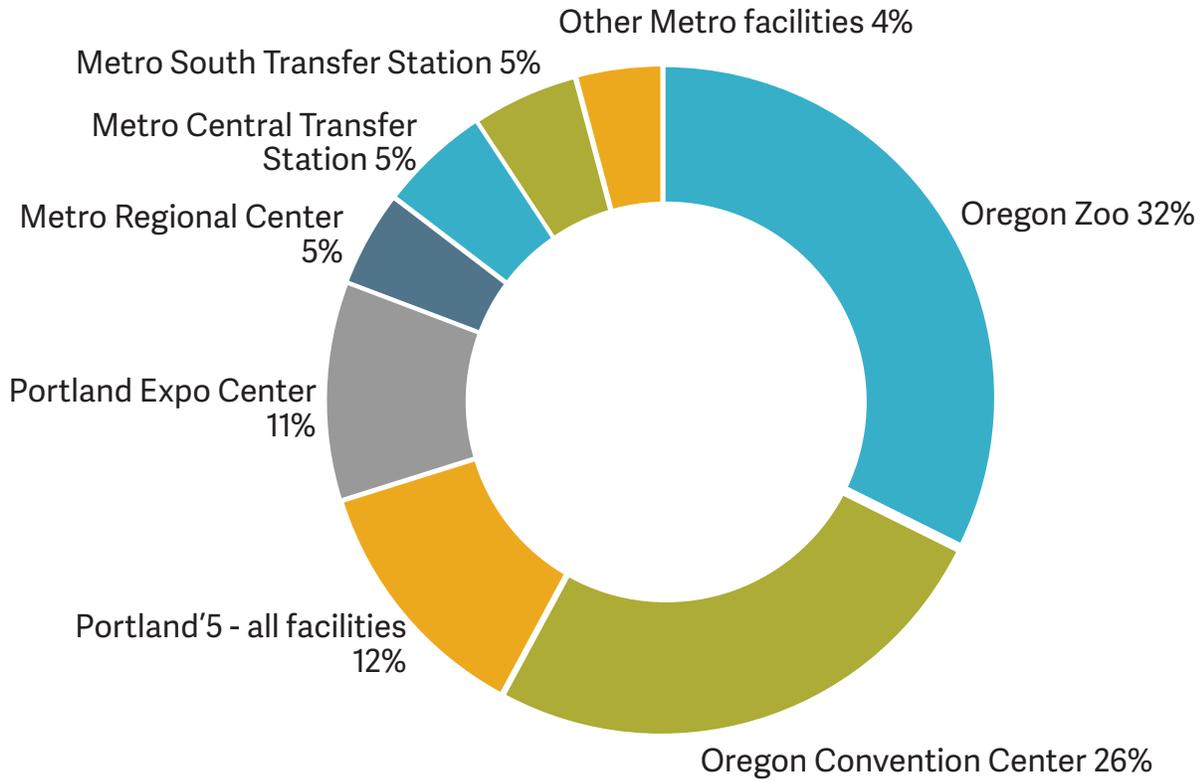
To reduce greenhouse gas emissions from energy consumption, Metro needs to both decrease overall energy use and increase use of renewable energy. Both of the new Zoo exhibits include solar arrays; the Education Center was designed for net zero energy and the solar panels began generating electricity in October 2017. The solar array at the Convention Center generated 25 percent of the center’s energy use in FY 2016-17. In addition, in FY 2016-17, Metro purchased enough renewable energy from utilities to offset 71 percent of the total electricity used from the grid, reducing greenhouse gas emissions and supporting development of domestic sources of cleaner, renewable energy.

The last greenhouse gas inventory indicated that much progress must be made to meet the 2050 goal. The FY 2016-17 inventory will provide a more complete picture of Metro’s progress toward this goal, as well as key opportunities.

