

# Self-Service at UMB: Engaging Building Occupants in a New Waste Collection Model

NCCI Conference  
July 2023

# About UMB



OFFICE OF SUSTAINABILITY

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

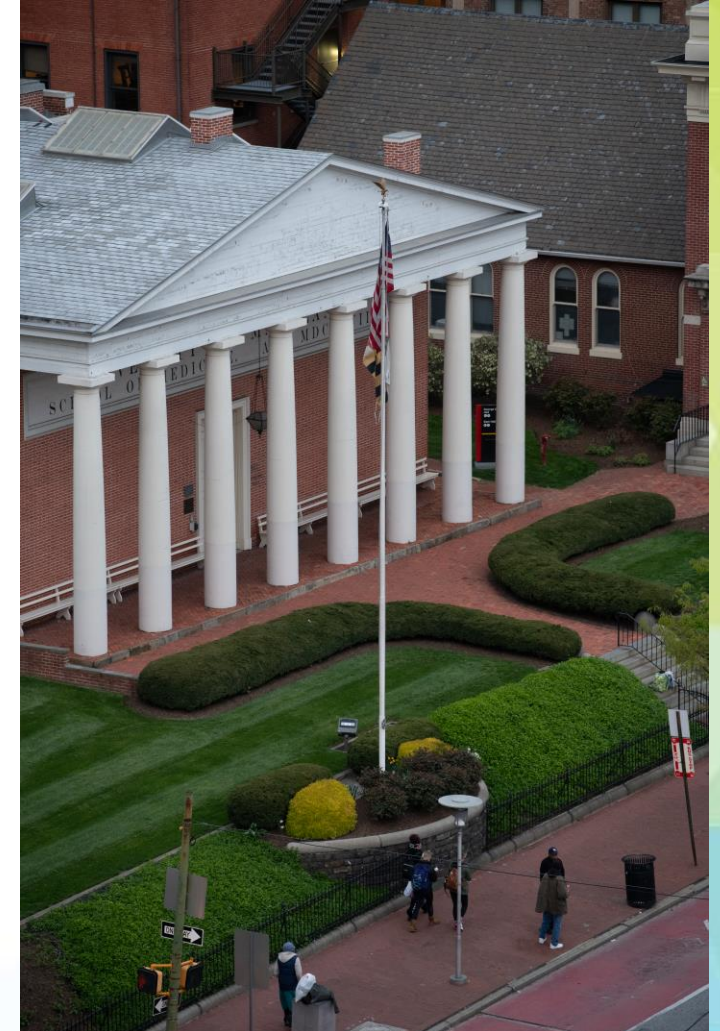






# About the University of Maryland, Baltimore (UMB)

- Opened in 1807
- Maryland's public health, law, and human services university
- UMB enrolls nearly **7,000 students** in six professional schools — **dentistry, law, medicine, nursing, pharmacy, and social work** — and an interdisciplinary **Graduate School**
  - **90** doctoral, master's, baccalaureate, and certificate programs
- Located in Downtown Baltimore, the campus consists of **71 acres** with **6.9 million gross square feet** of space in **60+ buildings**



