NATIONAL ZERO WASTE CONFERENCE

10:45 am Pacific Time
October 2, 2024

Track B

Concurrent AM

How Zero Waste Businesses are Resolving "Tricky" Issues for Waste Reduction

Speakers:

Sue Beets-Atkinson
Jen Parks
Jesse Dunbar
Agustín Sánchez
Marie Gallagher

Moderator: Amy Marpman

Hosted by: ZERO WASTE USA

Day 1 • Zero Waste Businesses & Institutions

10:45 am Pacific Time
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Track B

Amy Marpman

Director Sustainability

SBM Management Services, LP

(Moderator)

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Sue Beets-Atkinson

Global VP of Sustainability

SBM Management Services, LP

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Jenifer Parks

District Facilities Manager

Microsoft

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Jesse Dunbar

Senior Sustainability Manager – National Accounts

SBM Management Services, LP

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Agustín Sánchez

Engineering Director

GWES Engineering N.E MERCK

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Marie Gallagher

Senior National Sustainability Manager

SBM Management Services, LP

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Bagless Recycle Process

October 2, 2024

Bagless Recycle Process

What is Bagless Recycling?

More haulers across the U.S. are requiring sites to remove bags or liners from recycling dumpsters. This is due to bagged recyclables contaminating the load and impacting downstream MRF operations.

This request can be a challenge for site operations teams to determine how to efficiently collect recyclables and empty the loose contents into the hauler container.

Waste management technicians clear plastic bags and plastic sheeting from a recycling center screen. Plastic bags and sheeting are a major challenge for recyclers, as they snarl sorting equipment, cause contamination, and drive up processing costs. Photo, copyright to Whyy.org. Photo by Waste Management.

What if my hauler requests bagless recycle?

Clarify the Request

Confirm that the hauler wants accepted recyclables ‘loose’ in the designated recycle container (FEL, tote, compactor, etc.)

1. Hauler May Respond
   - No plastic liners in recycling
   - No bags in the recycle container
   - Your recycling in ‘contaminated’
   - We are charging a contamination fee
2. Ask for Specifics:
   - If they mention “Contamination” or a “contamination fee”, ask:
     I. What is the contamination?
     II. Please provide pictures of the contamination
     III. In the container vs. within bags
        1. Cleaner vs. site employees

How do I implement bagless at my site?

It can't happen over night. This takes time.

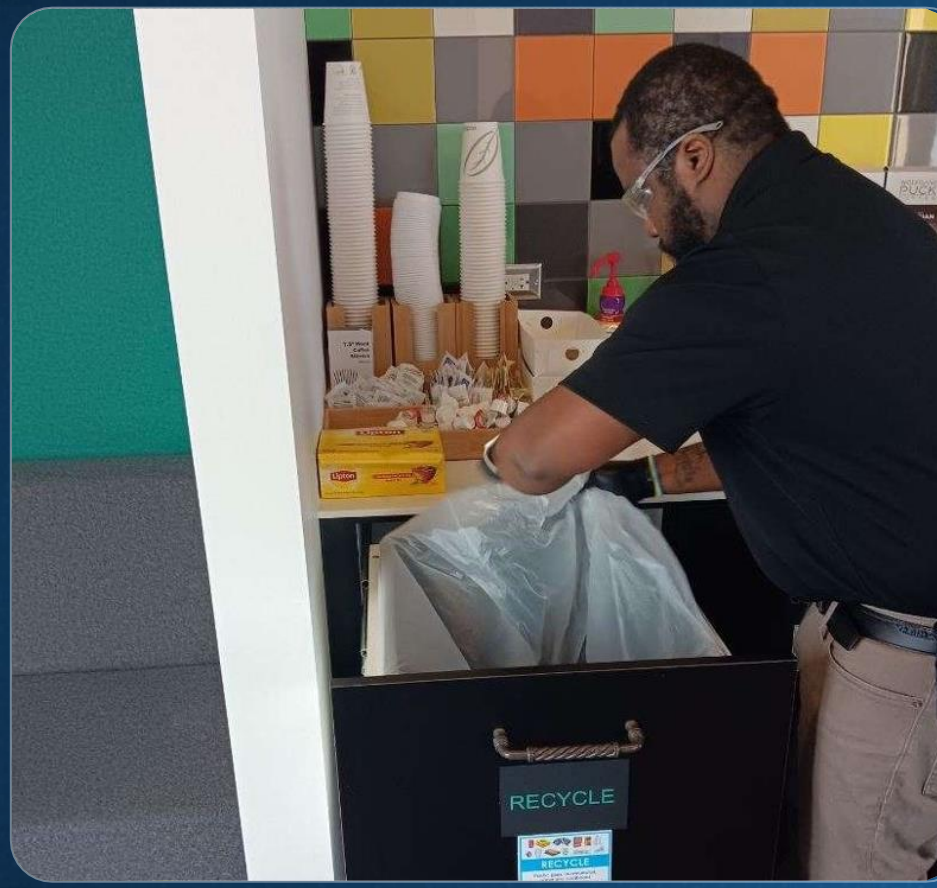
- Let the hauler know you are working on the request and when to expect the change.
- Let the hauler know when you have completed the change, especially if contamination fees are being assessed or the recycle container is being discarded as trash due to contamination.

