



Recycling and Waste Reduction Opportunity Assessment

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

November 2015



A report by the Illinois Sustainable Technology Center

istc.illinois.edu/zerowaste

Table of Contents

Introduction.....	4
Waste Characterization Study	5
Recycling survey	7
Campuswide waste and recycling generation.....	9
Current Solid Waste Generation	9
Current Recycling Generation	9
Effective Diversion Rate	9
Opportunity Assessment.....	9
Collection Improvement.....	10
Current Practices	10
Issues & Concerns Identified	10
Collection Improvement Recommendations	10
Engagement Improvement.....	11
Current Practices	11
Issues & Concerns Identified	11
Engagement Improvement Recommendations	12
Estimated Benefits of Implementation	12
Current Cost Estimates	12
Cost Savings through Implementation	13
Greenhouse Gas Reduction through Implementation.....	13
Appendix A. Waste Characterization Data for Individual Buildings	14
Business Instructional Facility	14
Building Summary.....	14
Trash and recycling bin placement.....	15
User Survey Response	16
Rodger Adams Laboratory.....	23
Building Summary.....	23
Trash and recycling bin placement.....	24
User Survey Response	29
Illini Union.....	34

Building Summary.....	34
Trash and recycling bin placement.....	35
User Survey Response	41
Lincoln Avenue and Allen Residence Halls	45
Building Summary.....	45
Trash and recycling bin placement.....	46
Appendix B: Material definitions used for Waste Characterization sorting.....	51

INTRODUCTION

Since 2010, the University of Illinois at Urbana-Champaign (Campus) has taken several major steps toward achieving zero waste. The Illinois Climate Action Plan (iCAP) has outlined a plan for Campus to reduce its landfill dependence drastically in the coming decade. The Illinois Sustainable Technology Center (ISTC), a unit of the Prairie Research Institute at the University of Illinois, created a methodology for waste stream characterization and evaluation that provides building-level performance measures and achievable recommendations for improvement. This report is the second round of Campus Waste Characterizations involving facility-level waste characterizations for four buildings throughout the University of Illinois at Urbana-Champaign.

Funding for this project was made available by Student Sustainability Committee and Facilities and Services.

The Student Sustainability Committee and Facilities and Services contracted with ISTC to implement a project to:

- Examine the composition and quantity of recyclable materials discarded.
- Evaluate the effectiveness of existing waste reduction and recycling programs.
- Provide baseline metrics for measuring progress toward zero waste.
- Identify opportunities for increased materials recovery.

This report presents findings from project tasks conducted from September to November of 2015.

- ➔ **Baseline waste characterization** of four different buildings at University of Illinois at Urbana-Champaign
- ➔ **Research on:**
 - Current participation of staff with regards to recycling and waste reduction
 - Current waste reduction practices on Campus
- ➔ **Recommended steps for improvement:**
 - Refine recycling program
 - Active outreach and education campaign
 - Enhance and expand the compost program
- ➔ **Estimated benefits of implementation:**
 - Cost savings
 - Mt_eCO₂ reduced

Questions about this report and project may be directed to:

ISTC Zero Waste Program | 1 Hazelwood Dr. Champaign, IL 61820 | istc-zerowaste@illinois.edu

Figure 1. University of Illinois Urbana-Champaign iCAP objectives for Solid Waste

- ✓ By FY17, at least 50% of purchases will meet campus environmental standards by FY20, and 75% by FY25.
- ✓ Increase the diversion rate of MSW to 45% by FY20, 60% by FY25, and 80% by FY35, while also increasing the total diversion rate to 90% by FY20 and 95% by FY25. MSW sent to landfills will decline to 2,000 tons annually by 2035.
- ✓ Utilize landfills with methane capture.
- ✓ Appropriately staff Zero Waste efforts through the hiring of a full-time Zero Waste Coordinator.

WASTE CHARACTERIZATION STUDY

In October of 2015, ISTC conducted a characterization of landfill and recycling-bound materials collected from 4 different buildings at University of Illinois at Urbana-Champaign. Waste samples were collected from the following buildings:

- Illini Union
- Business Instructional Facility (BIF)
- Lincoln Avenue Residence Halls (LAR)
- Roger Adams Laboratories (RAL)

Table 1. University of Illinois Sampling schedule and totals

Building	Dates	Number of Sample	Total weight sorted (lb.)
Business Instructional Facility	Oct 5-9	5	1458.2
Lincoln Avenue Residence Hall	Oct 19-23	5	952.4
Illini Union	Oct 12-16	5	2167.9
Roger Adams Laboratory	Oct 19-23	5	829.5
Grand Total			5407.9 lbs.

A total of **5407** pounds of waste was sorted into 23 material categories over a 15 day sampling period.

Sampling Procedure

Facilities and Services (F&S) provided a complete list of all the collection dates and locations of the dumpsters for each building to be sampled. ISTC worked with F&S to catalog the building service workers (BSW) personnel schedule to appropriately time each sort. Each building was sampled daily for five consecutive days. A sample ranged from 150 to 350 lbs. and represented a quarter of the day's generation. The ASTM standard test method for determination of the composition of unprocessed municipal solid waste through manual sorting (ASTM D5231) was used as the guiding document to conduct sampling and sorting.



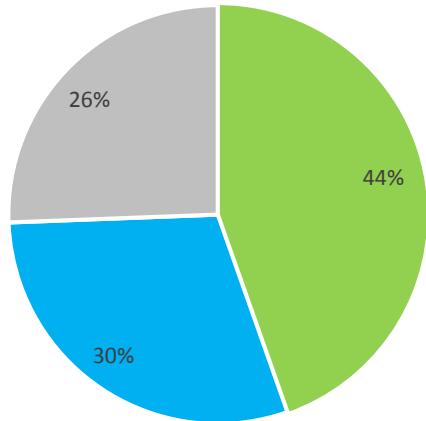
Samples of waste were collected from the dumpsters at each target building. Building service workers of each building were requested to bag all outgoing garbage during the sample period (left). All samples were transported to the rear lot at ISTC to be hand sorted by trained student hourly workers (right).

Waste Characterization

The sorting of the waste was conducted on ISTC's rear parking lot at 1 Hazelwood Drive. All samples were sorted into 23 categories, described in Appendix A, Table A-5. Material was separated into labeled containers with known weights and net material weights were recorded for each sample. All sorted material was collected from selected buildings, meaning that the materials were destined to be recycled or landfilled. Individual building data and diversion rates are detailed in Appendix A.

Figure 3. Sampled Composition Recoverability by Weight of Landfilled Material

■ Compostable ■ Recyclable ■ Non-Recoverable



ISTC's waste team hand sorting sample from the Business Instructional Facility

Table 2. Sampled Composition by weight of landfill material

Material class	Material Composition	Mean
Recyclable	Non food-service paper	9.6%
	Other plastic containers	5.5%
	Plastic beverage containers	2.9%
	Corrugated cardboard	5.1%
	Aluminum and tin	2.8%
	Glass	1.7%
	EPS	0.7%
	Electronic waste	0.0%
	Gloves	1.5%
Compostable	Food scraps	22.0%
	Paper towels	14.1%
	Food-service paper	8.5%
Landfill (Non-Recoverable)	Fines	6.0%
	Trash bags	3.9%
	Composite plastic	6.5%
	Composite organics	2.1%
	Plastic food-service ware	0.6%
	Composite paper	0.8%
	Composite metal	1.2%
	Composite glass	0.6%
	Bulky items	0.3%
	Lab plastic	3.5%
	Regulated waste	0.1%

Key findings and observations about UIUC's landfill-bound waste stream throughout the sample include the following:

- Approximately **74%** (4140 tons/year) of UIUC's waste stream is **recyclable or compostable**.
- Recyclables represent **30%** (1658 tons/year) of the waste stream. "**Recyclables**" includes glass, plastic and aluminum beverage containers, tinned food cans, nonfood-service paper, corrugated cardboard, and other plastic containers.
- **Non Food-Service Paper** represents **10%** (537 tons/year) of the waste stream, followed by **Other Plastic Containers** at **6%** (307 tons/year) and **Corrugated Cardboard** at **4%** (280 tons/year) as the top three recyclables still in the waste stream.
- **Compostables** represent almost **45%** (2484 tons/year) of the waste stream. "**Compostables**" includes food scraps, paper towels, food-soiled paper, other paper foodservice ware, paper cups, and liquids.
- The remaining **26%** (1427 tons/year) of the waste diverted to the landfill is material that cannot be recycled or composted. This includes film plastic, trash bags, and composite materials. "Composite" materials are those made of multiple material types which are difficult to separate for recycling. For example, a coffee pouch or chip bag is made of layers of material which, put together, make it difficult to recycle.

RECYCLING SURVEY

ISTC sent out individual surveys to all the full-time employees at each of the four buildings sampled. The survey was issued to gauge the occupants' understanding of the current waste management system in the building, as well as their participation in recycling efforts while in the building. Complete survey results for each building are in this report along with the results of the waste characterization audits, organized in the order of questions in the survey. Due to a restriction on surveys during our timeline, there are no deliverable survey results for Lincoln Avenue Residence Hall.

Misconceptions about campus recycling

The building occupant surveys identified some concerning perceptions about the campus recycling program. Although at least 58% (Figure 1.) of respondents from each building claimed to be somewhat informed about the campus recycling policy, the responses did not clearly convey that claim (Figure 2). Even though only plastics #1 and #2 are accepted, almost all survey participants believed that at least one other plastic commodity is being accepted at the waste transfer station. In addition, at least 21% of the occupants of BIF and RAL thought that all plastics are being recycled and at least 44% of the respondents of each building believed glass is being recycled (Figure 2).

Figure 1. How informed are you regarding recycling at U of I?

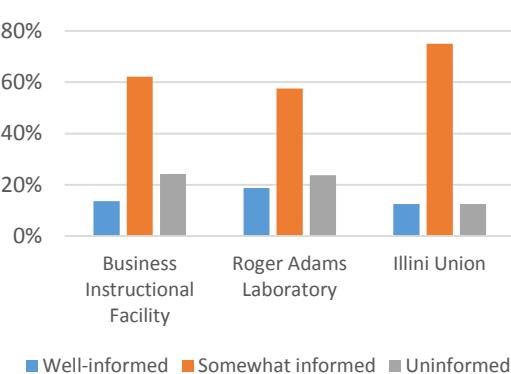
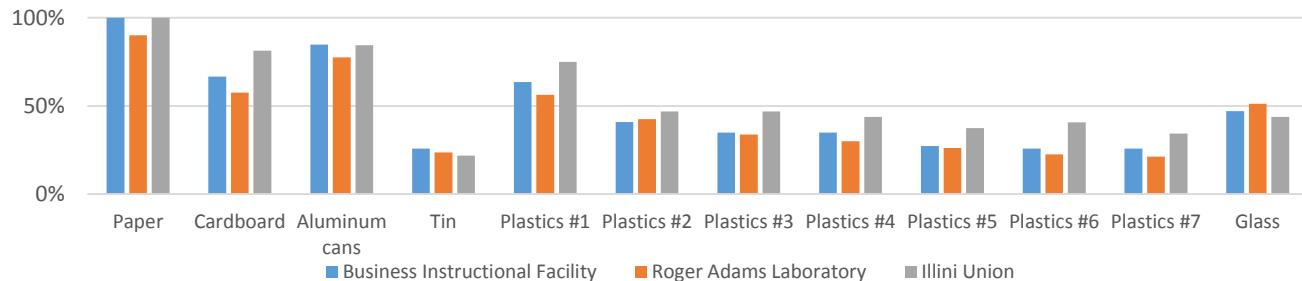
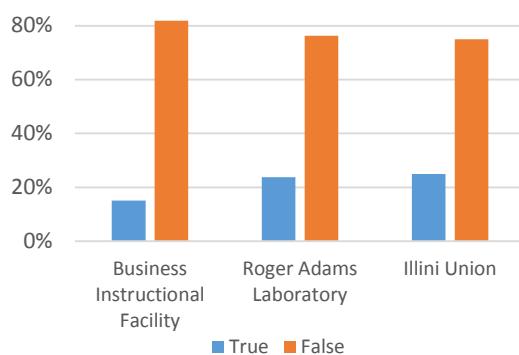


Figure 2. Which materials do you think are recycled from bins in your building?



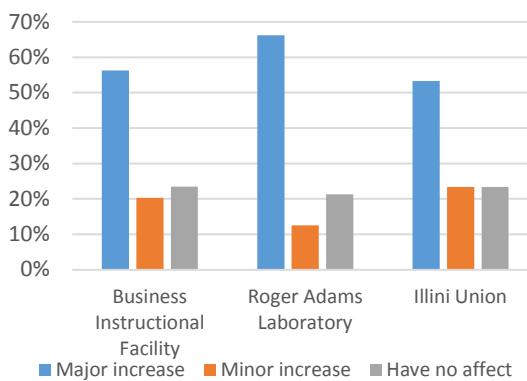
While there is a campus perception that everything will be sorted at the WTS, at least 75% of respondents from each building do not think that should deter them from separating at source (Figure 3).

Figure 3. The material in all of our building's bins are sorted for recycling so it doesn't matter what bin I use.



Recycling accessibility

Figure 4. If a recycling bin was placed next to each trash bin, how would it affect the amount you recycle?



Building occupants indicate there is a great deal of potential to increase recycling rates if trash bins are paired with recycling bins. In each building, at least 76% of the respondents believe this action will increase the amount they recycle, and at least 53% believe it will have a significant impact.

