

# UNIVERSITY OF MARYLAND, BALTIMORE SUSTAINABILITY

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## ***Fiscal Year 2023 Report***



UNIVERSITY of MARYLAND  
BALTIMORE

OFFICE OF SUSTAINABILITY

[umaryland.edu/sustainability](http://umaryland.edu/sustainability)

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# SUSTAINABILITY AT UMB

## Office of Sustainability

University of Maryland, Baltimore (UMB) leaders understand the importance of reducing our impact on the environment in a holistic way. Sustainability at UMB has come a long way — from the creation of the first Sustainability Committee on campus in 2008 by former President David Ramsay, to the creation of UMB's Office of Sustainability by President Bruce Jarrell in 2021.



**“We care about the welfare of our people, planet, communities, and University.”**



### UMB'S CORE VALUES

RESPECT *and* INTEGRITY

WELL-BEING *and* SUSTAINABILITY

EQUITY *and* JUSTICE

INNOVATION *and* DISCOVERY

**In August 2021, the University revised its core values to include well-being and sustainability. Being a catalyst for well-being and sustainability means:**

- Supporting work-life harmony
- Promoting healthy behaviors
- Protecting the environment
- Using resources responsibly
- Planning for the future

#UMBtotheCore

## Updates to the Strategic Plan

The Office of Sustainability worked with Communications and Public Affairs to create icons indicating the status of the UMB Sustainability Strategic Plan's goals and tactics. These are revisited twice a year and status updates are made on the [Sustainability Strategic Plan website](#).



## Legislative Impacts

The [Climate Solutions Now Act](#) passed in the 2022 Maryland General Assembly Legislative Session. The new law went into effect in June 2022, and accelerated UMB's carbon neutrality goals.

The new legislation requires the State to reduce statewide greenhouse gas emissions by altering statewide greenhouse gas emissions goals, establishes of a net-zero statewide greenhouse gas emissions goal, develops certain energy efficiency and emissions reduction requirements for certain buildings, requires electric companies to increase their annual incremental gross energy savings, establishes certain zero-emission vehicle requirements for the State fleet, and establishes an electric school bus pilot program.

# FY 2023 MILESTONES

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## Living UMB's Core Values: Sustainability Designations, Accolades, and Awards

At UMB, our journey towards sustainability is an ongoing and iterative process. We like to say "Somewhere down the river" instead of "Somewhere down the road" to emphasize that point. This year, we are proud to have achieved the following awards that align with our core values of Well-Being and Sustainability.



# A MORE SUSTAINABLE FUTURE

## Achieving Sustainability at UMB Through Collaborative Efforts

Apart from receiving awards and recognition, UMB's sustainability team is actively engaged in various working groups, cross-campus partnerships, and external committees. Through these initiatives, the Office of Sustainability at UMB is effectively transforming the university's sustainability goals into tangible and impactful outcomes.



The next few pages detail the progress the University has made, and the work that the four sustainability working groups, reduction, resilience, engagement and education, and green labs, have accomplished.

Overall, the University's sustainability working groups have made significant progress in promoting sustainable practices and reducing the environmental impact of the campus. Their efforts have not only contributed to a more sustainable future for the University but have also inspired others to adopt more sustainable practices in their own lives.

# Strategic Plan Progress

## Self-Service Waste Program

By the end of FY23, all UMB-owned buildings aside from School of Medicine buildings had been converted to the Self-Service Waste Program. The remaining buildings are expected to be completed by February 2024.



## Health Sciences and Human Services Library (HSHSL) Waste Audit

Waste audits were performed at HSHSL in October 2022 and May 2023, prior to and after the Self-Service program was implemented.

	Before Self-Service	After Self-Service
Actual Conversion Rate	8%	73%
Potential Conversation Rate	25%	77%
Missed Opportunity Rate	17%	4%

## LED Lighting Project

LED upgrades restarted in 2022 with the goal of converting all older, less efficient lighting fixtures to LED fixtures. By the end of FY23, the project was at 39% complete. The project is estimated to save 5.3 million kilowatt hours (kWh) per year upon completion, the equivalent to taking 817 gas-fueled vehicles off the road.

# Reduction Working Group



## Saratoga Energy Reduction Pilot

### WHAT:

HVAC temperature set backs from Thursday evenings through Monday mornings beginning late August 2022.

**7.67% reduction in electricity use from September '22 - July '23.**

**Extended indefinitely from pilot phase to continue savings.**

## FY22 Greenhouse Gas Inventory Submitted

### WHAT:

Report out on Scopes 1, 2, and 3 emissions for Second Nature Climate Commitment.

