


2023

ANNUAL REPORT



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EXECUTIVE SUMMARY

The University of Kentucky's (UK) diversion strategies include reduction, reuse, composting, and recycling. This report details UK's waste diversion activities and accomplishments for the 2023 calendar year. Recycling and waste diversion have been operational priorities for the university for more than 30 years. UK's efforts began with small-scale paper recycling in the early 1990s and have expanded to include recycling options for more than 30 different types of materials, food waste and organics composting, and a variety of large- and small-scale reuse initiatives. UK Recycling, a department within Facilities Management, is the lead unit on the majority of UK's waste diversion efforts.

UK Recycling wants to remind the wildcat community that all reuse, donation, composting, and recycling efforts are offered and operated at no cost to any UK department¹.

Become a zero-waste campus by 2030.

In late 2022, UK adopted a new set of guiding principles for sustainability. One of these principles is for UK to become a zero-waste campus by 2030. The university has adopted the target of a 90% diversion rate on the Academic Campus as one of the primary goals in support of this principle. Calendar year 2023 was the first full year of effort toward this goal. Given the unique operating conditions and regulatory requirements for UK Healthcare, UK Recycling tracks the waste diversion rates for UK Healthcare and the Academic Campus as subtotals of the overall rate, called "University Overall" hereinafter.

There were many successes and a few challenges throughout 2023, but overall, UK made important strides towards its waste reduction and diversion goals. In 2023, the university achieved an overall diversion rate of 34%(figure 1). This means that for every 100 lbs. of waste produced, 34 lbs. were either recycled, composted, or reused, and 66 lbs. were landfilled. In 2023, the Academic Campus achieved a 42% diversion rate, and UK Healthcare reached a 23% diversion rate.

¹ The University of Kentucky's waste diversion efforts are funded primarily by a surcharge assessed to all tangible goods at the time of purchase. This innovative funding model was established in the early 1990s and provides capacity for dynamic and robust efforts to reduce, reuse, compost, and recycle.

UNIVERSITY DIVERSION RATES

In 2023, the total waste generated by the University Overall was 14,572 tons of material. This was a 22% increase over the 11,946 tons produced in 2022. In 2023, 9,652 tons went to the landfill, comprising 66% of the total generated waste for the year (Table 1). This means the total diversion rate for 2023 was 34%, an increase from 32% in 2022 (Figure 1). A diversion rate is the sum of waste that was diverted from the landfill divided by the total waste produced. Diversion includes reduction and reuse, composting, and recycling. The diversion rates for the Academic Campus and Healthcare in 2023 were 42% and 23%, respectively (Figure 2).

	REDUCTION & REUSE		COMPOSTING		RECYCLING		TOTAL WASTE DIVERTED		LANDFILL	
	tons	%	tons	%	tons	%	tons	%	tons	%
University Overall	1,109	8%	955	7%	2,848	20%	4,912	34%	9,652	66%
Academic Campus	833	11%	944	12%	1,580	20%	3,358	42%	4,556	58%
Healthcare	276	4%	11	0%	1,268	19%	1,555	23%	5,096	77%

Table 1: Waste produced in tons and by percentage by stream in 2023 for the University Overall, Academic Campus, and Healthcare.

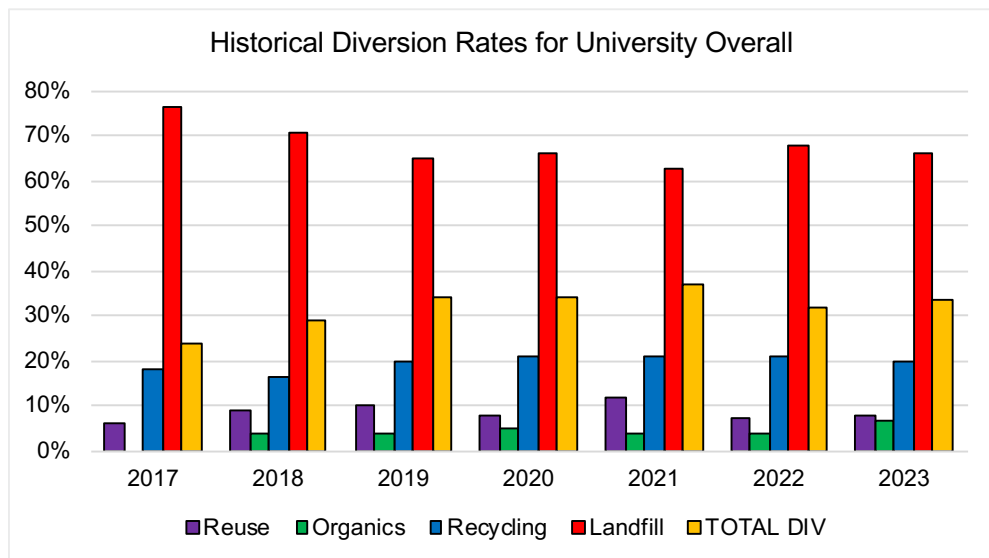


Figure 1: Historical diversion rates by stream for the university overall.

