



5.

# ZERO WASTE

NO DAMAGE  
NO TRACE



The Zero Waste International Alliance (ZWIA) defines “zero waste” as “the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.”<sup>117</sup>

In other words, the goods and services we purchase — and how we interact with them — influences everything from the size of landfills to the release of harmful greenhouse gases (GHG). By investigating a resource’s life cycle (i.e., a “whole system” approach), we can minimize energy usage across all stages, from raw material extraction to transportation to waste disposal.

The university’s first significant step toward reducing landfill waste emissions occurred in 2009. We began sending landfill waste to a site in Danville, Ill., that recovers methane emissions

for electricity generation. The campus had previously sent landfill waste to a non-recovering site in Clinton, Ill. According to the standard GHG calculator, SIMAP,<sup>118</sup> this change resulted in a 101% emissions decline from FY08 to FY09. In 2015, Karin Hodgkin Jones, former student member on the Purchasing, Waste, and Recycling (PWR) SWATeam and current lecturer in the School of Art + Design, investigated university landfill emissions using public data from the Environmental Protection Agency. With her data, the GHG emissions from landfill waste were re-

calculated to show 2,314 tons in FY08 and 510 tons in FY14.<sup>119</sup> Using this data, we recently modified the carbon footprint to be more accurate; emissions from solid waste were approximately 475 MTCO<sub>2</sub>e in FY19.

Notable achievements in zero waste from 2015 to 2019 include:

- » In July 2017, the Purchasing Office began reporting directly to the chancellor instead of the University of Illinois System Office, better equipping the Urbana campus to execute targeted improvements.
- » In FY19, Facilities and Services (F&S) set in motion a phased modernization and upgrade program geared toward meeting campus’s zero waste goal. Projects included: installing 162 standardized indoor recycling stations to increase collection; improving collection routes to build recycling capacity; installing on-truck scales for effective tracking; and providing tours and educational sessions at the Waste Transfer Station to increase engagement. Additionally, in summer 2020, \$310,000 was approved to replace 382 outdoor trash receptacles with 130 strategically placed dual trash and recycling bins.
- » Employing dedicated staff members is critical to ensuring that university waste management policies receive the expert attention they deserve. In 2020, F&S initiated a search to hire a permanent full-time Zero Waste

Coordinator. The key responsibility for this position is transitioning campus to a zero-waste community with an emphasis on operations.

- » University Housing has prioritized food waste reduction with particular success in campus dining halls. Food scraps comprise 17.5%<sup>120</sup> of landfilled municipal solid waste (MSW) in the state of Illinois, a larger percentage than any other MSW. Because of this, managing food waste in other campus units remains critical.
- » The Department of Food Science & Human Nutrition, the Department of Crop Sciences, and University Housing collaborate on the Illinois Sustainable Food Project (ISFP) which began in 2013. This initiative provides processing of fruits, vegetables, and grains for campus dining halls and units (e.g., Bevier Café) and offers student learning and research opportunities while reducing the amount of food sent to the landfill. For example: excess or visually unappealing tomatoes are processed into sauces; grain left over from the wheat breeding program is milled into flour for baked goods; hot peppers are used for hot and wing sauces; and leafy greens or apple cider are frozen for year-round use. The ISFP allows for larger production of certain items by providing value-added or preservation functions for goods. Through this program, students receive opportunities to learn about

<sup>117</sup> Updated December 2018, <http://zwia.org/zero-waste-definition/>

<sup>118</sup> <https://unhsimap.org/home>

<sup>119</sup> <https://bit.ly/3hT68GQ>

<sup>120</sup> <https://bit.ly/3oX125n>

### Percent Recycled-Content Paper Purchased from OfficeMax

TRACKED BY FISCAL YEAR



Figure 19: Percent Recycled-Content Paper Purchased from OfficeMax

sustainability, food production, and recipe development using local items in classes, student groups, or internships. In 2019, over 100,000 pounds of products from various campus sources were processed.

- » The Sustainable Student Farm (SSF) began in 2009 as a joint project between the Student Sustainability Committee (SSC) and the Department of Crop Sciences with support from University Housing. Their goal is to educate students about the health, economic, and environmental benefits of local food production while providing high-quality, great-tasting produce. The SSF has operated a farm stand on the Main Quad since 2011, opening an online store in 2020 for the community's safety and convenience. By cultivating and selling fresh, minimally packaged fruits and vegetables for on-

campus consumption, the SSF models low-emission, low-waste local food.

