University of Oregon Materials Tracking Report Fiscal Year 2021

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FY21 Highlights

Recycling and waste reduction have been foundational components of the University of Oregon's sustainability programming for nearly 30 years. It is one of the few activities that every UO community member participates in daily. This material recovery report summarizes the results of this collective effort for the 2021 fiscal year (FY21). The report has been re-structured from previous years for clarity, to include reduction and re-use initiatives, and better analyze long-term trends. The data are used to evaluate and continuously improve our diversion programs. The report relies on data collected by the Zero Waste program, Design and Construction, Landscape and Grounds Maintenance, Dining Services, Environmental Health and Safety, and several other units handling small and/or specialized materials. These units collect and weigh materials directly, use established volume-to-weight conversions provided by the EPA, and/or receive weights by 3rd party vendors contracted to haul UO waste and/or diverted materials. The University of Oregon Office of Sustainability collects and analyzes the data and produces this annual report. All material weights are reported in tons except where noted.

Key takeaways for FY21:

- Covid-19 dramatically changed on-campus consumption patterns in FY21. Changes in waste and diversion numbers should be viewed through this lens.
- The University of Oregon produced 1942 tons of waste but recycled 959 tons and re-used 46 tons. This equals a recovery rate of ~52%.
- UO's absolute diversion rate improved steadily from 31% in 1993 to 61% in FY17. It has been declining the last four years, though still remains above 50%. The per capita diversion rate has been rising steadily.
- Material sent to the landfill has been trending up slightly during the last five years, but it is not yet clear why this is.
- UO's recycling and reuse programs have significantly reduced material sent to the landfill in both absolute and per capita terms since data collection began in FY93.
- The annual report now includes construction and demolition (C&D) materials. There were no major demolition projects with data in FY21. During the past five years C&D diversion averaged approximately 80%.
- Glass, metal, and plastic amounts by weight have decreased dramatically over the last decade. This is mostly because beverage manufacturers and distributers are substituting lighter weight plastics for glass.
- Paper collection and diversion has decreased from its high of 906 tons per year in FY04 to 435 tons in FY19. This reduction of 470 tons of paper is strong evidence of a transition to paperless offices happening across campus.
- There was no increase in the landfill per ton tipping fee in FY21. The fee remains at \$84.13/ton for commercial haulers delivering directly to the landfill. Lane County approved an increase tipping fees in FY22, to \$85.90/ton. Waste dumping will change location in FY22. Rates will be published at that time.

Diversion and Waste Totals FY21 (in tons)

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TOTAL REDUCED MATERIAL*	470
TOTAL RE-USED MATERIAL	46
TOTAL RECYCLED MATERIAL	959
TOTAL LANDFILLED MATERIAL	937
TOTAL MATERIAL	1,942
FY20 DIVERSION RATE	52%

Reduction estimates not counted towards diversion rate.

** Categories with less than 3 tons of materials have been aggregated. See appendix for detailed breakout.

RE-USED MATERIALS						
Recovered and Donated Electronics	14.67					
Recovered and Donated Food	10.22					
Move-Out and Miscellaneous Donati	20.71					
Chemicals Re-used on Campus	0.02					
RECYCLED MATERIA	LS					
Paper Products	243.87					
Cardboard	175.05					
Office Paper - All Colors and Grades	45.22					
Confidential Material	14.24					
Books	8.02					
Other Paper**	1.34					
Food and Beverage Containers	130.78					
Food Compost	92.70					
Cooking Oil	10.88					
Glass	8.79					
Metal/Plastic (Commingle)	7.54					
Glass (Deposits)	6.43					
Plastics (Deposits)	2.04					
Other Food and Beverage Container	2.40					
Construction & Demolition Recycl	40.25					
Large Projects	0.00					
Small Projects and Misc	40.25					
Other Materials	543.84					
Yardwaste	372.00					
Wood Waste	108.00					
Scrap Metal	50.35					
Environmental Health and Safety	5.33					
Batteries	2.69					
Styrofoam	1.68					
Other Other**	3.79					

Regional and PAC-12 Recovery Rate Comparison

The University of Oregon's FY21 diversion rate is 52%. Comparing diversion rates is useful but difficult as methods, assumptions, and policy vary across jurisdictions and institutions. The most currently available recovery rates for 11 of 12 Pac-12 institutions are below. University of Oregon's recovery rate is ranked fourth amongst this group. The 2019 waste and recovery reports for Lane County and the State of Oregon, which are both produced by the Oregon Department of Environmental Quality, state the following:

- University of Oregon has a 52% recovery rate
- Lane County has a 55.1% (2019) recovery rate and a goal of 63%
- State of Oregon has a 42% (2019) recovery rate and a goal of 52% by 2020 and 55% by 2025



Diversion Rate Among PAC-12 Schools

Long-Term University of Oregon Material Recovery Trend

 UO's diversion rate has steadily increased from 31% in 1993 to 61% in FY17. It has since steadily decreased to 52% by FY21.