Talk to your cleaning company.

- Engage janitorial lead or manager of the cleaning staff. Line level staff do not make process decisions.
- Depending on the site, involve facilities management team.

Who else is using the recycle container (FEL, tote, compactor)?

- Even when the cleaning company makes the change, if there are other users of shared containers, there will still be bags in recycle (food service, other tenants, retail, etc.)



Changing the process

Understand janitorial company process change requirements.

- No liners is a change from the regular process.

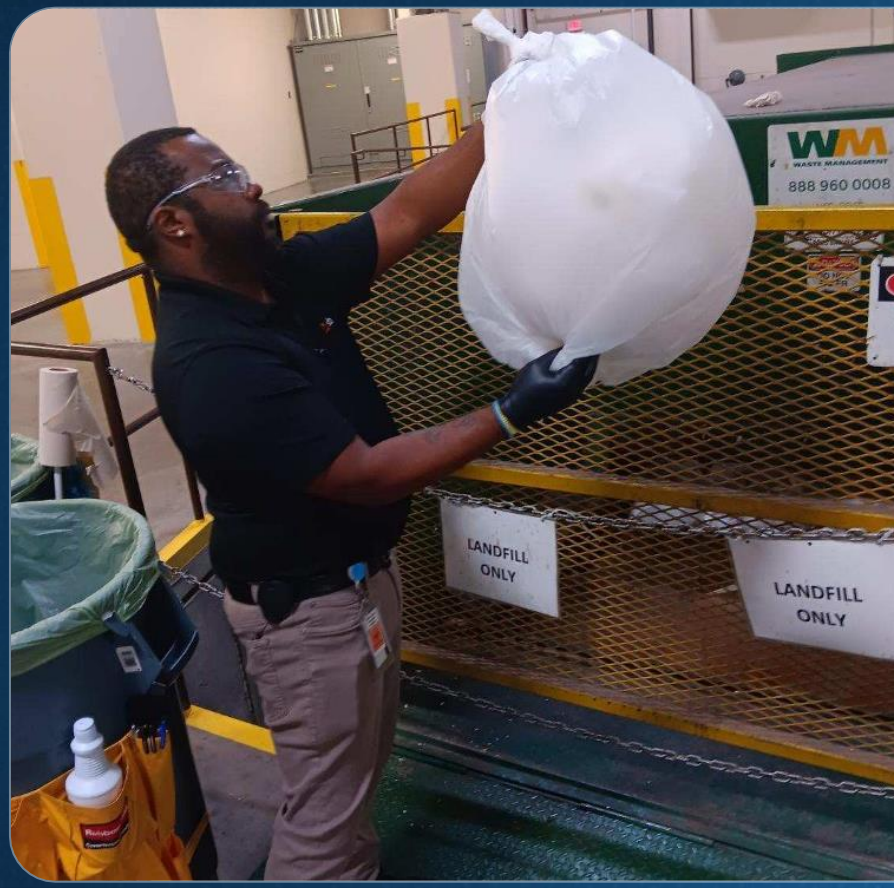
The SBM Team Considers the Following:

Safety Concerns:

- There is a difference between throwing a bag into a container and having to pour the waste into the container.
- Touching the bottom of the bag is unsafe; proper PPE is required.

Time/Labor Concerns:

- Through time studies, we have established it takes an additional one to two minutes of labor per bag. This accumulates over time and could mean pulling janitorial team members from other tasks.
- The janitorial company may need to create a proposal for additional time or needs to reallocate resources that will impact the current work at the site.



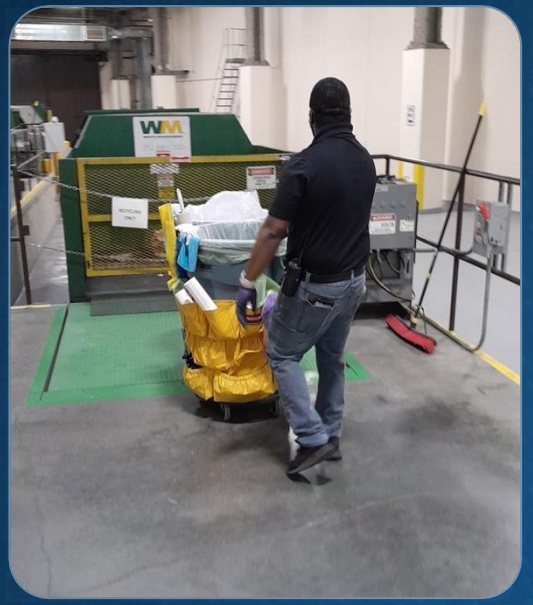
Case Study: Site 1

Process:

- Conducted a time study on current collection process and new collection process.
- Evaluated safety for current equipment set-up.
  I. Compactor on loading dock
  II. Concerns with mess and potential smell/pest discarding loose material (rather than bagged) into compactor

Outcome:

- Continue using liners in the recycle bins throughout floors and collect as normal.
- When transporting internally to loading dock, open paper bag and use safety tool to tear bag open and empty into paper bag.
- Staple paper bag shut and place into compactor.
- Collect used liners and discard into trash compactor.