- » In April 2020, the SSC approved funding for the university to become a member school of the Post-Landfill Action Network (PLAN). In addition to providing a network with resources to assist in our zero-waste efforts, the PLAN offered a summer 2020 student fellowship opportunity designed to help with benchmarking our waste goals and collaborating with stakeholders to identify how we can improve our waste diversion efforts beyond behavior change campaigns.

Purchasing and procurement standards remain a major challenge at the university, as policies are not always well-known, used, or enforced. As of FY17, campus reported purchasing 19.13% recycled-content paper from OfficeMax as compared with the 2015 target of 50%

### Municipal Solid Waste (MSW) Diversion Rate

TRACKED BY FISCAL YEAR

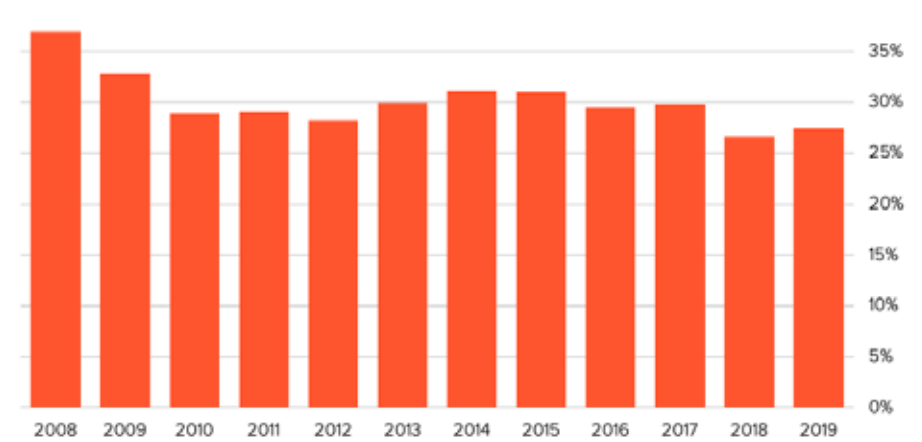


Figure 20: Municipal Solid Waste (MSW) Diversion Rate

by FY20<sup>121</sup> (Figure 19). iCAP 2020 includes objectives to not only implement a transparent procurement reporting program, but also to address the issue at its source by holding high-level business officers accountable for making environmentally conscious purchasing choices.

The 2015 iCAP also set the ambitious goal to increase our municipal solid waste (MSW) diversion rate (i.e., the percentage of everyday garbage kept out of landfills each year) to 45% by FY20. This metric was measured at 27.40% as of FY19 (Figure 20). However, using diversion rate as a key performance indicator complicates tracking true change in landfilled waste due to fluctuations in total waste volume. For example, imagine that campus has dramatically reduced the amount of paper consumption from

printing. This reduces both the total waste volume and the recycled waste volume, resulting in a reduced diversion rate. To avoid this flaw, we are now focusing on the core objective of reducing the total volume of landfilled waste rather than tracking the diversion rate alone.

A comprehensive behavioral shift for students, staff, faculty members, and visitors is integral to mitigating our waste stream. Our vision is to promote a zero-waste campus culture by empowering individuals and units to take responsibility for everything from purchasing to waste reduction. Actionable steps like providing education about “reduce, reuse, and recycle” concepts, clearly communicating best practices, and investing in our facilities (e.g., indoor and outdoor recycling bins) are vital to this process.

<sup>121</sup> <https://bit.ly/3gftGoB>

- 5.1 Sustainable Procurement Reports
- 5.2 Reduce Landfilled Waste
  - 5.2.1 Install Appropriate Infrastructure
- 5.3 Establish a Culture of Reuse
  - 5.3.1 Zero Waste Messaging Campaign
- 5.4 Reduce Food Scraps
- 5.5 Plan for Organic Waste
- 5.6 Use Local Food
  - 5.6.1 Food Literacy Project
- 5.7 Green Cleaning Program

## Zero Waste Objectives

The following Zero Waste objectives were developed by the SWATeams, iCAP Working Group, campus community, and Sustainability Council to guide the university's actions toward achieving zero waste and fostering a conscientious consumer culture.



The University of Illinois Urbana-Champaign recycles cardboard collected in specific Dumpsters throughout campus. Recyclables are manually sorted at the Waste Transfer Station.

### 5.1 [Purchasing] Create sustainable procurement reporting guidelines and increase compliance to 100% of business managers through training and outreach by FY24.