**15.4% reduction in net MTCDE from previous reporting period.**

**Added data set for diesel generators.**



**FY22 energy usage intensity (EUI) calculated and compared to FY19 numbers: down 19% and at its lowest since report began in FY10.**

## PURCHASED

**100% RENEWABLE ELECTRICITY**



## COMPLETED

**19 BUILDINGS**



**in Calendar Year 2022**

**for Self-Service Waste**

# Resilience Working Group



## Resilience Assessment

### WHAT:

Reassessment of 2017 Resilience Assessment, using Second Nature metrics.

**4 Key Areas Identified.**

**Top 3 Strengths and Vulnerabilities Identified.**

## Tree Canopy Analysis

### WHAT:

Analysis using GIS and remote sensing. Partnered with US Forest Service and Baltimore City.

**10% tree canopy from 2018 Chesapeake Conservancy data.**

**Campus Tree Inventory began in April '23.**



## THIRA Climate Change Incorporation

### WHAT:

Office of Emergency Management's Threat Hazard Identification Risk Assessment.

**Added language to THIRA to account for increased heat and natural disasters due to climate change.**

**PLANTED**

**68**

**NATIVE TREES**



**throughout campus**

**ENGAGED**

**33**

**TREE PLANTING**

**volunteers**



# Engagement and Education Working Group



## Interpretive Graphics Created

### WHAT:

Educational signage for bees and native plantings to bring awareness to areas on campus.

**4 educational signs at new SSW meadow, HSF3 7th floor beehive, HSF2 pollinator garden, and HSHSL PAL decorated trees.**

## Campus Sustainability Month '22

### WHAT:

Held every October; an international celebration of sustainability in higher education.

**5 events throughout October, including a Waste Audit at HSHSL.**

**Launched an Office Supply Swap.**



## Earth Month '23

### WHAT:

Held every April, a time to raise awareness and create consciousness around the issues that affect mother nature.

**7 events throughout April, including a Nature 600 Challenge.**

**Supported inaugural, student-led ECO Fest at SSW.**

**ENGAGED**

**59**

PEOPLE  
IN



**OVER**

**900 LBS.**



**Nature 600 Challenge**

**of specialty recycling**

# Green Labs Working Group



## Freezer Rebate

### WHAT:

Incentive rebate for labs that replace an inefficient freezer with a newer, efficient model.

**up to \$2,000 in rebates for trading in older, less efficient freezers.**

**Funding to replace up to 10 freezers.**

## Green Labs Checklist

### WHAT:

Program for research labs to improve green practices within their labs via a pre- and post-implementation checklist.

**Asks labs to identify at least 5 new actions to implement.**

**Qualitative and Quantitative data collected from labs.**



## LabShare Program

### WHAT:

A lab equipment swap program to divert items that can be used or reused from being thrown away.

**Swap uncontaminated items in good condition such as vials, autoclave bags, etc. Complete inventory viewable by all participants.**



**PILOTED**

**4**

**RESEARCH LABS**



**in Green Labs Checklist**

**GRANTED**

**\$8k IN REBATES**



**for efficient freezers**

# RESOURCE DEVELOPMENT

The Office of Sustainability created a wide list of resources between July 2022 and June 2023 ranging from alternative transportation, catering, food rescue, student engagement, and waste reduction.

over  
**130**  
members

## UMB FREE Alerts

Food rescue alert system for students that reduces wasted food. Event planners send out an alert via email about leftover food post-event.

**A UMB FREE EVENT**  
(FOOD RECOVERY + ENVIRONMENTAL EATING)  
An OFFICE OF SUSTAINABILITY initiative  
[UMARYLAND.EDU/SUSTAINABILITY](http://UMARYLAND.EDU/SUSTAINABILITY)



## Green Eats List and Map

A list and interactive map of local caterers that provide bulk food, condiment, and drink options as well as other green-minded metrics.

**9**  
vendors

over  
**30**  
members

## **Bike Commuter Survey and Microsoft Team**

Feedback from the Bike Commuter survey resulted in creation of a community for UMB members to gather and talk about all things cycling.



## UMBuy Nothing Microsoft Team

A place for UMB students, faculty, and staff to find new homes for personal items in usable condition.

over  
**100**  
members

**LabShare and Office Supply Swap Channels Added**

identified  
**89**  
environmental  
organizations

## Interprofessional Student Leadership Network

Resources created for student leaders interested in starting up an environmentally-focused club, no matter what school they're in.