Respondents indicated a lack of comingled recycling bins in BIF and RAL (Figure 5). This issue was not stressed by respondents from the Illini Union but it should be noted that building has a large number of visitors that were not surveyed. For instance students and staff members going to Union's basement for lunch were not surveyed, in a space that contained no recycling bins.

Figure 5. Do you think there are enough aluminum can/plastic bottle recycling bins in your building?

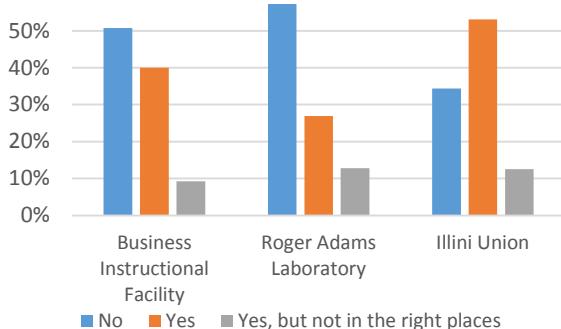
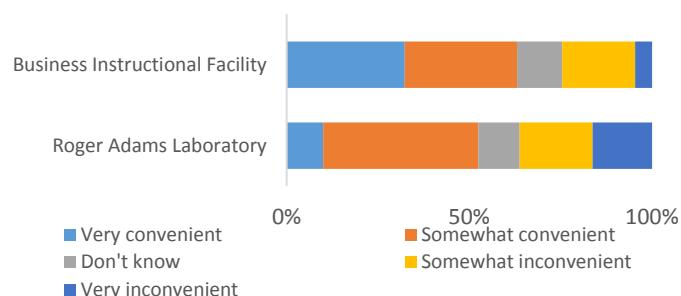


Figure 6. How convenient is recycling in your building?



Responses to recycling convenience differ somewhat for lab buildings (Figure 6). This difference may be accounted for by recycling bins being in the labs, but lunch products not being allowed in the labs. Occupants expressed some frustration in RAL about bins not matching where consumption takes place.

CAMPUSWIDE WASTE AND RECYCLING GENERATION

Facilities and Services provided ISTC with yearly totals of material landfilled and recycled during FY 2015.

Current Solid Waste Generation

In fiscal year 2015, the Urbana-Champaign campus generated and landfilled 5,568.78 tons of solid waste. This number was calculated by Facilities & Services from invoices provided by the hauling and landfill companies.

Current Recycling Generation

In fiscal year 2015, the Urbana-Champaign campus recycled the following:

- Office Paper – 740 tons
- Cardboard (OCC) – 580 tons
- Plastic bottles – 20 tons
- Metals – 830 tons

This data was provided by Facilities & Services and based on the weight of recyclable materials sold.

Effective Diversion Rate

Using the solid waste and recycling data from fiscal year 2015, the University of Illinois at Urbana-Champaign campus had a municipal solid waste diversion rate of 28%.

OPPORTUNITY ASSESSMENT

Beyond the waste characterization study and survey findings, ISTC gathered information and observations about the materials management system at Campus, for the purpose of proposing initiatives to improve the solid waste operations. Opportunities are categorized by two main areas of focus:

- **Collection Improvement**
- **Engagement Improvement**

Collection Improvement

Current Practices

Within campus buildings, the Building Service Workers (BSWs) coordinate the solid waste process by facilitating material movement from isolated interior bins and cans to the exterior dumpsters and roll offs. While there is an effort to keep this process consistent amongst all campus buildings, differences have developed over time with some structures taking on unique collection characteristics.

Most buildings work with Facilities & Services (F&S) to set up an adequate collection schedule for trash as well as recycling. F&S's trash dumpster inventory is a mix of dumpsters ranging from 2 to 8 yards in volume along with roll offs of 20 or 30 yards. (A complete active inventory and pick up schedule is available from the Waste and Recycling Coordinator at the Waste Transfer Station) All dumpsters and roll offs (excluding those used for food collection) are taken to the South bay of the Waste Transfer Station for sorting.

Recycling bins in the buildings are staged to have at least one 3-bin station on each floor. The stations are not tied to volume or proportionate to material percentage. Most individual offices also have personal recycling bins but the BSWs are not allowed to empty those bins, leaving that part of the collection process to the occupants.

Many of the buildings lack space for a separate recycling dumpster, so there are several instances of the roll offs and dumpsters serving multiple purposes. It is not uncommon for blue bags of recyclables and cardboard to be placed in landfill dumpsters. This process then calls for the staff at the Waste Transfer Station to pull out the recyclable materials before the rest is sorted.

Issues & Concerns Identified

In the Champaign-Urbana community, most plastics numbered 1 through 7 are recycled. But on the UIUC Campus the only plastics recycled are number 1 and 2 bottles. This inconsistency leads to confusion about what can be recycled on campus.

The lack of space for cardboard dumpsters causes those materials to be placed in the trash dumpsters and then pulled out later. Adding cardboard to trash dumpsters increases the likelihood of contamination. Separate dumpsters could decrease contamination and increase the supply of saleable product.

The pickup process of each building's dumpsters is based on a set schedule rather than demand or volume. By moving the focus to volume based pickups, staff time could be better utilized.

Collection Improvement Recommendations

Recommendations (Table 3) are divided into Phase 1 and Phase 2 categories. Phase 1 recommendations are easier to implement and may be precursor steps to Phase 2 recommendations. Recommendations are further classified as Planning (additional data gathering, cost research, etc.) or Implementation (program launch, signage, staff training, etc.).

Table 3. Engagement and Collection Improvement Recommendations, by Implementation Phase

Collection Improvement/ Phase I	
Add recycling bins to each workstation. Most offices only have a landfill bin.	Implementation
Increase recycling and reuse of items during student move out through interdepartmental collaboration.	Planning
Increase participation in the EPS (Styrofoam) recycling program across campus.	Implementation
Increase participation in the nitrile glove recycling program across campus.	Implementation
Collection Improvement/ Phase II	
Add a dedicated cardboard dumpster or a compactor to buildings that have a large cardboard volume. Cardboard is currently being thrown in the landfill dumpster and then picked out later, but in that process a large amount of the material is contaminated. By collecting cardboard separately, the number of dumpster pick-ups could be reduced.	Planning/ Implementation
Expand plastics recycling to include all materials #1 to #7. This change would increase plastics recycled from 3.7% of the waste stream to 11% of the waste stream.	Planning
Explore organics diversion campus wide. An anaerobic digester or large-scale compost system compost would greatly increase the opportunities to divert more material from landfill.	Planning
Install hand driers to replace paper towels. Over 14% of the material generated from campus is paper towel. Installing hand driers would be an easy way to cut the waste stream by that amount.	Planning

Engagement Improvement

Current Practices

Each building has a BSW that supplies the signage as agreed upon by F&S. This signage is currently being standardized throughout campus. While some buildings have active BSWs that communicate ways to capture more recycling, there is not a zero waste coordinator to provide a consistent message throughout campus. There is little education to building occupants about the Waste Transfer Station's process.

Engagement is done on a project by project basis, but afterwards, behaviors frequently revert to old habits. Projects are limited by staff and student turnover along with budget challenges. The lack of a long-term strategy is problematic to incremental improvement.

Issues & Concerns Identified

- Signage is not yet standardized throughout campus.
- No centralized communication on recyclable materials or preferred systems of participation.

- Little support, financial or otherwise, to start or monitor recycling programs on the building level.
Periodic funding provided by the Student Sustainability Committee.
- There isn't a long term plan or party responsible to reach iCAP goals.
- There is a widespread misconception about what is and isn't recycled on campus along with the level of sorting that is done by the Waste Transfer Station.

Engagement Improvement Recommendations

Table 4. Engagement and Collection Improvement Recommendations, by Implementation Phase

Collection Improvement/ Phase I	
Pair each landfill bin with a recycling bin. Having a choice engages the user in the process.	Implementation
Use campus's standardized bin signage throughout all buildings.	Implementation
Add recycling stations for bottles and cans, survey respondents reported a lack of bottles and cans recycling stations.	Implementation
Collection Improvement/ Phase II	
Run a campus wide recycling campaign that focused on waste reduction (such as kill the cup), and increased paper/plastic/cardboard/aluminum recycling. This will help educate campus on what materials are accepted by the WTS.	Planning/ Implementation

Estimated Benefits of Implementation

Current Cost Estimates

ISTC worked with Facility and Services staff as well as the Sustainability Working and Advisory Team for Purchasing, Waste and Recycling, and reviewed hauling contracts to estimate the current cost of refuse collection as well as the revenue received for recycling sales.

Current Landfill Costs: Facilities and Services hauls trash and recycling for most buildings on campus. The full cost of waste incurred by the university is the cost of transportation of trucks to and from the Waste Transfer Station and campus as well as the tipping rate for the material destined to the landfill by weight. ISTC used numbers from 2015 provided by Facilities and Services to extrapolate a cost per ton.

Current cost per ton of refuse: \$67.14/ton

Current Recycling Revenue: Facilities and Services collects recycling for most buildings on campus. Facilities and Services also secondary sorts some of the trash for recyclables. ISTC used numbers from 2015 provided by Facilities and Services to extrapolate a cost per ton. Due to volatile recycling markets and uncertainty in collection this number can fluctuate yearly. The revenue per ton is greatly affected by the tonnage of aluminium that is sold, which fluctuates annually.

Revenue per ton of recycle material: \$122.60/ton

Cost Savings through Implementation

ISTC calculated the campus-wide¹ cost savings for four scenarios that reflect opportunities highlighted in the recommendations section of this report; a 75% increase in collection of current recyclables, a 75% increase in collection of all recyclable material; replacing all paper towel dispensers with air dryers; and diverting 75% of all organics for compost or energy recovery.

75% increase in collection of current recyclables from the landfill stream: A 75% increase in collection of current recyclables from the landfill stream translates to an approximate 905 tons of waste diverted from the landfill annually. The estimated savings from avoided landfill costs and recycling rebates is **\$96,912** annually.

75% increase in collection of all recyclables from the landfill stream: A 75% increase in collection of all recyclable materials from the landfill stream translates to an approximate 1240 tons of waste diverted from the landfill annually. The estimated savings from avoided landfill costs and recycling rebates is **\$113,389²** annually.

Replacing paper towels with air dryers: Removing paper towels from the landfill stream translates to an approximate 784 tons of waste diverted from the landfill annually. The estimated savings from avoided landfill costs is **39,000** annually. The estimated cost savings does not include the cost of purchasing new driers and operational cost for utility.

75% diversion of organic material for energy recovery or compost: A 75% diversion of organics from the landfill stream translates to an approximate 3707 tons of waste diverted from the landfill annually. The estimated savings from avoided landfill costs is **\$93,143** annually.

If all the scenarios are achieved, a total of **\$553,000** of costs can be saved annually.

Greenhouse Gas Reduction through Implementation

ISTC utilized the EPA Waste Reduction Model (WARM) to calculate the estimated reductions in GHG emissions that reflect the opportunities highlighted in the recommendations section.

75% increase in collection of current recyclables from the landfill stream: A 75% increase in collection of current recyclables from the landfill stream translates to a **565 MTCO₂E/ton** reduction in GHG emissions.

75% increase in collection of all recyclables from the landfill stream: A 75% increase in collection of all recyclable materials from the landfill stream translates to an **805 MTCO₂E/ton** reduction in GHG emissions.

Replacing paper towels with air dryers: Removing paper towels from the landfill stream translates to an **1155 MTCO₂E/ton** reduction in GHG emissions.

75% diversion of organic material for energy recovery or compost: A 75% diversion of organics from the landfill stream translates to a **141 MTCO₂E/ton** reduction in GHG emissions, assuming no methane capture.

If all the scenarios are achieved a total reduction of 3899 **MTCO₂E/ton** in GHG emissions would be achieved annually.

¹ The estimated campus wide costs, tonnage and potential diversion were calculated by extrapolating the mean composition identified through the waste characterization study to the total tonnage of MWS sent to the landfill provided by Facility and Services.

² The estimated cost savings were calculated using avoided landfill tipping fees and a recycling rebate for the currently sold commodities and no rebate for the rest of the material, due to lack of relatable data.

APPENDIX A. WASTE CHARACTERIZATION DATA FOR INDIVIDUAL BUILDINGS

Business Instructional Facility

Square Footage: 162,251 sq. ft., classrooms and office space

Staff: 390 persons including all College of Business employees

Sample period: October 5, 2015 to October 9, 2015

Total Waste sorted: 1458 lb.

Building Summary

The Business Instructional Facility is primarily classrooms, offices, and gathering places. Building occupants are primarily students attending a class, or joining a study group in the major atrium.