“Procurement” refers to locating and obtaining goods and services from an outside vendor — everything from food products, to printer paper, to public computers in university labs. Procurement is one of the earliest life cycle stages over which we have direct control, and the sources we select for campus purchasing are some of our most powerful sustainability “votes.”

People will usually opt for sustainable sourcing when given the opportunity. However, a core procurement issue at a university of this size is the lack of coordinated communication within the network of professionals making buying decisions. Drafting an annual report to be completed by business managers ensures that information about sustainable procurement is compiled, disseminated, and distributed to those who have the power to cast the most environmentally conscious vote.

#### SUSTAINABLE PROCUREMENT REPORTING PROGRAM

Working closely with the Business Managers Group, we aim to implement a sustainable procurement reporting program by FY23. By FY24, we plan for all campus business managers to participate. Annual reports will include metrics such as the percentage of environmentally preferred purchases of products like office paper, cleaning products, computers, electronics,

and package delivery services; the percentage of purchases made through iBuy;<sup>122</sup> and the number of vendor contracts with sustainability requirements.

#### iBUY

Because all purchasing through iBuy occurs online, increasing the percentage of purchases made through this marketplace will elevate our campus's overall sustainability by decreasing the waste stream typically generated from purchasing.

Purchase Orders (PO) through Banner have historically been printed and mailed to vendors, which generates large quantities of waste from paper, toner, postage, and delivery. From FY17 to FY19, the average annual POs in Banner exceeded 7,500; a conservative estimate of 10 pages per PO calculates over 75,000 sheets of paper used per year. Using iBuy can conserve waste, cut costs, and minimize emissions.

Recently, the Purchasing Office has made focused efforts to shift purchases from Banner to iBuy, with over 2,700 POs completed in iBuy from FY17 to FY19. Functional updates will enable a higher volume of POs to be routed through iBuy in the future. These include:

- » The addition of Contracts Plus. Historically, Banner was the only channel for submitting purchase orders tied to a solicitation or contract. Adding Contracts Plus enables these purchases to be made through iBuy, eventually replacing the Illinois Contract System (ICS) and consolidating contracted

and solicited orders.

- » The ability to process Standing Purchase Orders. Standing POs allow units to order qualifying items on an as-needed basis (e.g., frequently replenished lab supplies). Although iBuy is not yet capable of processing Standing POs, this feature is expected by FY21. In FY19, more than 3,000 Standing POs were processed in Banner. While not all of these will immediately transition to iBuy, a substantial reduction is expected by FY21.
- » The America To Go (ATG) punch out catalog. Punch out catalogs allow buyers to directly access supplier catalogs from within the purchasing platform. Currently, the university spends approximately \$10M per year on restaurant and catering orders from Banner, iBuy, Purchasing Cards (P-Cards), and Travel Cards (T-Cards). The majority of these purchases are from Banner and T-Cards. By streamlining access to ATG (which provides a curated network of restaurant and catering vendors), we can reduce the volume of orders processed through Banner and digitize our ordering practices.

#### CAMPUS CONTRACTS

Every campus department is involved in procurement; numerous professional positions require thoughtful vendor interactions to negotiate everything from day-to-day office supply purchases to expensive orders including elec-

tronics and catering. Though each department has different requirements, all can incorporate sustainability into their purchasing choices. In addition to a sustainable procurement reporting program, we will advocate to integrate sustainability literacy components into relevant contracts and job descriptions.

The purpose of the reporting program outlined in this objective is to integrate green purchasing into all facets of campus. The reporting itself is a necessary step; the ultimate goal is to foster a culture of environmentally conscious decision-makers. Only through coordinated communication and diligent reporting can we hope to tackle this problem as a campus.

### 5.2 [F&S] Reduce the total campus waste going to landfills from 5,049 tons in FY19 to 4,544 tons or less in FY24, which is a decrease of at least 10%.

In FY19, the university (including the South Farms) generated 5,049 tons of waste — the combined weight of 1,000 *Alma Mater* statues. With an improved waste collection infrastructure, we plan to cut this amount by 10%, to 4,544 tons per year, by FY24.

Our strategy for this objective is contingent upon determining the largest campus waste-producers and targeting our reduction efforts to those locations. With data from waste collection trucks, we can identify the top five waste-producing buildings and provide “reduce, reuse, and recycle” training to their units.

