Initial Report from Purchasing, Waste and Recycling SWATeam

Warren Lavey, Dilip Chhajed, Bart Bartels, Olivia Webb, Matt Murphy, Guy Angelo

May 5, 2014

***Summary***

***On one level, the two iCAP targets in this area have been mostly satisfied.***

* ***Exceeded 75 percent waste diversion by 2020 (although definitions and measures of waste diversion vary substantially)***
* ***In 2011, UIUC adopted a revised policy statement on recycling, recycled products procurement and waste reduction; major step toward a long-term Zero-Waste campus policy***

***However, there are opportunities for improvement in fulfilling the iCAP goals, and many strategies specified in the iCAP or policy statement have not been implemented.***

* ***Aggregate waste diversion rate of 84.5% in 2011 and 2012 masks many shortcomings***
	+ ***Aggregate waste diversion rate fell by 2.4 percentage points since the baseline year (2008)***
	+ ***While campus units achieve almost complete diversion of agricultural and landscaping wastes, diversion rates for other product categories are low***
		- ***Only 28 percent recycling rate for non-agricultural and non-landscaping wastes***
		- ***Comparing 2012 to the baseline year, annual landfill increased by about 960 tons (19.5 percent) while recycling decreased by about 530 tons (19.2 percent)***
		- ***Recycling raises revenues and avoids trash tipping fees for UIUC***
		- ***Some promising programs began after the most recent annual data (2012) and may boost the diversion rates for some product categories (such as food waste)***
* ***Important equipment, processes and programs for recycling have not been deployed or implemented***
	+ ***Increase the number of recycling bins, decrease the number of landfill bins, and make signage uniform***
	+ ***Potential improvements in making campus units responsible for their wastes, coordinating them in waste diversion, and providing incentives to them for increased recycling***
	+ ***Potential improvements in recycling data collection, communications and training for students, faculty and staff***
* ***The 2011 policy statement has not yielded progress toward Zero Waste or implementation of best practices by campus units in recycling, procurement or waste reduction***
	+ ***Low reported purchases of recycled office paper, and no reported measures for purchasing environmentally-preferred cleaning and computer products***
	+ ***Total annual*** ***waste from campus units increased slightly from 2008 to 2011 and 2012***
		- ***While the annual weight of agricultural and landscaping waste was unchanged, other waste was 5.6% higher in 2012 than in 2008 (429 tons more)***
		- ***Total waste (excluding agricultural and landscaping) declined by 3.0 percent from 2011 to 2012 (253 tons less)***
* ***Examples of opportunities to initiate or strengthen strategies noted in the iCAP or policy statement***
	+ ***Encouraging*** ***all campus units to establish “green teams” to develop recycling programs***
		- ***Collect, report and review recycling operational data to evaluate and improve these programs***
	+ ***Purchasing programs***
* ***Use carbon and other environmental indicators for purchases to avoid environmentally irresponsible products and suppliers***
	+ ***Example: standards or preferences in procurements for products with recycled content and recyclable products***
* ***Revise the iBuy ordering system to reflect environmental preferences***
* ***Implement full cost accounting and life-cycle analysis for major purchases exceeding $25,000***

 ***• Broad themes for pursuing Zero Waste***

* + ***Implement programs to diminish the amount of materials consumed***
	+ ***Adopt systems approach to purchasing and waste reduction across campus units***
	+ ***Enable campus-wide or university-wide analysis and decisions***
	+ ***Improve purchasing and waste reduction communications and training for students, faculty and staff***

**I. iCAP targets and strategies on Purchasing, Waste and Recycling**

 A. Targets

1. Increase waste diversion to 75 percent by 2020

 2. Develop a long-term Zero Waste campus policy by 2011

 B. Strategies

 1. Waste reduction and diversion

a. Make campus purchasing entities responsible for costs of the disposal of the products consumed

b. Develop a campus incentive for reducing trash with the possibility of charging for waste

c. Consider a campus-wide bottle or can deposit program

d. Identify opportunities for an increase in reuse and recycling of materials

e. Develop a durable goods reuse cataloguing system

f. Work for legislation to enable the resale of campus goods to the general public