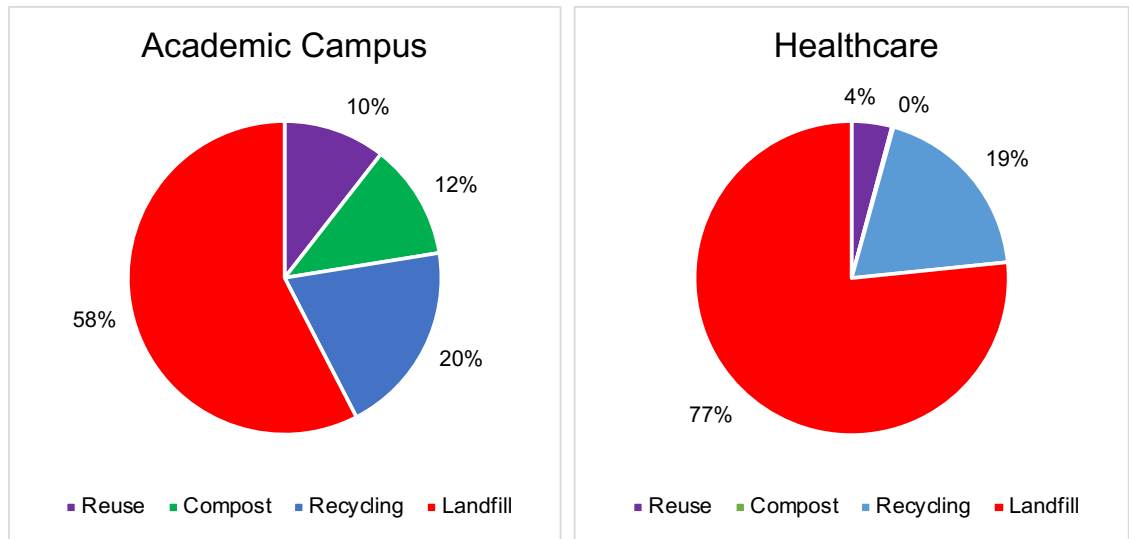


Figure 2: Waste produced by stream in 2023 for UK's Academic Campus and Healthcare.

ACADEMIC CAMPUS

The university aims to achieve a 90% diversion rate on its Academic Campus by 2030. While UK did not increase its Academic Campus diversion rate from 2022 to 2023, the university was able to maintain the same diversion rate at 42% (Figure 3). The total waste generated on the Academic Campus also increased by 37.5% between 2022 and 2023. Therefore, UK Recycling does not view maintaining a 42% diversion rate as a major setback and is already looking at opportunities to increase this diversion rate in the coming year.

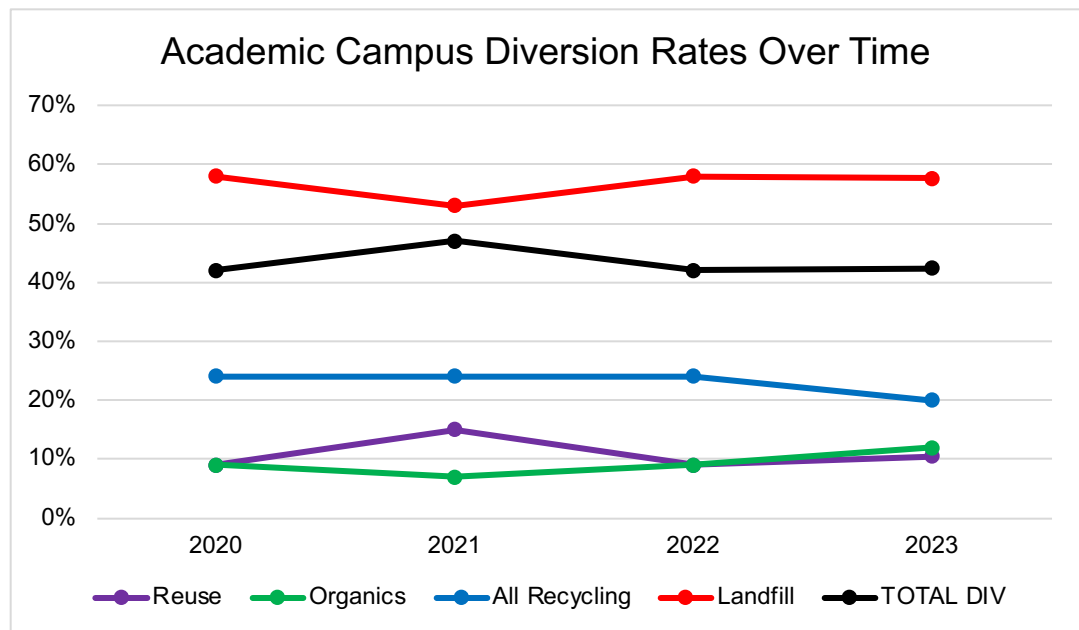


Figure 3: Historical diversion rates by stream for UK's Academic Campus. Total Diversion equals the sum of all diversion methods for that calendar year.