To incentivize waste reduction, we will explore options for buildings, businesses, com-

122 <https://www.obfs.uillinois.edu/iBuy>

mercial areas, and organizations to compete to produce the least total amount of waste. This objective will also be communicated in the dining halls to encourage consciousness of minimizing food waste.

Additional work will be done to eliminate single-use containers from the dining halls and disposable items (e.g., plastic bags and straws) from campus. Bevier Café currently has a system of reusable containers which allows students to take a to-go container with their food and return it at their next visit. In addition to minimizing waste generated by buildings and their units, we plan to explore innovative, research-based solutions that take advantage of the university's network of expert investigators and its ability to function as a "living lab."

### 5.2.1 [F&S] Install appropriate waste collection infrastructure throughout the University District, with new indoor bins placed in at least 150 buildings by FY24.

One of the clearest indicators of a unified waste collection infrastructure is the appearance of our indoor and outdoor bins. In addition to performing a vital function, our waste and recycling receptacles embody the time, attention, and resources devoted to campus sustainability.

By renovating and improving our bins' presentation, we can ensure that we are capitalizing on every available opportunity to recycle and that waste that must be disposed of is handled correctly. This will also provide a visible signal to students, staff, faculty members, and visitors that our campus prioritizes sustainability and

is committed to making zero-waste behaviors accessible to all.

To operationalize a formally designed, campuswide waste collection plan, we will develop a Facilities Standard for indoor and outdoor waste management containers.

#### INDOOR BINS

Our plan to place new indoor bins in at least 150 campus buildings by FY24 will ideally be completed as soon as possible. We will begin with an inventory of existing bins to capture current bin locations, bin quality status, and where additional bins are needed. Based on that data, we will evaluate funding solutions for completing this plan by the target year, focusing on installations for new and retrofitted buildings.

In addition to standard areas (e.g., academic buildings and highly trafficked hubs like the Illini Union), we want to provide waste diversion opportunities in less-trafficked locations like mail rooms, copy rooms, break rooms, and department kitchens.

#### OUTDOOR BINS

Outdoor bins require high levels of coordination to install. Our anticipated timeline for renovating and updating these bins is outlined below:

- » By FY22, we will complete updates to existing outdoor bins, including labeling and signage improvements.
- » By FY24, we will finalize optimizing bin locations and their collection process.
- » By FY25, we will incorporate drop-off bins specifically for cardboard and

disseminate a list of campus locations.

#### TAILGATES

Tailgates pose a unique challenge for waste collection. The high volume of individuals, reliance on disposable materials (e.g., single-use food service items), and lack of adequate receptacles over acres of space result in large quantities of landfill waste.

As large gatherings are reconfigured to resume safely, we plan to transition these events to operate more sustainably as well. We propose that blue recycling bags be distributed at all tailgating parties so tailgaters can separate aluminum, cardboard, and plastics from general waste — individually, efficiently, and on-site. Individuals will deposit the blue bags alongside the usual receptacles for the F&S recycling truck to pick up after the event.

#### SPECIAL RECYCLABLES

In addition to commonly recycled items such as paper, plastic, and cardboard, we want to provide our community with easy-to-understand programs to recycle specialized materials like non-rechargeable batteries, glass, electronics, and industrial waste produced on campus (e.g., vehicle batteries, scrap metal, wires, concrete, and tires). Overwhelmingly, we've found that individuals are willing to take steps to recycle items responsibly when they are presented with the resources to do so.

The Illini Union Bookstore began a plastic bag recycling program in 2019 through its vendor. The store posted signage encouraging patrons to bring their own bags to divert this plastic from the waste stream. Expanding this

*“Composting is the perfect solution: it helps the environment in terms of carbon sequestration, aiding reforestation, enhancing water retention in soils, and more, while it is also cost friendly and promotes higher agricultural yields.”*

— Emily Dickett '23

program by adding other collection points on campus will help educate our community and reduce plastic waste. Once it is safe to resume use of reusable shopping bags, we plan to investigate plastic bag fees for other on-campus vendors to dissuade customers from using single-use bags.

Additionally, while glass is not an accepted material in our campuswide recycling program, it is collected from catering operations and periodically hauled to a local vendor for recycling.

**5.3 [F&S w/Provost Office] Establish a culture of reuse, with two major campuswide zero-waste events using durable goods and composting in FY22, four in FY23, six in FY24, and eight in FY25.**

Objective #5.1 focused on purchasing, the origin of the university's waste stream; Objective #5.2 guarantees that any waste we generate can be disposed of using appropriately labeled bins. Building on these strong foundations, Objective #5.3 ensures that items used on campus — particularly at large events — are durable, repairable, and reusable, and that they contribute to our university-wide culture of reuse.

