

# Waste Management at University of Illinois Urbana-Champaign

Thursday, April 28, 2022



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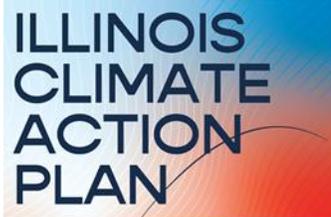
# Nice to meet you!



Meredith Moore  
Sustainability Programs Manager  
[Mkm0078@illinois.edu](mailto:Mkm0078@illinois.edu)



Sydney Trimble  
Interim Zero Waste Coordinator  
[fandssydneyt2@mx.illinois.edu](mailto:fandssydneyt2@mx.illinois.edu)  
[Recycling@illinois.edu](mailto:Recycling@illinois.edu)



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# Agenda:

## Introduction

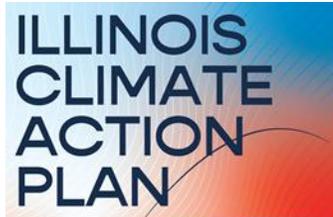
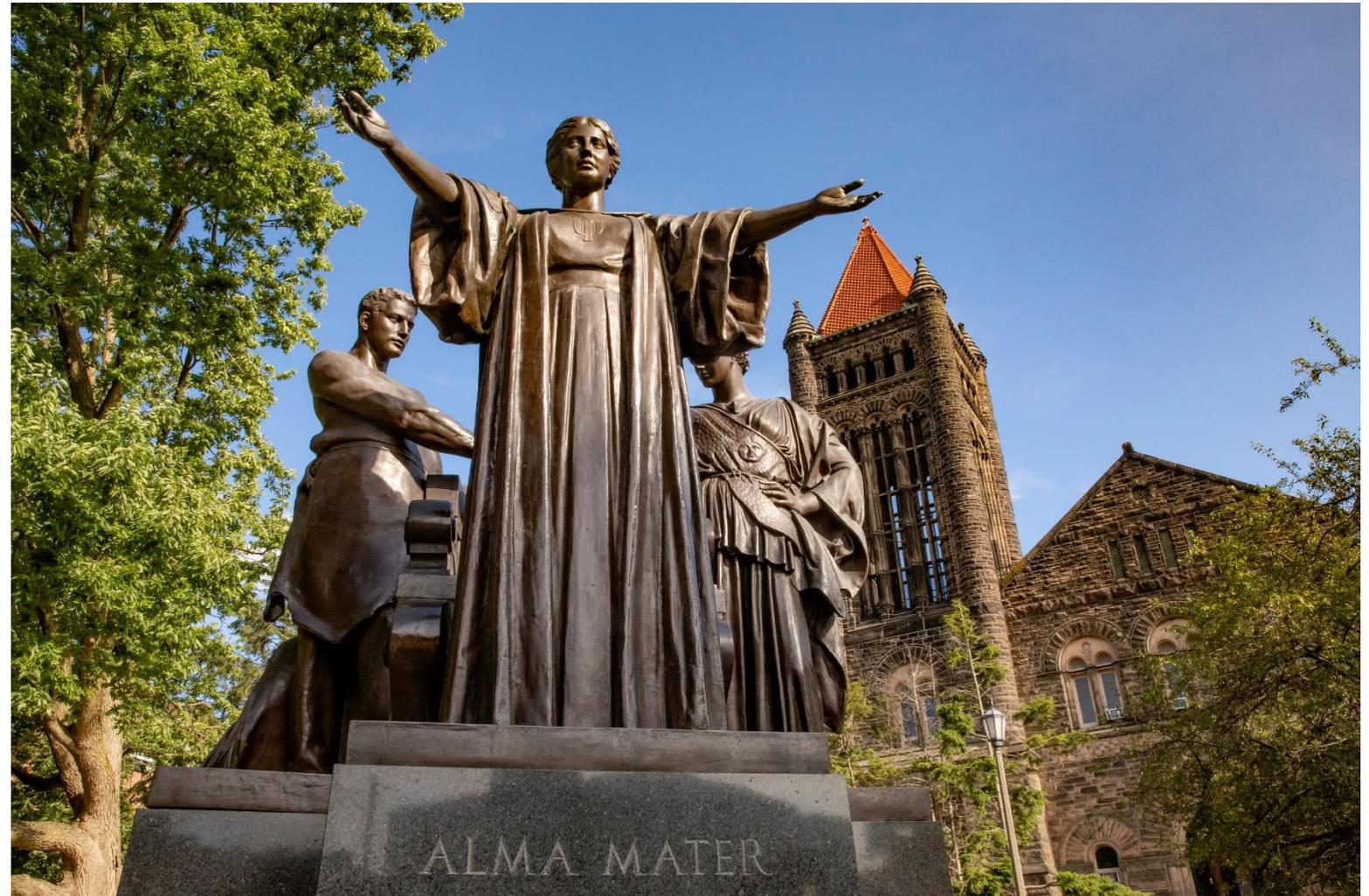
- UIUC Profile
- Waste Transfer Station