While UK's Academic Campus recycling rate decreased slightly in 2023, the waste diverted through composting and reuse increased by 3% and 2% respectively. Within the waste diversion hierarchy, this means the university increased its more desirable diversion options from 2022 to 2023 (Figure 4). The university considers composting a more desirable diversion option than recycling. This is because UK composts through an internal operation. The finished compost is then either used as a land-applied soil amendment at the university's farms or is brought back to the Academic Campus and used on campus grounds. This process converts a campus waste stream into a valuable resource for campus operations.

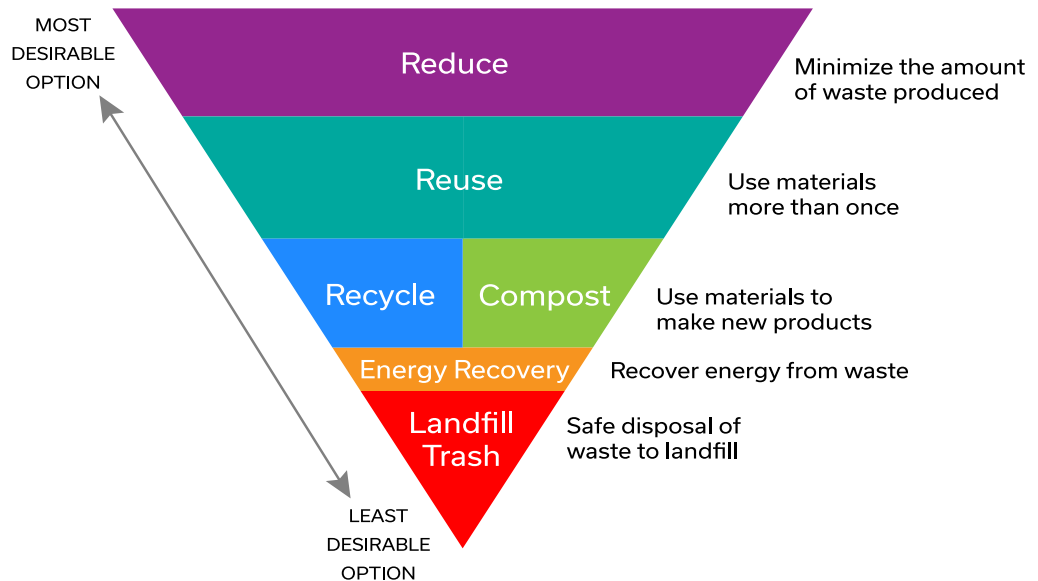


Figure 4: Waste management hierarchy. Adapted from: [Solana Center for Environmental Innovation](#).

HEALTHCARE

UK Healthcare does not currently have a diversion rate goal set. However, work is currently underway by a committee of university stakeholders to set a goal specific to healthcare. The committee will evaluate UK Healthcare's current diversion rate and potential and assess similar academic medical campuses to determine a diversion goal for UK Healthcare which is ambitious but achievable. The goal is on track to be determined by the end of calendar year 2024.

ATHLETICS – UK FOOTBALL

UK Recycling also reached new heights with a diversion rate of 32% during the 2023 football season at Kroger Field. This is the highest diversion rate of any football season for the university and is a 10% increase from 2022.

One way UK Recycling worked to achieve this was to expand the Big Blue Recycling Crew to sixteen student workers this season. Before each game, the students provided tailgaters with educational literature, recycling and landfill bags, and giveaways to ensure each tailgate had the tools, knowledge, and enthusiasm for helping UK reduce its landfill waste. As fans entered Kroger Field, students then monitored containers around the stadium and provided guidance on whether the waste they threw out was recyclable or not.

Additionally, UK Recycling piloted food waste collection inside the stadium kitchens for the first time this season, collecting a total of 1.24 tons. There are currently plans to expand this initiative in 2024.



The 2023 Big Blue Recycling Crew outside of Kroger Field.



Big Blue Recycling Crew Member handing out educational material to a tailgater.

NEW INITIATIVES

The university also began a new reuse initiative called the [Campus Woods Project](#) in collaboration between UK Grounds, UK Forestry Department, and the Office of Sustainability. Campus Woods finds alternative uses for the trees removed on the Academic Campus through student and faculty projects. In 2023, third-year Product Design students created a custom conference table from six different wood species. This is a great example of how UK prioritizes reuse while providing unique opportunities to students.



UK third-year students: Richard Blevins, Olivia Gascon, Mason Godhe, Amir Pasha Mohaghegh, Karley Tucker, Nick Williams, and Caden Worley standing with the custom circular conference table.

The university also began a chemical reuse program led by Environmental Quality Management. Through this program, unwanted chemicals are collected and redistributed to interested labs on the Academic Campus. This helps reduce UK's waste while also reducing the amount of university funds spent on costly chemicals. With the support of UK Recycling, the university hopes to greatly expand this initiative in 2024.