# UMB's Core Values and Mission



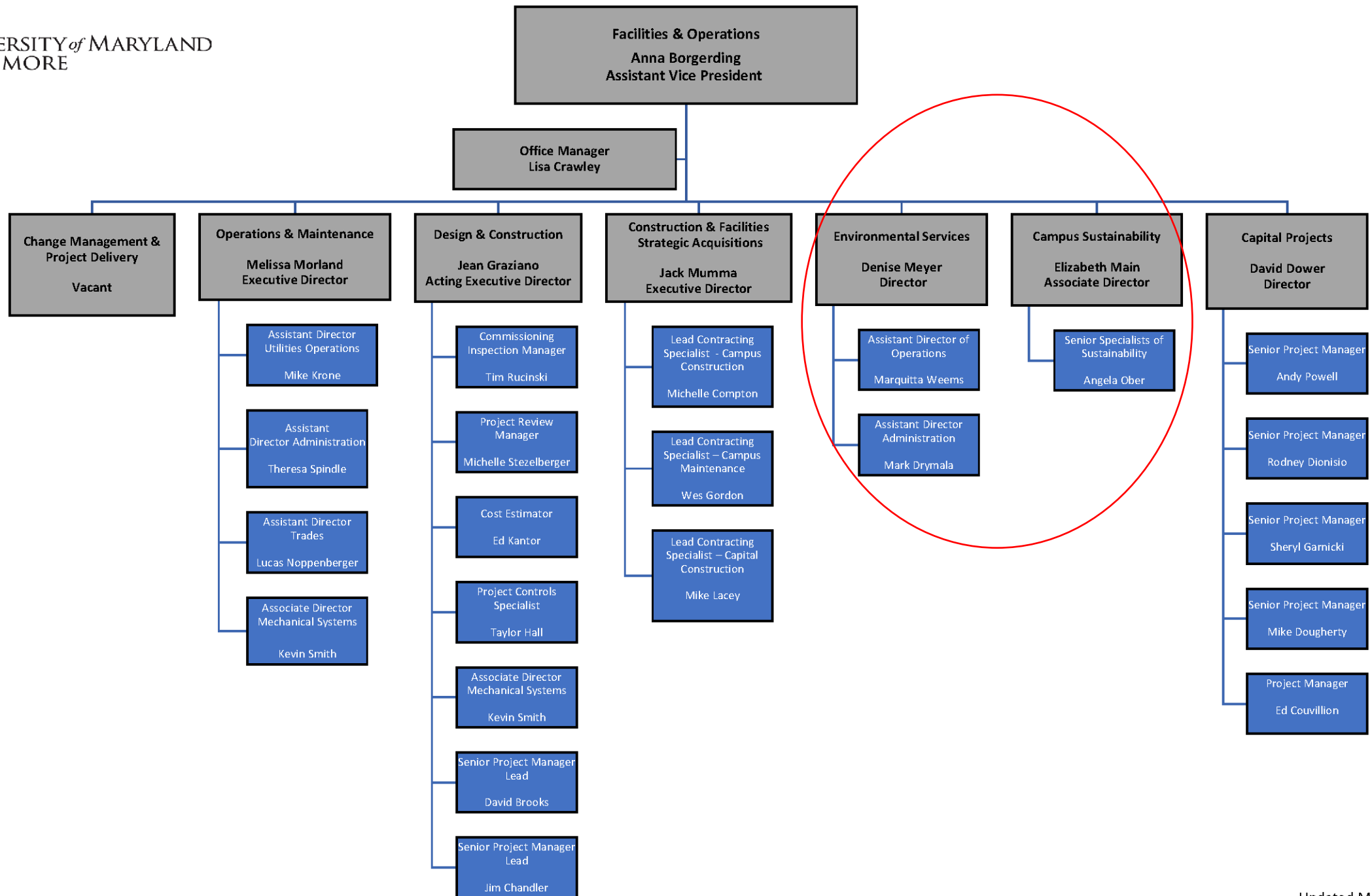
*Respect and Integrity | Well-Being and Sustainability  
Equity and Justice | Innovation and Discovery*

**Mission:** *To improve the human condition and serve the public good of Maryland and society at-large through education, research, clinical care, and service.*

# Office of Sustainability Introduction

- **Founded in 2021**
  - Focused on reducing greenhouse gas (GHG) emissions in support of carbon neutrality by 2050\*
  - Facilities-focused, but work extends beyond operations
  - Building partnerships to execute the University's mission through the lens of sustainability
  - Lead 4 volunteer Working Groups comprised of students, staff, and faculty





# The Initiative – What does “Self-Service Waste” even mean?



# Rolling out a Consistent and Improved Waste Collection System

*Self-Service  
Removal Model*

*Liner, Bin,  
and Signage  
Standards*

# Self-Service Model

- Communal triple bin stations placed in central areas of buildings and serviced by Environmental Services (EVS) custodial staff
- Faculty, staff, and students place their waste in these common receptacles instead of personal desk-side bins





# New Bin Liner Standards

- Color coordination to alleviate concerns about UMB not recycling
- Triple Stations from Left to Right:
  - Mixed Recycling (plastics, metal, glass) – switching to a **blue liner**
  - Paper/Cardboard – **no liner**
  - Trash – clear liner



# New Waste Bin Standards – Slim Jims

- Repurposing existing Slim Jims where possible to make this project as low-cost as possible
- Fitted with standard campus vinyl signage





# New Waste Bin Standards – ErgoCans

- Nicer cans in high visibility areas (lobbies, deans' suites, etc.) and where Slim Jims cannot be repurposed



# The Why



# Current Conditions – No Standard for Waste Bins or Signage



School of Pharmacy



School of Law



School of Medicine

# What the UMB Campus is Saying

- **Feedback from students, faculty, and staff about confusion regarding recycling and waste**
  - 2021 UMB waste survey – 122 responses
  - Most common answers to the question “why don’t you recycle?” were:
    - lack of bins/bins being inconveniently located
    - bins being poorly labeled
    - lack of knowledge of what can be recycled
- **UMB needs to remain relevant to students, and the environment is Generation Z's #1 concerns**