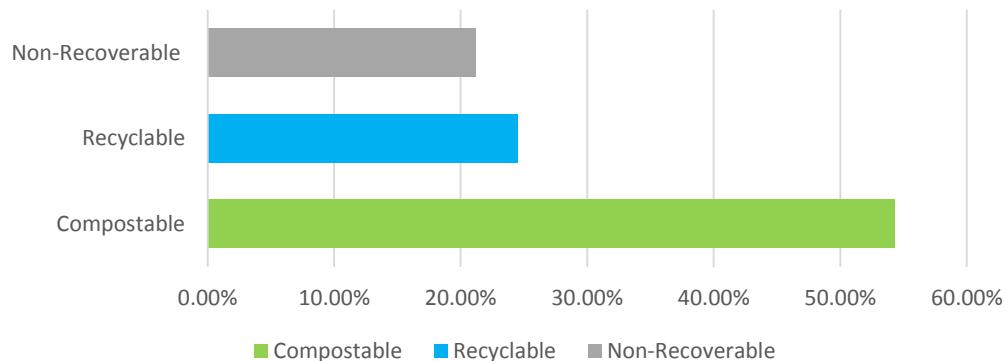


Table A-1 Detailed Composition of Material destined for Landfill, Business Instructional Facility

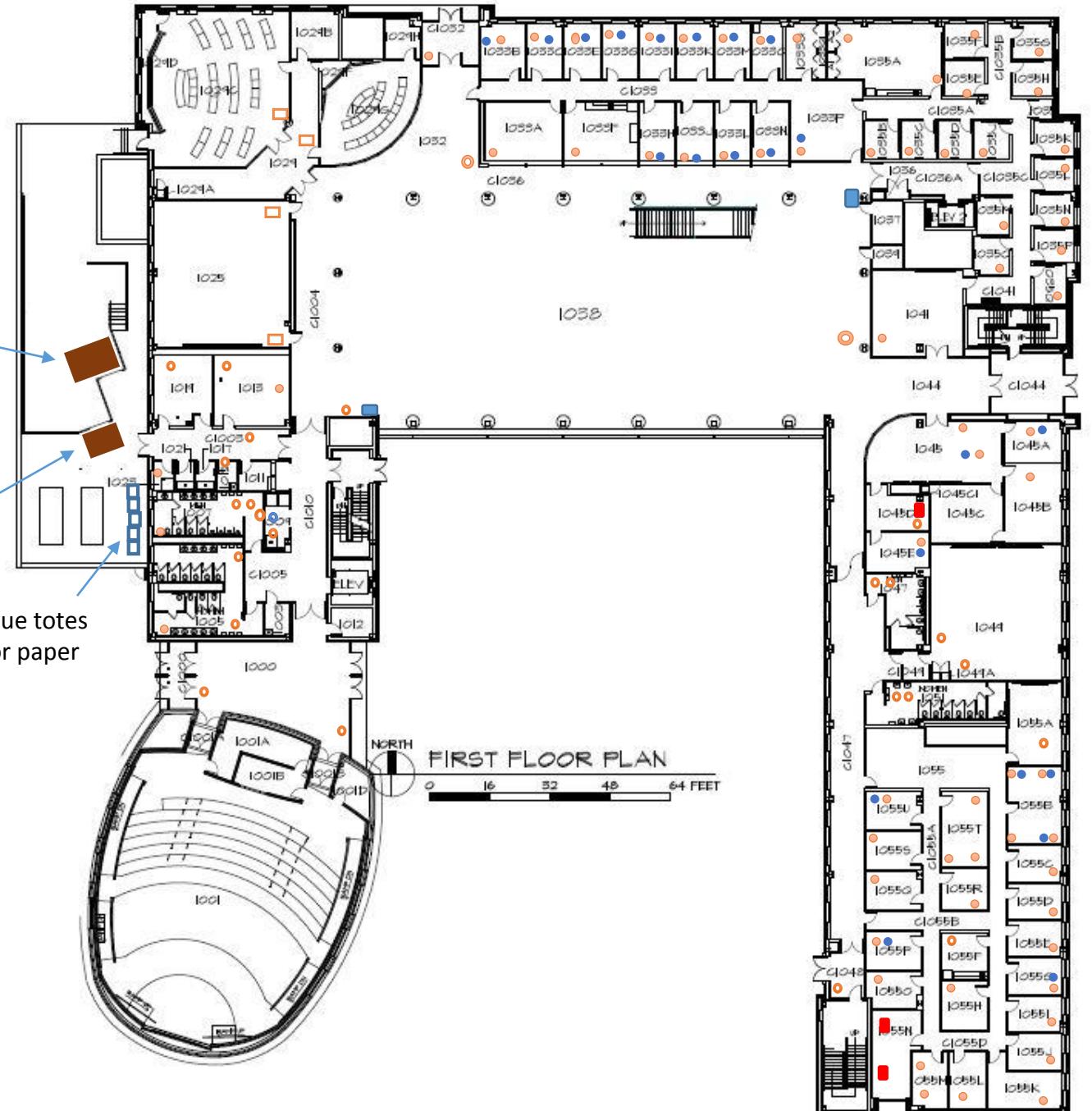
Material	Percent	Material	Percent
Compostable	54.3%	Non-Recoverable	21.2%
Food Scraps	24.5%	Fines	8.7%
Paper Towels	19.1%	Trash Bags	5.3%
Food-Service Paper	10.6%	Composite Plastic	4.1%
		Composite Organics	1.0%
Recyclable	24.5%	Plastic Food-service Ware	0.7%
Non Food-service Paper	8.0%	Composite Paper	0.6%
Other Plastic Containers	7.3%	Composite Metal	0.6%
Plastic Beverage Containers	3.7%	Composite Glass	0.2%
OCC	3.6%	Bulky Items	0.1%
Aluminum and Tin	0.9%	Lab Plastic	0.0%
Glass	0.6%	Regulated waste	0.0%
EPS	0.4%		
Electronic Waste	0.1%		
Metal Drum	0.0%		
Gloves	0.0%		

- Small Recycling Bin
- 3 Bin Recycling Station
- 40 Gallon Bottles & Cans
- Paper Recycling - Slim Jim
- Small Trash Can
- 30 Gallon or Brute Trash Bin
- 27 Gallon Trash – Slim Jims
- 60 Gallon Totes Paper Totes
- Dumpsters

8 Yard
Dumpster
for Trash

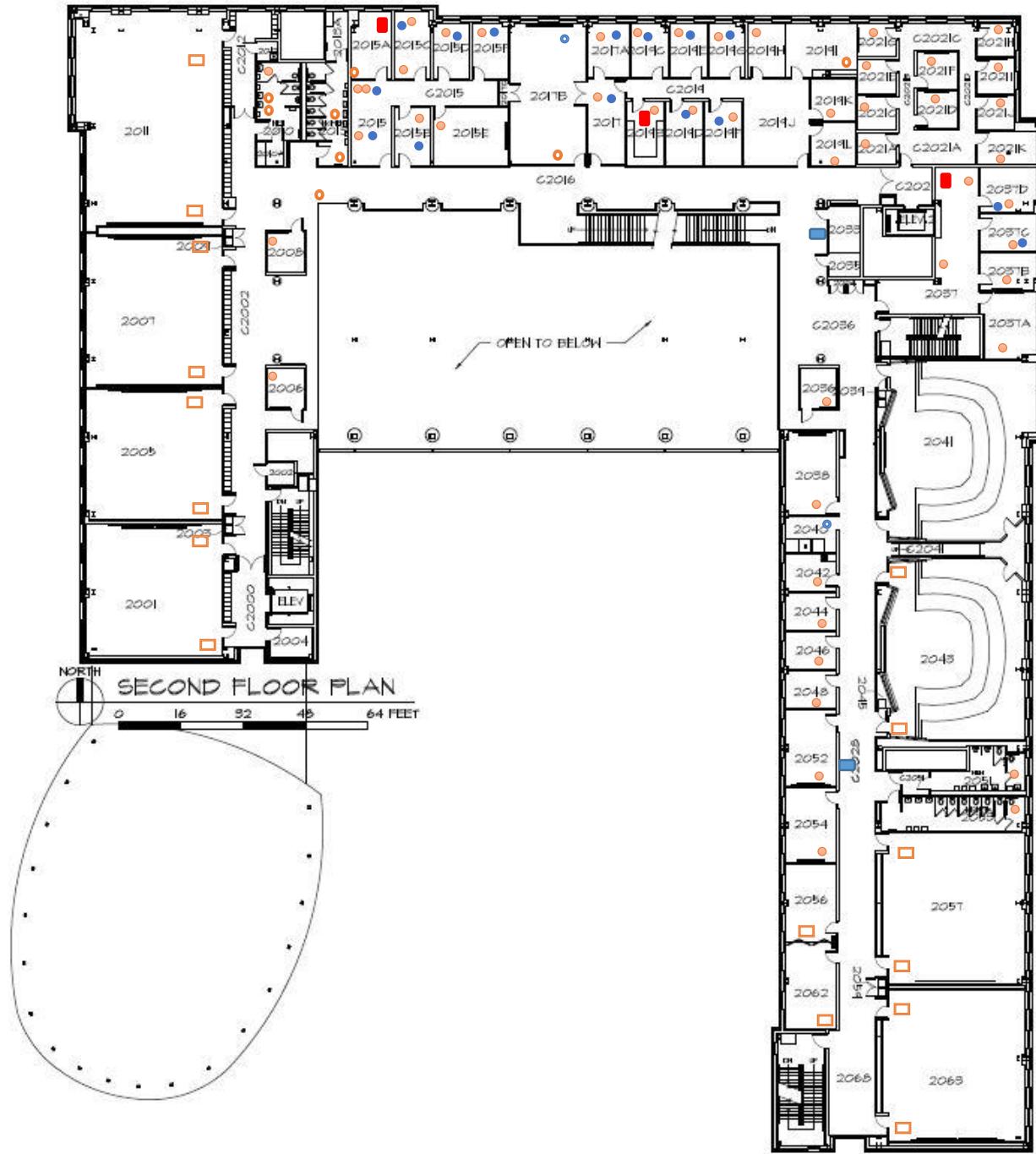
5 Yard Dumpster
labeled for
paper but filled
with trash

Blue totes
for paper



- Small Recycling Bin
 - 3 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling - Slim Jim
 - Small Trash Can
 - 30 Gallon or Brute Trash Bin
 - 27 Gallon Trash – Slim Jims
 - 60 Gallon Totes Paper Totes