### ZERO-WASTE EVENTS

Because of their high-profile nature, university-sponsored events provide the perfect opportunity to cultivate a campuswide culture of reuse. While remaining cognizant of current and future safety concerns like the COVID-19 pandemic that may alter event formats, we have developed strategies for facilitating university

gatherings that are mindful of sustainability concerns.

Student welcome events and Grange Grove tailgates alike are charged with camaraderie and excitement; however, they generate garbage bins full of disposable bottles, single-use plastics, and uneaten food scraps. It is the university's responsibility to ensure that these events (particularly those hosted by the Office of the Chancellor and/or Office of the Provost) are as sustainable as possible. To guide event planners toward environmentally conscious best practices, F&S will draft a guide for hosting zero-waste events.

Catered events are especially prone to waste production, as purchasers often opt for single-use utensils, plates, and serving implements for financial reasons or out of convenience. In response, we will establish incentives and pricing structures to encourage using durable materials for campus events involving food.

We also aim to address events that include tabling, distributing marketing materials, and hosting giveaways. A prime example is Quad Day. This event is quintessential college: the Main Quad filled with music, pathways lined with canvas tents, throngs of students eager to engage with Registered Student Organizations (RSO). While academic and extracurricular tabling events cultivate community, they generate waste from discarded pamphlets, fliers, packaging, and branded items with short life cycles. To reduce disposables associated with these activities and provide sustainable alternatives, we will develop a zero-waste swag document to be referenced by offices, departments, and RSOs.

Our initial goal is that two events practice zero waste by FY22. In light of adjustments made as a result of COVID-19, we hope to generate momentum and encourage widespread adoption of these practices. Starting small allows us to achieve gradual footholds and continue making progress each year.

From athletics to commencement, university events are prestigious traditions. Introducing zero-waste practices to these occasions will allow us to lead by example and encourage all who attend to adopt sustainable habits.

### EXCESS ITEMS

Central to our zero-waste philosophy is interdepartmental collaboration. In an effort to encourage reusing items as opposed to buying new, we will ensure that unneeded items (office supplies, electronics, furniture, etc.) are made internally available to university units. To do this, we will establish an intra-campus communication system allowing departments to post, claim, and exchange items. In the event that an item cannot be reused internally, we will seek opportunities to make it available to external recipients (e.g., local nonprofits and state agencies).

All of the above will incorporate feedback from the Surplus Warehouse<sup>123</sup> housed under the Office of Business and Financial Services (OBFS) to ensure that transactions are completed through established procedures and are permitted by relevant policies.

### INDIVIDUAL CULTURE OF REUSE

In tandem with event policy revisions and

reuse of Surplus items, it is crucial to establish a culture that encourages individuals to take actionable steps. The practices we implement as a campus will make it easier and more intuitive for individuals to make zero-waste choices of their own. For example: by installing refill spouts on drinking fountains, we hope to encourage students, staff, and faculty members to carry reusable rather than single-use water bottles.

**5.3.1 [F&S] Develop a comprehensive Zero Waste messaging campaign by FY21 and achieve a cumulative total of 10,000 "Use the Bin" pledges by FY24.**

Individual behavioral change is integral to a successful zero-waste program. Therefore, we plan to launch a Zero Waste messaging campaign to ensure that students, staff, and faculty members are aware of and enthusiastic about zero waste. Outreach may include digital channels (e.g., web pages and social media), competitions and contests (e.g., creating art from recyclable materials), reuse workshops, and events coordinated with global and national initiatives like the Earth Day Network and America Recycles Day. As discussed in Objective #5.3, we can also incorporate zero-waste elements into high-profile campus events like Illinois sports (e.g., an annual zero-waste football game).

One theme we will communicate through digital channels is the importance of recycling on the Urbana campus. The improved labeling system will help educate the public on the

123 <https://bit.ly/314mfu5>

nuances of what can and can't be recycled. Additionally, many opportunities exist for waste diversion of personal items including electronics, cell phones, textiles, household goods, appliances, furniture, and other items students bring to campus that are often abandoned and fed into the waste stream. A recycling-focused information campaign might draw particular attention to the Waste Transfer Station, one of our campus's recycling facilities.