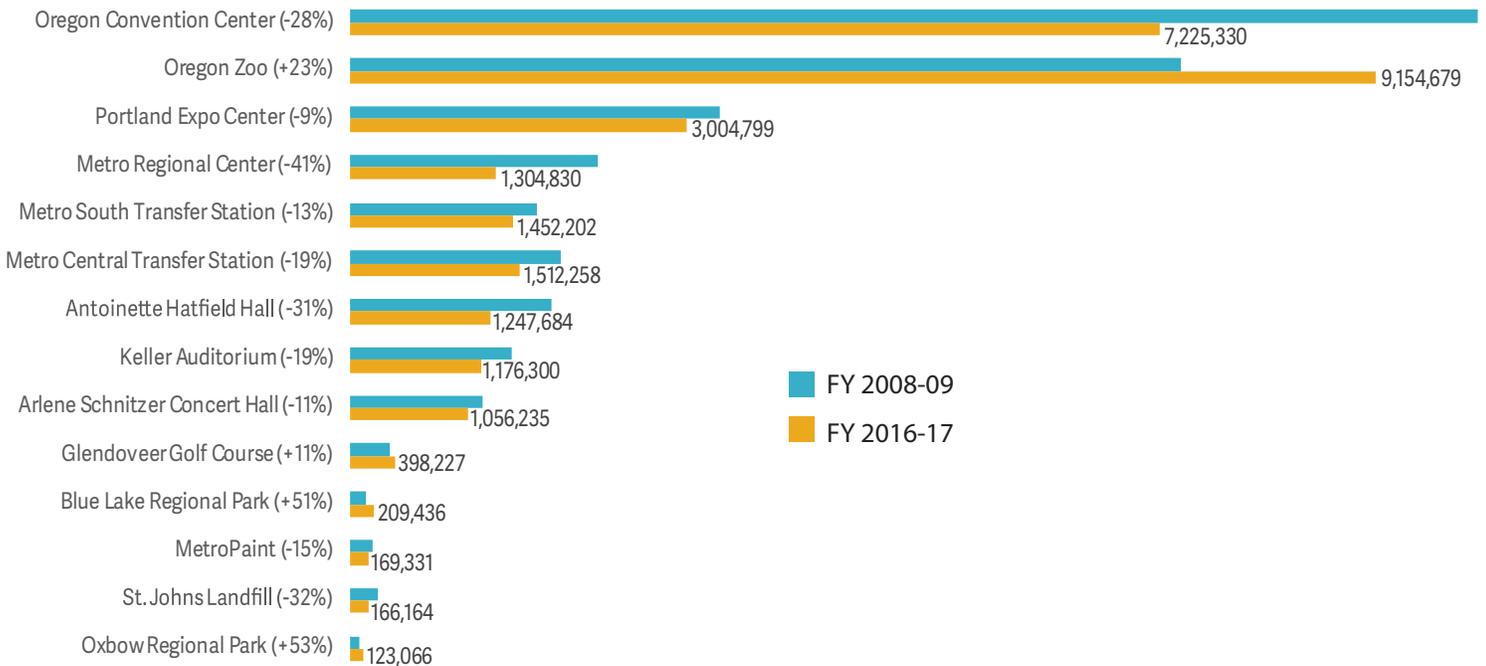


¹ The baseline years for reporting Metro-wide usage of electricity and natural gas differ. FY 2010-11 is used for natural gas since that is the year with the most complete set of gas usage data for Metro facilities.

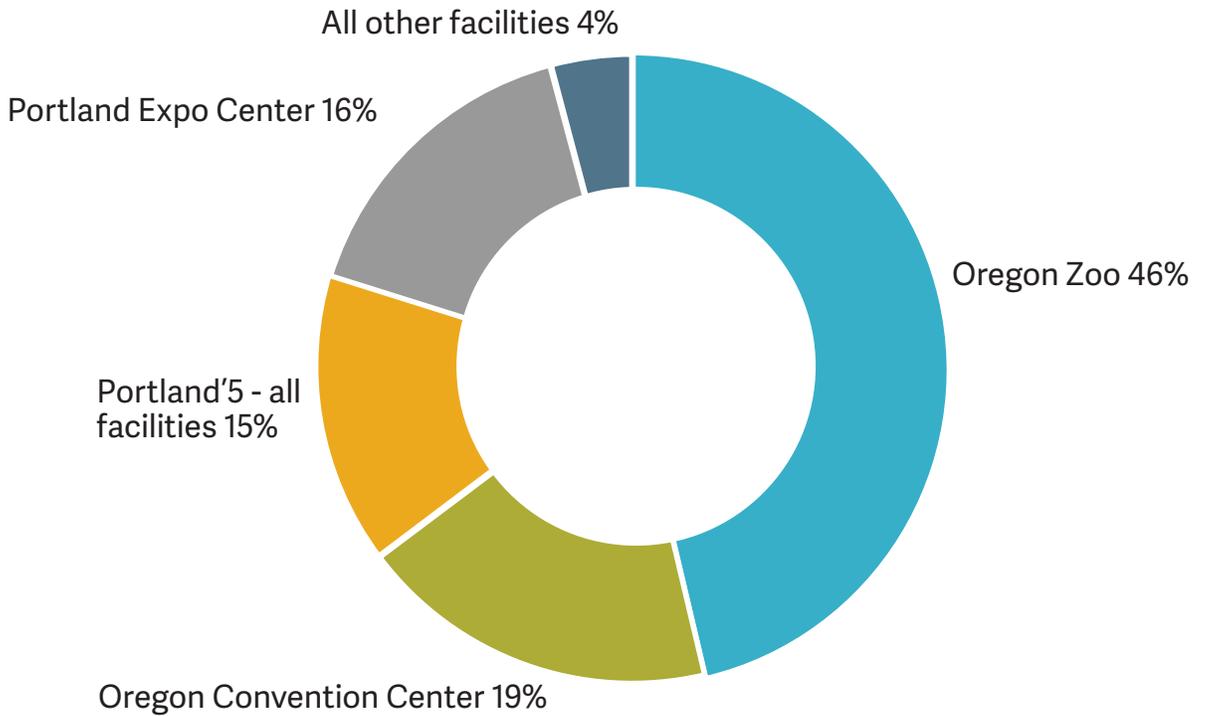
FY 2016-17 electricity use at Metro facilities as a percentage of agency total



