

**ILLINOIS COLLEGE ASSISTANCE PROGRAM (I-CAP) FOR RECYCLING
2015 WASTE REDUCTION PLAN / PLAN UPDATE**

SUBMITTAL INFORMATION

Please provide the original and one hard copy as well as a PDF copy (can send via email or include a CD or jump drive) by 4 pm, April 1, 2015. A one month extension may be requested and will be approved if received prior to April 1, 2015. Request for extensions may be emailed. A sample extension request is attached. Completed plans should be sent to:

Illinois College Assistance Program for Recycling
David E. Smith, Manager
500 East Monroe, Ridgely 12
Springfield, IL 62701
Email: David.E.Smith@illinois.gov
Phone: 217-785-2006

Date: March 20, 2015
Institution Name: University of Illinois at Urbana-Champaign
General Mailing Address: 506 S. Wright Street, Urbana, IL 61801
Authorized Contact: Morgan Johnston
Contact Title: Associate Director of Facilities & Services, Director of Sustainability
Contact Phone: 217-333-2668
Contact Email: mbjohnst@illinois.edu

SECTION 1 - BACKGROUND

1.1 Institution Identification

Provide a brief description of the institution and its mission. Since its founding in 1867, the University of Illinois at Urbana-Champaign has earned a reputation as a world-class leader in research, teaching, and public engagement. A talented and highly respected faculty is the university's most significant resource. Many are recognized for exceptional scholarship with memberships in such organizations as the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Engineering, and with awards such as Nobel Prizes, Pulitzer Prizes, and the Fields Medal in Mathematics.

The campus has a fundamental commitment to undergraduate education. More than 32,000 undergraduate students are enrolled in nine undergraduate divisions, which together offer some 5,000 courses in more than 150 fields of study. The campus enrolls more than 12,000 graduate and professional students in more than 100 disciplines. It is among the top five universities in number of earned doctorates awarded nationally each year.

Also integral to our mission is a commitment to public engagement. Each year about 65,000 Illinois residents participate in scores of conferences, institutes, courses, and workshops presented statewide. Research and class projects take students and professors off campus to share expertise and technical support with Illinois farmers, manufacturing firms, and businesses. In a typical year, student volunteers log more than 60,000 volunteer hours.

1.2 Contacts

Plan Coordinator

Ms. Morgan B. Johnston
Associate Director of Facilities & Services, Director of Sustainability

1501 S. Oak Street
Champaign, IL 61820
(217) 333-2668

Recycling Coordinator

Mr. Tracy Osby
Coordinator of Campus Waste Management
1501 S Oak Street
Champaign, IL 61820
(217) 244-7283

1.3 Student/Staff Population

What is the total number of full-time equivalent (FTE) enrollment? 42,720 FTE students in FA14

What is the total number of students, both full and part-time, enrolled? 43,603 total students in FA14

What is the total number of occupants of student housing? There are 8,500 undergraduates in the residence halls, 700 graduate students in grad halls, and 1,150 apartments for student families.

What is the total number of employees of the institution including teaching staff and administrators? 7,068 total FTE faculty and staff / 17,421 total faculty and staff headcount

1.4 Buildings/Grounds

Identify any off-site facilities and/or satellite campuses operated by the institution and accounted for in the plan.
None

Identify any off-site facilities and/or satellite campuses operated by the institution not accounted for in the plan and provide an explanation for exclusion. All campus property within the contiguous campus boundary in Urbana-Champaign is included in this plan. Any campus property off site is excluded because it is not managed centrally.

Approximate total number of the institution-occupied buildings accounted for in the waste reduction plan?
There are approximately 205 large buildings (over 10,000 square feet) in the core campus. Facilities & Services (F&S) collects waste and recycling from 189 dumpster locations on a regular basis. There are a total of over 600 buildings and sheds on the contiguous campus property.

Number of incineration facilities: 2

Materials incinerated: Type 4 waste, animal carcasses, and type 7 waste, laboratory/medical waste, are incinerated. The University has a type 4/7 incinerator at the Veterinary Medicine Basic Sciences Building and a type 4 incinerator at the Edward R. Madigan Laboratory.

Maximum capacity of each: The type 4/7 incinerator can accommodate 400 pounds per hour and the type 4 incinerator can accommodate 500 pounds per hour.

Average daily throughput: In 2014, the type 4/7 facility incinerated 74,212 pounds of material over 708 hours for a throughput of 105 pounds per hour. The type 4 facility incinerated 19,091 pounds over 181 hours for a throughput of 105 pounds per hour.