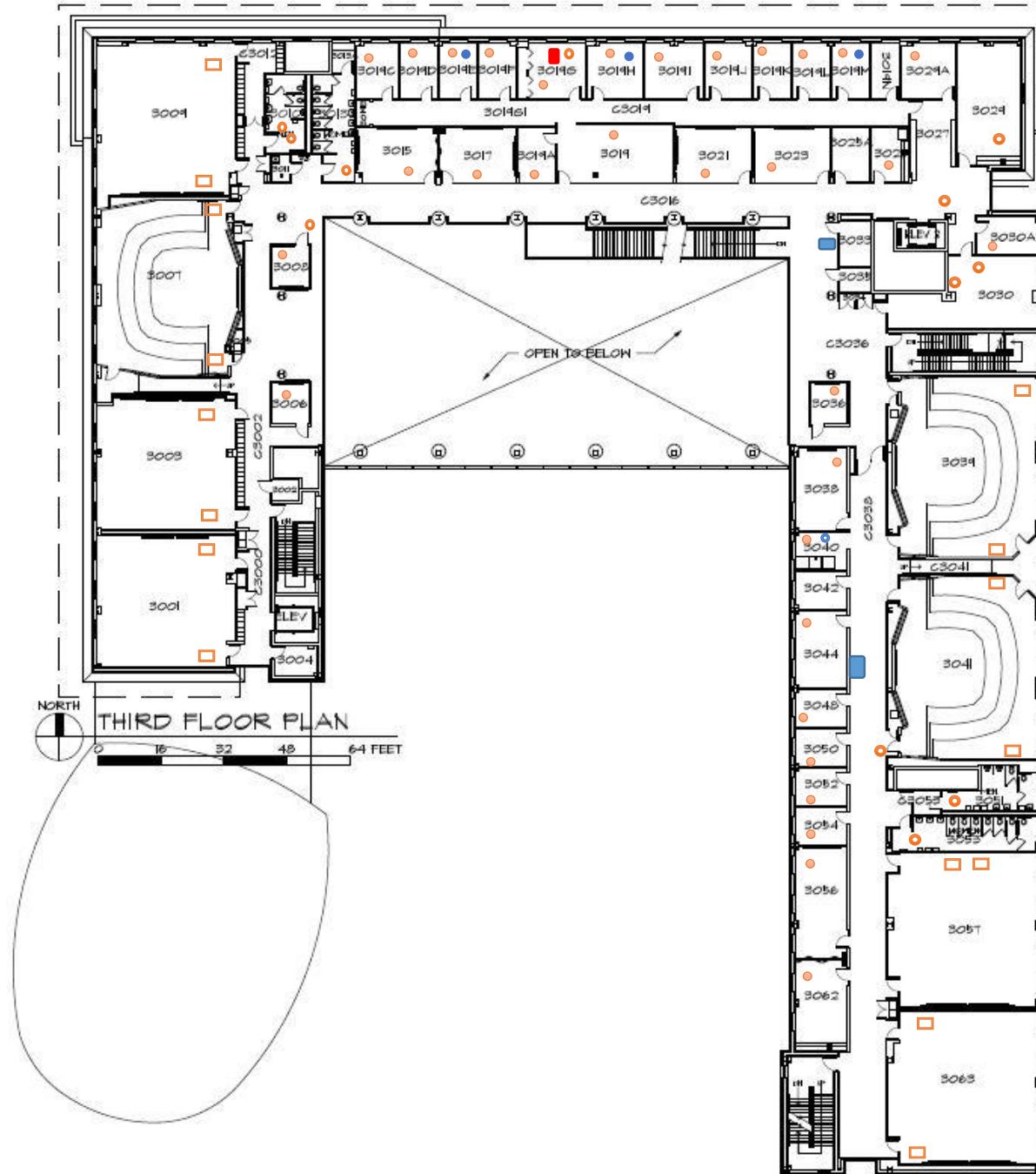
■ Dumpsters



ILLINOIS SUSTAINABLE
TECHNOLOGY CENTER
PRAIRIE RESEARCH INSTITUTE



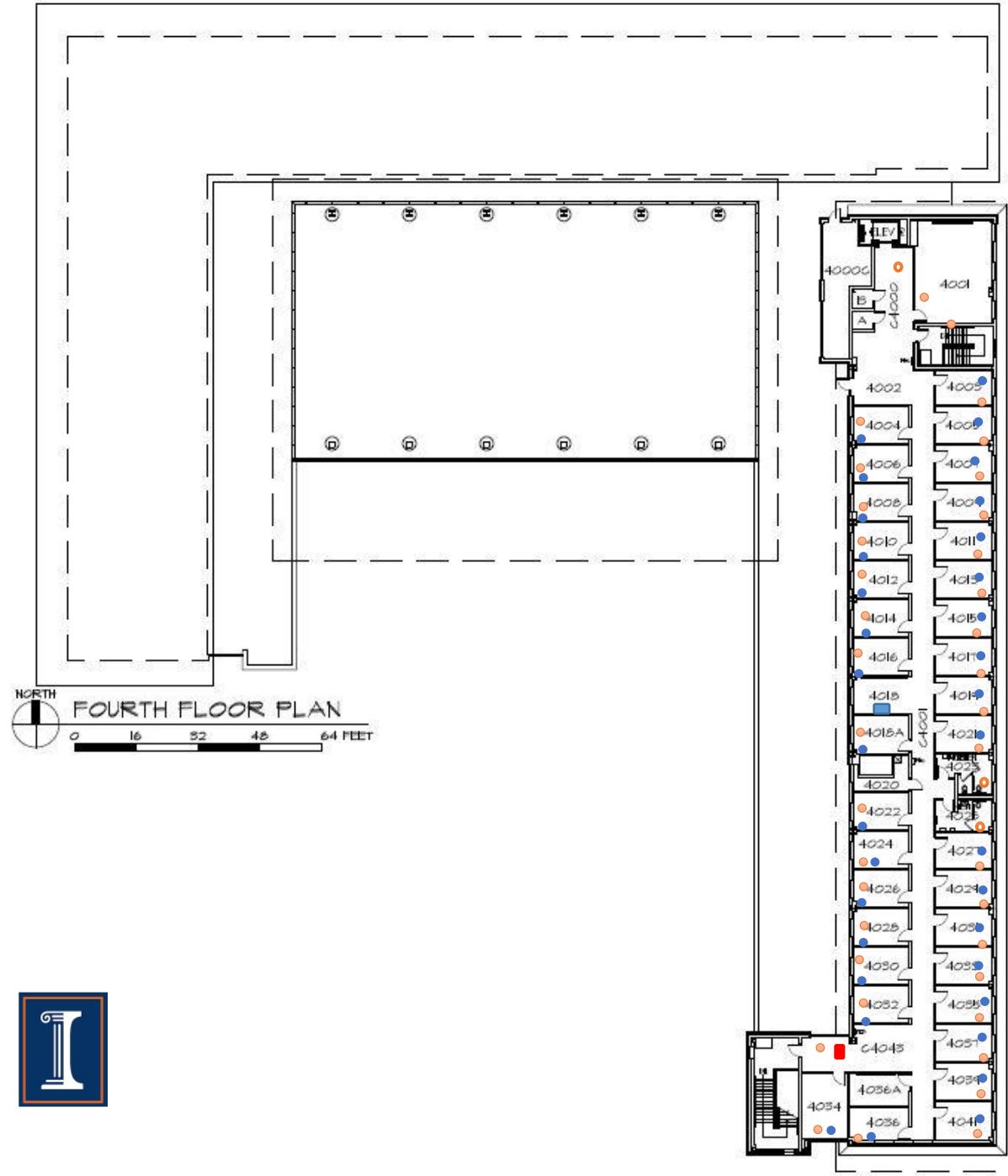
- Small Recycling Bin
 - 3 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling - Slim Jim
 - Small Trash Can
 - 30 Gallon or Brute Trash Bin
 - 27 Gallon Trash – Slim Jims
 - 60 Gallon Totes Paper Totes



ILLINOIS SUSTAINABLE TECHNOLOGY CENTER

PRAIRIE RESEARCH INSTITUTE





User Survey Response

On 25, September, 2015, ISTC sent out an online survey to all the employees at BIF (N=390). The survey was issued to gauge the occupants understanding of the current waste management system in the building as well as their participation in recycling efforts while in the building. A total of 66 surveys were returned, for a response rate of 17%.

The intent of the survey results are only to improve waste and recycling on the University of Illinois Campus. These results are not be used as generalizable knowledge.

Q1. What is your role on campus?

Role	Number (N)	Proportion
Faculty	28	42%
Staff	38	58%
Undergraduate student	0	0%
Graduate student	0	0%
Other	0	0%

Q2. How well-informed are you regarding recycling at U of I?

	Number (N)	Proportion
Well-informed	9	14%
Somewhat informed	41	62%
Uninformed	16	24%

Q3. The material in all of our building's bins are sorted for recycling so it doesn't matter what bin I use.

	Number (N)	Proportion
True	10	15%
False	54	82%

Q4. What materials do you think are recycled from bins in your building?

Material	Number (N)	Proportion
Paper	66	100%
Cardboard	44	67%
Aluminum cans	56	85%
Tin	17	26%
Plastics #1	42	64%
Plastics #2	27	41%
Plastics #3	23	35%
Plastics #4	23	35%
Plastics #5	18	27%
Plastics #6	17	26%
Plastics #7	17	26%
Glass	31	47%

Q5. If you have a plastic bottle or aluminum can, how often do you use the building's recycle bins to recycle it?

Frequency	Number (N)	Proportion
Always	33	50%
Occasionally (more than half the time)	19	29%
Rarely (less than half the time)	8	12%
Never	6	9%

Q6. If you have paper you need to discard, how often do use your building's recycling bins to recycle it?

Frequency	Number (N)	Proportion
Always	45	68%
Occasionally (more than half the time)	17	26%
Rarely (less than half the time)	3	5%
Never	1	2%

Q7. How convenient is recycling in your building?

Frequency	Number (N)	Proportion
Very convenient	21	32%
Somewhat convenient	20	30%
I don't know	8	12%
Somewhat inconvenient	13	20%
Very inconvenient	3	5%

Q8. Do you think there are enough paper recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	33	50%
Yes, but not in the right places	7	11%
No	24	36%

Q9. Do you think there are enough aluminum can/plastic bottle recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	26	39%
Yes, but not in the right places	6	9%
No	33	50%

Q10. If a recycling bin was placed next to each trash bin, how would it affect the amount you recycle?

Frequency	Number (N)	Proportion
Major Increase	36	55%
Minor Increase	13	20%
No	15	23%

Q11. Are the recycling bins easily distinguished from trash cans?

Frequency	Number (N)	Proportion
Yes	38	58%
Sometimes	17	26%
No	10	15%

Q12. Do you have any comments or concerns about the items recycled?

- Do we recycle batteries?
- I watch too many people placing recyclables in litter bin
- In an ideal world, the person that empties our trash basket on Monday could collect our recycling too. Go single stream like City of Urbana.
- In our office, we also recycle printer cartridges thru Business Council.
- Information on recycling should be posted near garbage and recycle areas
- The bins would have no effect on my recycling because I make a special trip to the bins every time. But it's depressing that most people don't. And that people throw trash in the recycling bins.
- The classrooms are the major issue. There are generally recycling bins next to garbage cans at the end of the halls but not in between or in classes. Because my office is at the end of the hall it is convenient and easy for me to recycle. But that would be different if I was constantly attending classes or positioned somewhere else in the building. So, recycling everywhere there is trash (including just outside buildings) would have a huge impact on everyone (if only a minor impact on me).
- The lids to the recycling bins had very small holes in the
- The only recycling bins that I am aware of are in the Atrium and it is difficult for me to discern from the descriptions on the bins what should be placed in them.
- The trash gets picked up, no one collects recycling from my office recycling bin. I wish there were clear directions on how to handle recycling. It's a shame that we have a LEED certified business school but faculty have no guidance on how to recycle. I am referring to Wohler's Hall specifically.
- There are no recycle bins in the normal walking path in my building.
- We should recycle more. Many of us eat lunch here, because we are so far from any restaurants, so there are probably a lot of bottles and cans that could be recycled.
- Why do we have to empty our own office recycling?
- why does cardboard not go into the recycling tote on the dock
- Why is cardboard not recycled and what isn't constitutes 'cardboard'? Just boxes or is cardboard also the back of a notepad?
- Yes. I cannot recycle plastic/plastic bags and I find it very frustrating.

Q13. The waste diversion rate is defined as the volume of waste that is recycled or composted as a percent of the volume of waste that is sent to the landfill. To begin the discussion about your building's waste diversion rate, what would you guess the current diversion rate is? Pick a number from 0-100% that you think is closest to the percentage your building diverts from landfill.

Diversion	Number (N)	Proportion
100%	0	0%
90%	0	0%
80%	2	3%
70%	6	9%
60%	3	5%
50%	11	17%
40%	6	9%
30%	11	17%
20%	14	21%
10%	6	9%
0%	0	0%

Q14. Do you have any recommendations to reduce waste and increase recycling in your building?

- Actually enforce recycling from employees.
- Each staffer's office should have 2 bins, one for garbage, one for recyclables, not all of them do.
- Encourage all vendor to allow for reusable containers
- Have more frequent pick-up in the offices.
- More and better-labeled containers around the building; have 'shred days' for employees twice/year (good reason to purge if individuals are prone to hold paper longer than they should).
- More visible bins and improved collection strategies.
- Send out a flier that explains how the recycling program should work. Is it sorted on site or later at the landfill? What is allowable in the individual blue cans? Is coated paper recyclable as well as uncoated, etc.?

Rodger Adams Laboratory

Square Footage: 268,297 Classrooms, office spaces, and laboratories

Staff: 1500 including everyone paid by the School of Chemical Sciences

Sample period: October 19, 2015 to October 23, 2015

Total Waste sorted: 829 lb.

Building Summary

Roger Adams Lab is a major research facility, including scientific labs, offices, and classrooms.

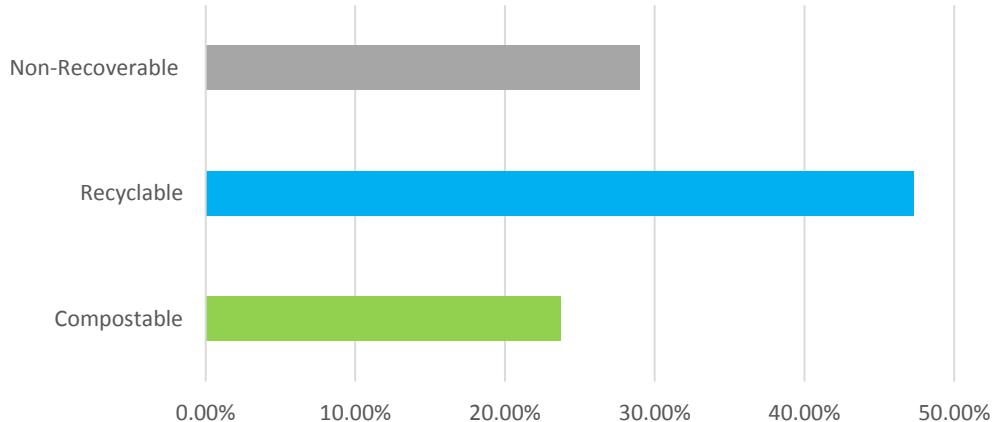


Table A-1 Detailed Composition of Material destined for Landfill, Rodger Adams Laboratory

Material	Percent	Material	Percent
Compostable	23.7%	Non-Recoverable	29.0%
Food Scraps	5.9%	Fines	4.1%
Paper Towels	14.2%	Trash Bags	1.2%
Food-Service Paper	3.7%	Composite Plastic	4.8%
		Composite Organics	1.3%
Recyclable	47.3%	Plastic Food-service Ware	0.3%
Non Food-service Paper	12.1%	Composite Paper	0.6%
Other Plastic Containers	2.8%	Composite Metal	1.4%
Plastic Beverage Containers	2.5%	Composite Glass	0.2%
OCC	12.3%	Bulky Items	1.0%
Aluminum and Tin	1.7%	Lab Plastic	14.2%
Glass	4.2%	Regulated waste	0.0%
EPS	1.3%		
Electronic Waste	0.0%		
Metal Drum	4.5%		
Gloves	6.1%		

ROGER ADAMS LABS – GROUND FLOOR

- Small Recycling Bin
 - Paper Shredder
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 22 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 55 Gallon Totes – Packing Peanuts
 - Dumpsters
 - ? Unknown



ILLINOIS SUSTAINABLE TECHNOLOGY CENTER

PRAIRIE RESEARCH INSTITUTE



ROGER ADAMS LABS – FIRST FLOOR

- Small Recycling Bin
- 3 Bin Recycling Station
- 40 Gallon Bottles & Cans
- Paper Recycling – Slim Jim
- Small Trash Can
- 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 55 Gallon Totes – Brown Glass
- Dumpsters
- ? Unknown