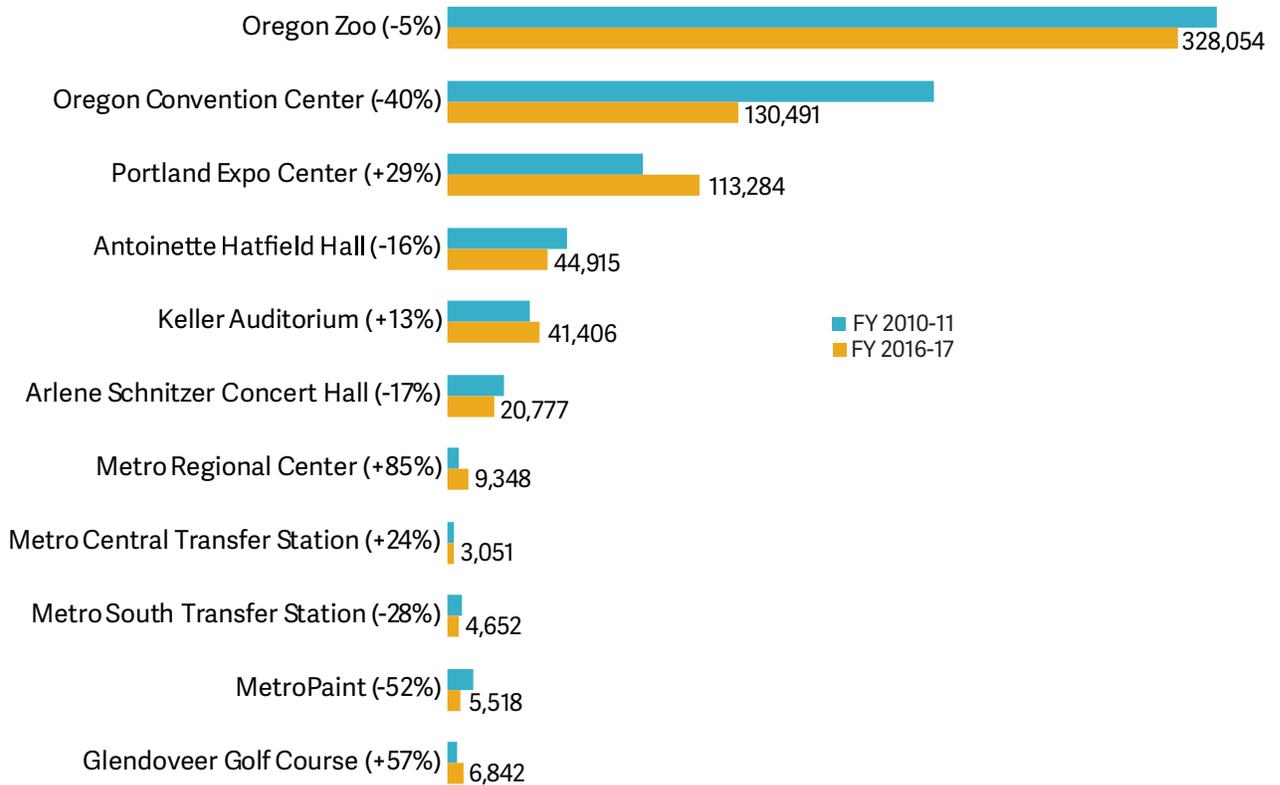
Electricity usage FY 16-17 (% change over baseline 2010-11)



FY 2016-17 natural gas usage at Metro facilities as a percentage of agency total



Natural gas usage FY 16-17 (% 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. In 2014, Metro developed a Toxics Assessment Tool in partnership with KHA-Online SDS, the host for Metro’s web-based safety data sheet database. The 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 made some important changes to the Toxic Assessment Tool to be more robust and better reflect the intent of the Metro Council’s adopted toxic 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. These changes reset the baseline to FY 2014-15. 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 is focusing its toxics reduction efforts on these most hazardous products, seeking safer alternatives where available.

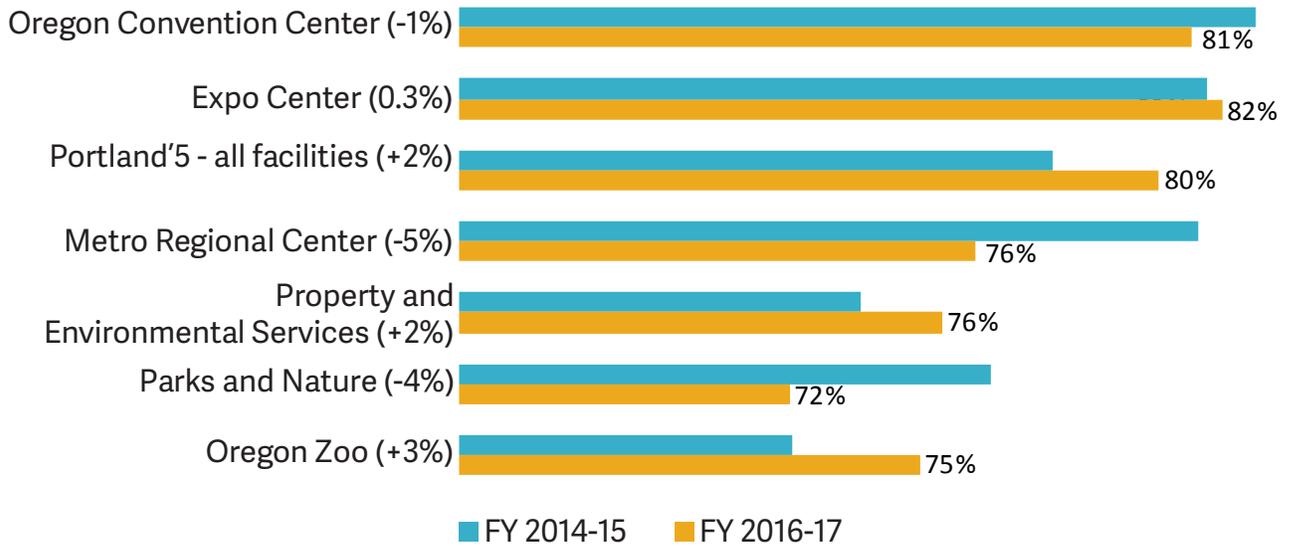
An updated inventory was under way when the data was generated for this report. At that time, there were a total of 1,897 unique safety data sheets in Metro’s database, representing chemical products in use at Metro facilities. In FY 2016-17, the percentage of products in Metro’s inventory with a high hazard in one or more category was 76 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 also reduced the total number of products in its inventory, so while the percentages did not change substantially, the actual number of toxic products decreased. The change in methodology in 2014-15 triggered the need to set a new goal and interim targets; these will be updated after Metro has a few years of data under the new methodology.