Is energy recovered? No

SECTION 2 - EXISTING RECYCLING AND COMPOSTING ACTIVITIES

2.1 Details of Recycling/Composting Activities

What materials are collected for recycling at your institution?

- Commodity recyclables, which include aluminum cans, or “cans”; cardboard (old corrugated cardboard or “OCC” and paperboard, excluding waxed); #1 PETE and #2 HDPE bottle-shaped plastic, or “bottles” or “plastic”; steel and tin cans; mixed paper, or “paper” (books, mixed office paper, shredded paper, junk mail, magazines, folders, newsprint); mixed metal (brass, copper, iron, stainless steel, steel); truck and car tires; and wood pallets.
- Special recyclables, which include surplus or scrap electronic equipment, batteries, cellular telephones, lamps, bicycles, clothing and textbooks.

Please explain how this material is captured. The initial collection and sorting of the most common recyclables (paper, cardboard, plastic bottles, and aluminum cans) begins with individuals at campus buildings. This promotes the sustainability culture on campus and engages campus visitors on a personal level in the recycling process. Faculty, staff, and student residents have garbage and/or recycling bins in their personal office or residence hall room. Building Service Workers (BSWs) are responsible for emptying the individual garbage bins in offices and rooms into the common building garbage collection dumpster. Conversely, residents are responsible for emptying their personal recycling bin into a common recycling bin in the building. Not all individual offices or residence rooms have individual recycling bins, but all buildings have at least one common recycling bin.

BSWs empty the common area recycling bins into the appropriate building-level dumpsters. If there is a paper-only dumpster, or a cardboard dumpster, those materials are placed directly inside. If the building uses only a garbage dumpster, then the recycling is collected in a blue liner, which the BSWs tie off and place in the garbage dumpster. These blue bags are used in all plastic/can collection bins, and they are very visible from the garbage dumpsters and during subsequent sorting at the Waste Transfer Station (WTS).

The dumpster collection schedule is complex but flexible. To minimize traffic conflicts, collection begins each weekday at 3:00 a.m. and a second route begins at 5:00 a.m. All hauling is usually completed by 3:00 p.m. In addition to the waste hauling, there are two paper dumpster collection routes and the two cardboard dumpster collection routes for each weekday. Drivers log by hand the truck weights for the incoming paper recycling trucks. To meet Illinois EPA requirements, the Coordinator of Campus Waste Management conducts and logs a weekly visual inspection of one incoming garbage load and estimates its waste components.

For special recyclables (pallets, bicycles, lamps, etc.) the unit(s) generating the waste work directly to collect and process the recyclables. In some cases, the Coordinator of Campus Waste Management is engaged in the process, such as with pallet recycling, and in other cases the individual unit responsible handles the recycling/reuse, such as with abandoned bicycles.

How are captured recyclables collected and processed? If a third party is involved in collection and processing please identify who performs what services. F&S manages the majority of campus waste through the division of Waste Management & Recycling, under the supervision of the Coordinator of Campus Waste Management. This process is centered at the Waste Transfer Station (WTS). At the WTS, there are three processing points for the collected waste: the South Bay, the North Bay, and the Sorting Floor.

In the South Bay, loads of garbage with mixed-in recyclables, i.e., bottles/cans, cardboard, and paper, are pushed onto the conveyor belt's infeed belt (Figure 1). Any blue liners are broken open and the cardboard and loose bottles and cans are pushed onto the infeed belt. The infeed belt moves the recyclables into the sorting platform where Developmental Services Center (DSC) employees drop recyclable commodities through slots on the sides of the belt into bays on the main floor designated for bottles, cans, cardboard, paper, or mixed metals. When these recycling commodity bays are full, contents are pushed onto the Sorting Floor. The waste that passes through the sorting belt is collected in the North Bay.

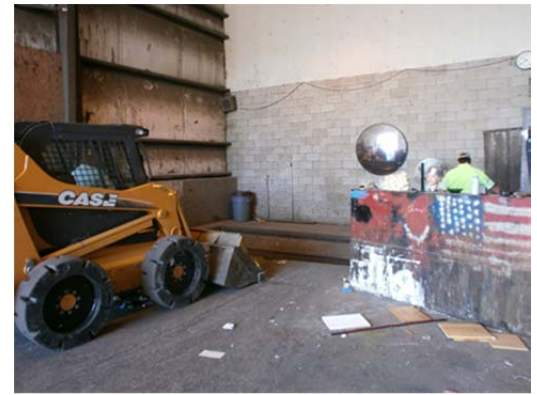


Figure 1: South Bay - infeed belt (above)