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- UO's success in increasing diversion in other materials has reduced the percent reduction of paper and glass. The institution-wide reduction in paper consumption has reduced FY19's total weight of diverted materials by 470 tons compared to FY04. The transition from glass to lighter plastic beverage containers has a similar impact on the total amount diverted and the diversion rate.
- The Pandemic clearly affected total waste generated. It's not yet clear how it impacted the recycling rate.

Total Materials Comparison										
Total Materials Generated (in tons)										
Fiscal Year	Landfilled	Diverted	Diverted TOTAL							
FY93	1914.54	846.52	2761.06	31%						
FY94	1759.75	988.47	2748.22	36%						
FY95	1641.47	951.67	2593.14	37%						
FY96	1562.79	1116.05	2678.84	42%						
FY97	1571.08	1138.86	2709.94	42%						
FY98	1518.80	1144.90	2663.70	43%						
FY99	1674.86	1281.02	2955.88	43%						
FY00	1675.88	1321.58	2997.46	44%						
FY01	1734.82	1205.55	2940.37	41%						
FY02	1836.46	1229.34	3065.80	40%						
FY03	1755.92	1193.98	2949.90	40%						
FY04	1752.99	1577.13	3330.12	47%						
FY05	1727.17	1510.73	3237.90	47%						
FY06	1744.80	1422.17	3166.97	45%						
FY07	1713.09	1494.40	3207.49	47%						
FY08	1655.63	1535.22	3190.85	48%						
FY09	1620.03	1450.98	3071.01	47%						
FY10	1569.77	1489.42	3059.19	49%						
FY11	1542.29	1603.34	3145.63	51%						
FY12	1496.84	1429.66	2926.50	49%						
FY13	1426.07	1496.11	2922.18	51%						
FY14	1378.91	1734.74	3113.65	56%						
C&D (Co	Instruction and	Demolition)	ncluded Belov	w This Point						
FY15	1516.04	2338.23	3854.27	61%						
FY16	1696.31	2575.59	4271.90	60%						
FY17	1666.44	2560.51	4226.95	61%						
FY18	1730.99	2053.08	3784.07	54%						
FY19	1741.91	2725.59	4467.50	61%						
FY20	1543.09	2053.06	3596.15	57%						
FY21	937.36	1004.34	1941.70	52%						
Total From FY93-20	47,106.10	44,472.24	91,578.34	48.56%						







Long-Term University of Oregon Material Recovery Trend Cont.

Total Waste and Recovered Materials (in tons)



Materials Per Person: Lbs (Left Axis) & Pop (Right Axis, dashed line)



- Institutional diversion efforts are clearly reducing the total amount of material sent to the landfill since waste data collection began in FY93. (Note: C&D waste and diversion data is not available prior to FY15.)
- Landfilled material per capita has been reduced significantly since FY93.
- Recovered material per capita has been rising since FY93.
- Remote operations during FY21 had a dramatic impact on waste generation.
- NOTE: Complete data for all staff are only available back to FY16. Assuming the student/staff ratio is roughly constant, we were able to estimate staff numbers back to FY93.

Five-Year University of Oregon Material Recovery Trend

Five Year Trend FY17-FY21 (in tons)



- FY21 will likely be considered an anomaly due to COVID-19.
- In FY21 the COVID-19 pandemic resulted in significantly fewer people on campus for the entire year and less overall waste and recycled material.
- Construction and demolition (C&D) landfilled and diverted materials vary greatly year to year due to changes in construction activity. Construction and demolition projects in FY21 will not be available until project completion this report will be updated if new data becomes available.

Glass, Metal, and Plastic Containers Trend



The collection and recycling of glass, metal, and plastic containers represents a significant part of Campus Zero Waste's work. The vast majority of these items are beverage containers. The steady decline in tonnage since FY08 largely reflects the transition from glass to plastic beverage containers. Plastic is lighter. The reduction in weight does not lead to a reduction in work. The total number of beverage containers moving through our campus collection system is likely increasing.

Beginning in FY18 we see slight declines in plastic and metal collection and recycling tonnage. The increase to \$.10 per redeemable item in that year incentivizes more people to return their containers directly and/or pick through recycling bins before Zero Waste can collect items.

The significant reduction in glass, metal, and plastic in FY20 & FY21 is likely a result of COVID-19, when the on-campus population declined.

A note about terms: From FY00 – FY09 recycling of plastic bottles and jugs, metal food containers, and all glass was combined. Beginning in FY10 glass was recycled separately but plastic bottles and jugs and metal food containers, not categorized as deposits, were commingled. Beginning in FY14 glass was further broken down into deposits and non-deposits.

Paper Trend

- Paper use and recycling reached a high of more than 900 tons in FY04. It has been declining steadily ever since as more and more campus units transition to paperless systems.
- Roughly 470 fewer tons of paper were collected and recycled in FY19 as compared to FY04. (We're not counting FY20 or FY21 in this analysis given the unique impacts of COVID) This reduction in consumption also reduced the diversion rate by approximately 4% from FY04 to FY19.
- Campus Zero Waste has seen significant declines in recycling of other office supplies including CDs, mailing envelopes, toner, and Tyvek.