Efforts to recycle can be impeded by public health crises like the COVID-19 pandemic; we will navigate these challenges with a focus on equipping individuals to stay informed and do their part.

#### FIRST-YEAR STUDENT ENGAGEMENT

To ensure that our message hits home with students, we will communicate best practices for zero waste when it counts: at the beginning of their Illinois careers. For example, distributing information about campus recycling during first-semester courses and first-year orientation events can help instill zero-waste practices into students' daily lives.

#### ETHICS TRAINING

Our zero waste initiatives should directly engage staff and faculty members as well as students. A current project that originated from a SWATeam recommendation is the effort to incorporate zero-waste elements into the annual ethics training, which is approved by the Office of the Executive Inspector General and

taken by all University of Illinois System employees. This training will provide an iCAP overview as well as departmental guidance on zero-waste protocol, specifically regarding recycling. In its first year (2020), it will be presented as an optional module that individuals can visit following the mandatory ethics training. The module will then be re-evaluated to potentially become a mandatory inclusion in the ethics training. The video and survey will be available year-round on the iSEE website and may be shown in various capacities such as intro-level courses, office trainings, or for anyone who wishes to brush up on campus sustainability best practices. Additionally, the training can be expanded in the coming years to highlight other relevant topics (e.g., energy efficiency) and reach wider audiences.

#### CAMPUSWIDE OUTREACH

One way to strengthen the campus's collective approach to zero waste is through developing a program in which student coordinators collaborate with departmental contacts to increase sustainable practices, with an emphasis on waste reduction. We plan to work with Resident Advisors of campus residence halls to communicate these initiatives.

#### DUMP & RUN

To bolster campus and community engagement with waste prevention, F&S partnered with the University YMCA to provide resources and leadership to expand the Dump & Run program. This program gathers household goods

(e.g., furniture, kitchenware, small household appliances and electronics, school and office supplies, nearly-new clothing, books, toiletries, lawn and garden items, artwork, vinyl and CDs, musical instruments, and sporting equipment) which find new homes at the annual sale in August during student move-in. University Housing also provides staff and drivers to help move the items. Dump & Run reiterates the notion of a circular economy, whereby materials are reused through their useful life before entering the waste stream.

#### 5.4 [F&S] Promote food scraps reduction on campus through a behavior change campaign, and tracking and recovery of surplus food for donation, with at least five new areas tracking and reporting their food waste by FY22.

Food scraps comprise a significant portion of the university's total landfilled waste. But just how much food is thrown out on campus in a given week, semester, or year?

In 2014, a Baseline Waste Stream Characterization Study<sup>124</sup> prepared by the Illinois Sustainable Technology Center (ISTC) revealed that organic and compostable

124 bit.ly/IISTC\_WasteCharacterizationStudy



Purchasing local food from organizations like the Sustainable Student Farm supports small farmers and decreases emissions associated with food transportation.

Credit: Irina Valenzuela, "This Learning Life" 2019 Photo Contest Participant



materials (including food scraps) ranked consistently as the first- and second-highest waste categories in the buildings examined. The report detailed waste production in the Alice Campbell Alumni Center, Henry Administration Building, Swanlund Administration Building, and Illini Union Bookstore, and found that “food scraps, food soiled paper, paper towels, and other compostable items constituted a significant portion of the waste from these buildings. For these four buildings alone, the organics segment accounts for 17.2 tons annually.”

Currently, University Housing is the only unit on campus independently tracking how food scraps factor into waste production; these efforts have been effective and well-received, and exemplify the impact of metrics on waste reduction. Housing uses a program called Leanpath<sup>125</sup> to track all pre- and post-consumer food waste in dining units. By using the cloud-based software to digitally weigh food waste and target “problem areas,” dining halls have dramatically reduced pre-consumer food waste (e.g., surplus food, spoiled ingredients, or scraps resulting from food preparation). Housing also uses an extension of this program, Leanpath Spark, to measure post-consumer waste (e.g., leftovers) and educate customers on how they can make a positive impact.

Many facilities responsible for food production and distribution do not have tracking systems in place. As with many of the iCAP objectives, a preliminary step to ensure informed decision-making involves gathering the appropriate data. We will begin tracking food waste

(by weight) from self-operated campus food services that do not already do so (e.g., Bevier Café, campus coffee shops, and in-institute cafés like Beckman Café, Array Café in IGB, and Latté Da! Café in Lincoln Hall).