## iCAP Waste Reduction Goals

- Waste Reduction Goals
- Challenges

## Best Practices and Strategies

- On-campus recycling
- Indoor/outdoor bin replacement
- Public engagement



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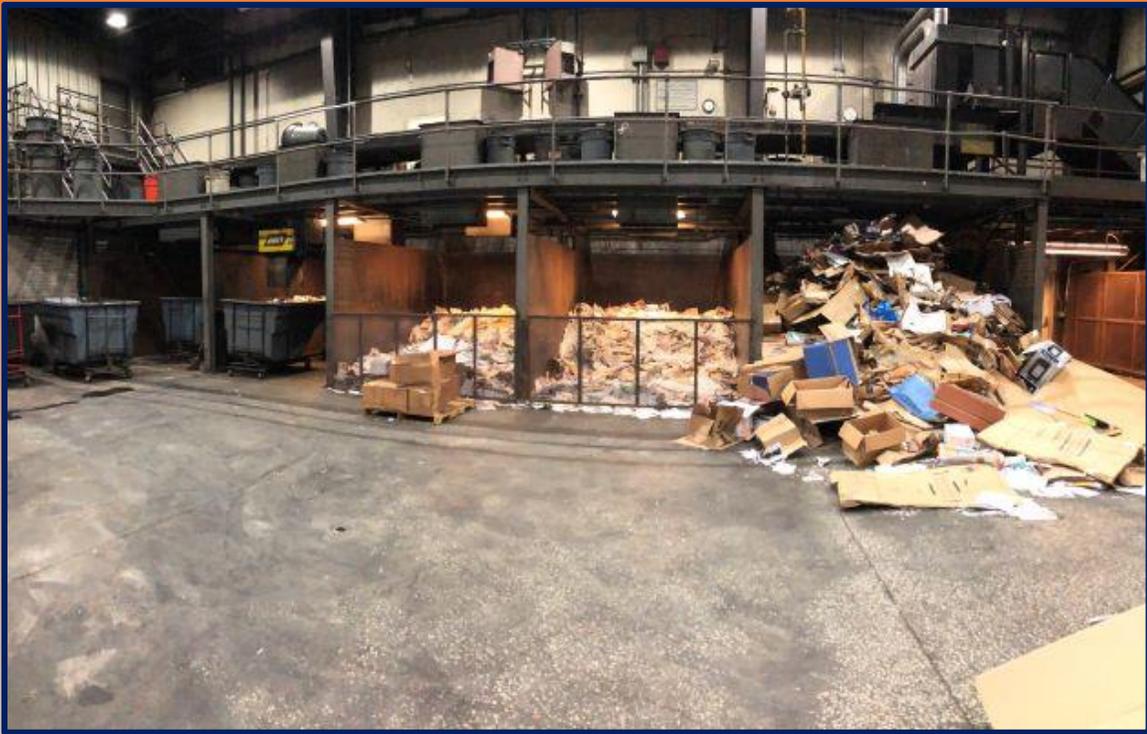
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**Location:** The twin cities, Champaign and Urbana (population of 207,000), are about 140 miles south of Chicago

**Population:** 15.6k grad students, 39k undergrad students, 10k faculty & staff

**Size:** 651 University Owned Buildings  
6,370 acres (9.9 square miles)





Dump floor with commodities



Overhead view including sort conveyor



Outdoor view

# Waste Transfer Station

# Recyclable Commodities Collected

## 1. Plastic Bottles #1 and #2

More than just soda bottles, check the bottom of containers to find the plastic type number

## 2. Aluminum Cans

Also known as Used Beverage Containers (UBC)

## 3. Paper

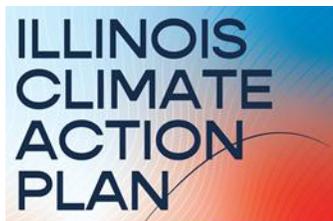
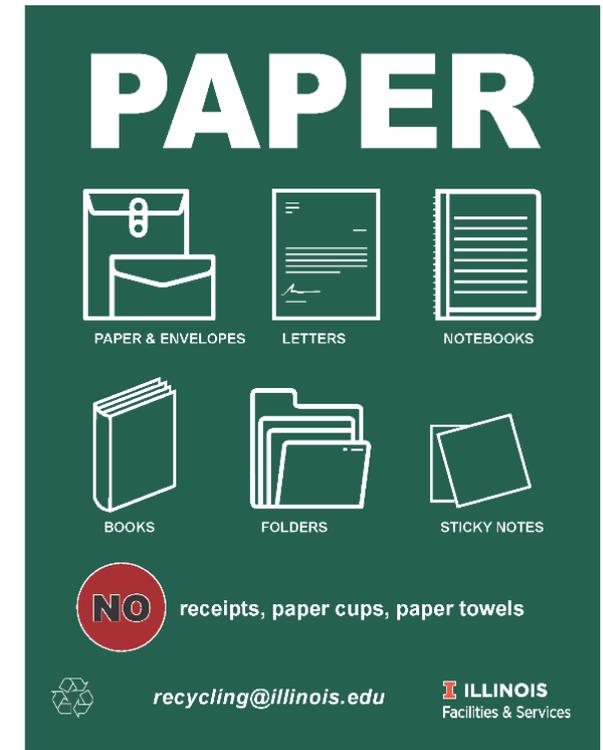
Office paper, newspaper, paper folders, envelopes, magazines, etc.