UK Recycling also expanded what was accepted for recycling in 2023 with two new streams. In the Spring, UK Recycling was newly able to accept t-shirts and some other textiles for recycling. This new initiative collected nearly a ton of new materials. The second recycling expansion was in Healthcare. UK Recycling partnered with Boston Scientific to begin collecting ureteroscopes for their internal reuse program. Despite starting this initiative in late 2023, the program was able to collect 27 scopes for reuse.

DIVERSION BY STREAM

REDUCTION & REUSE

Reduction and reuse are the most preferred methods of waste diversion by the university. It both conserves resources and prevents unnecessary waste from being created. The university utilizes several methods to reduce waste and reuse materials. The most extensive program is through external reuse via the [UK Surplus program](#) (Figure 5). UK Surplus accepts and accounts for all excess property within the UK system while also allowing UK departments to check out assets like furniture, monitors, and brief cases at no charge. Currently, weights of materials used internally are not tracked. If items are not claimed by university personnel for use at work within a specific window of time, the items are then opened for purchase to the public.

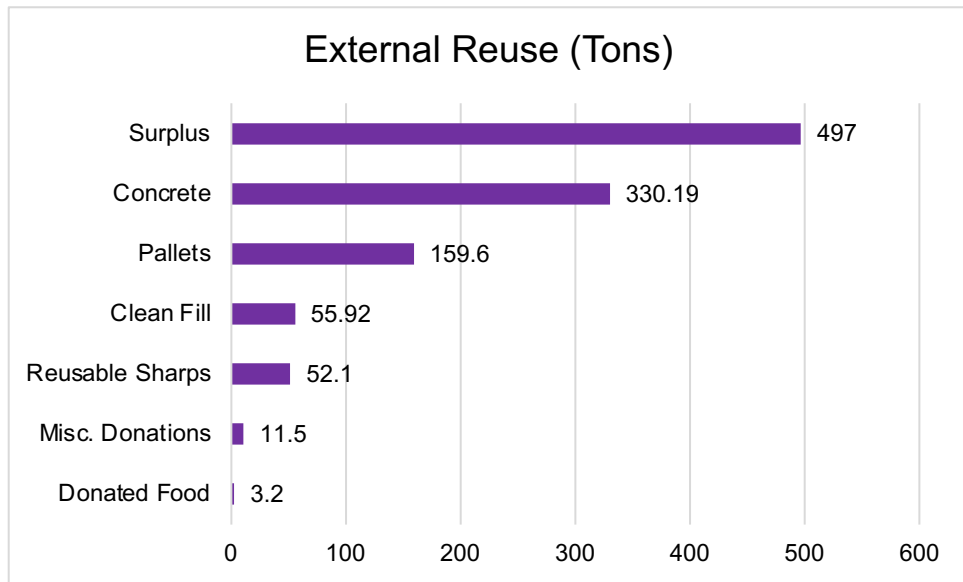


Figure 5: Materials reused external to University of Kentucky in tons for 2013.

The university also practices reuse through donations and partnerships external to the university. Some of the materials donated externally are latex paint, clothing, and wooden spools (Figure 5). UK Recycling works diligently to form new and maintain existing local partnerships for donating our materials for reuse. Some of the university's external partners on these efforts are God's Pantry, Goodwill, Stericycle, Habitat Restore, and several local goat farms. UK Recycling also has local partnerships to reuse the university's many pallets which are created from material transportation and deliveries, concrete and clean fill from construction, and sharps from Healthcare.



Food donations for the Big Blue Pantry, top left, waiting to be loaded. Louis Weathers, top right, collecting Give and Go donations.

The university also makes efforts to reduce waste and reuse materials internally through several other avenues such as printing over used yard signs rather than printing with virgin material, creative reuse within the Theatre Department for set designs, and reusable beverage cup programs (Table 2).

OTHER INTERNAL REUSE MATERIALS	TONS
Yard Signs	0.02
Coffee Cup Reuse	0.03
Theatre Partnership	0.96
Campus Woods Project	2.88

Table 2: Materials reused internally to University of Kentucky in tons for 2023.

ORGANIC WASTE

UK achieved a record-high diversion rate for organic waste in 2023 at 7%. Similar to reuse, UK Recycling’s organic waste diversion is handled both internally and externally. Food waste in the dining halls and retail locations as well as the leaves from Academic Campus are collected and taken to UK’s C. Oran Little Research Center in Woodford County to be composted. Once that organic waste is broken down, the finished compost is either land applied to the fields at UK farms or brought back onto the Academic Campus and used as a soil amendment by UK Grounds. This is a great example of how UK helps support a circular economy.

In 2023, 64 tons of food waste and 171 tons of leaves were collected and included in our compost operation. The university did not collect as much food waste as in 2022 due to mechanical issues with the dishwasher and pulper at Fresh Food Company in the 90 (Figure 6). As one of two dining halls on campus which generate the majority of food waste collected, this greatly affected the food waste collected throughout the year. However, UK Recycling has resolved the issue and expects this quantity to rebound in 2024. Additionally, UK Recycling began expanding food waste collection in 2023 to the retail dining locations on the Academic Campus, including both restaurants and coffee shops, and plans to finish expanding to all locations by Spring 2024. While the total food waste collected in 2023 was less than in 2022, UK Recycling expects this retail expansion to greatly increase food waste collection in the coming year.