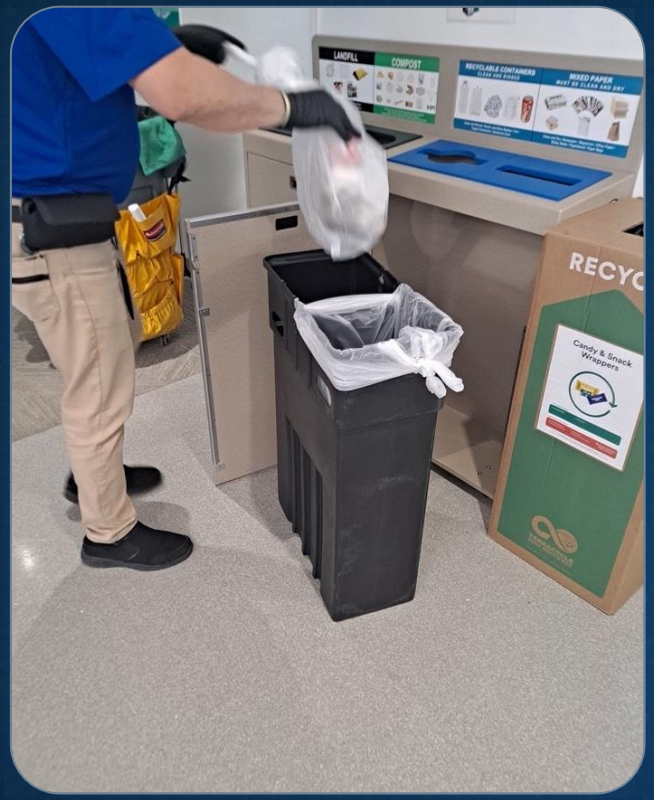
Case Study: Site 2

Process:

- Conducted a time study on current collection process and new collection process.
- Evaluated safety for current equipment set-up.
    I. Front end load container within loading dock, safe height to pour bagged contents into
    II. Existing liner colors allow for ease of knowing which bags are intended for recycle FEL

Outcome:

- Continue using liners in the recycle bins throughout floors and collect as normal, except for NON tied bags.
- After transporting internally to loading dock, safely pick-up bag and empty contents loose into FEL.
- Collect used liners, and if clean, place in plastic film collection container. If dirty, place into landfill FEL.



Thank you for your time!

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Liquid Disposal

October 2, 2024

Liquid Waste at Microsoft

Current State

- TRUE Zero Waste Certified since 2016
- Working towards 2030 sustainability goals
- Free beverages offered to all employees
- Each bag of recycling contains 13% liquid on average
- 700,000 lbs. of liquids sent to recycling centers annually from all of Puget Sound Campus (estimate)

Microsoft employees have access to free soda, seltzers, milks, and juices in containers. Flavored water or soda dispensers are also available in select locations.

Why remove liquids from the waste stream?

The Problem with liquids:

- Liquids contaminate recycling which can cause them to be diverted to the landfill.
- Liquids from the waste stream combine in the landfill which creates methane.
- Methane is 20X more impactful to the climate than CO2 over the first 20 years.
- Liquids increase the weight of waste bags which can cause lifting injuries to janitors.

Designing a Liquid Capture Program

Engage your stakeholders

- What is the goal of your liquid capture project?
- Will you start with a pilot or a full-fledged program?
- Who will be cleaning and servicing the bins?
- How will you educate users?
- Will the bins be used during events?

Find the right product to meet your needs

- Do the bins need to be mobile?
- Does the product need to be made of recyclable materials?
- Do they need signage?

Determine service levels

- How often will these need to be emptied?

Where will the bins be located?

- Will these be installed in a cafés, kitchenettes, or conference rooms?
- Are free beverages available? If yes, where?
- Can sinks be used to capture some of the liquid?
- Do you have janitor sinks near by to empty the bins into?
- Should the bins be installed in a cabinet?
- Are pests a concern?

Choosing the correct product for Microsoft

Site requirements

- Must be easily movable and empty quickly to limit impact to Janitorial scope of work.
- Bins need to look clean and not detract from the aesthetic of the campus.
- Bins need to be reasonably priced.

What options did we explore?

- We looked at several options including; Clean River, PourAway USA, Max-R, and others.

What option did we choose?

- PourAway USA Cadet 30-gallon.

Developing the Pilot – Steps to Success

Step 1

Determine a location:

- Working with our Food Service vendor, we identified a location
- Bins were placed next to Compost, Recycle, and Landfill bins for ease of use. 5 in the café areas and 4 in event spaces.

Step 2

Tracking Data:

- QR Codes were created to make tracking data from the pilot easy including weights of the containers and feedback from users.
- Waste from pilot area was segregated and sorted so we could test liquid levels in the waste stream prior to the pilot to establish a baseline.
- Once pilot started, we analyzed the waste daily to see how much liquid was still reaching the Recycle or Landfill bins.
- Weights from the liquid capture bins were noted using a custom gauge that helped janitors determine the weight of the liquid without using a scale.