## 4. Cardboard

Ask BSWs where to put your cardboard

## 5. Scrap Metals

Copper, conduit, metal shelving, etc.



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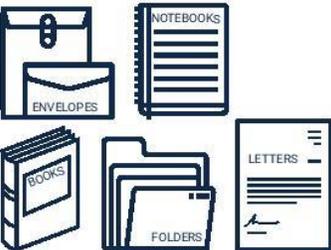


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# RECYCLING AT UNIVERSITY OF ILLINOIS

## WHAT DOES ILLINOIS RECYCLE?

### Paper



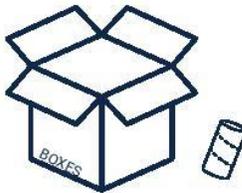
All types of office paper, Newspaper, magazines, journals, all types of envelopes, junk mail, ream wrappers, books, manila and file folders.

### Bottles and can



Plastic bottles #1 and #2 and aluminum cans.

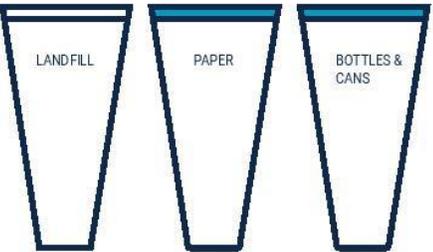
### Cardboard



All types of corrugated cardboard boxes, sheets, and rolls.  
Place flattened cardboard near the paper bin or directly in the cardboard dumpster.

## RECYCLING STANDARDIZATION

### Bin placement



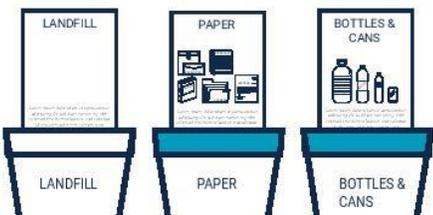
In all hallways, common areas and lobbies always co-locate bins. Avoid having recycling bins placed by itself. This helps reduce contamination.

### Liner colors



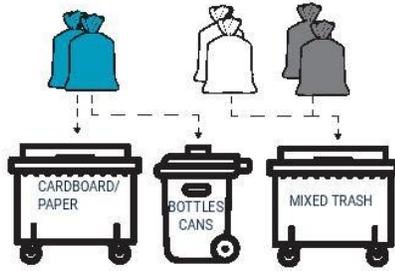
Use clear liners for common area and office landfill bins, and blue liners for all recycling bins. Note: use black liners for bathrooms, labs, and dining areas. This will help the transfer station quickly identify the recycling bags for processing.

### Signage



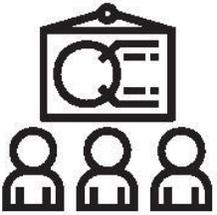
Ensure that clear signage accompanies all bins. F&S is updating its signage. Current bin signage can be found at [tinyurl.com/binsigns](http://tinyurl.com/binsigns)

### Dumpster usage



Place tied blue bags in either paper/cardboard dumpster or the blue two-wheel carts. Place clear and black bags in the mixed trash dumpster. If you need additional blue two-wheel carts or a larger recycling dumpster please email [recycling@illinois.edu](mailto:recycling@illinois.edu). If your building has a compactor, please do not place any blue bags in it.

### Host a training



Help us spread the word! The recycling team would be happy to lead a 20 min discussion at your department, residential floor, or student organization on waste minimization and recycling.

### Schedule a tour



Join us as for a tour of the Waste Transfer Station to observe the recycling process in action. See first hand how we recover the recyclables and the vast difference this standardization is making!  
To schedule a tour visit

# WTS Tours

Average 8-10 tours per semester

- Pre-Covid was closer to 10

Demographic is mostly college age patrons

- Various Departments - Housing
- Sustainability related classes
- Individuals in research

Common Questions:

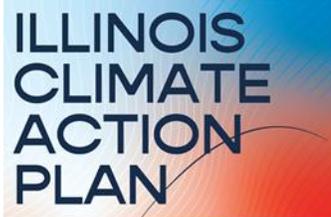
What are the possibilities to expand?

How can a student help reduce waste?

- *Join environmental groups, speak out, and lead by example*

What is 1 piece of equipment you could replace today?