[link to How-To Start Guide](#)

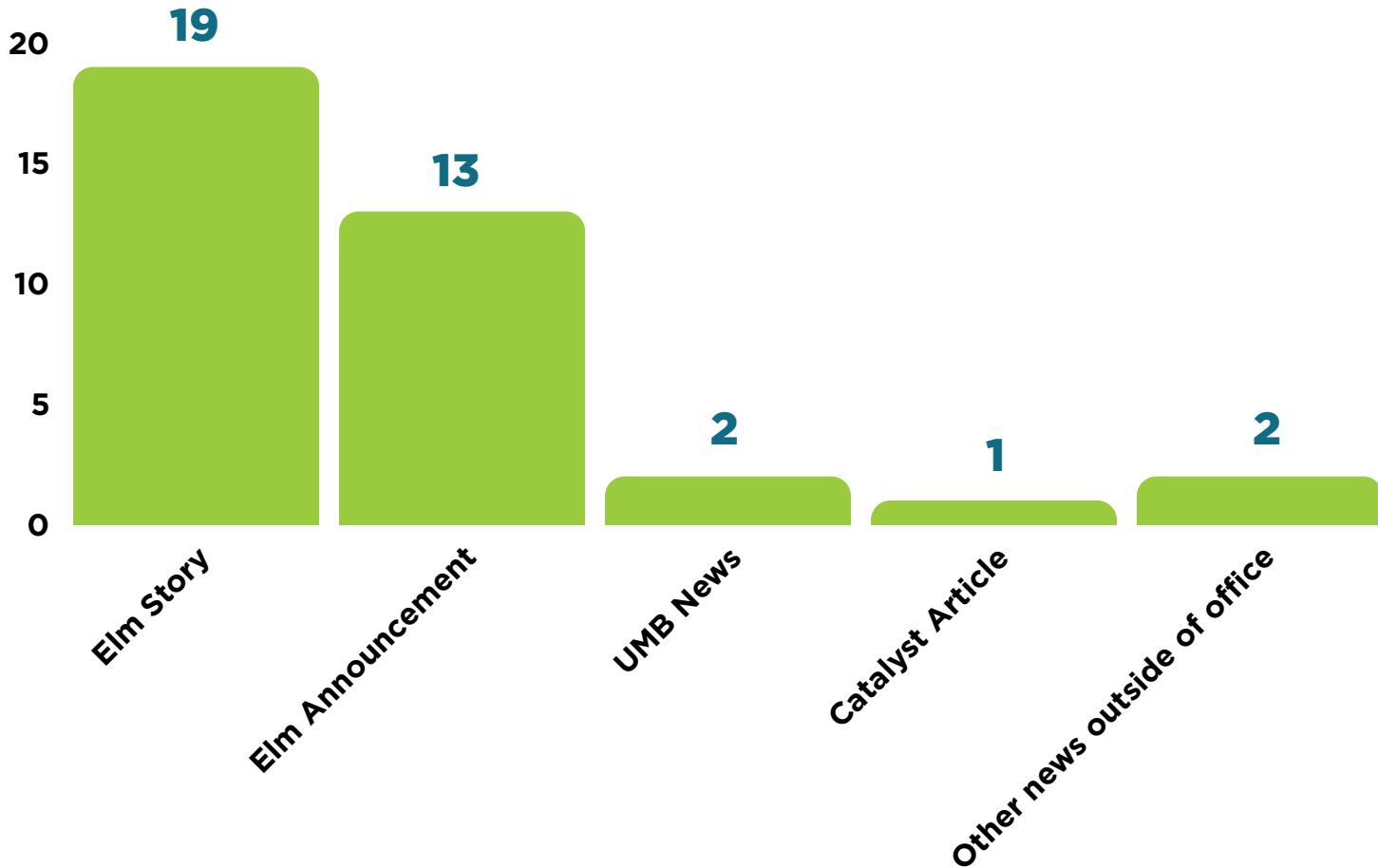
[link to Communications Guide](#)

[link to Environmental Organizations](#)

# COMMUNICATIONS

## Sustainability News

The Office of Sustainability has been hard at work, updating the UMB campus community with the latest sustainability news. A total of 37 write-ups, including individual stories by the office and UMB's Communications and Public Affairs team, campaign summaries, sustainability series, and other announcements have been published, covering a range of sustainability-related topics.