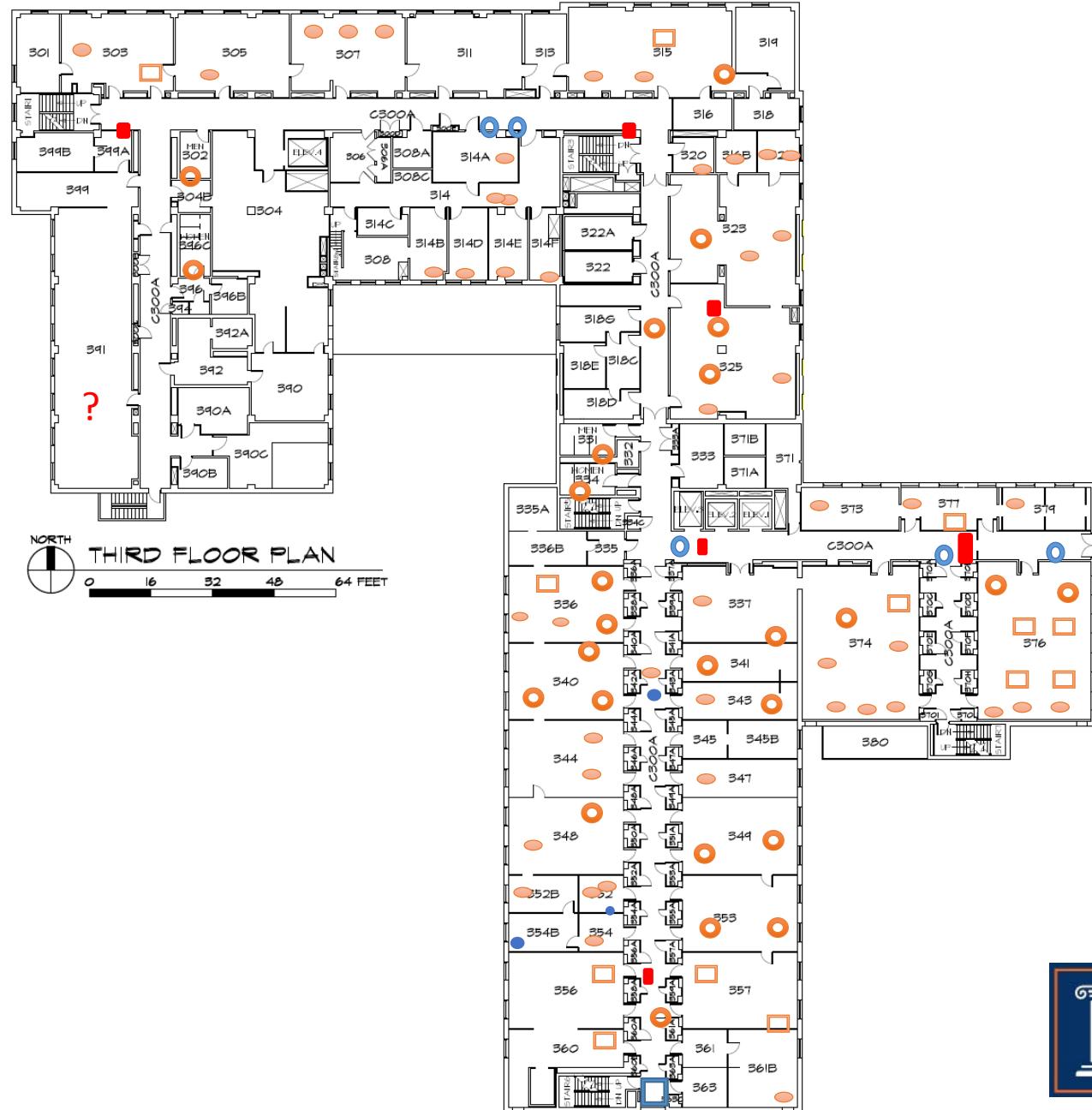
ROGER ADAMS LABS – SECOND FLOOR

- Small Recycling Bin
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 55 Gallon Totes – Brown Glass
 - Dumpsters
 - ? Unknown



ROGER ADAMS LABS – THIRD FLOOR

- Small Recycling Bin
- 40 Gallon Bottles & Cans
- Paper Recycling – Slim Jim
- Small Trash Can
- 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 55 Gallon Totes – Brown Glass
- Dumpsters
- ?
- Unknown



ROGER ADAMS LABS – FOURTH FLOOR

- Small Recycling Bin
- 40 Gallon Bottles & Cans
- Paper Recycling – Slim Jim
- Small Trash Can
- 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 55 Gallon Totes – Brown Glass
- Dumpsters
- ? Unknown



User Survey Response

On 28, September, 2015, ISTC sent out an online survey to all the employees at BIF (N=1500). The survey was issued to gauge the occupants understanding of the current waste management system in the building as well as their participation in recycling efforts while in the building. A total of 81 surveys were returned, for a response rate of 5.4%.

The intent of the survey results are only to improve waste and recycling on the University of Illinois Campus. These results are not be used as generalizable knowledge.

Q1. What is your role on campus?

Role	Number (N)	Proportion
Faculty	9	11%
Staff	24	30%
Undergraduate student	3	4%
Graduate student	42	52%
Other	2	2%

Q2. How well-informed are you regarding recycling at U of I?

	Number (N)	Proportion
Well-informed	15	19%
Somewhat informed	46	57%
Uninformed	19	23%

Q3. The material in all of our building's bins are sorted for recycling so it doesn't matter what bin I use.

	Number (N)	Proportion
True	19	23%
False	61	75%

Q4. What materials do you think are recycled from bins in your building?

Material	Number (N)	Proportion
Paper	72	89%
Cardboard	46	57%
Aluminum cans	62	77%
Tin	19	23%
Plastics #1	45	56%
Plastics #2	34	42%
Plastics #3	27	33%
Plastics #4	24	30%
Plastics #5	21	26%
Plastics #6	18	22%
Plastics #7	17	21%
Glass	41	51%

Q5. If you have a plastic bottle or aluminum can, how often do you use the building's recycle bins to recycle it?

Frequency	Number (N)	Proportion
Always	41	51%
Occasionally (more than half the time)	10	12%
Rarely (less than half the time)	15	19%
Never	13	16%

Q6. If you have paper you need to discard, how often do use your building's recycling bins to recycle it?

Frequency	Number (N)	Proportion
Always	31	38%
Occasionally (more than half the time)	28	35%
Rarely (less than half the time)	13	16%
Never	8	10%

Q7. How convenient is recycling in your building?

Frequency	Number (N)	Proportion
Very convenient	8	10%
Somewhat convenient	34	42%
I don't know	9	11%
Somewhat inconvenient	16	20%
Very inconvenient	13	16%

Q8. Do you think there are enough paper recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	24	30%
Yes, but not in the right places	17	21%
No	38	47%

Q9. Do you think there are enough aluminum can/plastic bottle recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	21	26%
Yes, but not in the right places	10	12%
No	47	58%

Q10. If a recycling bin was placed next to each trash bin, how would it affect the amount you recycle?

Frequency	Number (N)	Proportion
Major Increase	53	65%
Minor Increase	10	12%
No	17	21%

Q11. Are the recycling bins easily distinguished from trash cans?

Frequency	Number (N)	Proportion
Yes	32	40%
Sometimes	30	37%
No	18	22%

Q12. Do you have any comments or concerns about the items recycled?

- A clarification on waste paper towels would be nice.
- A few more bins would be very helpful.
- Can you make stickers to indicate which items can be recycled and place those on normal garbage cans?
- I believe they get sorted, but also know that contaminated recyclables (such as cardboard covered in pizza sauce) is waste. Therefore perfectly recyclable material becomes trash under the current system.
- I have seen the BSW in our building just dump recycling bins in with the other trash, so I hope that recycling is being sorted out.
- I hope we can recycle plastic pipette tip boxes, I know a lot of biology based labs go through a lot of these.
- I see the janitors taking recycling and putting it directly into the trash bins. They have a responsibility to recycle as well and should be held accountable.
- I would like to see more recycling of plastics not just bottles, like all #2 containers including large plastic buckets.
- it is unclear whether Styrofoam gets recycled
- Needs battery bin(s).
- pizza boxes and other food contaminated paper
- Plastic, aluminum, and paper should be mostly sufficient.
- See #14
- The way the questions are asked makes me think that all bins are not sorted for recycling. This possible misconception certainly guided my answers.
- There are no trash bins in our halls. In my opinion is why trash is thrown in the recycle bins
- there are some general recycling bins not labeled, or questions on what is recycled where is sometimes confusing
- Unsure if bottles (plastic or glass) can go in containers labeled 'Cans'
- We have paper recycling bins that NEVER get emptied; the can recycling bins are always full of regular trash and NEVER emptied. As a result, nobody recycles at all.
- We need secure recycle bins as well as most (if not all) of the paper is confidential for staff offices.
- We need to expand the range of items that are recycled on campus!
- We would LOVE to see MORE recycling on campus, but I've only seen paper recycling in our building.
- Yes; ideally allow recycling more than just plastics #1 and #2

Q13. The waste diversion rate is defined as the volume of waste that is recycled or composted as a percent of the volume of waste that is sent to the landfill. To begin the discussion about your building's waste diversion

rate, what would you guess the current diversion rate is? Pick a number from 0-100% that you think is closest to the percentage your building diverts from landfill.

Diversion	Number (N)	Proportion
100%	1	1%
90%	1	1%
80%	1	1%
70%	2	2%
60%	4	5%
50%	2	2%
40%	4	5%
30%	13	16%
20%	24	30%
10%	18	22%
0%	2	2%

Q14. Do you have any recommendations to reduce waste and increase recycling in your building?

- A designated electronics waste room would be convenient.
- Add more bins, ideally the kind with three internal compartments for different materials. End of the hall, middle of the hall, other end of the hall, and across from the elevators. It's not about saving money, it's about making it easy for everyone to be responsible.
- Battery & ink cartridge recycling bins would be nice to have in RAL.
- Continue to 'divide the trash' as you claim to do, but give us actual recycling bins for ALL types of recyclable products.
- gloves and empty chemical plastic containers from lab need to be recycled
- have more recycling bins if that will make recycling for the university easier and more efficient
- I just happened upon a can/bottle bin one day (otherwise I wouldn't have known) but I had NO idea there was any other type of recycling bin available. I never see any. Suggestions: More & varied recycling bins, well-labeled, and overall- just more common.
- If bins are not sorted, then there should absolutely be more readily available recycling bins. I don't even know where in the entire building to find an aluminum can or plastic bottle recycling bin.
- If possible, having recycling bins near or in the students' and professors' offices.
- Impose fines on lab groups that don't practice recycling (via subtraction from their CFOPA) - by checking if each recycling cans have recyclable waste in them - and pay the janitors more using the fine collected.
- It would be great if you could find something to do with broken glass that is safe.
- it would be nice to be able to recycle foam boxes and cardboard
- Look at how other universities have an effective and clear plan for recycling. Illinois is living 20 years in the past.
- Look into ways to recycle some lab plastics from consumables.
- Make receptacles for recycling prevalent and obvious. I'm more inclined to recycle if it's easy
- More bins!! For other items than just office paper.
- More bins, and more clearly labeled.
- More recycling bins and be sure BSWs actually dump recycling into proper locations.
- More recycling bins, regular upkeep of the bins (do not let them overflow), post a sign on the bins which beyond labeling it as recycling, shows its importance (such as the impact it will have on the environment).

- Place paper and cardboard recycling bins
- place recycling bins next to trash bins and clearly mark where you can recycle items (and what you CANNOT recycle)
- Please put more recycling bins
- Probably not practice, separate bins for recyclable materials
- Provide bins to recycle all #1 and #2 plastic containers, bins for recycling intact glass bottles and jars, bins for recycling toner and ink cartridges, bins for recycling #2 and #4 plastic bags. It is very easy to recycle all of these materials in C-U but not on campus.
- Recycling bins and garbage cans are never placed near each other. Often have to throw trash in bathroom. Often see trash in recycling because no trash can nearby. Esp. true on 1st floor where undergrad traffic is.
- Start with educating people about recycling, Make bins more visible (increase color and size), provide incentives for the building with this highest waste diversion rate
- The definition above allows for answers above 100% to be possible. I think it may be portrayed incorrectly. The only things worth recycling (actually reduce energy/material consumption) are aluminum and steel. Hazardous material recycling can prevent material from landfills, but they are contained. I think we spend too much money on something which has very little impact.
- We generate huge amounts of cardboard (in Receiving). Ideally this should be recyclable. This alone would have a huge impact for our building.
- We need secure recycle bins as well as most (if not all) of the paper is confidential for staff offices.

Illini Union

Square Footage: 305,130 sq. ft., retail, hotel, and office space

Staff: 201 persons including union, tenants, and vendors

Sample period: October 12, 2015 to October 16, 2015

Total Waste sorted: 2167 lb.

Building Summary

The Illini Union houses student programs, a major food court, several recreational spaces, and several full-time staff. Building occupants are mostly transient, with the exception of the full-time Union staff members.