Step 3

Operations:

- Trained the janitors to use the gauge and check and clean the unit daily.
- Instructed them to share photos of the bins so we could see what state they were in prior to being emptied.

Pilot Results

Results

1. Pilot was a success; nearly half of all liquids were captured, and concept was proven.
2. Overall percentage of liquid in each waste stream remained flat during the pilot.
3. PourAway containers performed as expected, were simple to use, and easier for associates to empty consistently.
4. Pests were a challenge early in the pilot but were managed via cleaning and consistent dumping of contents when the units became full.
5. PourAway usage declined when the weather improved.
6. Received 15 responses and nothing but positive comments.

3572 lbs.
Liquid Contamination in Waste Stream

1750 lbs.
Liquid Captured in PourAway Containers

49%
Liquid Captured in PourAway Containers Overall

Program Expansion

Moving from pilot to a program

- Place 80 PourAway bins during events and at 21 cafes on main Puget Sound campus.
- Bins will be serviced 3 times per week and checked daily to ensure cleanliness and fullness.
- Partner with café janitorial team to train employees on new process.
- Expanded program will remove 120,000 lbs. of liquid waste from the cafe waste stream annually.

Thank you for your time!

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Lab Plastic Recycling

October 2, 2024

Opportunity

Plastics are a ubiquitous waste stream in a laboratory environment

- Scientists rely on plastic as an integral part of most processes, but plastic waste from the lab is rarely recycled.
- Pipette tip boxes alone account for approximately 75% of all lab-generated plastic waste items.
- 40% of the total carbon emissions attributable to the BioPharma industry are embodied in the ‘procured goods’ and services.
- Virtually every ‘procured good’ in a laboratory is plastic.
- Plastics from a laboratory are intelligible for single stream recycling through traditional waste haulers due to the nature of the materials.

Solution

Launch a lab plastic specific recycling program

- Identified a local, closed loop solution for non-contaminated rigid lab plastic waste
  - Regionally processed in Massachusetts
- Start with one easy to identify item – pipette tip boxes
  - Limited risk of contamination
  - Potential to grow program based on pilot's success
- Other rigid lab plastics / other areas
- Collected pipette tip boxes to be "upcycled"
  - Material processed and made into new lab consumables
  - Pipette tips, conical tubes, microcentrifuge tubes

Phase 1

- Begin with 30 mail back recycling boxes
  - Split between 2 sites
- Identified 1 floor per site to pilot
  - Labs that generate significant amount of pipette tip boxes
  - Areas with strong support from lab champions
- Placed bins in high traffic / high visibility areas near existing centralized trash collection (CTC) stations
- Communicated out to site via multiple outlets:
  - Email notifications, newsletters, onsite signage, lab and facilities team meetings, in person outreach events

Phase 1-Pilot

Process:

- SBM custodial team to check fullness of boxes during usual rounds
- Boxes brought to SBM shipping / receiving team when full
- Shipped out via prepaid shipping label
- Full boxes replenished with empty boxes
- Metrics tracked via online waste portal

Results:

- 30 boxes / 3 months: 335 pounds of plastic recycled - both sites combined
- Positive feedback from lab users
- Support from site leadership for pilot extension - additional round of 30 boxes ordered to meet demand
- Used metrics to establish baseline for expansion proposal

CTC Station Setup

Lab Plastic aggregation units placed next to existing centralized trash collection (CTC) stations, or where space available depending on laboratory configuration.

Additional signage added to deter users from disposing of any unrecyclable and/or contaminated plastic waste.

Communications/Signage

Introducing:
Pipette Tip Box Recycling

MRL Boston & Cambridge are launching a new recycling initiative for lab plastics! You can now recycle non-contaminated pipette tip boxes in designated bins throughout the labs.