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

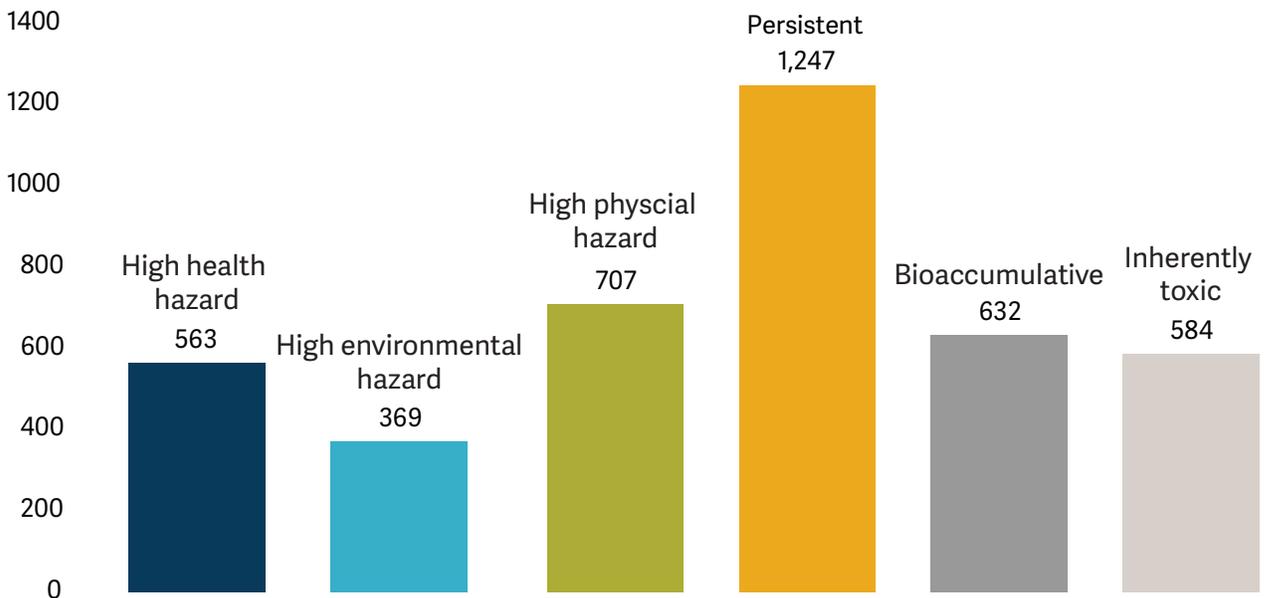
FY 2016-17 percentage of products with a high hazard rating in one or more category



FY 2016-17 number and percentage of products rated high hazard in Metro's inventory

	Total products in inventory	Products with high hazard rating in one or more categories	Products with a high hazard rating in all categories
FY 2014-15	2,402	1,772 (74%)	160 (7%)
FY 2016-17	1,897	1,446 (76%)	130 (7%)

FY 2016-17 number of products with high hazard by 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'). 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 4,195 tons of waste in FY 2016-17 and recycled 57 percent of total waste.

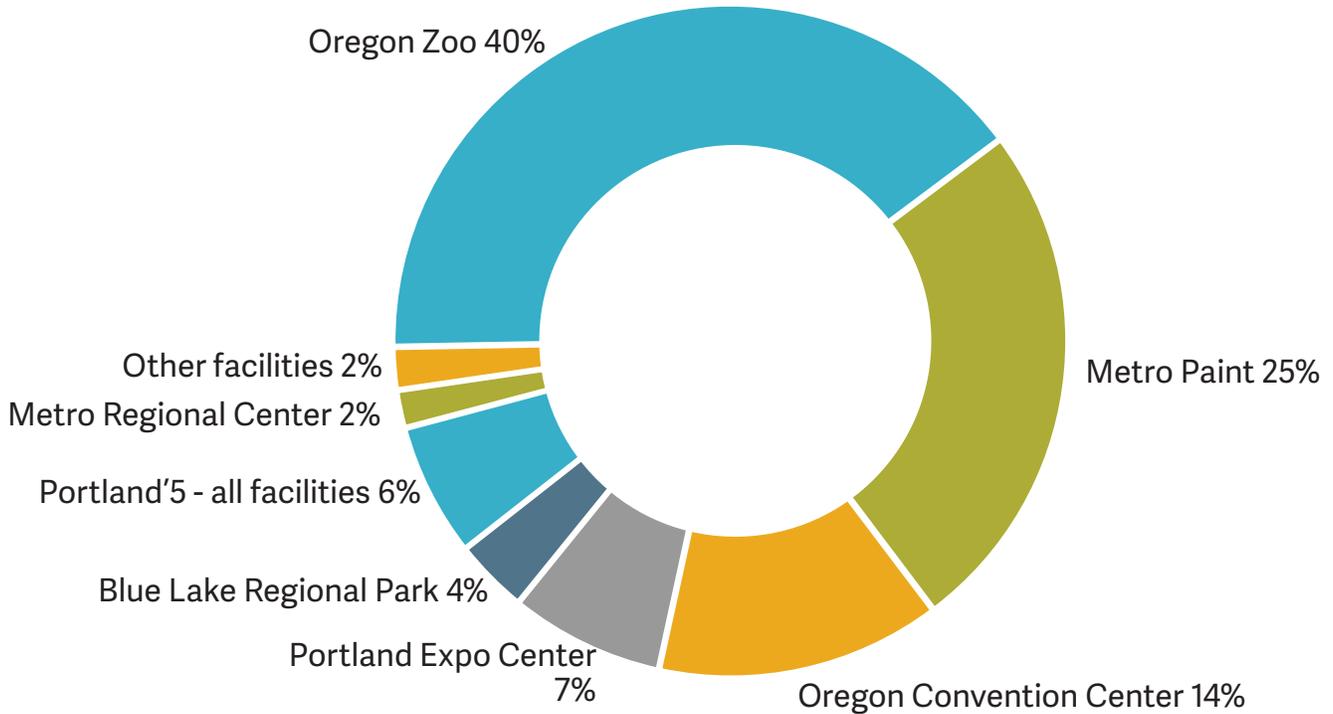
Overall waste generation across Metro is trending in the wrong direction – 32 percent higher than baseline. 2016-17 generation was an improvement over the previous year, but far from meeting the 2020 interim target of 20 percent below baseline.