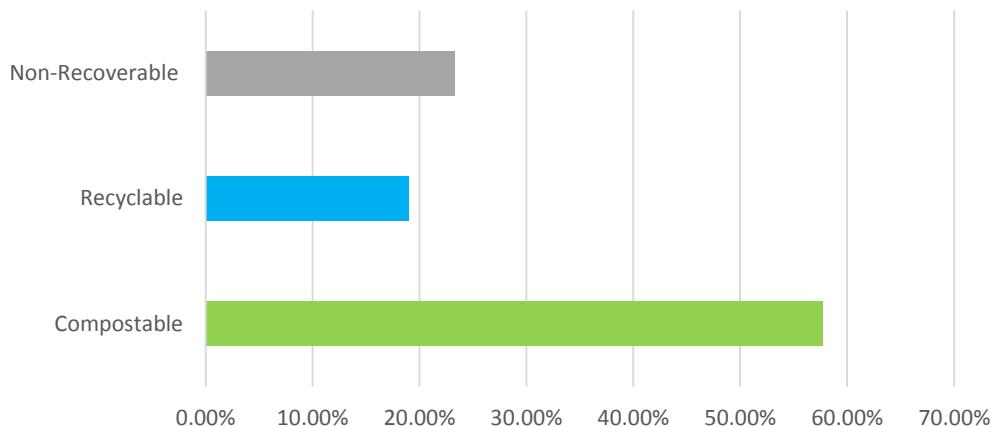


Table A-1 Detailed Composition of Material destined for Landfill, Illini Union

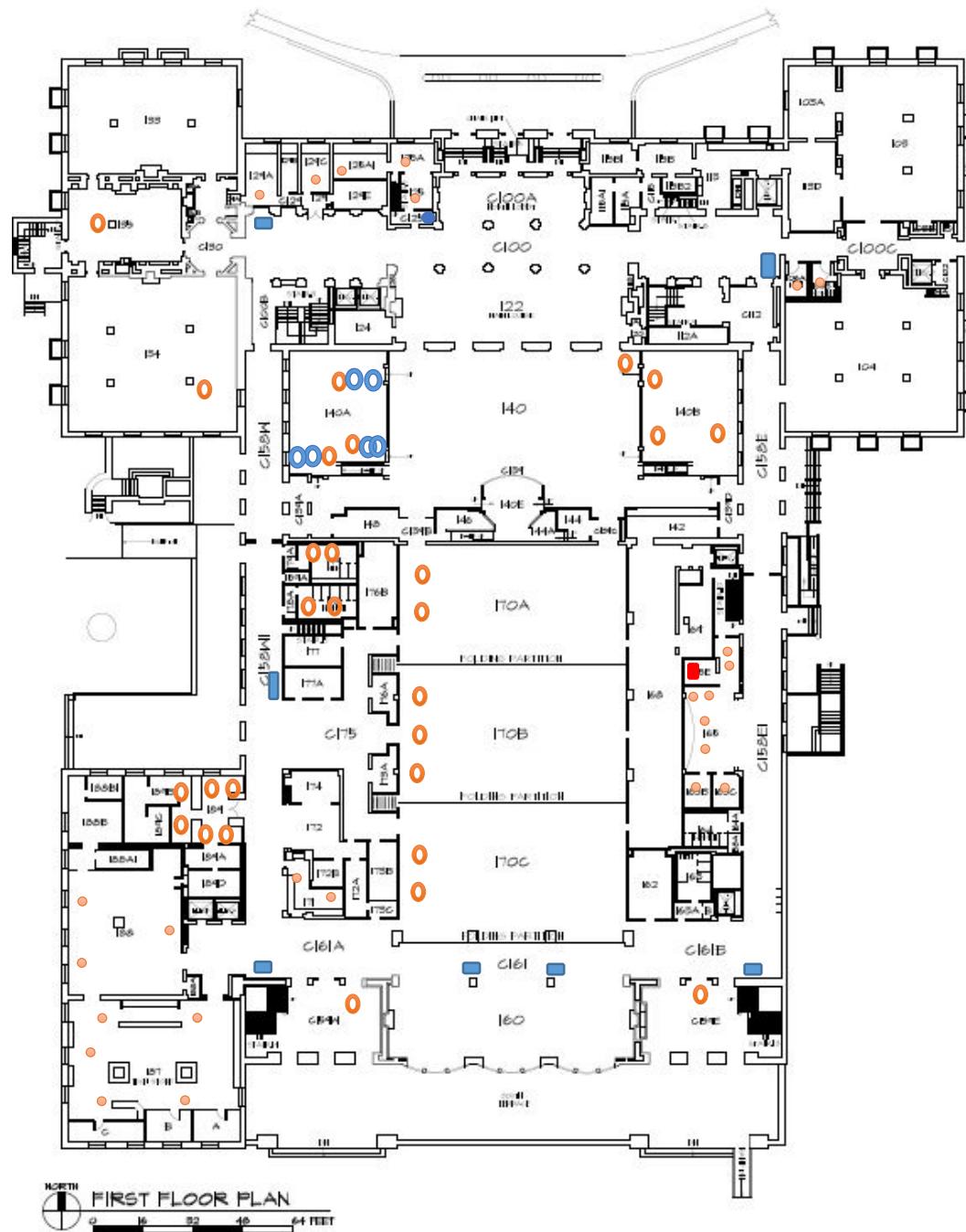
Material	Percent	Material	Percent
Compostable	57.7%	Non-Recoverable	23.3%
Food Scraps	32.0%	Fines	8.6%
Paper Towels	10.4%	Trash Bags	6.1%
Food-Service Paper	15.3%	Composite Plastic	5.0%
		Composite Organics	0.9%
Recyclable	19.0%	Plastic Food-service Ware	0.9%
Non Food-service Paper	6.6%	Composite Paper	0.8%
Other Plastic Containers	6.2%	Composite Metal	0.6%
Plastic Beverage Containers	1.5%	Composite Glass	0.0%
OCC	0.9%	Bulky Items	0.0%
Aluminum and Tin	2.0%	Lab Plastic	0.0%
Glass	1.1%	Regulated waste	0.4%
EPS	0.7%		
Electronic Waste	0.0%		
Metal Drum	0.0%		
Gloves	0.0%		

ILLINI UNION

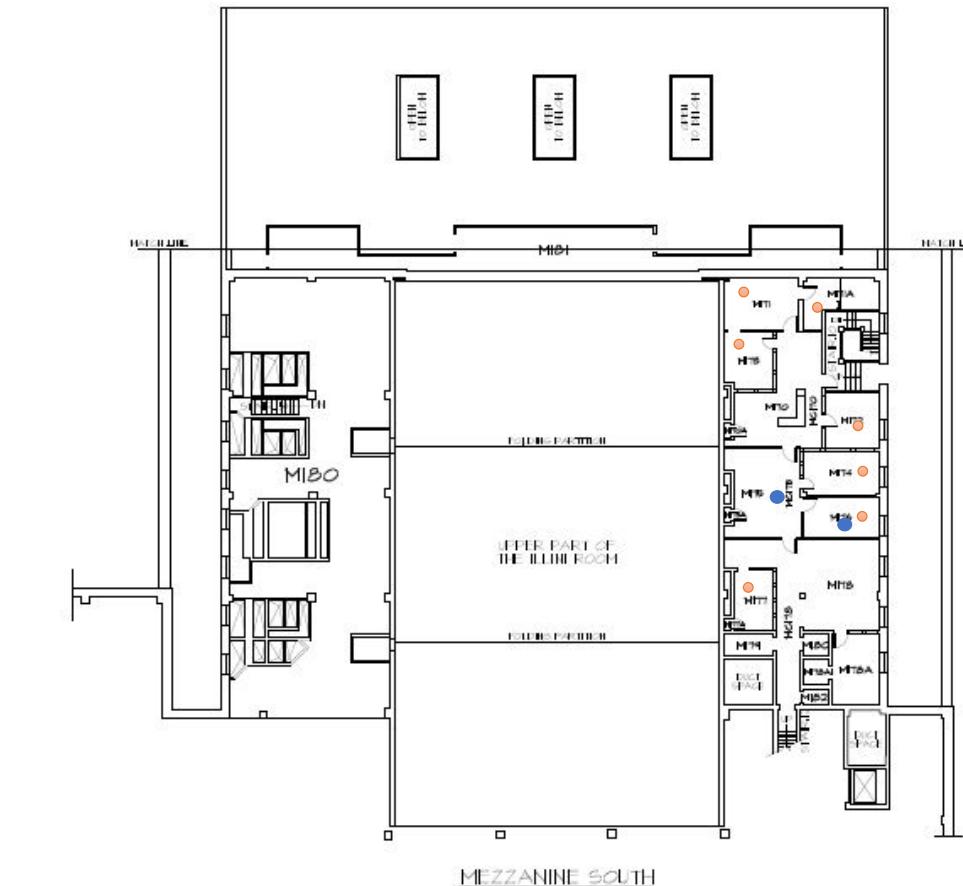
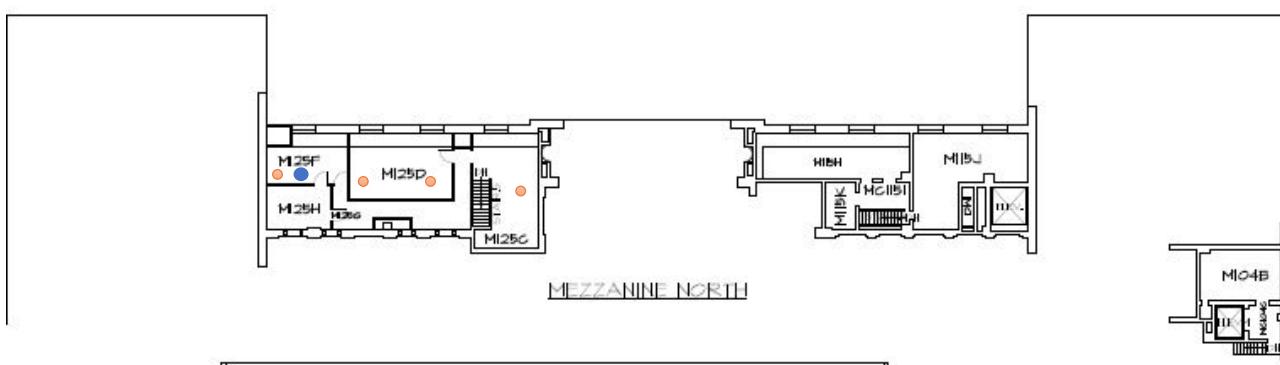
- Small Recycling Bin
- 4 Bin Recycling Station
- 40 Gallon Bottles & Cans
- Paper Recycling – Slim Jim
- Small Trash Can
- 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 90 Gallon Totes Paper & Bottles
- Dumpsters



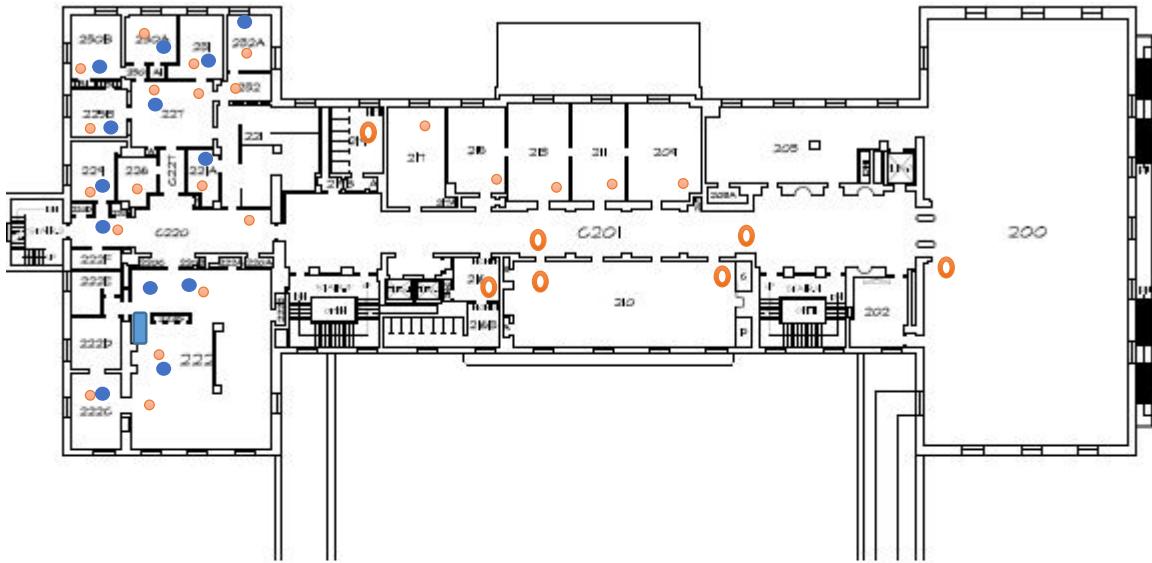
- Small Recycling Bin
 - 4 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 90 Gallon Totes Paper Totes
 - Dumpsters



- Small Recycling Bin
- 4 Bin Recycling Station
- 40 Gallon Bottles & Cans
- Paper Recycling – Slim Jim
- Small Trash Can
- 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 90 Gallon Totes Paper Totes
- Dumpsters



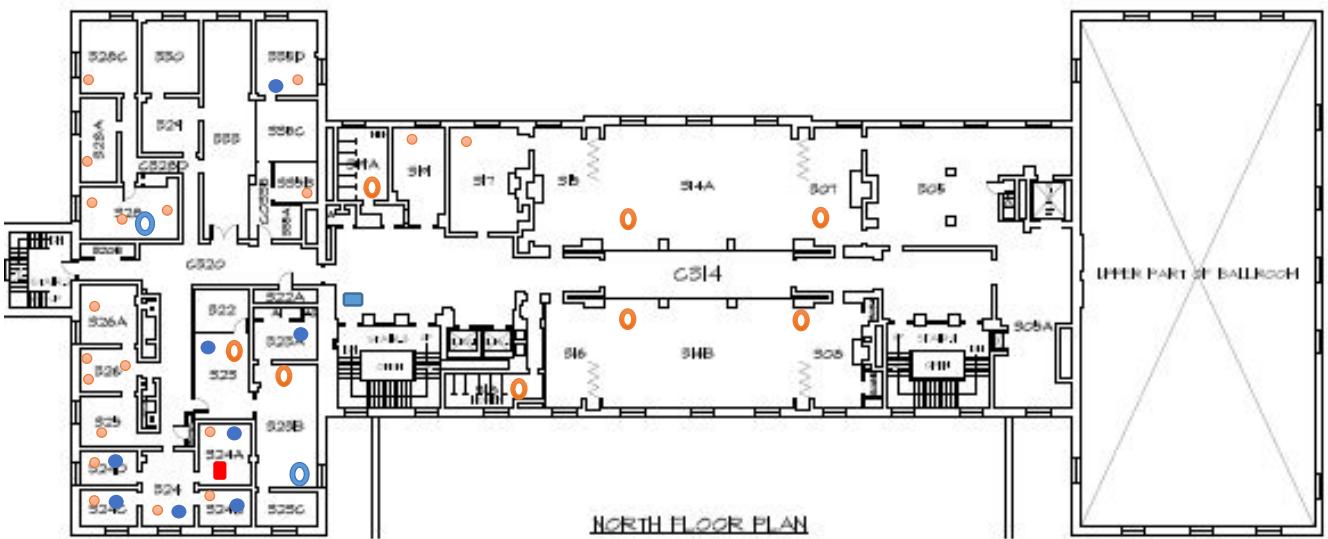
- Small Recycling Bin
 - 4 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 90 Gallon Totes Paper Totes