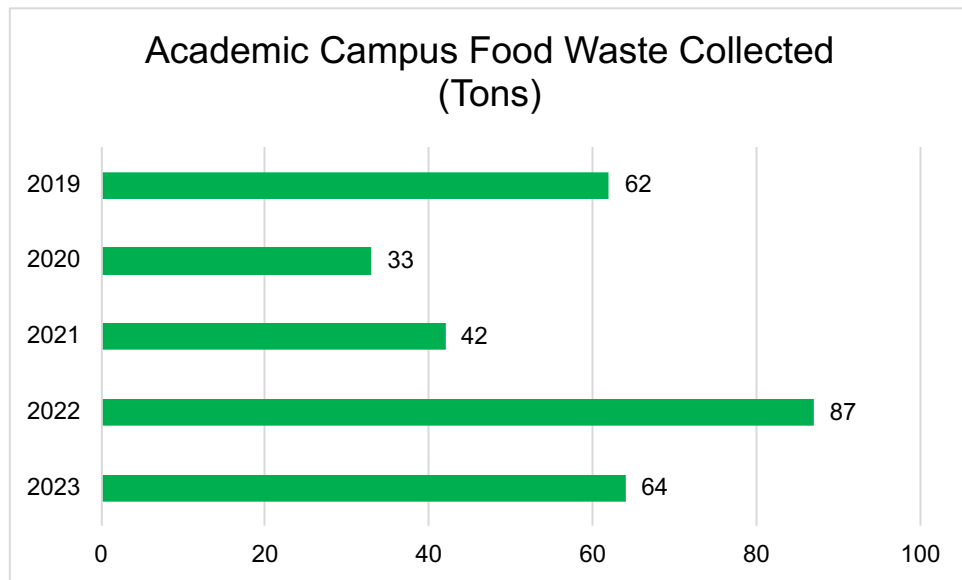


Figure 6: Food waste in tons collected on Academic Campus by year. Note: 2020 and 2021 experienced decrease in collection due to the COVID-19 Pandemic.

UK Recycling also collects organic material and sends it outside the university to be mulched. In 2023, the university sent 698 tons of logs and brush to Lexington-Fayette Urban County Government to be turned into mulch. Similarly, UK sent 21 tons of broken pallets to an external partner to be mulched.



The Windrow compost system at C. Oran Little Research Center.



Leaves gathered in burritos to be mulched.

RECYCLING

Nearly half of all recycling produced at UK is through the mixed recycling stream. The mixed recycling stream is the blue bins throughout the university which collect comingled materials like office paper, paper and plastic cups, cardboard, and aluminum cans. [Check out UK Recycling's website](#) for a comprehensive list of all items which can be recycled at UK. Once collected, this material is taken to a facility in Louisville where all of the items are sorted out into their different material types (e.g. paper, aluminum). Of the 2,848 tons of recycling the university collected in 2023, 38% or 1,089 tons was from the mixed recycling stream. This was an over 16% increase in mixed recycling collection from 2022, compared to a landfill increase of only 14%.

In addition to the mixed recycling stream at UK, the university has many other avenues for recycling (Table 3). These avenues are called source-separated recycling, meaning they are sorted by the consumer for recycling rather than a facility like the mixed recycling stream. Some of those materials are only collected on the Academic Campus while others are only within the Healthcare side of the university. Figures 7 and 8 depict the recycling breakdown for Academic Campus vs Healthcare.



Recyclables at Louisville facility in the process of being sorted.



UK student recycling an empty pizza box.

MATERIALS	UNIVERSITY OVERALL (TONS)	ACADEMIC CAMPUS CONTRIBUTION (%)	HEALTHCARE CONTRIBUTION (%)
Aerosol cans	1.2	50%	50%
Ballasts	19.2	90%	10%
Batteries	13.9	70%	30%
Blue Wrap	1.7	0%	100%
Cardboard	676.8	5%	95%
CDs/DVDs	2.0	100%	0%
Confidential Paper	417.6	25%	75%
Cooking Oil	34.2	48%	52%
Electronic waste	122	50%	50%
Freon Items	41.7	85%	15%
Hard Drives	0.3	60%	40%
Hardbound books	35.7	97%	3%
Lightbulbs	4	85%	15%
Molded Styrofoam	6.9	5%	95%
Motor Oil	12.3	100%	0%
Oil Filters	12.1	100%	0%
Other Plastics	2.8	0%	100%
Scrap Metal	333.4	90%	10%
Styker Equipment	7.1	0%	100%
Tires	8.2	100%	0%
Toner Cartridges	2.5	25%	75%
T-shirts	0.8	70%	30%
Yard Signs	0.3	100%	0%

Table 3: University Overall source-separated recycled materials in tons for 2023. Academic Campus and Healthcare contributions are included as percentage breakdowns.