# Preventing Contamination

- **Contamination = non-recyclable items that end up in recycling**
  - Leads to hauler rejection + incineration
- **Research shows that centralized waste stations decrease contamination**
  - Clear signage at the point of disposal helps keep materials sorted
  - MIT case study – 6.5% less contamination



*Photos from UMB's Mixed Recycling Hauler of Contamination from our campus*

# Following Best Practices from Peers

- Co-location, different colored liners, clear and consistent signage
- Currently not meeting *All State Agencies Recycle* requirement by the State of Maryland to recycle 30%
  - In 2021, UMB achieved a **19%** recycling rate
  - NYU –178% increase in recyclable material after implementing similar program



*Standard Waste Bin Stations at the University of Virginia (UVA)*

# What's In It For Me (WIIFM)

## *Why should senior leadership care?*

Getting buy-in and making the message relevant to Deans and Vice Presidents



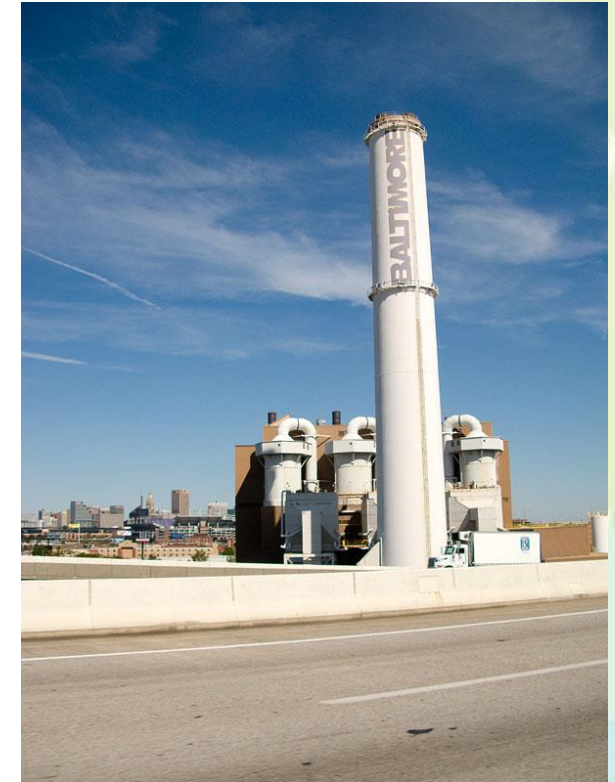
# Reminder of UMB's Mission

- **Mission:** *To improve the human condition and serve the public good of Maryland and society at-large through education, research, clinical care, and service.*



# Tying the Program to Our Mission

- UMB is a leader in our respective fields in the state of Maryland and nationally while simultaneously contributing to detrimental health impacts in Baltimore City
- Sorting UMB's waste properly will result in less waste incinerated annually, thus decreasing the pollutants released into the air that lead to poor health conditions in Baltimore City, particularly in communities of color



# Reminder of UMB's Core Values



- *Respect and Integrity* | *Well-Being and Sustainability*  
*Equity and Justice* | *Innovation and Discovery*

**Core values were revamped in 2021, at which time *Sustainability* was added**

- Speaker series, pledge, awards, tool kits



# Tying in to Core Values

## *Respect and Integrity*

- **We value each other and hold ourselves accountable for acting ethically and transparently using compassion and empathy.**
  - Respecting all of our UMB staff members and their time.
  - Holding ourselves accountable for the waste we generate on campus—the more awareness around the trash individuals generate, the more likely we will look for opportunities to reduce that waste through thoughtful procurement practices and habit changes.

# Tying in to Core Values

## *Well-Being and Sustainability*

- **We care about the welfare of our people, planet, communities, and University.**
  - Protecting the health of our custodial staff and office staff by reducing the number of touch points EVS staff encounter.
  - Encouraging healthy habits by having occupants take a quick break to stand and walk to a central location from their office to dispose of waste.
  - Reducing pest issues—fewer locations create fewer hotspots for rodents, fruit flies, ants, and other pests.
  - Reducing our waste—fewer liners for individual trash bins mean less non-recyclable plastic film waste sent to the incinerator.