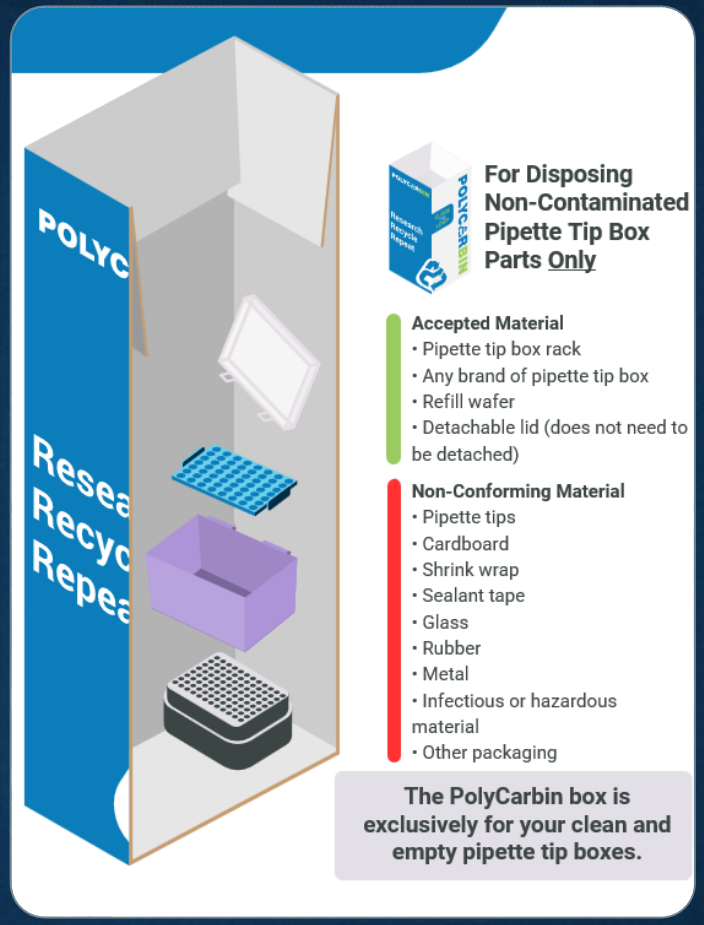
Through the successful pilot on one floor at both sites, in 2024 alone we have already recycled **0.85 tons** of pipette tip boxes, saving the equivalent of nearly **2 million gallons** of water and **11 thousand pounds** of CO_2 emissions!

Accepted materials include:

- **Any brand of pipette tip box**
- **Pipette tip box rack**
- **Refill wafer**
- **Detachable lid (does not need to be detached)**

These items will be recycled through PolyCarbin and used as feedstock for new lab consumables.

Look for our new recycling boxes in a lab near you!



Phase 2

Full Site Expansion

- Interest from users in expanding to additional labs / floors
  - Boston – 7 total floors
  - Cambridge – 3 total floors
- Expand from mail back program to hauler model
  - Monthly bulk pickup
  - Reduced emissions
  - Reduces need for single use cardboard boxes
  - Streamlined approach for operations teams
  - More cost-effective option

Phase 2 - Expansion

Process:

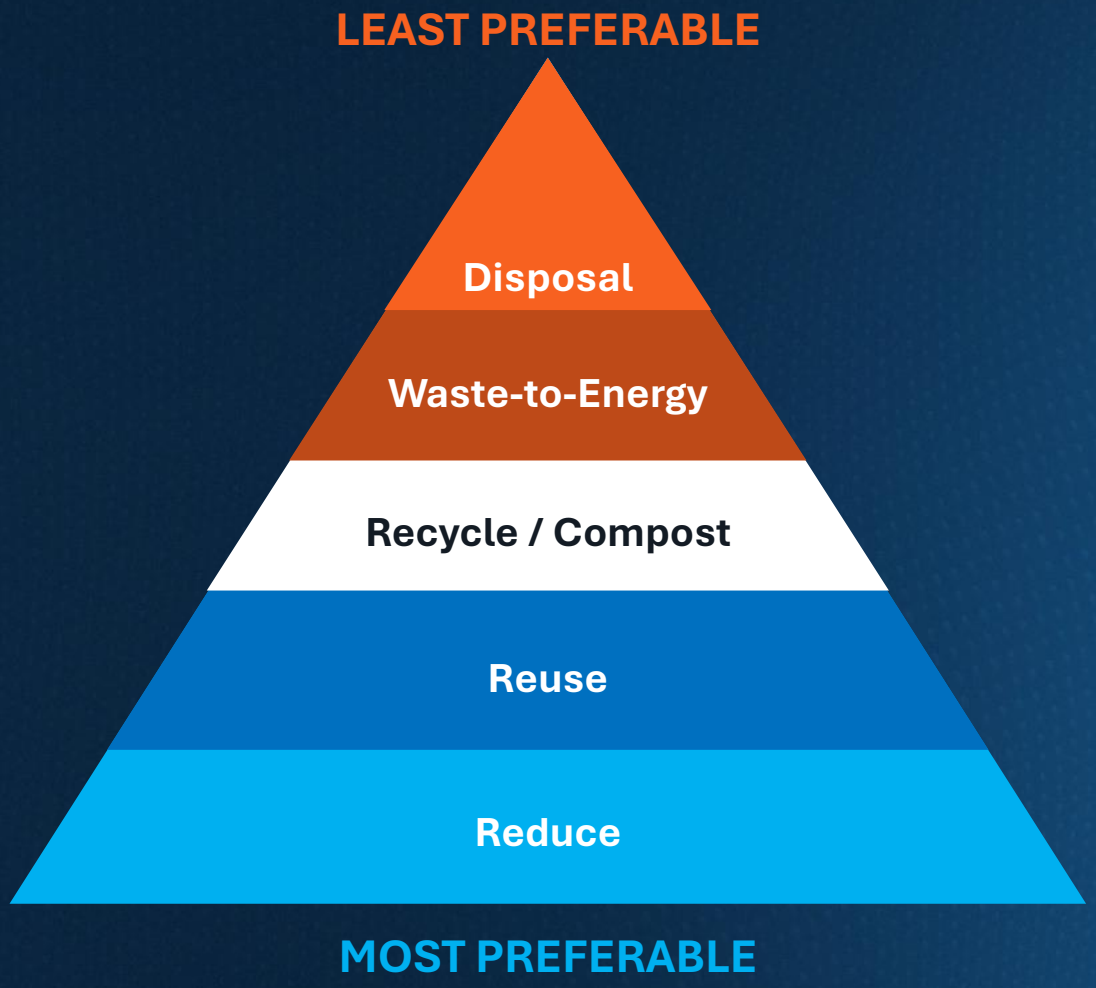
- SBM custodial team to check fullness of boxes during usual rounds
- Boxes emptied (liners removed) and liners replaced
- Plastic waste brought to loading dock and placed in gaylords for hauler pickup
- 1x month pickup – on call as needed
- Metrics tracked via online waste portal
- Currently assessing full site expansion environmental impact

Results:

- Both sites as of August 2024:
  - **2,235** pounds of plastic recycled
  - **13,654** pounds Co2E reduced
  - **2,502,368** gallons water conserved