 2. Purchasing policy

a. Use carbon and other environmental indicators for purchasing to avoid environmentally irresponsible products and corporations. Coordinate this effort with other universities.

b. Implement full-cost accounting and life-cycle analysis structures for major purchases exceeding $25,000 by 2015

c. Set and enforce minimum recycled content standards

**II. Status of Campus Efforts on Purchasing, Waste and Recycling**

 A. Estimates of aggregate waste diversion rates (based on a recent report that this SWATeam views as the most comprehensive and reliable data collection)

 1. Total waste rose from baseline year to 2011 and 2012 (pounds)

 a. FY2008 (baseline for iCAP) 75,040,182

 b. FY2011 76,432,578

 c. FY2012 75,928,471

 2. Total landfilled waste rose from baseline year to 2011 and 2012 (pounds)

 a. FY2008 9,850,035

 b. FY2011 11,983,068

 c. FY2012 11,770,112

3. Aggregate waste diversion rates exceeded 75% target in baseline year, 2011 and 2012; but, diversion rate was lower in 2011 and 2012 than in baseline year

 a. FY2008 86.9%

 b. FY2011 84.3%

 c. FY2012 84.5%

4. Total commodity waste (excluding agricultural and landscaping waste, “special recyclables”) rose from baseline year to 2011 and 2012 (pounds)

 a. FY2008 15,387,912

 b. FY2011 16,752,742

 c. FY2012 16,246,244

5. Total commodity waste recycled declined from baseline year to 2011 and 2012 (pounds)

 a. FY2008 5,537,877

 b. FY2011 4,769,674

 c. FY2012 4,476,132

6. Commodity waste diversion rate declined from baseline year to 2011 and 2012

 a. FY2008 40.0%

 b. FY2011 28.5%

c. FY2012 27.6% [Note: UIC reports an overall recycling rate of 46% for paper, plastic, metal and glass in 2012.]

Table 1 Estimated Aggregate Annual Diversion Rate



(data compiled in special report submitted to F&S in 2014; units in pounds; estimates of commodity recyclables reflect sales in a year, with some recyclables withheld from sale in some years because of unattractive prices)

Source: M. Ricci, “Zero Waste Planning at the University of Illinois at Urbana-Champaign” at 94 (2014)

 7***. Interpretation of aggregate waste diversion rates and amounts***

 ***a. iCAP target of 75% by 2020 exceeded in both baseline year and FY2012. It appears that the iCAP team lacked data on waste streams when setting this target.***

 ***b. This SWATeam is concerned about the decline in the estimated aggregate waste diversion rate of 2.4 percentage points from 2008 to 2012, as well as the 19.5% increase in the amount of landfill and the 19.2% decline in the amount of recycling.***

 ***c. Achievement of high level of aggregate waste diversion is dominated by high level of use of agricultural and landscaping waste (manure, animal bedding, mowed grass, etc.) in fertilizing fields and other agricultural applications. Excluding agricultural and landscaping waste, the diversion rate of 27.6% in 2012 appears low, shows a sharp decline from the baseline year, and deserves attention for improvement.***

 ***d. Although the iCAP is not clear in defining the calculation and components of the waste diversion target, this SWATeam believes that the campus should pursue increases in diversions of various categories of waste (see indicators in Section II.B, below).***

 ***e. The increase in total annual waste (excluding agricultural and landscaping) indicates that waste reduction efforts need to be improved, including purchasing practices that favor reusable, recycled and other environmentally-preferred products.***

 B. Estimates of amounts of commodity waste recycled by category

1. Estimates of tons of recycled commodities by category show

a. substantial volumes of recycling for several categories

b. from 2008 to 2012, decreases in recycling for all categories (except for plastic, which was stockpiled in 2008 for later sale)

c. from 2011 to 2012, decreases in recycling for cardboard, paper and plastics; increase in recycling scrap metal

Table 2 Estimated Annual Recycling by Commodity Waste Category

 (data compiled in special report submitted to F&S in 2014; units in pounds)

 Source: Ricci, supra, at 86.