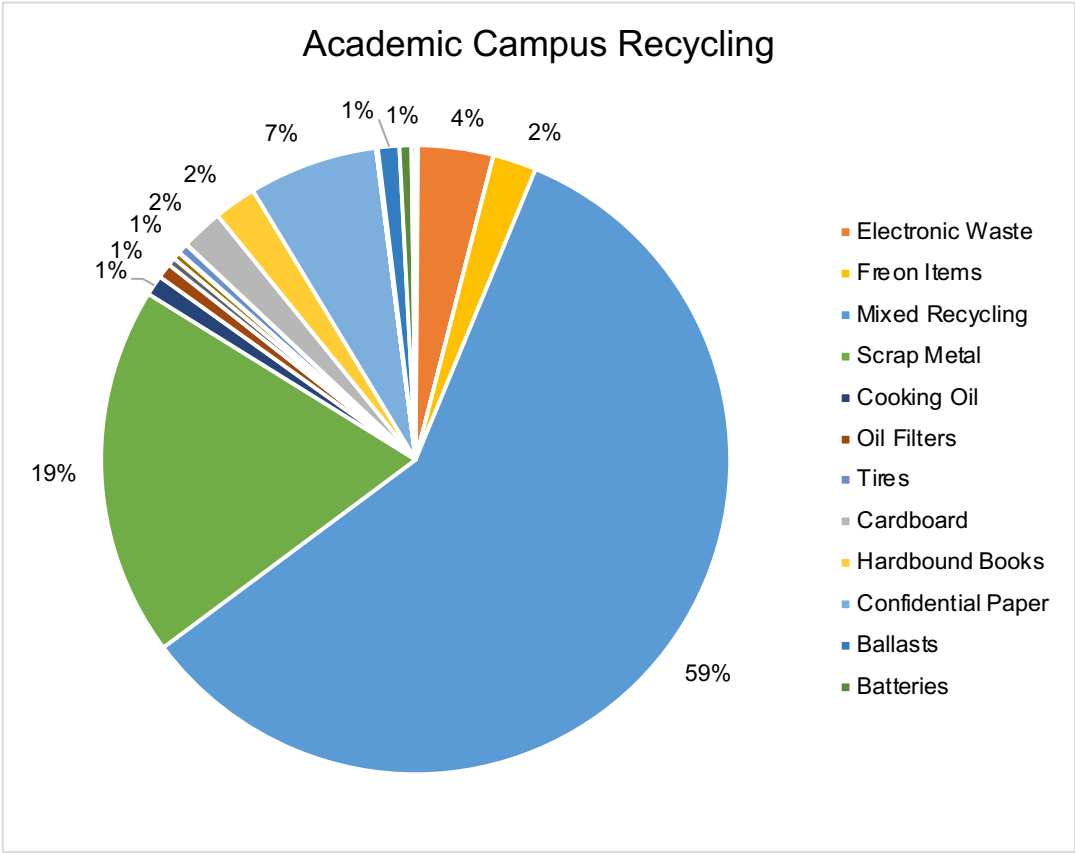


Figure 7: Breakdown of the recycling collected on UK's Academic Campus by percentage for 2023.