Units with contracted food services (e.g., Athletics and the Illini Union) are expected to include stipulations for tracking food waste in new or renewed contracts. These stipulations may require modification to conform to grab-and-go dining (e.g., Memorial Stadium concessions).

In addition to introducing waste-tracking policies to self-operated and contracted food distributors, we hope to encourage greater food waste consciousness among campus consumers: the students, faculty members, staff, and visitors who take advantage of these services daily. We plan to launch a creative campaign to spread awareness of food waste issues. The three-pronged campaign will 1) offer relevant statistics about on-campus and global food waste; 2) provide actionable steps by encouraging activities like zero-waste lunches; and 3) motivate participants to make a difference by directing them to a food donation webpage. When people stop for their morning coffee, to-go lunch, or late-night study snack, we hope that they do so thoughtfully and with consideration of their environmental impact.

By FY24, we anticipate a 30% reduction of food scraps in areas that begin tracking food waste. Once the program is running in numerous campus locations, we can partner with local businesses to encourage food waste

*“More than ever before, our actions will determine the state of the environment and society’s attitudes toward environmental protection in the coming decades.”*

*— Anneli Cers ’21*

tracking and prevention.

**5.5 [F&S] Develop a detailed comprehensive plan including implementation and operational costs/benefits to sustainably dispose of all food scraps and other organics by FY24, and fully implement the plan by FY33.**

The existence of excess food on plates, at events, or in dining halls is inevitable — there will always be leftovers, scraps, and uneaten meals that cannot be redistributed. Our goal with Objective #5.5 is to ensure that none of this waste reaches the landfill.

In the “reduce, reuse, and recycle” frame of mind, we want to exercise every available opportunity to productively, sustainably, and completely dispose of campus food waste. Below are several methods for reusing and recycling food waste that we plan to explore and implement.

**COMPOSTING**

We don’t just want to sustainably dispose of food scraps — we want to put them to work. In conjunction with other iCAP objectives supporting individual and departmental composting efforts, our goal is for composting to become an integral component of campus and community waste operations.

In 2010, a feasibility study evaluated the viability of large-scale composting on campus.<sup>126</sup> We intend to conduct an up-to-date cost-benefit analysis in the coming years; in addition to financial and logistical considerations, this analysis will examine how local farmers can benefit from buying university compost and identify any legal limitations governing these interactions. Following this analysis, we will proceed with the most reasonable plan. Options for composting are diverse and may include: increasing the number of small-scale composting solutions on campus

125 <https://www.leanpath.com/>

126 <https://bit.ly/3hRwomb>

(e.g., the NSRC composting tumbler as referenced in the Land & Water chapter); increasing community engagement with composting; and investigating opportunities to establish commercial composting facilities for campus and surrounding communities.

By capturing and composting food waste, we will not only divert these materials from our waste stream, but also produce a valuable, nutrient-rich product that benefits our soil. Composting is a particularly apt example of our integrated approach to iCAP 2020. Moving forward, it is important to consider the many ways in which our themes interact with, affect, and enrich one another.

## RESOURCE RECOVERY/ ANAEROBIC DIGESTER

Composting is not the only way to divert food scraps from the landfill. University Housing Dining currently operates three anaerobic digesters (Enviropure) and three food waste collection systems (Grind2Energy) for use with the anaerobic digester at the Urbana-Champaign Sanitary District (UCSD). We have diverted approximately 95% of our pre- and post-consumer food waste at university dining halls for the last three years and plan to replace the three remaining aerobic digesters as funding allows.

We are exploring additional technologies capable of recovering resources from university-generated food scraps. A potential opportunity to add an anaerobic digester may be at the future Dairy Facility. The Veterinary Teaching Hospital has straw bedding waste that could be used, and we look forward to optimizing these efforts in collaboration with other campus units. We plan to expand collaboration with

community partners in these efforts with the UCSD, for example.

## FOOD WASTE RECYCLING

While the average student might not associate food waste with traditional recycling, there are many options to repurpose common ingredients for alternative functions. For example, we are exploring a way to recycle all used cooking oil for a beneficial use such as biodiesel: a high-quality, high-functioning fuel derived entirely from renewable resources. Researchers received Campus as a Living Lab seed funding and Student Sustainability Committee funds to study the potential to convert biowaste into bioenergy and reduce pollution. Research focuses on testing processing systems to deliver renewable energy, clean water, and organic fertilizers for agriculture.