Once a recycling commodity bay is emptied onto the Sorting Floor, or a recycling truck is dumped on the Sorting Floor (Figure 2), recyclables are pushed into the baling machine and bundled into 60-ft³ bales. Because they are more immune to weather conditions, bales of bottles, cans and mixed metals are placed in semi-trailers in the parking lot. A trailer with an allowed Gross Vehicle Weight of 80,000 pounds can carry a load equating to 29-33 1,400-pound paper or cardboard bales, or fifty-six 600-800-pound bottle or can bales. Because their condition and market value are more sensitive to dampness, cardboard and paper bales are stacked on the Sorting Floor until a trailer-load has accumulated.



Figure 2: Sorting Floor – with paper truck contents

The North Bay is where waste for the landfill is collected. The campus-wide waste collection trucks go to the South Bay or the Sorting Floor, with the exception of materials from trash compactors. This compacted waste is the exception to the typical sorting process used at the WTS because the compacted waste is too compressed to effectively remove recyclables through the sorting line. For the materials that do go through the sorting line, remaining garbage is dropped into the North Bay and dropped through holes in the floor into roll-off trailers parked under the bay. When full, these trailers are hauled by landfill staff to the Brickyard Landfill in Danville, IL. Both hauler and landfill are owned by Republic Services.

Discuss who markets the recyclable commodities captured in your recycling programs. The Coordinator of Campus Waste Management markets the recyclable commodities. He waits until commodity prices reach an acceptable level before selling them. In some cases, this means holding the materials at the WTS for more than a year, such as with aluminum cans. At sale time, the buyer then sends a driver with a truck for the trailer. Paper is sold to multiple buyers through a broker. Aluminum cans are sold directly to Anheuser-Busch. Plastic bottles are sold directly to various buyers. All outgoing commodity recyclable trailers are weighed before they leave the WTS and then weighed again by the buyer when the trailer reaches the buyer.

Describe any and all educational and/or promotional activities used to promote recycling at your school. Since the start of the recycling program in the 1970's, F&S has led the communication efforts for promoting recycling to the campus community. This tradition continues today, with tours of the Waste Transfer Station, regular participation in campus sustainability promotional events, and the addition of social media messaging for special events.

In 2010, this campus completed the first Illinois Climate Action Plan (iCAP) setting a strategic plan for making this campus as sustainable as possible, and meeting the American College and University Presidents' Climate Commitment, as signed in 2008. With the signing of the 2010 iCAP, the campus moved toward developing a holistic approach to sustainability education and initiatives, including waste minimization. The Institute for

Sustainability, Energy, and Environment (iSEE) is now a central hub for sustainability education and outreach. It hosts an online database recording existing and planned sustainability-related projects and programs, with a listing of waste minimization initiatives at <http://icap.sustainability.illinois.edu/themes/procurement-waste>.

Recycling is one of the key topics in all campus sustainability education and promotion efforts, including Quad Day, Campus Sustainability Day, Earth Week, and social media messaging. While there have been numerous events and reminders each year throughout campus, there are two notable recent improvements: Zero Waste events and the Certified Green Office program. The most recent campus-wide Zero Waste event, coordinated by the Illinois Sustainable Technology Center, was the Homecoming Football game in October 2014. With interdepartmental cooperation and over 150 student volunteers, 60 percent of the waste from inside the stadium was diverted from a landfill, including 9,787 pounds composted and 8,790 pounds recycled.

In addition to large noticeable events like a Zero Waste Game, the campus is spreading awareness of recycling and waste minimization through the new Certified Green Office program. This program is managed by iSEE, and it already has over 25 offices enrolled. One of the required actions for participating offices is to “Identify, label and communicate the location of recycling stations (paper, bottles and cans) around the office/building and if needed request new bins by contacting Facilities & Services. Also, label bins with a printout of the acceptable materials list to ensure all recyclables make it into the appropriate containers.” Additionally, each of the participating offices assigns a staff person as their “sustainability ambassador” to help share information about sustainability programs on campus, including recycling programs.

How are new students, faculty and staff informed of recycling opportunities? At the beginning of each school year, there is a major event for all new students, called Quad Day. At this event, and the associated Welcome Week activities, the recycling program is explained along with other campus sustainability topics. Additionally, there is a sustainability education booth at the annual faculty and staff orientation for new employees.