Metro’s recycling rate has increased by six percentage points over baseline to 57 percent. The recycling rate has remained stagnant for the past three years and much progress will need to occur to reach the 2020 interim target of 90 percent recycling rate.

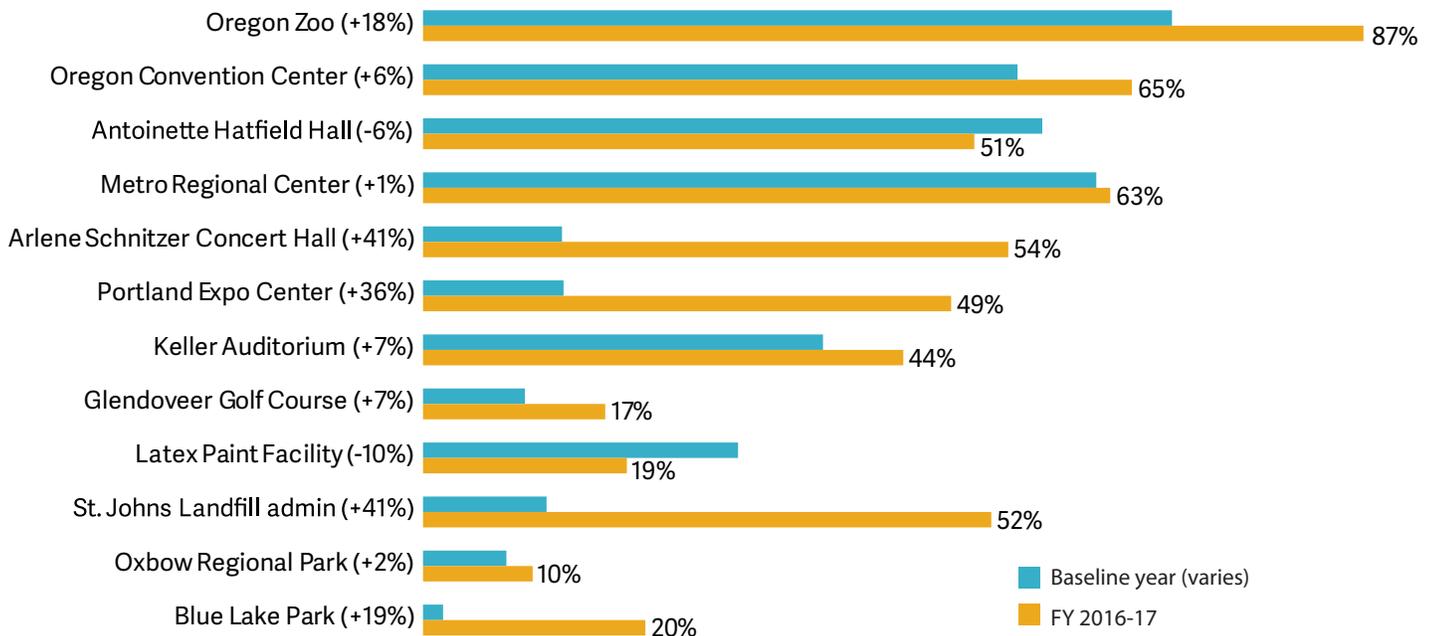


¹Recycled materials include standard recyclables, as well as yard debris or food scraps that were composted or anaerobically digested.

FY 16-17 Total waste generation as a percentage of agency total



FY 2016-17 recycling rate at Metro facilities compared with baseline year (varies)^{2,3,4}



²Blue Lake and Oxbow parks began tracking weight of yard debris, downed wood and trees as part of their recycling rates in 2014, thus dramatically increasing their reported rates.

³Baseline 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'5 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.

⁴The 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).

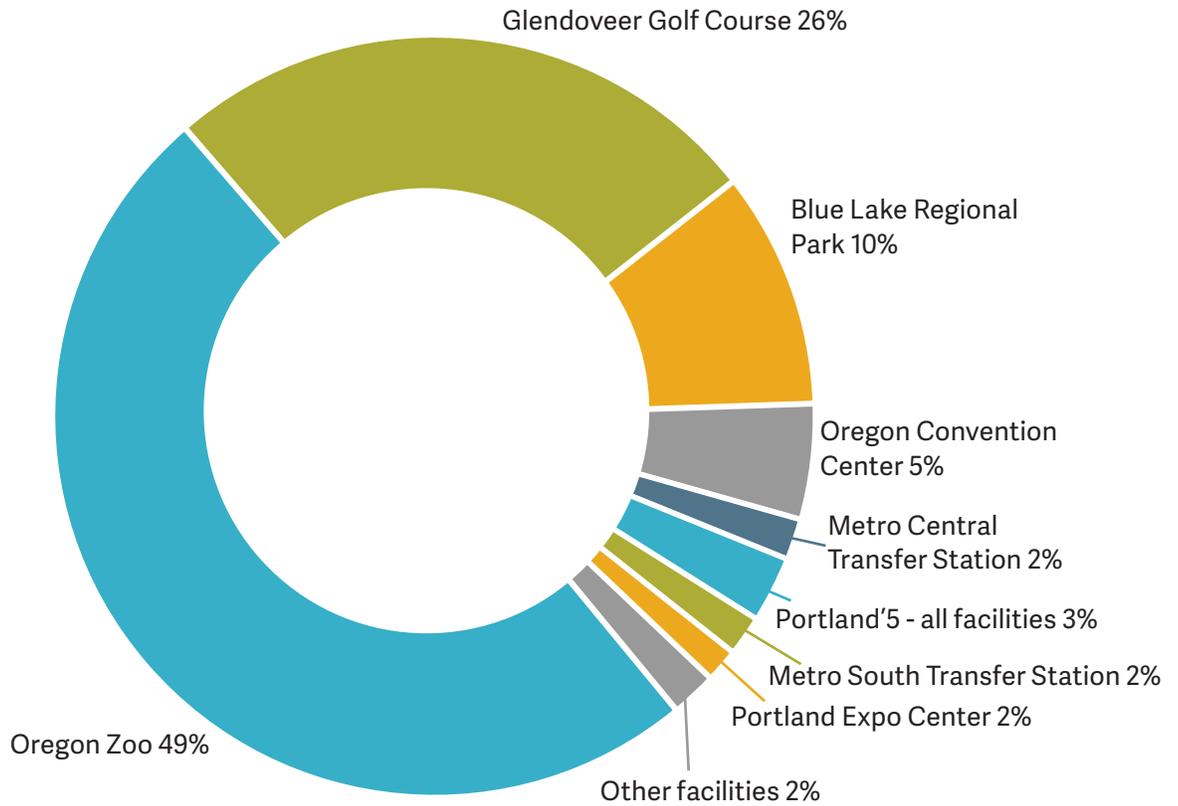
In FY 2016-17, Metro facilities consumed 191,105 CCF (143 million gallons) of water, including about 66,000 CCF (48.7 million gallons) from onsite wells. This amount of water equates to about 216 times the volume of an Olympic-sized swimming pool.