*The Elm* is a publication of the University of Maryland, Baltimore

**The Elm**

ELM STORIES

TOPICS ▾

SCHOOLS ▾

CALENDAR

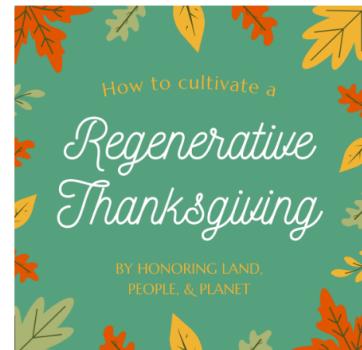
How to Have a Regenerative Thanksgiving

November 22, 2022 | Lucy Zhao

The Office of Sustainability recaps its November campaign on having a Regenerative Thanksgiving holiday.

Throughout the month of November, the Office of Sustainability shared information on how to cultivate a Regenerative Thanksgiving via [Facebook](#), [Twitter](#), and [Instagram](#). Tips and recipes were posted weekly to highlight Indigenous heritage, wisdom, and ingredients that honor the planet and its people. We hope you feel inspired by the various ways we can all create and foster regenerative and reparative practices this holiday season.

[What is a Regenerative Thanksgiving?](#)



## Social Media

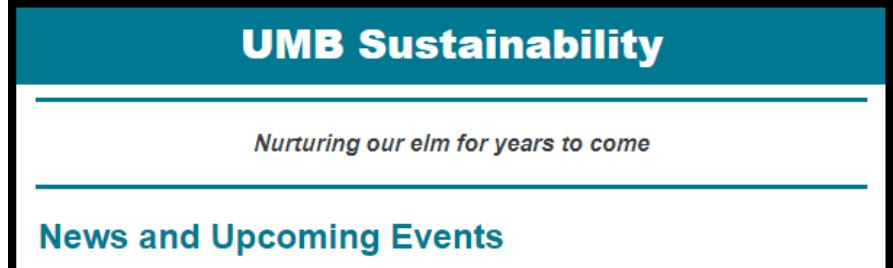
UMB's Office of Sustainability uses various social media platforms such as [Facebook](#), [Instagram](#), and [X](#) (formerly known as Twitter) to reach out to the community and share information. These channels enable the office to disseminate news from the office and its partners, as well as other community organizations outside of the office.



**8 CAMPAIGNS** **105 POSTS**

## Newsletter

Since its launch in March 2021, the monthly [Sustainability Newsletter subscription list](#) has grown to almost four times its size since the FY 22 report.



**400 NEWSLETTER SUBSCRIBERS** **46% OPEN RATE**

# PARTNERSHIPS

## Campus Cleanup

Sustainability teamed up with Environmental Services, Staff Senate, and USGA to host its first campus cleanup in April 2023 as part of its programmed Earth Month activities. Seventy-seven volunteers took time out of their day in one-hour shifts or longer to canvas the campus grounds for litter. The volunteers were able to spend time outside with their colleagues, and managed to remove 179 pounds of litter.



## Tree Planting

Members of UMB's Offices of Sustainability, Design and Construction, Environmental Services, and Parking and Transportation Services joined together to plant 3 trees behind the Pratt Street Garage. One serviceberry tree held extra significance for the Parking and Transportation team, as it was planted to commemorate a former staff member who had recently passed away.

## Tree PALS

The Office of Sustainability worked with the UMB Police Athletic/Activities League (PAL), a partnership between the UMB Community Engagement Center (CEC) and Police Department (UMBPD) to create ornaments for native trees planted behind the Health Sciences and Human Services Library in May 2023. Baltimore City Youth learned about urban heat island effect and the importance of native trees before decorating.



## Urban Gardening

An Urban Gardening event in May 2023 occurred at Vivien T. Thomas Medical Arts Academy. Members from Baltimore City Department of Public Works gave high school students a lesson on the basics of composting.

Afterwards, volunteers from UMB and Vivien T. Thomas Medical Arts Academy worked on pulling weeds from the high school's raised garden beds, planted vegetables for the summer, and picked up litter from the surrounding property.

A total of 4 lbs. of trash was collected and 31 lbs. of weeds removed.

# SUSTAINABILITY STAFF

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## Staffing Changes

The last fiscal year included some challenges as the Office of Sustainability adjusted to staffing changes. In September 2022, Anna Borgerding, director of operational excellence and sustainability, was appointed acting assistant vice president of facilities and operations, leaving the full time staff down to two. In May 2023, Anna accepted the position for Assistant Vice President, Facilities and Operations. The office was down to an office of two with Elizabeth Main, associate director, and Angela Ober, senior specialist.