### 5.6 [Housing] Increase the use of local food to 35% by FY30.

University Dining is committed to purchasing as much food as possible from local vendors to support small farms and conserve energy associated with long-distance transportation. In FY15, the university committed to surpassing statewide procurement standards in this area and was already sourcing one-quarter of dining hall food expenditures from such locations.<sup>127</sup> In order to increase the university's use of local food, we must:

1. Define the term "local" and enforce appropriate standards;
2. Identify the most efficient produce items to locally source based on factors like growing season; and



Ground dining hall food waste is emptied into the Grind2Energy holding tank (pictured). The slurry is transported to the Urbana-Champaign Sanitary District's anaerobic digester for electricity production.

<sup>127</sup> <https://bit.ly/312IAS7>

*“An anaerobic digester on campus could be a great solution to issues in several areas. Anaerobic digestion utilizes organic waste to generate useful products such as biogas, which can be used as fuel, and digestate, which can be used as fertilizer. Thus, having a digester on campus can reduce landfill waste, provide renewable energy, decrease greenhouse gas emissions, and more.”*

*— David Rivera-Kohr '20*

3. Measure total energy expended as a result of local purchasing as compared with long-distance transportation and make determinations based on the resulting data.

Speaking to the first of these, the Illinois Local Food, Farms, and Jobs Act<sup>128</sup> calls for State agencies and facilities to locally purchase 20% of farm and food products by 2020 and defines “local farm or food products” as “products (1) grown in Illinois; or (2) processed and packaged in Illinois, using at least one ingredient grown in Illinois.” Moving forward, we can assign a student to collaborate with campus stakeholders to establish a shared and flexible definition of “local food.”

#### **5.6.1 [Housing] Implement Food Literacy Project by FY24 by tracking carbon, nitrogen, and water footprints for food items in campus dining halls.**

The Food Literacy Project is a tagging mechanism to track the water, carbon, and nitrogen footprints of foods used in campus dining halls. The program also identifies food items originating from local sources.

Implementing this objective will promote intentional decision-making in support of sustainable food choices. Generally, sustainable diets tend to have lower energy and water inputs and use fewer resources than their counterparts. Additionally (as stated in Objective #5.6), using local food can decrease the carbon emissions associated with transportation and promote local economies by supporting small farmers.

Information obtained from the Food Liter-

acy Project can be leveraged into suggestions for “green” meals and diets. We also hope to integrate opportunities for collaboration with the Sustainable Student Farm.

With this objective, the university can promote environmentally conscious diets benefiting our students and the environment. Promoting intimate knowledge of and identification with our food sources will increase the sustainable choices made in the dining halls and beyond.

#### **5.7 [F&S] Establish a green cleaning program that meets LEED v.4 requirements by FY24.**

F&S staff members consistently ensure that campus operations are performed with minimal exposure of F&S personnel and building occupants to hazards that adversely affect human health, air quality, building finishes and systems, and the environment. One way to reduce such exposure is through procurement and use of green cleaning products and processes. These might include simple steps (e.g., placing floor mats at building entrances to prevent dirt from entering) or in-depth solutions (e.g., transitioning a portion of cleaning chemicals to third-party green certified products).

As F&S implements university-wide sanitation and hygiene protocols in light of COVID-19, we will ensure that all green cleaning strategies continually meet these rigorous standards to keep our campus operating safely and sustainably.

<sup>128</sup> <https://bit.ly/2Xa3DYz>

# Conclusion

With the strategies outlined in this chapter, we will launch a behavior-change campaign to educate and empower students, staff, and faculty members and promote environmental stewardship across campus. Our institution has more than 50,000 students, 11,000 staff and faculty members, five residence dining halls, and seven retail operations serving over 20,000 customers per day during the typical academic year. Therefore, the impact of tracking, analyzing, and reducing our waste stream extends well beyond the bounds of campus.

As individual consumers and Illinois community members, we can divert the campus waste stream at many points along its path. From the initial procurement of a good or service to its reuse or disposal, there exist countless opportunities to intercede with environmentally conscious decision-making.

That said, pursuing a university-wide culture of zero waste requires an investment of resources and time from individuals, units, and campus decision-makers. Ensuring that our targets are conscientiously met requires a dedicated effort at all levels, whether that takes the form of campuswide food waste reduction, one unit reusing furniture found in Surplus, or a student recycling their minifridge because they participated in Dump & Run.



Our institution has more than 50,000 students, 11,000 staff and faculty members, five residence dining halls, and seven retail operations serving over 20,000 customers per day during the typical academic year.