Water use in FY 2016-17 was 31 percent less than the FY 2008-09 baseline, a substantial reduction and on track to meet the 2020 target of 40 percent reduction (165,078 CCF). Water use has trended downward for the past three years.

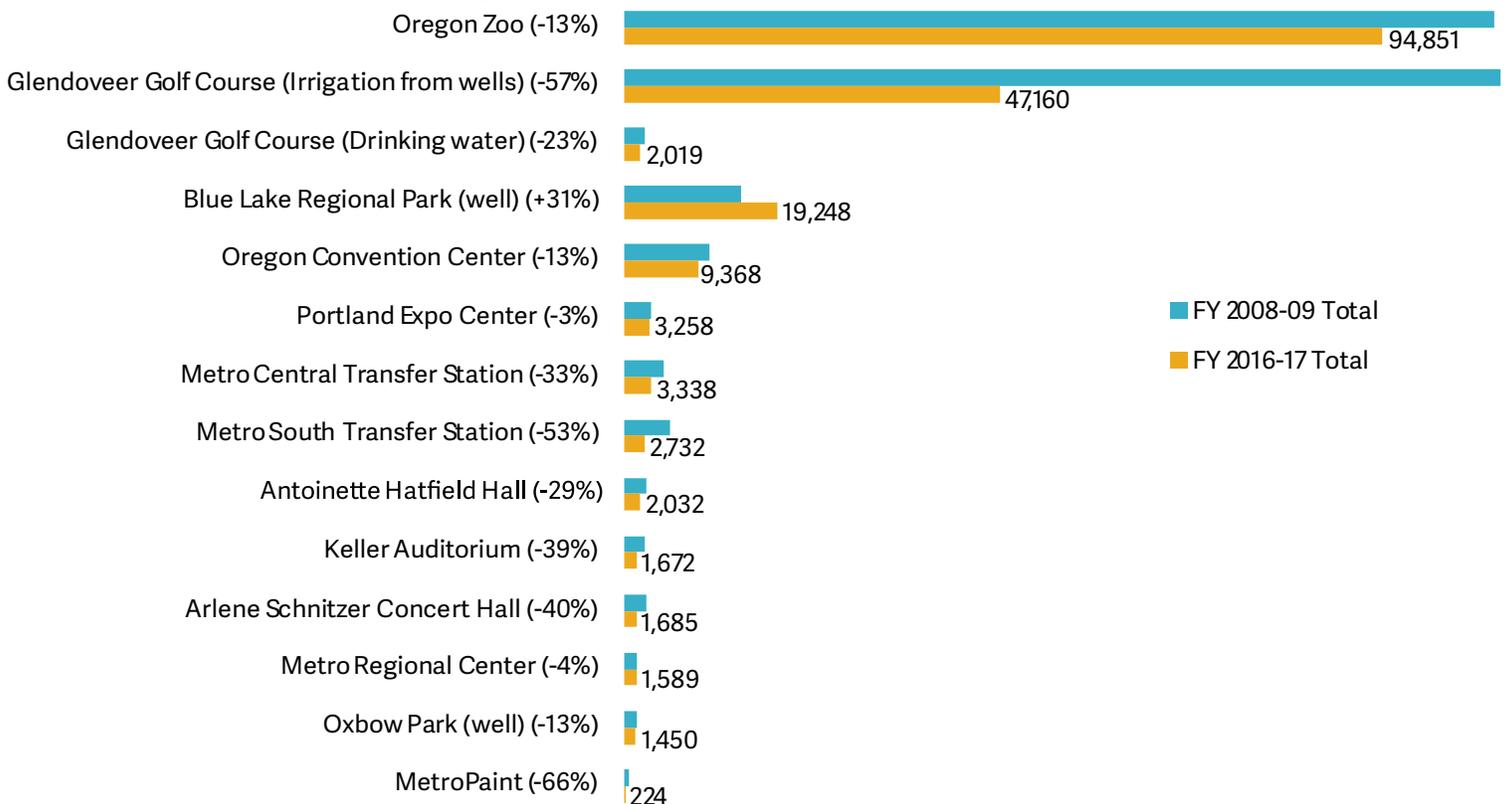
Oregon Zoo and Glendoveer Golf and Tennis Center continue to be Metro’s top water users, comprising 75% of Metro’s total water consumption. Reaching Metro’s water reduction goal hinges on success at these two facilities. Glendoveer has made substantial progress, achieving a 57% reduction in irrigation water use compared to baseline.



FY 2016-17 water usage as a percentage of agency total



FY 2016-17 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.