Describe future changes or enhancements. There are four enhancement initiatives in progress for the recycling program. First, we are defining specific objectives for waste minimization through the update process for the Illinois Climate Action Plan (iCAP). Second, there is a Styrofoam recycling project funded for implementation in the next year. Third, the Zero Waste awareness efforts will continue to expand through the Certified Green Office program. Fourth, the standard signage on recycling bins throughout campus will be refreshed to assure consistency.

There are also a number of recommendations under consideration this year, through the iCAP update process. The updated iCAP will include potential strategies for the campus to consider in support of the waste minimization goals. These are some of the potential strategies, subject to available resources, under consideration for the following five to ten years:

- Measure the performance of campus units (such as specific building or department) on purchasing, waste, landfill, recycling of specific commodities, and other product reuse.
- Invite campus units to participate in a waste stream characterization study that would help them develop customized building-level plans to decrease wastes, increase recycling, and increase engagement efforts.
- Increase awareness of special recycling categories, such as glass, food waste, electronics, batteries, and nitrile gloves.
- Expand the categories of waste that are recycled on campus, such as plastics types 3-7.
- Enhance the university purchasing process to explicitly track purchases for compliance with campus environmental standards, so that it would be straightforward to measure progress.

Covered Electronic Devices: What is the institution's plan for managing old, obsolete or unwanted covered electronic devices? University-owned electronics go to a campus surplus redistribution warehouse when they are no longer required by the original user. Surplus items are stored in the warehouse, which is accessible for any university-affiliated entity who would like to search for needed equipment for use on campus. Surplus operations are handled by Property Accounting and Reporting, and appropriate property accounting forms must be filled out to either add or remove items from the surplus area or to exchange items between departments. The campus surplus redistribution warehouse uses a web-based software application to tag and track all equipment.

Electronic equipment is processed through the surplus warehouse, and items that are likely to be reused on campus are kept in stock and available for free to campus units. Typically, this includes equipment that is three to five years old and that is likely to be wanted by another campus department. The refresh rate (frequency of replacement) for electronic devices is set by individual departments. Electronic devices which are not redistributed on campus follow the protocols established by the Illinois Department of Central Management Services (CMS) in Springfield. A full trailer of surplus electronic equipment is sent to CMS approximately every three weeks, which is estimated at 95 tons per year. If an item is nonfunctional or is not redistributed, it is sent for recycling to one of the State's approved e-waste recyclers.

2.2 Current Composting Methods

Please list the materials collected for composting at your institution. Landscape waste is composted at a central site on campus, including but not limited to leaves, woody plant brush, limbs, and stumps. A small food waste composting project is in place for one campus residence hall.

Please explain how this material is captured and processed. Leaves have been composted for over 50 years. Every fall the leaves are collected and hauled to the F&S Nursery where they are placed in windrows and periodically turned to produce compost. Eventually, the compost is reapplied on campus in various landscape projects.

Since the 1990 ban on land filling landscape waste, the campus chips most of the landscape waste other than leaves and uses it as mulch. When trees are removed by F&S tree surgeons, most of the smaller branches are chipped on site and applied directly to various campus areas immediately. The larger branches are cut into smaller logs that are quickly removed by people needing firewood.

Does your institution collect Food Scraps for composting? If so, please explain. Currently, this campus does not collect food scraps at the large-scale level for composting. There are Enviropure digesters in the larger Dining Halls for University Housing to reduce that food waste from the landfill waste stream. There is also a small food scrap vermicomposting system at the Sustainable Student Farm. We are currently handling three to six 40-gallon bins of food waste each week, during the school year, from the Busey-Evans Residence Hall.

Section 3 – Source/Waste Reduction Activities

Describe existing source/waste reduction activities employed by the institution. At the central procedural level, the campus has shifted primarily to electronic processes which reduce the demand for paper, including student applications, employment applications, phone book directories, etc. Dining Services reduced food waste by going “trayless” which limits the amount of food thrown away. All campus mail is sent in reusable envelopes of various sizes, which are used six to twenty times before they are recycled.

We promote two-sided copying, reusing materials, buying durable goods, and using refillable items. This is primarily accomplished through communication about waste minimization strategies, such as with the Certified Green Office program. Waste minimization steps to earn extra points toward Green Office certification are:

- Environmentally friendly office supplies.
- 100% recycled content printer paper.
- Online subscriptions instead of printed publications.
- Do not purchase bottled water when tap or filtered water can be made available instead.
- Have a full supply of reusable dishware, cutlery, and cups in the kitchen, or work with caterers to reduce packaging waste.
- Promote need-based printing (print only when needed and distribute agendas and supporting documents electronically prior to meetings).
- Place a used paper collection bin to increase use of scrap paper.
- Set the default on all printers to print two-sided in black and white.
- Collect printer cartridges and recycle them.