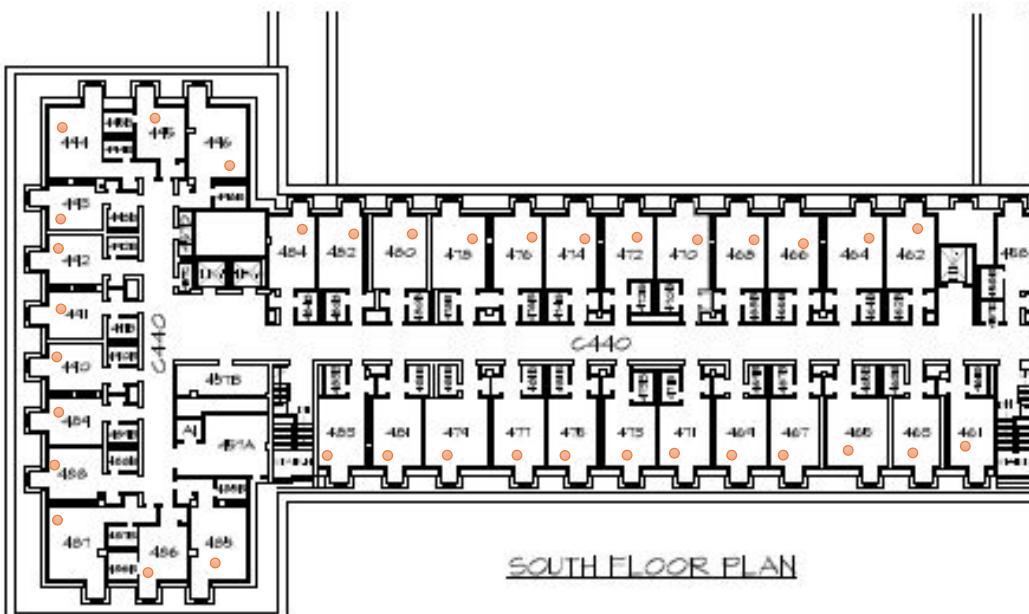
 NORTH SECOND FLOOR PLAN



- Small Recycling Bin
 - 4 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 22 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 90 Gallon Totes Paper Totes



- Small Recycling Bin
 - 4 Bin Recycling Station
 - 40 Gallon Bottles & Cans
 - Paper Recycling – Slim Jim
 - Small Trash Can
 - 22 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 90 Gallon Totes Paper Totes



40

User Survey Response

On 25, September, 2015, ISTC sent out an online survey to all the employees at Union (N=201). The survey was issued to gauge the occupants understanding of the current waste management system in the building as well as their participation in recycling efforts while in the building. A total of 32 surveys were returned, for a response rate of 16%.

The intent of the survey results are only to improve waste and recycling on the University of Illinois Campus. These results are not be used as generalizable knowledge.

Q1. What is your role on campus?

Role	Number (N)	Proportion
Faculty	0	0%
Staff	32	100%
Undergraduate student	0	0%
Graduate student	0	0%
Other	0	0%

Q2. How well-informed are you regarding recycling at U of I?

	Number (N)	Proportion
Well-informed	4	13%
Somewhat informed	24	75%
Uninformed	4	13%

Q3. The material in all of our building's bins are sorted for recycling so it doesn't matter what bin I use.

	Number (N)	Proportion
True	8	25%
False	24	75%

Q4. What materials do you think are recycled from bins in your building?

Material	Number (N)	Proportion
Paper	32	100%
Cardboard	26	81%
Aluminum cans	27	84%
Tin	7	22%
Plastics #1	24	75%
Plastics #2	15	47%
Plastics #3	15	47%
Plastics #4	14	44%
Plastics #5	12	38%
Plastics #6	13	41%
Plastics #7	11	34%
Glass	14	44%

Q5. If you have a plastic bottle or aluminum can, how often do you use the building's recycle bins to recycle it?

Frequency	Number (N)	Proportion
Always	16	50%
Occasionally (more than half the time)	14	44%
Rarely (less than half the time)	2	6%
Never	0	0%

Q6. If you have paper you need to discard, how often do use your building's recycling bins to recycle it?

Frequency	Number (N)	Proportion
Always	20	63%
Occasionally (more than half the time)	8	25%
Rarely (less than half the time)	3	9%
Never	1	3%

Q7. How convenient is recycling in your building?

Frequency	Number (N)	Proportion
Very convenient	11	34%
Somewhat convenient	13	41%
I don't know	4	13%
Somewhat inconvenient	2	6%
Very inconvenient	2	6%

Q8. Do you think there are enough paper recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	17	53%
Yes, but not in the right places	5	16%
No	10	31%

Q9. Do you think there are enough aluminum can/plastic bottle recycling bins in your building?

Frequency	Number (N)	Proportion
Yes	17	53%
Yes, but not in the right places	4	13%
No	11	34%

Q10. If a recycling bin was placed next to each trash bin, how would it affect the amount you recycle?

Frequency	Number (N)	Proportion
Major Increase	16	50%
Minor Increase	7	22%
No	7	22%

Q11. Are the recycling bins easily distinguished from trash cans?

Frequency	Number (N)	Proportion
Yes	21	66%
Sometimes	10	31%
No	1	3%

Q12. Do you have any comments or concerns about the items recycled?

- Even though I put paper in recycle, sometimes they don't separate them.
- Most of the trash cans are already next to a recycling one
- No
- Not really sure how our recycling program is currently working. We have recycling cans next to our trash cans, but both cans are dumped into the same bin during the daily trash pick-up. What is the point of having separate cans when it all goes into one main bin?
- Our hotel has nothing for recycling
- The Union's containers for recycled material are great to have, however, the plastic bins seem to fill up much faster than the other bins, but they containers are smaller so they don't hold as much and they become overflowing which sometimes leads to individuals simply putting their plastic item(s) in the garbage bin
- There should be recycle bins in each individual office for paper
- we already have paper recycle bins next to every waste can

Q13. The waste diversion rate is defined as the volume of waste that is recycled or composted as a percent of the volume of waste that is sent to the landfill. To begin the discussion about your building's waste diversion rate, what would you guess the current diversion rate is? Pick a number from 0-100% that you think is closest to the percentage your building diverts from landfill.

Diversion	Number (N)	Proportion
100%	1	3%
90%	1	3%
80%	2	6%
70%	0	0%
60%	4	13%
50%	8	25%
40%	2	6%
30%	5	16%
20%	5	16%
10%	1	3%
0%	0	0%

Q14. Do you have any recommendations to reduce waste and increase recycling in your building?

- Actually enforce recycling from employees.
- Each staffer's office should have 2 bins one for garbage, one for recyclables, not all of them do
- encourage all vendor to allow for reusable containers

- Have more frequent pick-up in the offices.
- More and better-labeled containers around the building; have 'shred days' for employees twice/year (good reason to purge if individuals are prone to hold paper longer than they should)
- More visible bins and improved collection strategies
- Send out a flier that explains how the recycling program should work. Is it sorted on site or later at the landfill? What is allowable in the individual blue cans? Is coated paper recyclable as well as uncoated, etc.?

Lincoln Avenue and Allen Residence Halls

Square Footage: Lincoln Avenue Residence Hall 150,139 - Allen Residence Hall 157,023

Staff:

Sample period: October 19, 2015 to October 23, 2015

Total Waste sorted: 952 lbs.

Building Summary

The Lincoln Avenue Residence Hall and Allen Hall are a single physical facility, joined by the central kitchen serving both dining halls. Building occupants are primarily student residents, living full-time in the facility, with a small group of staff employees on site.

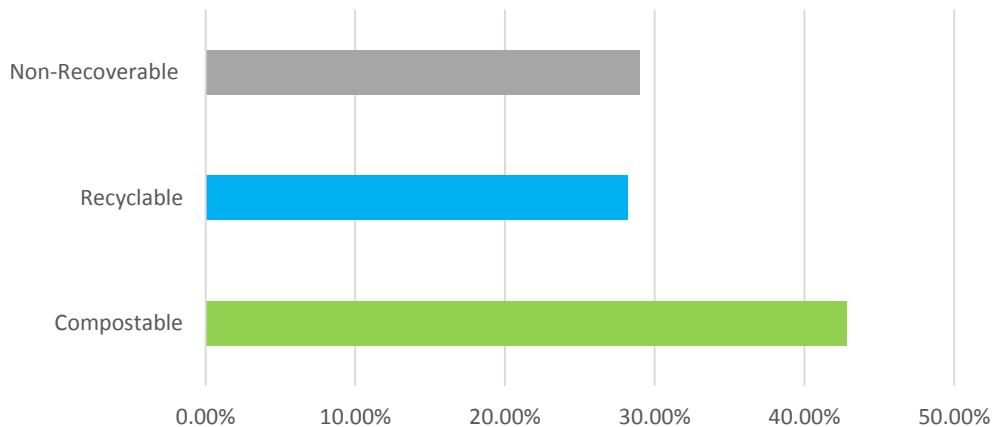


Table A-1 Detailed Composition of Material destined for Landfill, Lincoln Avenue and Allen Residence Halls

Material	Percent	Material	Percent
Compostable	42.8%	Non-Recoverable	29.0%
Food Scraps	25.6%	Fines	2.7%
Paper Towels	12.7%	Trash Bags	2.8%
Food-Service Paper	4.5%	Composite Plastic	11.9%
		Composite Organics	5.1%
Recyclable	28.2%	Plastic Food-service Ware	0.7%
Non Food-service Paper	11.9%	Composite Paper	1.2%
Other Plastic Containers	5.8%	Composite Metal	2.4%
Plastic Beverage Containers	3.8%	Composite Glass	2.2%
OCC	3.4%	Bulky Items	0.0%
Aluminum and Tin	2.0%	Lab Plastic	0.0%
Glass	0.8%	Regulated waste	0.0%
EPS	0.4%		
Electronic Waste	0.0%		
Metal Drum	0.0%		
Gloves	0.0%		

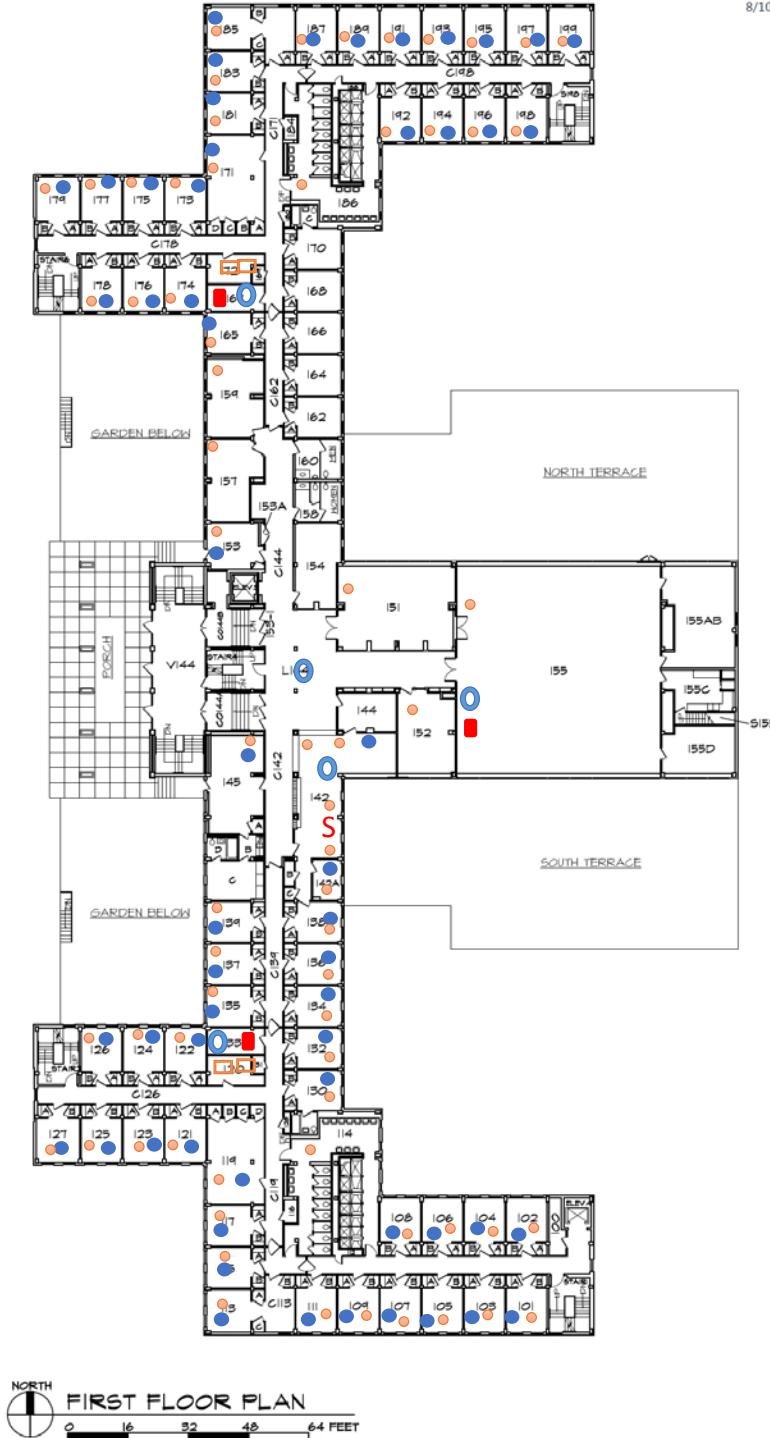
ALLEN RESIDENCE HALL – GROUND FLOOR

- Small Recycling Bin
- 3 Bin Recycling Station
- 40 Gallon Bottles & Cans
- S Paper Shredder
- Paper Recycling
- Small Trash Can
- 22 - 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 90 Gallon Totes Paper & Bottles
- Cardboard Gondola
- Dumpsters