- *The baler*



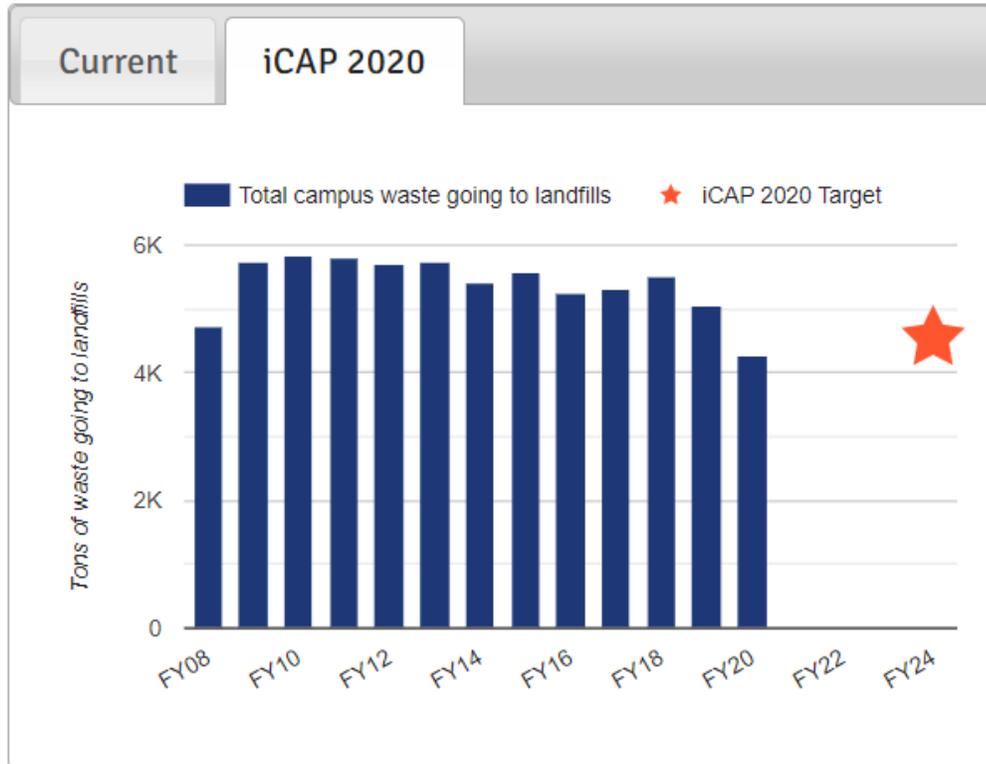
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# Illinois Waste Reduction Goals