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APPENDIX

Detailed Annual Report

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Appendix A: Detailed Annual Report FY21 (in tons)

	July	August S	eptember	October	November)ecember	January	February	March	April	May	June	Yearly Total
Recovered and Donated Electronics	1.22	1.22	1.23	1.22	1.22	1.23	1.22	1.22	1.23	1.22	1.22	1.22	14.67
Recovered and Donated Food	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.86	0.85	0.85	0.86	10.22
Move-Out and Miscellaneous Donations	0.26	0.71	0	0.01	0	0.01	0	0.56	0	0.03	0.05	19.08	20.71
Chemicals Reused on Campus	0	0	0	0	0	0.01	0	0	0	0	0	0.01	0.02
RECYCLED MATERIALS													
Paper Products													243.87
Cardboard	7.12	5.83	18.09	22.31	14.93	9.36	15.75	16.58	14.23	18.03	16.67	16.15	175.05
Office Paper - all colors and grades	0	2.54	0	13.94	0	0.76	1.69	5.94	4.62	5.25	0	10.48	45.22
Confidential Material	1.27	0.72	0.83	2.25	1	0.74	1.47	1.13	1.76	0.97	1.21	0.89	14.24
Books	0	0.61	0	3.95	0	0.69	0	0	2.77	0	0	0	8.02
Industrial Printer Scrap Material	0	0.21	0	0	0	0.08	0.43	0.62	0	0	0	0	1.34
White Office paper	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial Paper	0	0	0	0	0	0	0	0	0	0	0	0	0
Newspapers	0	0	0	0	0	0	0	0	0	0	0	0	0
Food Materials, Beverages Containers													130.78
Food Compost	0	3.95	0	12.56	12.18	0	11.33	11.79	6.9	10.6	12.37	11.02	92.7
Cooking Oils	0.33	0.66	0.00	0.56	0.85	0.36	0.38	1.65	0.00	2.03	2.03	2.03	10.88
Glass	0.66	0.46	0.51	1	0.47	0.48	0.99	0.66	0.86	0.4	1.12	1.18	8.79
Metal/Plastic (commingle)	0	0.52	0.55	0.51	1.09	0	0.59	1.14	1.1	0.56	0.5	0.98	7.54
Glass (deposits)	0.33	0	0.39	0.69	0.66	0.50	0.55	0.58	0.69	0.66	0.55	0.83	6.43
Plastics (deposits)	0.07	0	0.09	0.29	0.28	0.16	0.14	0.17	0.22	0.16	0.17	0.29	2.04
Aluminum Cans (deposits)	0.08	0	0.06	0.27	0.21	0.16	0.14	0.18	0.22	0.15	0.2	0.33	2
Earth Tub Compost	0.03	0.03	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.4
Construction & Demolition Recycled													40.25
Large Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Projects and Miscellaneous	4.18	2.19	2.36	2.35	2.24	2.97	0.57	2.38	3.45	2.2	9.15	6.21	40.25
Other Materials													543.84
Yardwaste	31	31	31	31	31	31	31	31	31	31	31	31	372.00
Wood Waste	4.5	9	9	9	13.5	9	4.5	9	9	4.5	9	18	108.00
Scrap Metal	2.37	6.39	3.01	4.3	1.95	5.16	2.19	1.95	2.17	0	11.88	8.98	50.35
Environmental Health and Safety Collection	0.44	0.44	0.45	0.44	0.44	0.45	0.44	0.44	0.45	0.44	0.44	0.46	5.33
Tires	0.09	0.08	0.12	0.09	0.08	0.12	0.09	0.08	0.08	0.09	0.08	0.09	1.09
Toner/ Ink Jet Cartridges	0	0.02	0.12	0.17	0.06	0	0.03	0.09	0.18	0.1	0.02	0.03	0.82
Batteries	0.22	0.22	0.23	0.22	0.22	0.23	0.22	0.22	0.23	0.22	0.22	0.24	2.69
Styrofoam	0.08	0.08	0.24	0.24	0.16	0.08	0.16	0.08	0.16	0.08	0.16	0.16	1.68
Mixed Plastic	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Mattresses	0.09	0.03	0.05	0	0	0.19	0	0	0	0.05	0.02	0.05	0.48
Pallets	0	0	0	0	0	0	1.4	0	0	0	0	0	1.40
Shrink Wrap (clean/dirty sheet)	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	_		LAN	DFILLED	MATERIALS		r						
Short Mountain General Landfill	35.76	41	53.53	89.48	100.27	47.29	88.71	89.13	82.42	82.71	66.9	73.32	850.52
Construction & Demolition	0.12	0	0	0	0	0	0	0	0	0	0	0	0.12
Small Projects C&D	6.25	3.27	3.52	3.52	3.37	4.43	0.83	3.43	5.17	3.3	13.67	9.32	60.08
EH&S Disposal	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	26.64
TOTAL RE-USED MATERIALS										45.62			
			TOTAL RECY	CLED MAT	TERIALS								958.74
		1	TOTAL LAND	FILLED MA	TERIALS								937.36
			ΤΟΤΑΙ	L MATERIA	L								1941.72
FY21 DIVERSION RATE										52%			