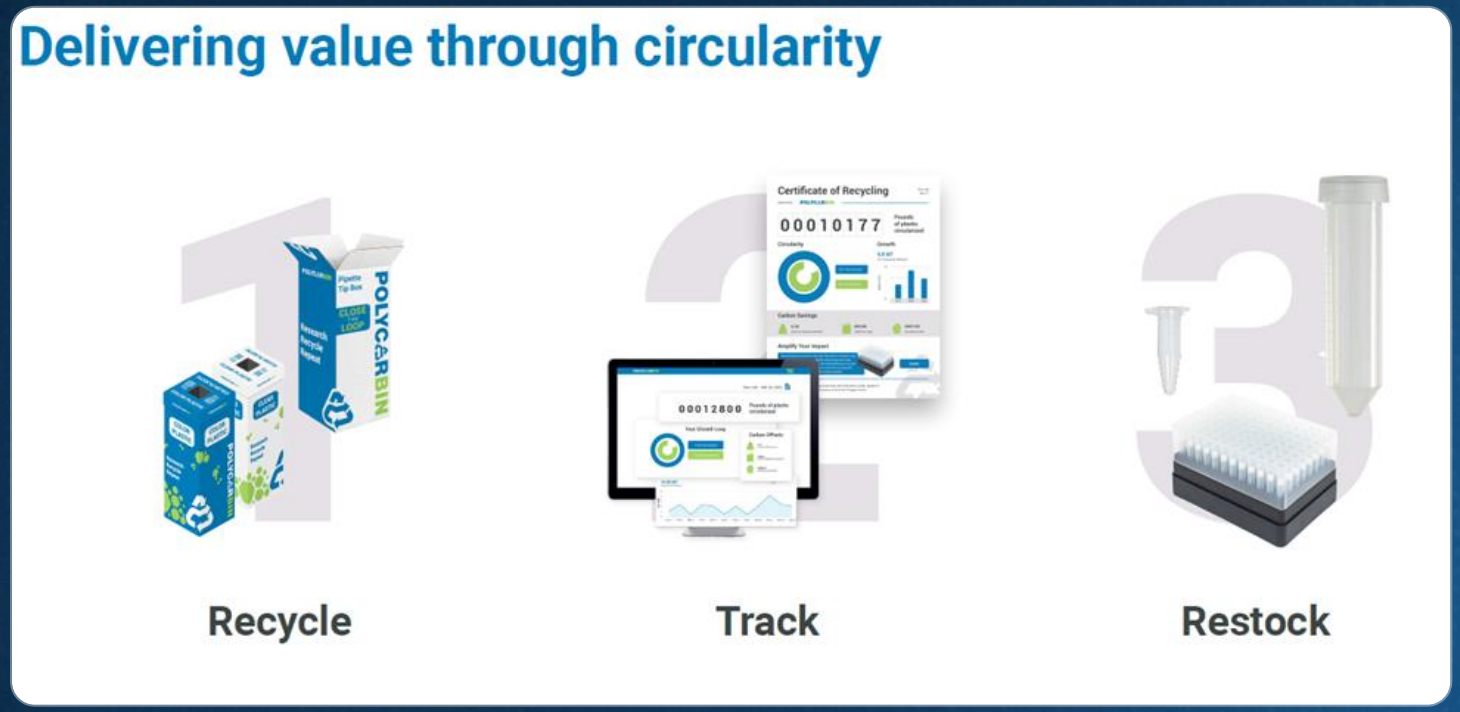
Benefits

- Utilize preferred disposal methods
- Circular waste solution
- GHG emissions reduction
- Align with evolving industry standards & client goals
- Highly visible sustainability initiative
- Encouraging user engagement and impact
- Talent retention & employee satisfaction



Conclusion

By collecting pipette tip boxes to be recycled, this waste stream has been diverted from the trash stream – extending the life of these materials and increasing the sites' recycling rates



Next Steps

Step 1

Expand to additional laboratory plastics

- Working with lab users to identify other common, eligible rigid lab plastics
- Continue to build customized recycling program based on science's consumables

Step 2

Grow program to additional sites

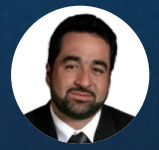
- Recently began pilot at Pennsylvania Research Lab
  - May 2024 – August 2024: 327lbs recycled
- 40 additional boxes purchased in September
- Assessing implementation plan for full site launch / hauler model

Step 3

Explore procurement opportunities

- **In**corporate recycled content products into procurement strategy

Thank you for your time!



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