2. Recent waste characterization studies of three administrative office buildings on campus show the following range for composition of the waste stream by weight:

 a. Recycled through separation at office building: 25-44%

b. Recyclable, but not separated at office building: 5-39% (possible recycling of a portion of this stream through separation at waste sorting facility, but likely contaminated by other waste and less effective than separation at source)

 c. Compostable, but not diverted from waste sorting facility: 25-34%

 d. Non-recyclable and non-compostable: 13-18%

3. Direct financial impact -- recycling earns revenues for UIUC and avoids tipping fees applied to waste going to landfills

a. Estimate of recycling revenues in 2013: $462,000

b. Estimate of costs for handling waste in 2013: $1.1 million

c. In 2010, recycling avoided $228,440 in tipping fees and yielded $347,818 in revenues

  ***4. Interpretation of commodity waste recycling practices***

***a. Low and decreasing rates of recycling paper, cardboard, metal, plastic and aluminum show the need for***

* ***more recycling bins at sources***
* ***better sorting at the waste transfer facility***
* ***providing incentives for recycling by campus units***
* ***communicating recycling goals to students, faculty and staff***

 ***b. Recycling has been cost effective through revenues for recycled materials and avoided tipping fees for waste going to landfills***

 C. Recently initiated or proposed waste diversion programs

 1. Food waste

a. Three dining halls installed EnviroPures Aerobic Digesters in March 2013; equipment grinds solid food waste into liquid waste which is washed down kitchen drains

b. Expected to divert nearly 7 tons of waste weekly from landfills (reducing by about 4 percent amount of landfill, and increasing by about 3 percent diversion rate for non-agricultural and non-landscaping waste)

c. Evaluation of digesters in context of iCAP requires systems approach, including effects on water usage and energy used to pump and treat liquid waste

 2. RecycleMania – participation in intercollegiate competition

 a. Game Day event 2/26/14 (diversion rate of 31.5%)

 b. e-Waste collection event 3/18/14 (13,870 pounds)

3. ChemCycle – program to facilitate reuse of laboratory chemicals; database updated daily for redistribution of pre-owned, excess chemicals across labs

4. Program for students to reuse furniture, furnishings and equipment from move-out and move-in periods (Dump and Run)

5. Pending proposal to add recycling bins on the Quad

6. Working with waste sorting facility for increased separation of recyclables

7. Draft studies received by F&S in February and March 2014

a. Study of campus recycling based on site visits, staff interviews and data analysis

b. Waste characterization of four administrative office buildings

8. Increased capacity of staff at F&S and Illinois Sustainable Technology Center (ISTC) to promote waste diversion

 D. Purchasing policy developments

1. Policy statement on recycling, purchase of recycled products, and waste reduction was revised in August 2011 (originally adopted in May 1990) (attached)

2. State law specifies standards for state agencies as to recycled content in purchasing certain paper products

3. STARS report submitted by UIUC on July 31, 2013 shows that the campus earned full STARS points (0.5 each) for having purchasing policies stating preferences for

* recycled content office paper
* Green Seal or EcoLabel certified cleaning products
* EPEAT Silver or higher computers and monitors

However, this report shows that the campus earned no or low STARS points for actual implementation of these purchasing policies.

* For the metric of purchasing office paper with recycled content, UIUC earned only 0.21 out of 1.50 possible STARS points. Out of $611,000 in expenditures on office paper in the most recent fiscal year,
	+ 2% had recycled content of 90-100%
	+ 4% had recycled content of 50-69%
	+ 23% had recycled content of 30-49%
	+ **71% had recycled content less than 10%**
* For the metric of purchasing certified cleaning products, UIUC did not report any measures and earned zero out of 1.50 possible STARS points,
* For the metric of purchasing EPEAT computers and monitors, UIUC did not report any measures and earned zero out of 1.50 possible STARS points

 4. Progress lacking in implementing

a. Preferences for purchasing products reflecting desired environmental qualities, including standards for products not addressed in state laws.