# Tying in to Core Values

## *Equity and Justice*

- **We embrace and are committed to diversity, and we value inclusive and just communities. We oppose racism and oppression in all its forms.**
  - Understanding we have a role in how our waste gets disposed of--this is everyone's job.
  - Reducing the amount of trash we send to the incinerator, which is an environmental justice concern—incineration is attributed to air pollution and other public health concerns that disproportionately affect lower-income Baltimore City communities.



# Tying in to Core Values

## *Innovation and Discovery*

- **We imagine and explore new and improved ways to accomplish our mission of education, research, clinical care, and service.**
  - Committing above and beyond our waste reduction efforts on campus by looking at waste in a holistic way.
  - Creating efficiencies in our waste disposal methods to ensure our buildings are run smoothly and UMB custodial staff can use their time effectively.

# The Planning Process

# School of Nursing Pilot

- School of Nursing implemented this program in 2018 and was successful in reducing trash and limiting contamination of the recycling stream
  - This one building saves an estimated **89,000** plastic liners from being incinerated each year
- Celebrated as pioneers of this initiative throughout campus-wide implementation





# Initial Steps in Planning Process



Planning with EVS department



Selecting bin standards



Designing signage with stakeholder input



Cost considerations



Estimated total cost of campus project by extrapolating building case studies

# Write-Ups, Presentations, and Communications

- Detailed program write-up/summary for AVP of Facilities & Operations
- Higher level presentation to SVP of Administration & Finance
- Presentation to Deans and VPs
- Built out websites
  - Office of Sustainability and EVS
- Created other marketing materials to inform campus community
  - E-boards, social media, Elm article, newsletter, President's Face to Face event
  - Presented at Communications Council, Staff Senate
  - Used Working Group members as ambassadors

# Next Steps

- Created rollout schedule
- Began process to procure new bins and vinyl signage for old bins
- Identified Building Managers and/or occupants for each building

| ☰ May - June '23             | ☰ July - August '23 | ☰ September - October '23 |
|------------------------------|---------------------|---------------------------|
| School of Dentistry          | 100 N. Greene       | HSFII                     |
| Campus Center and Pratt G... | 108 N. Greene       | HSFI                      |
| COPS                         | Davidge Hall        | GRB                       |
|                              | East Hall           | HSFIII                    |
|                              | Gray Lab            | 737 W Lombard             |
|                              | Dental Museum       |                           |
|                              | IHV                 |                           |



# Special Considerations

- **Exceptions for keeping personal bins**
  - Security guards
  - ADA concerns
- **Keeping other central station types – grandfathered in**
  - School of Nursing, Campus Center
  - Got to keep old bins but replaced/added standard signage
- **Lab spaces**
  - Double bin stations (trash, mixed recycling) due to space constraints



# Other Logistics and Key Features

- **Only gave option for folks to keep their bins if they asked**
  - Did not offer this upfront as an option
- **Engagement of/support from President and Senior Vice President for Administration & Finance**
  - Leading by example (gave up their own bins even though they could have kept them)
  - SVP mentioned initiative at Staff Senate meeting, World Facilities Day, etc.

# Implementation



# Step 1 – Transition to Blue Liners for Recycling

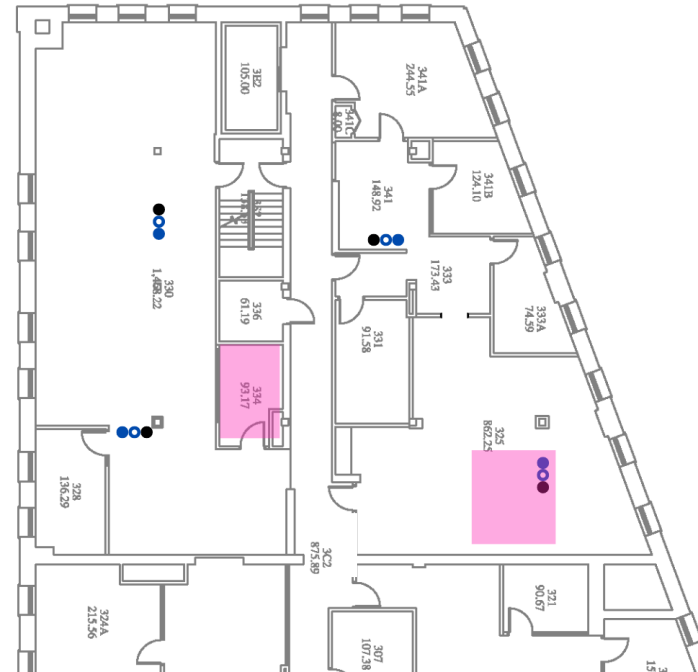
- Initial step to get EVS staff introduced to change and help building occupants visually differentiate recycling from trash streams