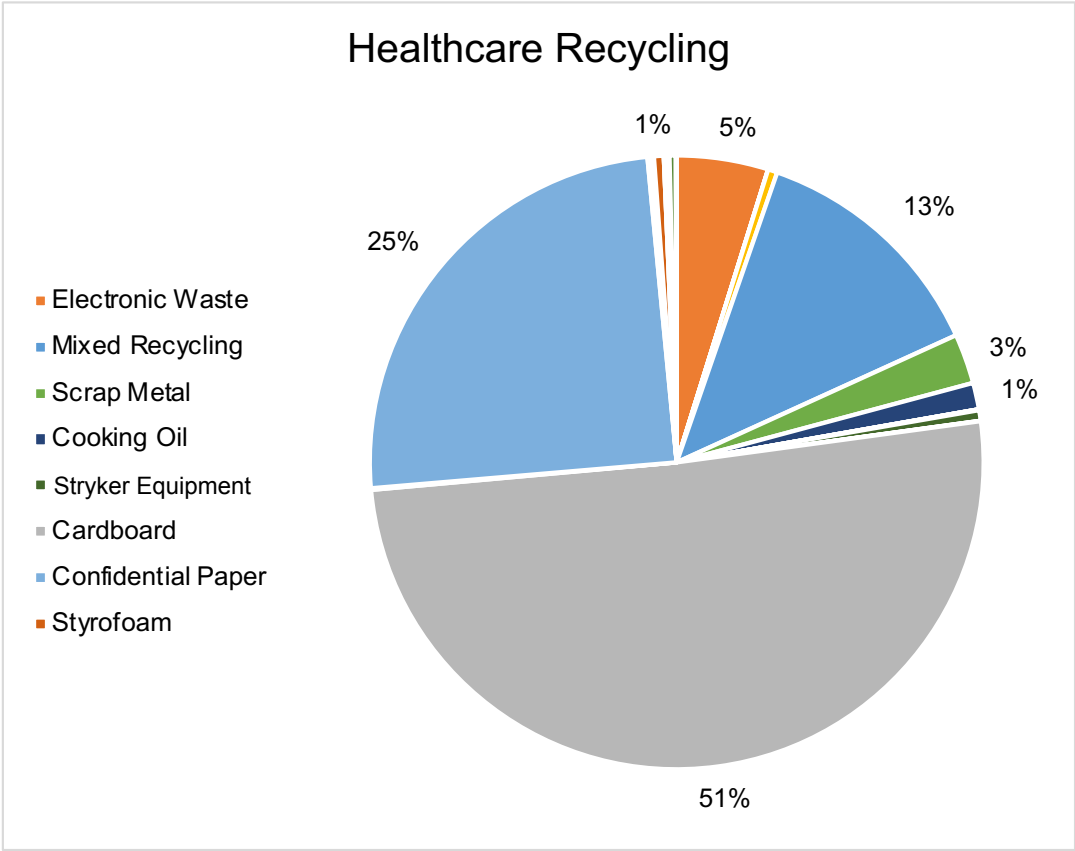


Figure 8: Breakdown of the recycling collected within UK Healthcare by percentage for 2023.

EDUCATION AND OUTREACH

Education and outreach are incredibly important tenets in reducing the university's waste. With a population that is always turning over, clear, concise, and consistent education is integral to UK Recycling's goal of becoming a zero-waste campus. 2023 was an excellent year for UK Recycling education and outreach, reaching 80% more people than in 2022. This is the highest number of people reached than any year prior with a conservative estimate of reaching nearly 250,000 people (Figure 9). UK Recycling achieved this by conducting 13 news and radio interviews, 6 tours, 16 presentations, tabling 59 times, and being featured in 56 newsletters and articles throughout 2023.

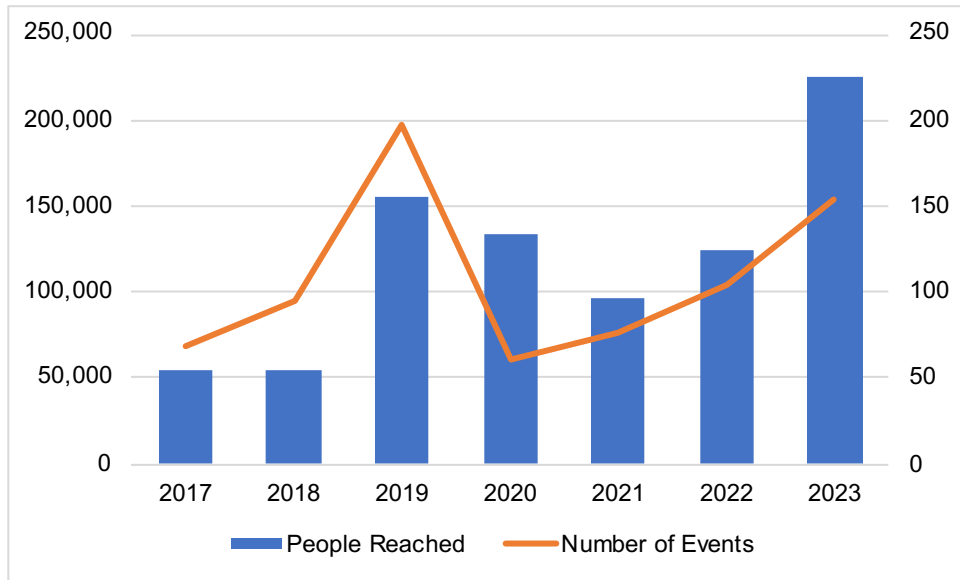


Figure 9: Number of people reached and number of outreach events by year.



University of Kentucky students at the 2023 Pop Up Thrift Shop in the Cats Den.



In April, UK Recycling held their fifth annual Thrift Shop Pop-Up in partnership with The Fashion Crew, Student Organizations and Activities, and Wildcat Wardrobe. A total of 730 lbs of clothing was collected from Academic Campus students, staff, and faculty leading up to the event. 650 lbs of clothes were redistributed to the event participants, and the rest were donated. Additionally, participation reached its highest ever with 218 attendees, an increase from 145 the year prior.

In September, UK Recycling also brought back their annual Sustainability Festival alongside UK Housing and UK Sustainability. The event brought 15 departments and organizations together from UK and Lexington to celebrate the many sustainability efforts our community has to offer.

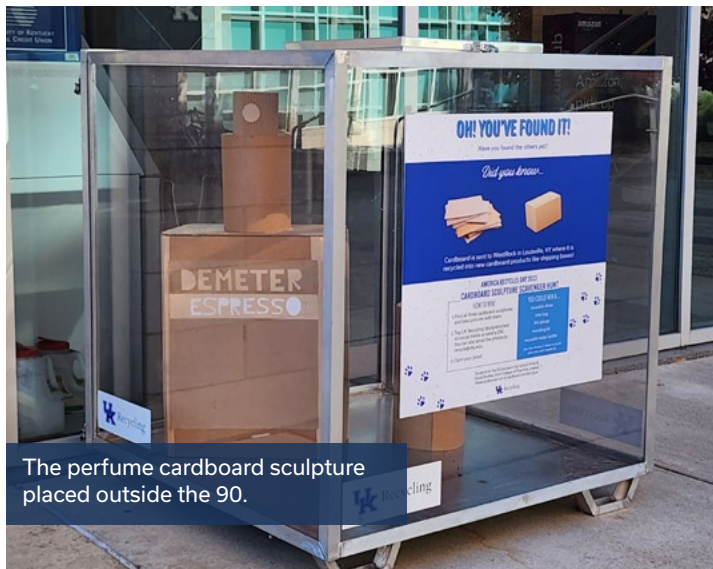


UK Recycling student intern, Elizabeth Hellmann, helping Grad Family housing residents sign up for the composting program.