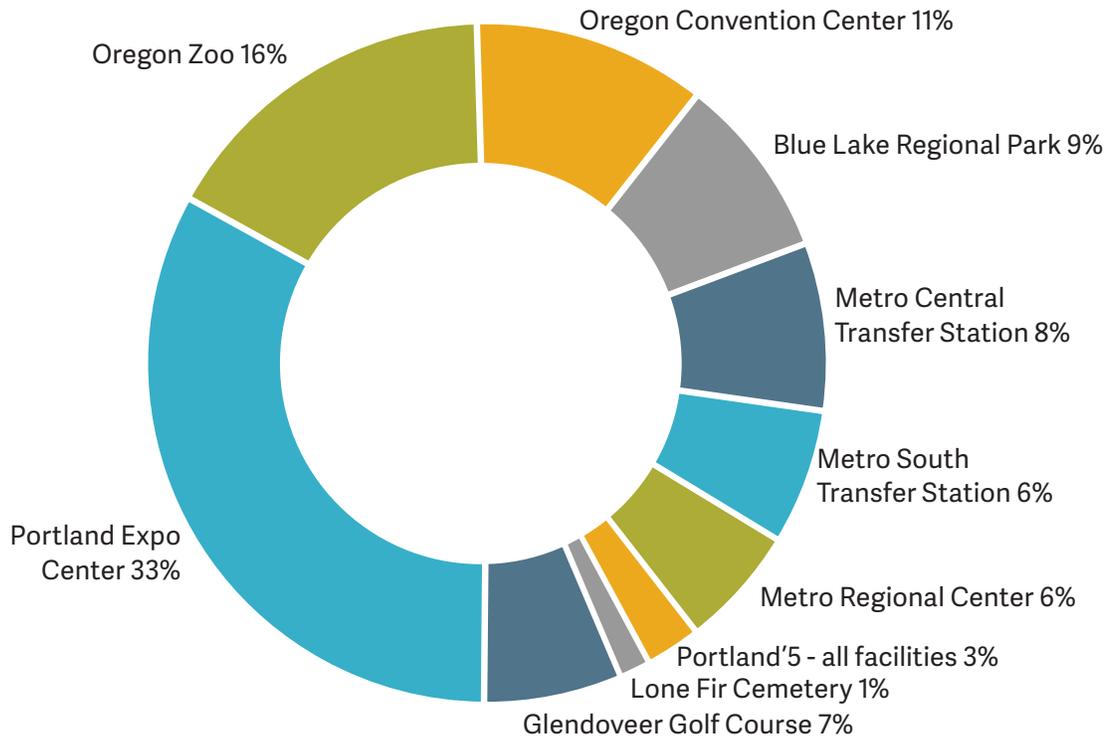
Tracking effective impervious surface area is a way to monitor stormwater runoff from Metro’s developed properties and resultant impacts to habitat health. Effective impervious area measures the amount of hardscape on a developed property (e.g., roofs, parking lots, sidewalks) that sends water directly to a waterway or sewer without being treated by an ecoroof, bioswale or other low-impact development 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 2016-17, the overall percentage of effective impervious area on Metro’s developed properties was 78 percent. 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.

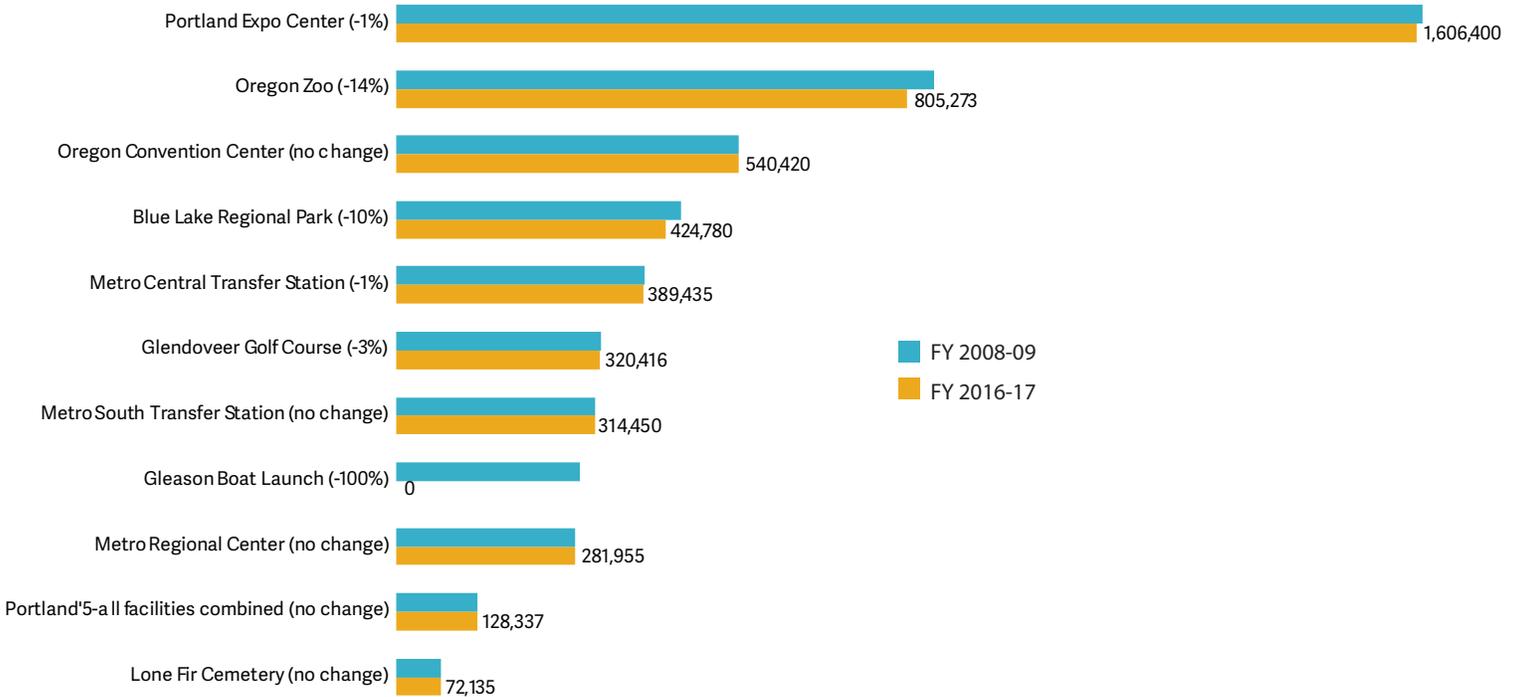
However, Metro has implemented low impact development features on properties as opportunities have arisen. For instance, in FY 2016-17, stormwater planters were installed to treat all of the stormwater runoff from the Zoo Education Center, and improvements to the maintenance yard at Blue Lake Regional 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 2015-16 and a stormwater green wall installed at the Portland Expo Center in FY 2013-14.