How are waste reduction options promoted to students and staff? Please refer to promotional information described in Section 2.1 above.

Section 4 - Procurement

An institution's procurement policy must not discriminate against the procurement of recycled-content products. Products with recycled-content shall be procured wherever and whenever cost, specifications, standards and availability are comparable to products without recycled-content. Does your institution meet this requirement? Yes. The University of Illinois at Urbana-Champaign Campus Administrative Manual includes the following policy statement: "University departments and units should purchase products with recycled material content whenever cost, specifications, standards, and availability are comparable to products without recycled content." Also, the purchase of polystyrene products is prohibited.

Please attach a copy of the institution's written procurement policy. Attached and online at <http://cam.illinois.edu/vii/VII-b-9.htm> and <http://cam.illinois.edu/vii/VII-b-11.htm>.

Section 5 - Waste Audit/Assessment

5.1 Waste Generation Study

When was the most recent waste assessment conducted at your institution? A Waste Characterization Study was completed in September 2014, for four specific administrative buildings on campus. The report is online at <http://icap.sustainability.illinois.edu/project-update/final-report-0>.

Who conducted this audit? This study was conducted by staff at the Illinois Sustainable Technology Center.

What were the results of this study? The results showed that an average of 43.6% of the building-generated waste was placed in the appropriate building-level recycling containers. The remaining waste from these buildings was subsequently processed at the WTS, leading to a higher (but not calculated) diversion rate. Due to the fine level of detail from this study, the Student Sustainability Committee has funded an additional round of waste characterization studies for other building types on campus. Those are scheduled to occur in FY16.

Section 6 - Investigation of Materials Not Recycled/Composted

What materials are not collected for recycling or composting at your institution? All of the materials recommended by DCEO are collected on this campus, with one caveat. Glass is recycled only through Housing, which manages the university catering operation.

Why are these materials excluded? Glass is excluded from the campus-wide system because there is a limited volume, higher risk of injury to collection staff, and a thin market for the collected material.

SECTION 7 - FUTURE ACTIVITIES

Please explain any future plans to implement expanded or new recycling/composting opportunities. There is an existing glove recycling program at the Illinois Sustainable Technology Center building and a pilot project for glove recycling at Dining Services. This system can be expanded to include the full volume of recyclable gloves across campus, to save approximately 20 tons per year. The maximum cost of this program would be about \$10,000 per year; however, we are investigating ways to reduce annual costs through consolidation of used gloves to ship to the recycler.

Additionally, there is a project underway to set up expanded polystyrene (EPS) recycling for our campus. While the purchase of polystyrene is prohibited, there are various materials shipped to campus in polystyrene packaging, especially for research materials. We have received some funding for student support and supplies from the University of Wisconsin at Madison as part of an EPA grant that students and postdocs there have received. This program will be a partnership with Community Resource, Inc. in Urbana. They have agreed to handle all of the logistics of picking up styrofoam from large containers ("gaylords") in campus buildings, transporting it to their site, feeding it into a machine called a "densifier", and selling the densified material to a company in Chicago. This project is being implemented through iSEE, with funding support from the Student Sustainability Committee.

Strategic Procurement has recently completed a great deal on 30% recycled-content paper from OfficeMax, in partnership with F&S Stores, we are now able to offer 30% recycled paper through F&S Stores for a lower price than many offices purchase virgin paper from OfficeMax directly. This competitive pricing will be communicated primarily through the Certified Green Office Program at iSEE, to increase the use of recycled-content paper on campus.

Section 8 - Target Reduction

Has your institution met the 40% goal? Yes, in FY14 the landfill tons/student was only 38% of the 1987 baseline, resulting in a 62% reduction from the 1987 baseline amount. See Table 1.

Totals, without construction and demolition waste	1987	2014
tons sent to landfill	12,000	5,426
FTE students	36,340	42,720
landfill tons/student	0.330	0.127
% of 1987 baseline	100%	38%
% reduced since 1987 baseline	n/a	62%

Table 1: Waste Reduction Progress

Section 9 – Willingness to Participate in Recycling Research and Data Gathering

From time to time DCEO or a partner (e.g., the Illinois Recycling Association) has a need to gather recycling related data in Illinois and could use help in those endeavors.

Would your institution be willing to help in these efforts in the future? Yes

If so, who should we contact? Tracy Osby at (217) 244-7283