## Total campus waste going to landfills (Tracked by Fiscal Year)

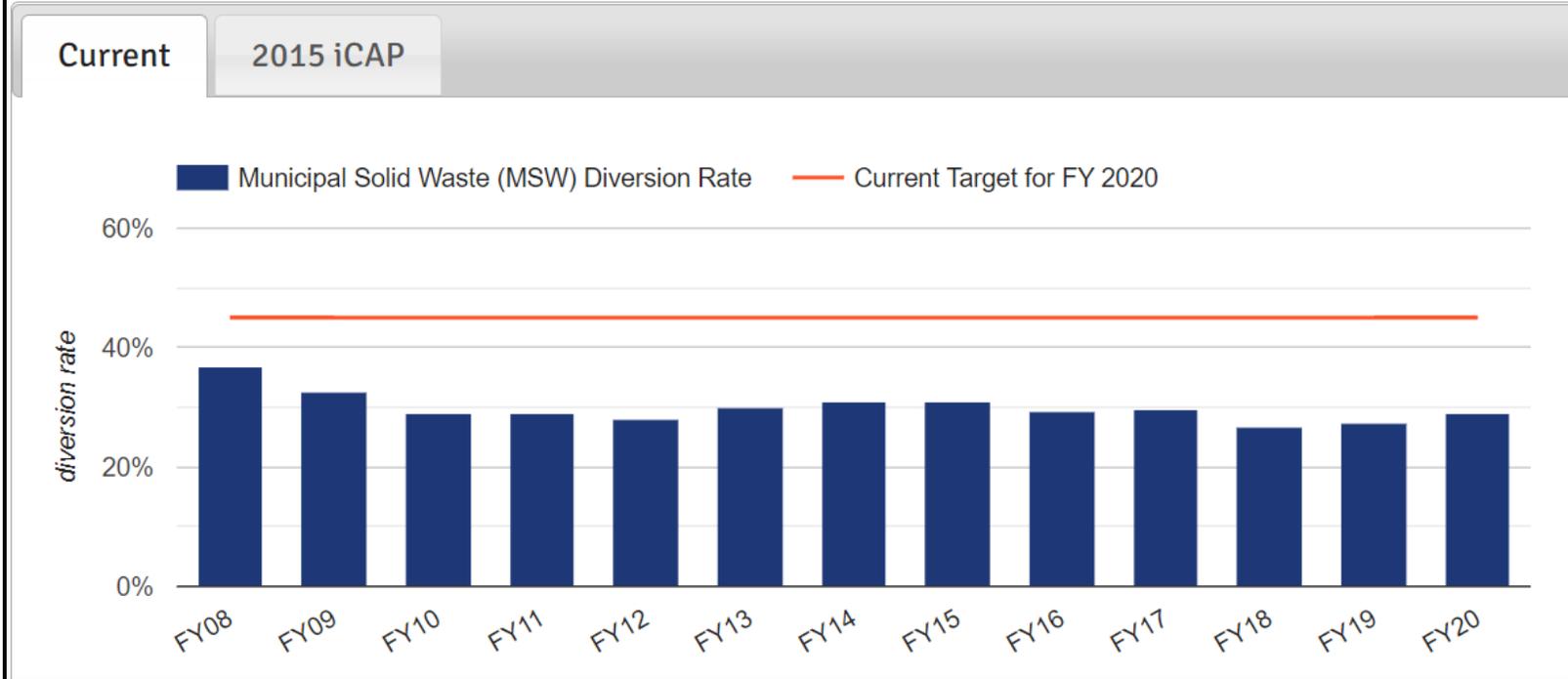


Total waste going to landfill seems to follow downward trend;  
*Goal: 4,544 tons or less by FY24*

Keep in mind:

- Data collecting refinement
- Pandemic effects

## Municipal Solid Waste (MSW) Diversion Rate (Tracked by Fiscal Year)



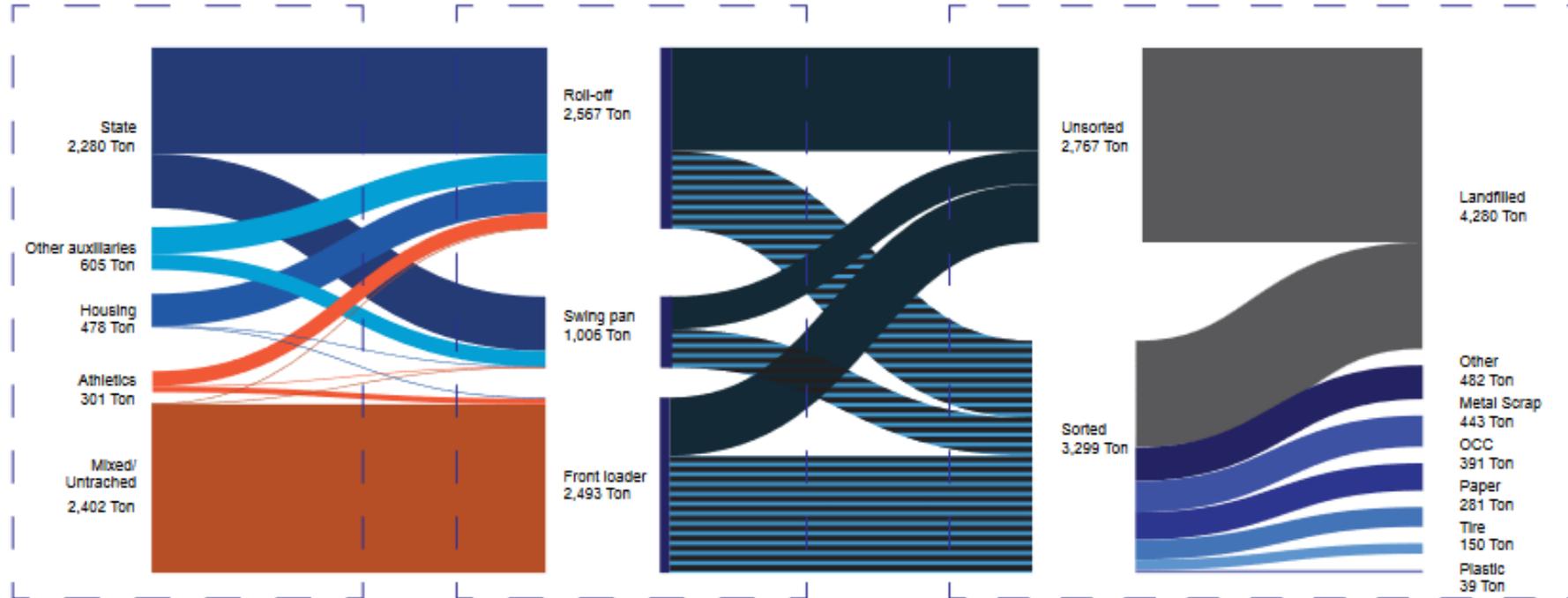
Diversion rate average: 30%  
*Goal: 45% by FY24*

Keep in mind:

- Data gaps
- Max capacity of WTS
- Contamination issues
- Recycling market fluxes

# Waste Tonnage Metrics

## Material recovery data in FY20



### Building level data

In FY 20 a total of 6,066 tons of material was generated across campus. Data is recored for individual buildings for roll-off and swing pan and summarized here at the functional group.  
By FY 21 all data will be associated by building.

### Truck level data

In FY 20 a total of 5,867 trips were made to collect refuse material. Data has been recored for each trip, including location, data, time, and work order and summarized here by truck type.  
By FY 21 all data will be recorded and reported through a portal compatible with AiM.