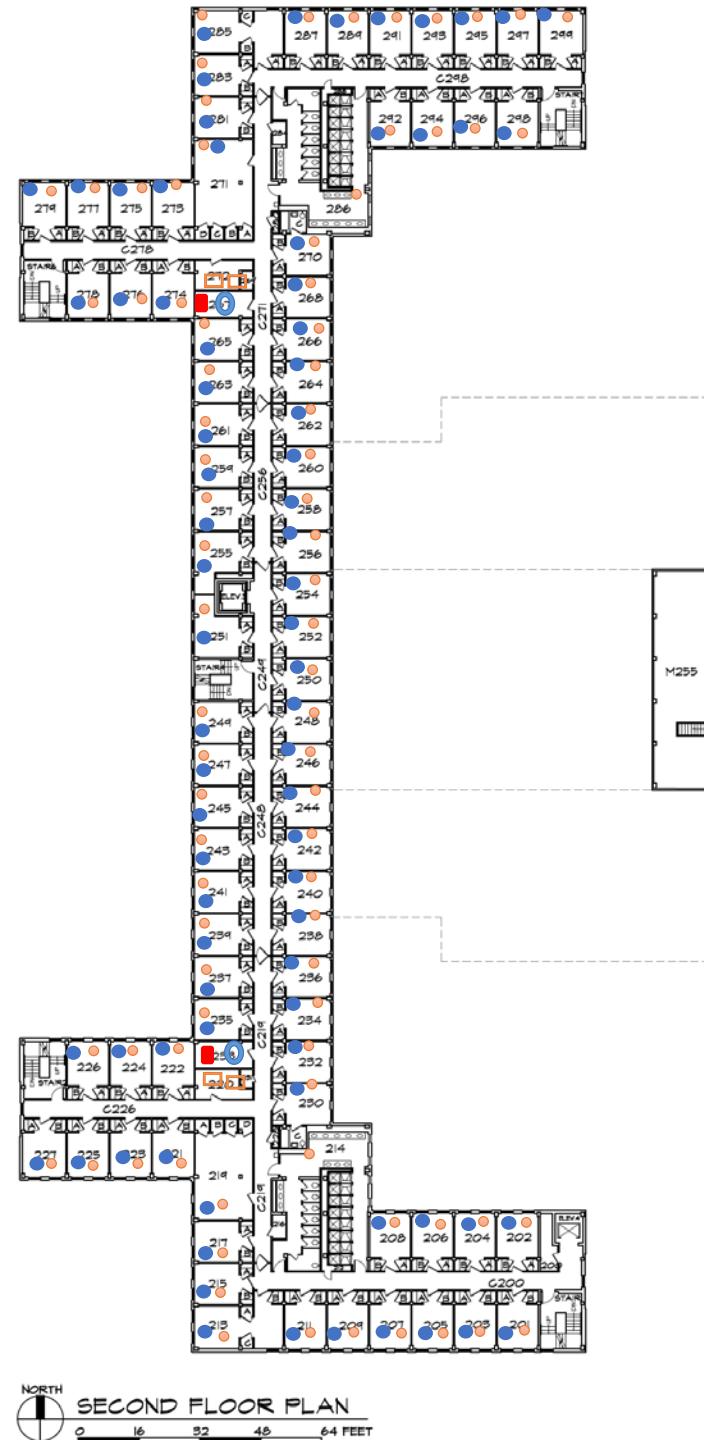
ALLEN RESIDENCE HALL – FIRST FLOOR

- Small Recycling Bin
- 3 Bin Recycling Station
- 20 - 40 Gallon Bottles & Cans
- S** Paper Shredder
- Paper Recycling
- Small Trash Can
- 22 - 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 90 Gallon Totes Paper & Bottles
- Cardboard Gondola
- Dumpsters



ALLEN RESIDENCE HALL – SECOND FLOOR

- Small Recycling Bin
 - 3 Bin Recycling Station
 - 20 Gallon Bottles & Cans
 - S Paper Shredder
 - Paper Recycling
 - Small Trash Can
 - 22 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - ▣ 90 Gallon Totes Paper & Bottles
 - Cardboard Gondola
 - Dumpsters

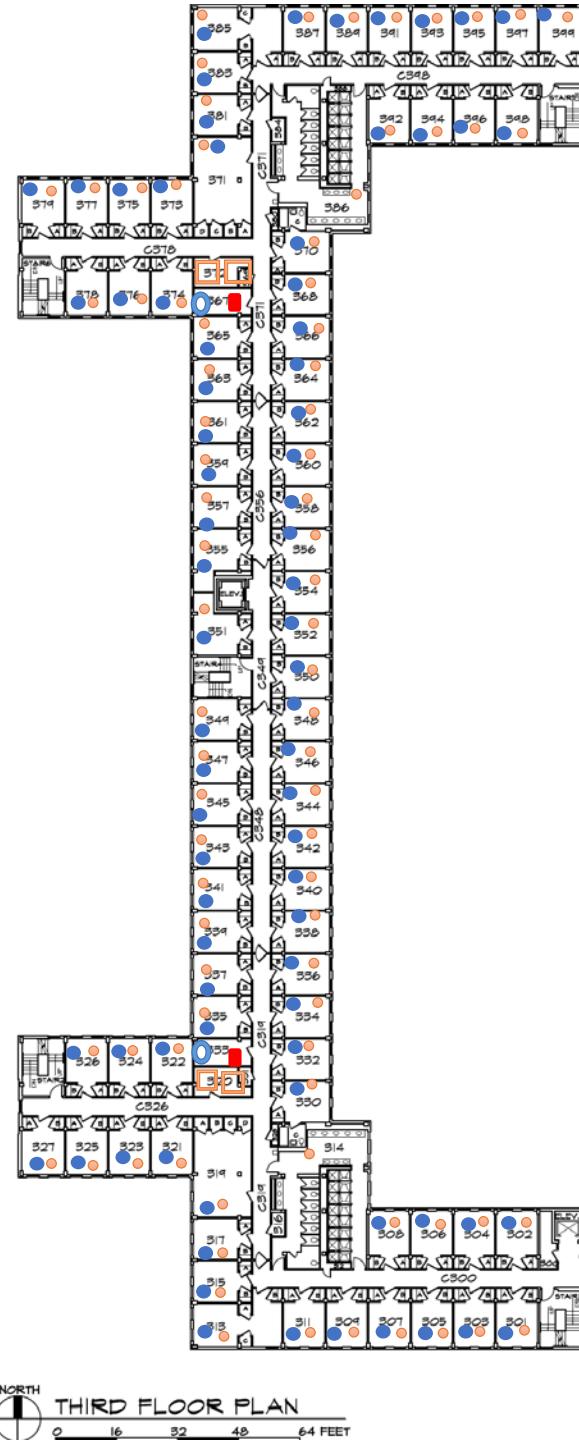


ILLINOIS SUSTAINABLE TECHNOLOGY CENTER PRAIRIE RESEARCH INSTITUTE



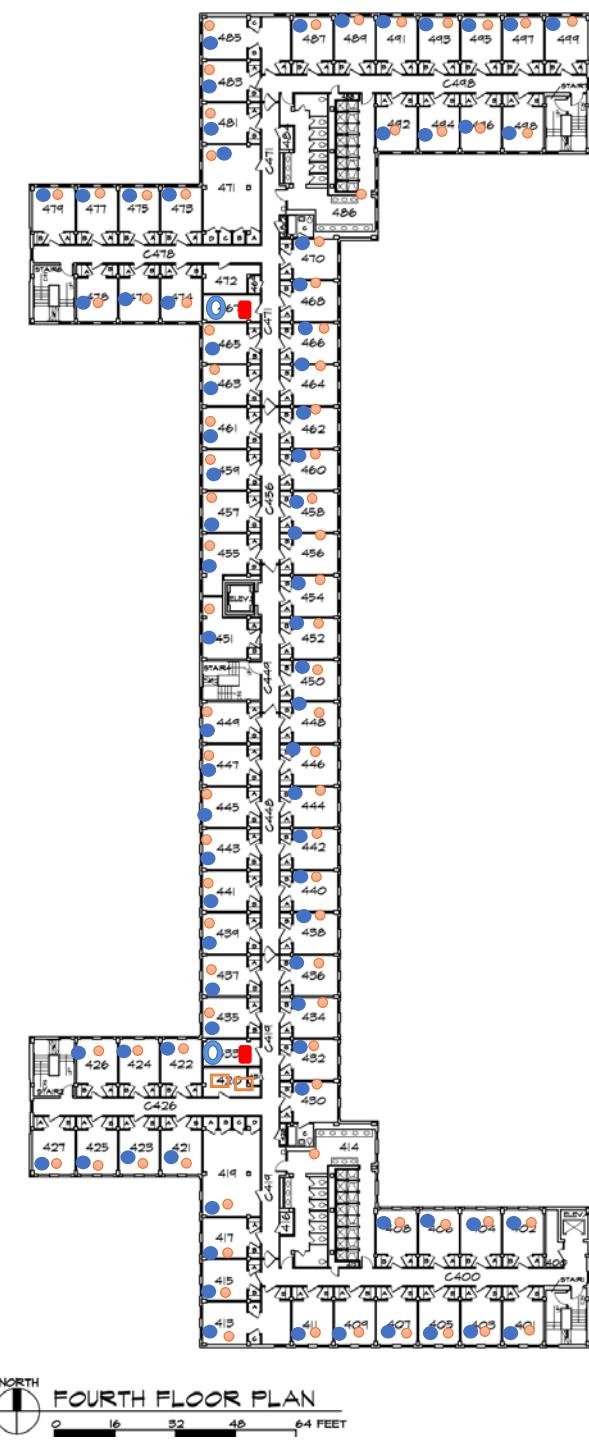
ALLEN RESIDENCE HALL – THIRD FLOOR

- Small Recycling Bin
- 3 Bin Recycling Station
- 20 Gallon Bottles & Cans
- S Paper Shredder
- Paper Recycling
- Small Trash Can
- 22 - 30 Gallon Trash Cans
- 55 Gallon Trash – Brutes
- 90 Gallon Totes Paper & Bottles
- Cardboard Gondola
- Dumpsters



ALLEN RESIDENCE HALL – FOURTH FLOOR

- Small Recycling Bin
 - 3 Bin Recycling Station
 - 20 Gallon Bottles & Cans
 - S Paper Shredder
 - Paper Recycling
 - Small Trash Can
 - 22 - 30 Gallon Trash Cans
 - 55 Gallon Trash – Brutes
 - 90 Gallon Totes Paper & Bottles
 - Cardboard Gondola
 - Dumpsters



ILLINOIS SUSTAINABLE
TECHNOLOGY CENTER
PRAIRIE RESEARCH INSTITUTE



APPENDIX B: MATERIAL DEFINITIONS USED FOR WASTE CHARACTERIZATION SORTING

Material Category	Description
Compostable	
Fines	Remnants left after sorting is complete. Typically consists of dirt, sawdust, small food scraps, etc.
Food scraps	Food preparation wastes, food scraps, spoiled food
Green waste	Debris such as grass clippings, leaves, garden waste, brush, and trees. Yard waste does include tree stumps
Other paper food-service ware	Paper kitchen products except paper cups
Paper cups	Cups made from paper with or without waxy coating
Paper towels and food-soiled paper	Bathroom towels, Food-soiled paper
Recyclable	
Aluminum and tinned food cans	Aluminum beverage cans, and tin cans used for food
Corrugated cardboard	Non-food-soiled corrugated cardboard
Electronic waste	All items that either contain a battery or power cord
Glass bottles and jars	All glass food and beverage containers
Non-food service paper	Newsprint, magazines, office paper
Other plastic containers	Plastic containers not used for containing water, fruit juice, sports drink, ice tea, wine, liquor, beer, soda water or similar carbonated drinks
Plastic beverage containers	Plastic containers used for containing liquid beverages
Expanded Polystyrene (EPS or "Styrofoam") food-service ware	EPS plates, cups and containers
Non-Recoverable	
Other bulky items	Large materials such as couches and tires
Other plastic food-service ware	Plastic one-time-use cutlery. Includes plates, bowls, forks and knives
Regulated materials	Materials regulated under federal or state solid waste management laws
Remainder/composite glass	Items that contain glass as the predominant category and another material
Remainder/composite metal	Items that contain metal as the predominant category and another material
Remainder/composite organics	Items that contain organics as the predominant category and another material
Remainder/composite paper	Items that contain paper as the predominant category and another material
Remainder/composite plastic	Items that contain plastic as the predominant category and another material
Trash bags	Bags used to contain waste materials