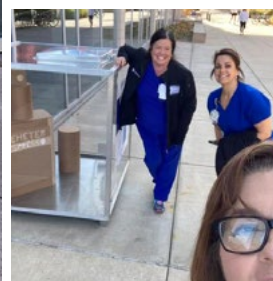


UK Sustainability Intern, Katie Johnson, helping an attendee on the smoothie bike, *top left*. Attendees experiencing the 2023 Sustainability Festival on Greg Page Law, *bottom row*.

Each November, UK Recycling plans a university-wide celebration and campaign to raise awareness for America Recycles Day. This year, UK Recycling celebrated with a cardboard sculpture scavenger hunt. Cardboard sculptures were donated from students in the UK College of Fine Arts School of Art and Visual Studies. Beside each sculpture was a fun fact about cardboard recycling at UK. This campaign was used to remind and educate the wildcat community that cardboard of all shapes and sizes is recyclable in the mixed recycling containers at UK.



The perfume cardboard sculpture placed outside the 90.



A submission for the Cardboard Sculpture Scavenger hunt.

In an effort to provide more clear and specific information for UK departments, UK Recycling developed a recycling guide specifically focused on labs. This is part of UK Recycling's goal to take a tailored approach to the unique materials produced within each area of the university.

LAB CLEAN OUT GUIDE

ALL MATERIALS MUST BE EMPTY AND CLEAN. ALL MATERIALS THAT HELD REAGENTS OR SOLUTIONS MUST BE TRIPLE RINSED BEFORE RECYCLING

MIXED RECYCLING

 Pipette Holders	 Plastic Carboys	 Centrifuge (falcon) Tubes	 Mixed Paper	Flyers & Brochures Paper bags White paper Colored paper Envelopes File folders Magazines Junk mail Paper & Plastic cups Plastic containers Glass bottles & jugs
 Amber Glass Bottles	 Plastic Reagent Bottles	 Plastic Squeeze Bottles	 Plastic Bottles & Jugs	
 Glove & Tissue Boxes (empty)	 Cardboard	 Aluminum Foil	REQUEST A 50 GALLON RECYCLING CONTAINER TODAY AT (859) 257-6234 OR RECYCLE@UKY.EDU	

REQUEST A SEPARATE RECYCLING CONTAINER FOR:

Confidential Paper CDs, DVDs, VHS Mixed Media
 Hardbound books Full 3-ring binders

SET THESE ASIDE FOR RECYCLING TO PICK UP:

Styrofoam (Polystyrene) coolers Hard plastic trays
 Metal cylinders* Lightbulbs
 Metal canister* Batteries
 Plastic barrels Plastic film

*EMPTY AND CLEARED BY EQM

GIVE TO ENVIRONMENT QUALITY MANAGEMENT:

Unwanted chemicals & reagents
 Pyrex bottles & beakers
 Unopened boxes of gloves

FOR MORE INFORMATION CONTACT MARIDELY LOYSELLE
 AT MARIDELY.LOYSELLE@UKY.EDU

LANDFILL: DO NOT RECYCLE

Latex/Nitrile gloves	Reagent reservoirs/troughs
Packaging material	Styrofoam cups
Plastic tubing	Pipette tips
Plastic bags	

SURPLUS

ALL UK PROPERTY MUST BE SURPLUS

All Electronics: Computers Monitors Lab devices Parts & Cords	Appliances: Freezers Refrigerators Other Appliances	Furniture: Chairs Desks Shelves Tables	Lab Glass: Beakers Funnels Test Tubes Pipettes
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FOR MORE INFORMATION, EMAIL SURPLUS@UKY.EDU

Visit our website at recycleblue.uky.edu for a complete list of recyclables.
 Email us at recycle@uky.edu







ACKNOWLEDGEMENTS

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Office of Sustainability

Shane Tedder, *Sustainability Officer*


UK Recycling

Ryan Lark, *Zero-Waste Specialist Sr*


This annual report is intended to provide a concise set of facts and measurements to support environmental decision-making.

We welcome your questions and comments to:

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Esther Moberly	Anthony Woods



UK Recycling 2023 staff photo. *Back row:* Louis W., Ken C., Anthony W., Ryan L., Michael F., Kathryn S., and Jordan F. *Front row:* K'Rissa M., Shaun B., Breanna W., Tim M., and Ken R.

UK Recycling's 2023 Annual Report