### Waste Transfer data

In FY 20 a total of 4,280 tons of waste was sent to the landfill a decrease of 12% from FY 20. Most of this decrease could be attributed due to the changes during the COVID-19 response. Through various streams, 1,786 tons were diverted from landfill. Data here is summarized by commodity type. Making the effective diversion rate for FY 20 at 29%. The "other" category includes diversion of materials not currently consistently tracked such as C&D, landscape waste, wood pallets.  
By FY 21 diversion data will include metrics carried out by other departments as well to better reflect the true diversion on campus.

# Challenges

- Gaps in data collection
- Recycling contamination (food & liquids) & revenue loss
- WTS designed for 1980s waste metrics; at max capacity in 2022
- Limited funding for more labor & upgrading equipment
- Have to balance between efficiency & functionality

**I FACILITIES & SERVICES  
WASTE TRANSFER STATION  
WEIGHT TICKET** 120

DATE: 3/15/21 TIME: 11:05 AM/PM

EMPLOYEE ID: 655143266 VEH. ID: 9635689

ROUTE/LOCATION: DIA

MATERIAL:  CARDBOARD  MSW  
 COMPACTED  PAPER  
 C&D  SOIL MIX  
 METAL  TOTES

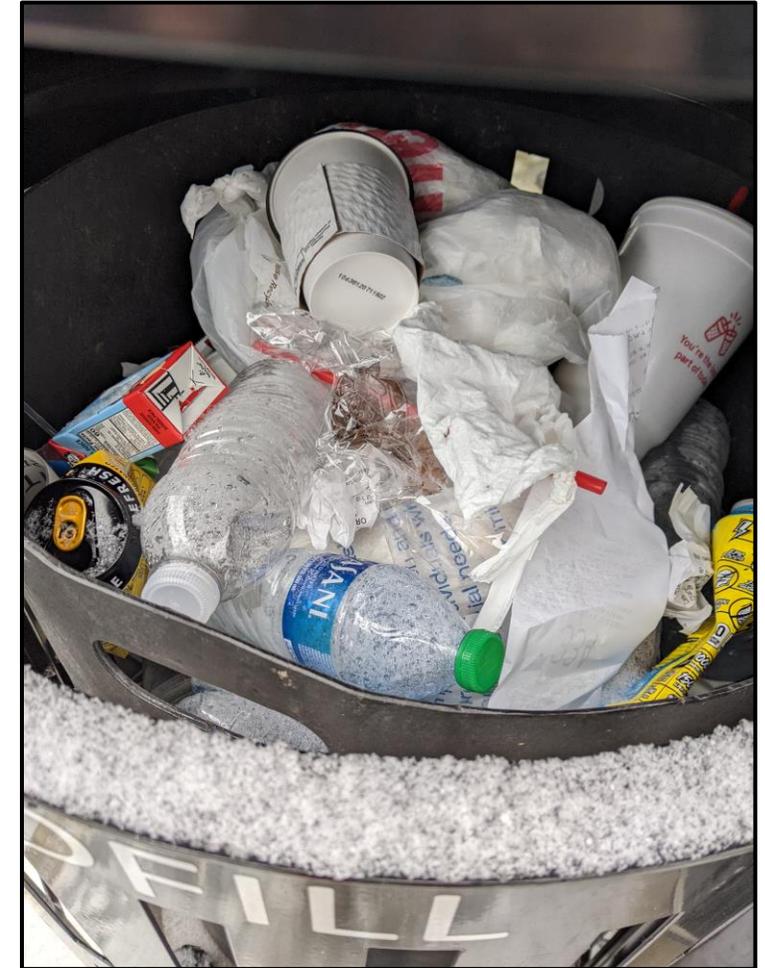
SCHEDULED/ON-CALL (CIRCLE ONE) 323

WORKORDER: \_\_\_\_\_

TIP LOCATION:  FLOOR  SOUTH BAY  
 NORTH LINCOLN  NORTH BAY  
 WALL

WEIGHT IN: 11920 lb. OUT: 11900 lb.

Please complete a separate ticket for each tip. Submit complete forms w/ dispatcher daily.



Recycling going to landfill

# Successful initiatives

- Route optimization
  - Reduces costs
- Scale system to track truck loads; piloting sensors
  - Can compare FY data metrics
- Bought more pans
  - Increases separation
- Multi stream deployment to decrease contamination
  - Blue liners for recycling = visual indicator
- Transportation & Waste Depts are in the same place
  - Able to respond more quickly & effectively