# Step 2 – Rollout of New Bins

- **Issued Purchase Order for bins**
  - Planned multiple deliveries and location for storage of bins
- **Bin inventories (*bininventories*) of current bins**
- **Create layouts of what future bin stations will look like**
- **Working with Building Managers/occupants to communicate change to occupants**
- **EVS building custodial staff huddles**

# Bininventories Example (Before & After)





# Day of the Rollout + Following Days

- Office of Sustainability places new waste stations/signage and removes old bins
- EVS custodial staff remove individual trash cans and passes out information slips
- Ideally, Building Manager (if applicable) is around to ensure message comes from many directions
- Final count of removed bins + update floorplan with placed bins; share with Building Manager and the area EVS Manager
- Bill school for bins and signs (internal budget transfer)

# Informational Quarter Sheet

## WHERE'D MY BIN GO?



**Environmental Services and the Office of Sustainability are rolling out a self-service waste model.**

*Flip over* →

### WHAT?

Building occupants will place waste in common receptacles instead of personal desk-side bins. Common receptacles will be conveniently located throughout each floor and will consist of clearly labeled triple stations (mixed recycling, paper/cardboard, and trash).



**To watch a short, informational video about the project, scan the QR code:**



### WHY?

- To help UMB reach the State of Maryland's recycling requirement of at least 30% as a state institution
- To support the goals in Administration & Finance's Strategic Plan
- To align with UMB's core values

*Don't forget to break down your cardboard boxes before recycling!*

**For more information, visit [umaryland.edu/evs/self-service-waste](https://umaryland.edu/evs/self-service-waste)**

Questions? Email: [sustainability@umaryland.edu](mailto:sustainability@umaryland.edu)

# Progress to Date

# Buildings Completed

- The following **19** buildings have had triple bin stations deployed and have converted to the self-service waste model
  - School of Nursing (updated signage), Health Sciences and Human Services Library, Community Engagement Center, Environmental Health and Safety, Saratoga, School of Law, Pearl Street Garage Offices, 300 Russell Street, Maryland Bar Center, Grand Garage Offices, Pine Street Station, Pine Street Annex, Pharmacy Learning Center, School of Social Work, School of Pharmacy, Lexington, School of Dentistry, Campus Center, COPS





# By the Numbers



Number of individual trash  
cans collected

**1,194**



Estimated number of liners  
saved so far

**311,634**

# HSHSL Waste Audit Before and After

|   | October 2022, before self-service | May 2023, after self-service |
|---|-----------------------------------|------------------------------|
| Average of all recycling that belonged in the trash | 15%                               | 14.53%                       |
| Average of all trash that could have been recycled  | 24%                               | 9.47%                        |
| Total current diversion rate                        | 36%                               | 72.62%                       |
| Total potential diversion rate                      | 8%                                | 77.2%                        |
| Missed opportunity rate                             | 25%                               | 4.58%                        |

# Challenges

# Challenges (Part 1)

- **Who pays for the bins?**
- **Procurement**
- **Storage of new and old bins**
- **Customers**
- **Timing**
  - Accelerated timeline + also delays
- **People power (or lack thereof)**
- **Lack of building managers/ways to communicate with occupants**



# Challenges (Part 2)

- **Interruptions on the day of the rollout**
- **Space constraints for bin placement**
- **People move bins**
- **Lack of loading dock/staging/setup areas**
- **Expectation that EVS will perform other/more services due to time saved from initiative**
  - Assumptions that this initiative is due to downsizing of department
- **What to do with collected bins**

# Overcoming Challenges + Lessons Learned

# Changes Made Mid-Way Through Rollout

- **First rollout at School of Law – Office of Sustainability collected desk-side bins**
  - Duty shifted to EVS
- **Liner standard change for paper/cardboard stream**
  - Lining is acceptable to collect loose paper, and is to be reused (if not contaminated with liquid)
- **For customers who keep deskside bins**
  - *Managing Your Personal Trash Bin* flyer created
  - Not an option offered upfront (only upon request)

# High Level Summary of Success of Project

- Identified champions and used them as examples
- Made pitch to senior leadership using data and tie-ins to organization's mission and core values
- Identified stakeholders and communicated to them in multiple ways





# Next Steps

- **Complete School of Medicine buildings in FY24**
- **Find homes (or recycling vendors) for old bins**
- **Continued education about recycling**
  - Building out the right infrastructure is just Step 1
- **Additional waste audits to identify problem areas and/or items**

# Thank You! Questions?