## Fellows

The Office of Sustainability employed three student fellows from UMB and one Climate Corps Fellow through SEI, Inc. All fellows had roles assisting with the implementation of UMB's Self-Service Waste Program.



Kimia Abtahi, a medical student, worked as a sustainability fellow from July 2022 to January 2023. Kimia worked on initiatives revolving around alternative transportation, green labs, waste, and food insecurity.



Lucy Zhao, a dual degree MPH/MSW student at the University of Maryland School of Social Work, was a sustainability fellow from September 2022 to April 2023. Her work revolved around food waste reduction, policy and student leadership development, and environmental justice initiatives.



Alex Skowron, a recent graduate from Washington and Jefferson College, worked as a data fellow through the SEI Climate Corps program. Alex started in January 2023, and began working on the University's tree inventory, a sustainability dashboard, and other field data collection and analysis.



Olivia Rosser, an MSW student, began in the office in March 2023 as the office's waste reduction fellow. Her work mainly revolves around composting, waste reduction initiatives, education and engagement, communications, and social media content creation.

# **SUSTAINABILITY WORK IN FY 2024**

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**Tree Inventory**  
**NexTrex Challenge Stats**  
**Compost Pilot Stats**  
**Sustainability Micro-Credential**  
**Weather Station**  
**Data Dashboard**  
**Rooftop Solar**  
**IPE Grant**  
**Recycling Center**

# THANK YOU!

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The work that the Office of Sustainability relies on working with cross-campus partners and organizations outside of UMB. The office would not be able to have gotten the amount of progress done in such a short time without the partnerships that we've developed since our creation in 2021.

**Community Engagement Center**

**Design and Construction**

**ECO-Environmental Justice in Action**

**Environmental Health and Safety**

**Environmental Services**

**GreenSON**

**Launch Your Life**

**Medical Students for a Sustainable Future**

**Office of Emergency Management**

**Operations and Maintenance**

**Parking and Transportation Services**

**Real Estate, Planning, and Space Management**

**Strategic Sourcing and Acquisition Services**

**Sustainability Working Group Members**

**URecFit and Wellness**

**University Student Government Association**

**... and many more!**

# DEFINITIONS

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## **Carbon Dioxide Equivalent (CO2e/CDE)**

Also written as CO2e or CDE. This considers all greenhouse gases' impacts on the climate in the context of its global warming potential.

## **Carbon Neutrality**

An effort to decrease greenhouse gases such as carbon dioxide (CO2) in the atmosphere. Greenhouse gases are the result of human activities such as deforestation, land use change, and fossil fuel burning.

## **Co-Located Bins**

Waste bins that are placed in a centralized locations or common spaces to create a station of bins. Co-located bins collect a different waste stream per bin.

## **Dual-Stream Recycling**

Recycling that has two waste streams. At UMB's campus, the University's recycling stream is separated by mixed paper and cardboard and mixed plastics, glass, and metal. This is different from single-stream recycling, where all recyclable materials go into one container.

## **Geographic Information System (GIS)**

A system that creates, manages, analyzes, and maps all types of data. GIS connects data to a map, integrating locational data (where things are) with all types of descriptive information (what things are like there). GIS helps users understand patterns, relationships, and geographic context.

## **Global Warming Potential (GWP)**

A measure of how much energy the emissions of 1 ton of gas will absorb over a period of time. Gases with a higher GWP absorb more energy, per pound emitted, than gases with a lower GWP, and thus contribute more to the warming of Earth.

## **Greenhouse Gases**

Gases that trap heat in the atmosphere. These include: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases (such as hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other synthetic gases). Each gas has a different magnitude of potency known as global warming potential

## **Leadership in Energy and Environmental Design- (LEED) Certified**

### **Buildings**

LEED is the most widely used green building rating system in the world. LEED provides a framework for healthy, efficient, and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement and leadership.

## **Net Zero Emissions**

Achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

# DEFINITIONS

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## **Renewable Energy**

Energy collected from resources that are naturally replenished on a human timescale. Types of renewable energy include: solar, wind, hydropower, geothermal.

## **Scope 1 Emissions**

Direct greenhouse gas emissions that occur from sources that are controlled or owned by an organization.

## **Scope 2 Emissions**

Indirect greenhouse gas emissions that are associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use.

## **Triple-Bin System**

A waste station with three separate containers to capture different waste streams.

## **Waste Stream**

Different categories of solid waste to be disposed of. Waste streams on campus include: mixed plastics, glass, and metal recycling, paper and cardboard recycling, regular trash, biohazardous waste, broken glass, etc.