LoadMan system



Open pan for temp. separation

# Indoor and Outdoor Bin Replacement



Old  
containers  
separated



New  
infrastructure  
Coupling reduces  
contamination



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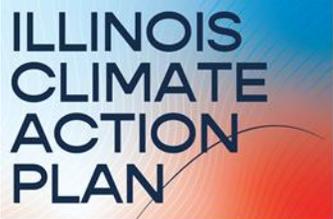
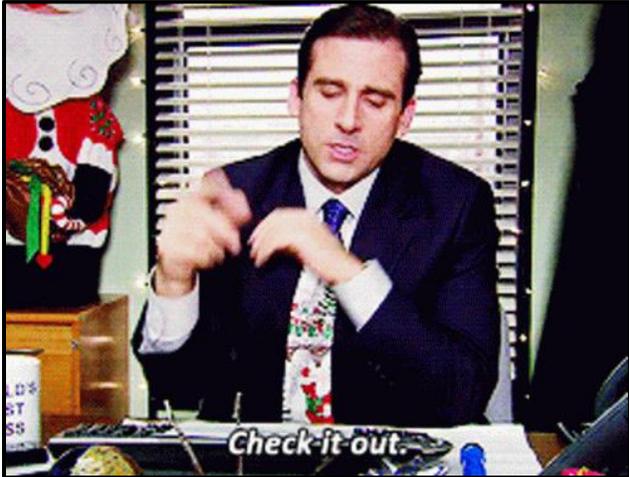
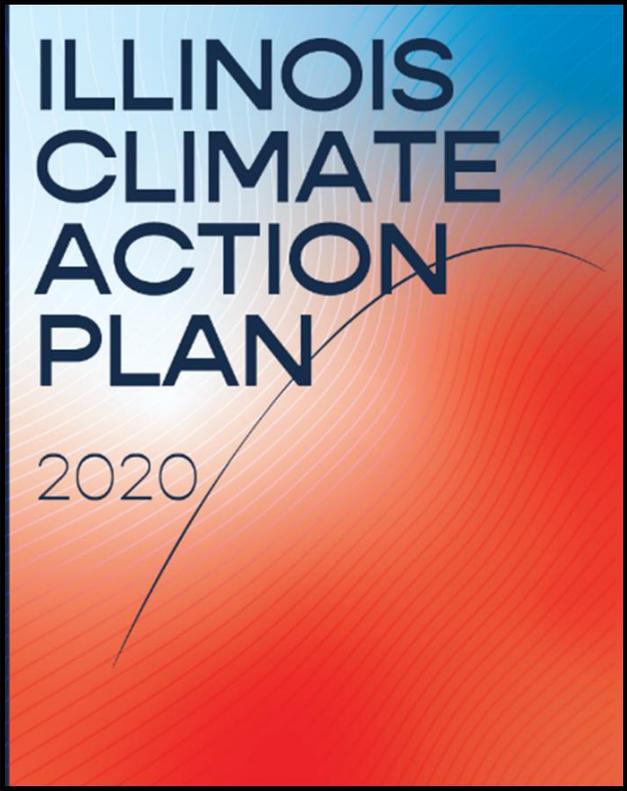
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# Indoor and Outdoor Bin Replacement

iCAP objective 5.2.1 is to "Install appropriate waste collection infrastructure through-out the University District..."  
*Increases recycling rate & lowers contamination*



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# Engagement - Best Practices and Strategies

- Consistent, clear messaging & behavior change campaigns
  - Refuse → tell sales clerks you do not want a bag
  - Reduce → buy less stuff, minimize packaging, design out the waste
  - Reuse → choose durable items, donate to surplus and charity
  - Recycle → commodity recyclables, costly recycling, waste to energy conversion, composting



# Waste Reduction Challenge

**iSEE**

## My Weekly Waste

Name: \_\_\_\_\_ Week: 10/4- 10/10

WASTE TYPE (ESTIMATE POINTS)	M	T	W	TH	F	S	S
FOOD							
PAPER							
PLASTIC							
"NEGATIVE" WASTE							
TOTAL							

WEEKLY POINT TOTAL: \_\_\_\_\_

- Participants received a guide and weekly grid to fill out with the items that you throw in the garbage each day
- A pre-determined point system allows participants to keep track waste
- The goal is to earn as few points as possible

## WASTE POINTS

Use the point system below to track your waste for the month of October. The goal is to earn as **few** points as possible. If you throw something away that is not on our list, use the 'other' point value for that category. You also have the opportunity to earn back points ("negative" points) based on doing positive things for the environment. Subtract them from your weekly total.

### FOOD: (4 points for other)

- Food Scraps (apple core, banana peel): **1 point**
- Wasted Food (nonorganic peels): **5 points**
- Individual Wrapper (gum, candy) : **3 points**
- Bulk Packaging: **3 points**
- Keurig Coffee Cup: **5 points**
- Coffee Grounds and Filter: **2 points**
- Sweetener Packet, Creamer Cup: **3 points**