FY 2016-17 effective impervious areas as a percentage of agency total



FY 2016-17 effective impervious area in square feet (change compared to baseline 2008-09)



Energy efficiency and renewable energy project incentives

FY 2016-17

Metro works closely with the Energy Trust of Oregon to implement energy efficiency and renewable energy projects at Metro facilities and visitor venues. Projects last year included LED lighting, cooling system upgrades, Leadership in Energy and Environmental Design assistance, solar photovoltaics, solar ready design, and participation in the Strategic Energy Management Program.

Summary of incentives from Energy Trust of Oregon, FY2016-17

Location	Measure description	Electricity savings (kWh)	Energy Trust incentive received
<i>Existing buildings program</i>			
Oregon Zoo Steller Cove	Chiller and cooling tower	451,775	\$98,657
Oregon Convention Center	LED lighting	1,148,030	\$93,963
Glendoveer Golf & Tennis	Occupancy sensing plug strip	122	\$21
	Subtotal	1,599,927	\$192,641
<i>New buildings program</i>			
Oregon Zoo Education Center	LEED-NC, custom track assistance grants	126,666	\$61,916
	Subtotal	126,666	\$61,916
<i>Commercial solar program</i>			
Oregon Convention Center	Solar photovoltaic system	1,755,384	\$200,000
Oregon Zoo Education Center	Solar ready design		\$6,024
	Subtotal	1,755,384	\$206,024
<i>Strategic energy management program</i>			
Expo Center	Participation incentives		\$1,000
Portland'5 Centers for the Arts	Participation incentives		\$1,000
Metro Regional Center	Participation incentives		\$2,460
Oregon Convention Center	Participation incentives		\$4,000
	Subtotal		\$8,460
	TOTAL	3,481,977	\$469,041

Sustainable procurement

FY 2016-17

Metro's Sustainable Procurement Program was created to ensure that Metro's procurement activities meet adopted sustainability goals. The program aims to:

- ensure that Metro's procurement activities meet the Sustainability goals and definition adopted by the Metro Council
- support a sustainable environment, economy and community by:
 - reducing the environmental impact of Metro government operations and setting the standard for sustainable public purchasing in the region
 - supporting businesses and markets located in the Portland Metro region
 - ensuring equitable inclusion of diverse members of our community in our Sustainable Procurement efforts.

The full Sustainable Procurement policy can be found online at www.oregonmetro.gov/greenmetro.

In FY 2016-17, Metro spent nearly \$20 million on sustainable goods and services. This represents roughly 27 percent of Metro's overall spending on goods and services for the year.

FY 2016-17 Metro-wide expenditure totals by category

Third party certified	\$937,000
Recycled content	
Recycled paper	\$185,000
Recycled content product	\$223,000
Product - other	\$77,000
Services	
Habitat friendly	\$830,000
Energy efficiency	\$1,404,000
Feasibility/desgin	\$23,000
Other	\$1,607,000
Renewable power	\$638,000
Green building	\$38,000
Supporting regional sustainability	\$14,079,000
Oregon products and services	
Oregon products	\$16,000
Oregon services	\$20,000
Total sustainable procurement FY16-17	\$20,077,000
Total goods and services purchases	\$74,938,000
Percentage sustainable purchases	27%

In addition to the numbers listed above, Metro's Zoo Bond program made significant purchases supporting green building. With nearly \$9.5 million in procurement of LEED Certified buildings in FY 2016-17, the Zoo Bond program showed commitment to sustainable new construction.

In 2012, Metro established a goal to increase sustainable procurement 5 percent year-over-year (using FY 2012-13 data as a baseline). Since then, Metro has increased its sustainable procurement to 27 percent. This puts Metro ahead of the goal of 26 percent sustainable procurement for FY 2016-17. Much of the increase over last year is due to spending to promote regional sustainability. This category represents \$14 million, or 19 percent of FY 2016-17 spending. This category aims to capture the public work that Metro does to make our region more sustainable. While the other codes are meant to capture Metro's internal operations expenses, this category captures public-facing work that directly relates to improving the environmental sustainability of the region.

Progress toward Metro-wide sustainability goal

<i>Fiscal year</i>	<i>Goal</i>	<i>Actual</i>
2012-2013	n/a	6%
2013-2014	11%	3%
2014-2015	16%	9%
2015-2016	21%	12%
2016-2017	26%	27%
2017-2018	31%	-

One of the biggest challenges in meeting the sustainable procurement goal is the process for tracking expenses. Metro tracks sustainable procurement through a section of budget coding that is applied to every line item in our accounting system. This means that there is a large number of staff that is responsible for correctly and consistently applying sustainability coding to expenses. Because of this challenge, Metro is most likely under-accounting for our sustainable procurement.