### PAPER: (2 points for other)

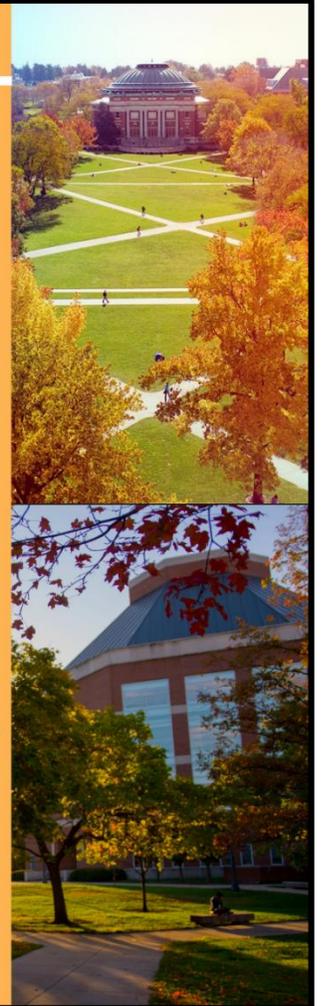
- Napkins, Paper Towels: **1 point**
- Sheet of Paper: **1 point**
- Disinfectant Wipes/ Makeup Wipes: **2 points**
- Dryer Sheets: **2 points**

### PLASTIC: (10 points for other)

- Beverage Container, Food Container: **5 points**
- Single-use plastic (cutlery, straw, cup): **4 points**
- Plastic Bag, Water Bottle: **10 points**
- **Other:** Purchased Fast-Fashion, Wasteful Clothing: **10 points**

### "NEGATIVE" POINTS: (5 points for other)

- Conversation about Waste: **-10 points**
- Watch an Environmentally Themed Documentary/Read a Book: **-20 points**
- Read about a Current Climate Issue: **-10 points**
- Pick Up Trash: **-5 points**
- Purchased in Bulk: **-10 points**
- Other actions? Share it with us!



# Plastic Free Challenge

## PLASTIC POINTS

March 2021 Plastic Free Challenge

Use the point system below to track your waste for the month of March. The goal is to earn as few points as possible. If you throw something away that is not on our list, use the point value for 'other' or your best judgment. You have the opportunity to earn back points when you complete environmentally-friendly actions. Subtract these "negative" points from your weekly total. Underlined categories contain a link for recycling information.

**Common Plastics**

- Plastic grocery bags: **15 pts**
- Ziplocs, plastic baggies, shipping envelopes, produce bags: **5 pts**
- Plastic water bottles, beverages, cups: **10 pts**
- Plastic containers, cutlery, straws: **5 pts**
- Food packaging, snack wrappers: **3 pts**
- Plastic wrap (Saran wrap, plastic wrap around the containers): **3 pts**
- Trash bags, dry cleaning bags: **5 pts**
- Plastic cleaning wipes, face or makeup wipes: **2 pts**
- Laundry sheets: **2 pts**
- Toothbrush, toothpaste tube: **2 pts**
- Razors, razor heads, deodorant container: **2 pts**
- Contact lenses, cases, packaging: **2 pts**
- Haircare products, shampoo, conditioner: **5 pts**
- Clothing: **10 pts**
- Electronics: **20 pts**
- Decorations, balloons, table coverings, etc.: **3 pts**
- Giftbags, tissue paper: **2 pts**
- Other: **1 pt** (or use your best discretion based on what your item is most similar to on this list)





iSEE

### How to Earn Negative Points

- Purchase used products instead of new: **-10 pts**
- Keep a reusable container, bottle, cutlery, or straw on hand: **-10 pts**
- Recycle: **-10 pts**
- Refuse "to-go" plastics: **-10 pts**
- Skip the straw: **-5 pts**
- Pick up litter: **-5 pts**
- Shop in bulk (spices, tea, baking ingredients): **-6 pts**
- Swap to an alternative (bamboo toothbrush, plastic-free haircare, glass containers, reusable bags, avoid dryer sheets, etc.): **-10 pts**
- Make your own cleaning product or self-care product (lotion, soap, cosmetics, etc): **-8 pts**
- Watch a documentary: **-5 pts**
- Plan/construct a garden: **-8 pts**
- Estimate your plastic footprint: **-10 pts**
- Give an 'experience' as a gift instead of a tangible item: **-5 pts**
- Have a conversation about plastic: **-5 pts**
- Make a sustainable New Year's Resolution (it's never too late!): **-10 pts**
- Share your actions to inspire others on the Waste Reduction @ Illinois Facebook Page: **-8 pts**

Other ideas or actions? Share it with us at [iseesustainabilitychallenge@gmail.com](mailto:iseesustainabilitychallenge@gmail.com)





iSEE

## Plastic Free Challenge Grid

NAME: \_\_\_\_\_

WEEK	MON	TUES	WED	THURS	FRI	SAT	SUN	TOTAL
Mar 1-7								
Mar 8-14								
Mar 15-21								
Mar 22-28								

iSEE **TOTAL POINTS:** \_\_\_\_\_

# Use the Bin Pledge



*“Do you promise to always use a Recycling Bin? If you don't see a Bin, do you agree to hold your recyclable until you find one?”*

Pledges as of FY22:  
394

Goal by FY24:  
10,000

# Thank you!



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