b. Full-cost accounting and life-cycle analysis for major purchases

c. Systems approach and campus-wide decisions in purchasing to decrease environmental impacts (such as unified contracting for hauling waste and recycling from campus buildings)

**III. Areas for Further Analysis and Work**

 A. Waste diversion

 1. Develop targets and strategies by commodity category for diversion of waste

*Example of possible targets reflecting categories of waste [subject to further review]*

* *By July 31, 2020, reuse, recycle or compost 75 percent of ongoing consumables, 75 percent of durable goods, and 75 percent of construction/demolition debris*
* *By July 31, 2020 divert 90 percent of all waste from landfill including yard and agricultural waste*
* *By July 31, 2025, reuse, recycle or compost 90 percent of all ongoing consumables, durable goods, and construction/demolition debris*

 2. Recycling

a. Number and locations of recycling bins; pair with trash bins; remove some trash bins

 b. More uniform signage for recycling and trash bins

 c. Measurements and incentive programs for recycling at major buildings

d. Communications and programs on recycling for students, staff and faculty (such as more zero-waste sports events, both football and basketball)

e. Increased sorting of combined waste at waste sorting station (financial incentives)

 f. Develop innovative recycling programs (such as for Nitrile gloves)

3. Make campus purchasing entities responsible for costs of the disposal of the products consumed

a. Studies of pricing for recycling Nitrile glove

b. Building-specific measurements of waste and recycling (by weight)

4. Develop campus incentives for reducing trash

a. Incentives for specific buildings to reduce waste (like Energy Conservation Incentive Program)

b. Possibility of charging for waste by volume/tonnage

 5. Reuse of materials

a. Durable use cataloguing system (such as for available furniture on campus); possible involvement of students through courses. Widen and encourage use by all departments.

 b. Support legislation enabling resale of campus goods to general public

 B. Purchasing policy

1. Use carbon footprint and other environmental indicators for purchasing to avoid environmentally irresponsible products and corporations

a. Review possible application of sustainable purchasing tools developed by the U.S. General Services Administration and other organizations

b. Select and apply purchasing standards, including minimum recycled content, for various products

c. Coordinate with other UofI campuses, universities and major purchasers in community

d. Pursue opportunities to engage major vendors on strategies to reduce waste and emissions

2. Implement full-cost accounting and life-cycle analysis structures for major purchases exceeding $25,000

ATTACHMENT – 2011 Revised Policy Statement on UIUC Recycling and Procurement Practices (posted on Campus Administrative Manual)

**Recycling, Recycled Products Procurement, and Waste Reduction**

**Purpose**

Recycling is an important waste management activity that conserves natural resources and reduces waste disposal costs. The University of Illinois at Urbana-Champaign implemented the University Recycling Program in February 1989 for both environmental and economic considerations. The program has been expanded into a Recycling and Materials Reduction Program (RMRP) to reflect a unified approach to campus waste management. The RMRP is assigned to the waste management department of Facilities & Services.

**Scope**

The following policy governs recycling and procurement practices for the Urbana-Champaign campus, as defined in the University’s [Climate Action Plan, iCAP](http://sustainability.illinois.edu/pdfs/Climate%20Action%20Plan.Final.pdf) (PDF).

**Authority**

The University’s Climate Action Plan, iCAP, under the direction and purview of the Office of the Chancellor.

**Processes/Procedures/Guidelines**

The items below describe the processes involved in the University’s Recycling and Materials Reduction Program.

1. RECYCLING

The University supports the development and implementation of recycling collection for all campus units by:

* 1. Encouraging all units (including residential facilities, departments, schools, colleges, laboratories, and offices) to develop programs for recycling. These programs may include paper and paper products, cans, plastic, and food wastes.
	2. Educating faculty, staff, and students about recycling. University employees and students are expected to participate in and support all aspects of the RMRP.
	3. Collecting and reviewing recycling operational data. Because individual units may require various recycling strategies, operational data should establish the most acceptable and effective recycling program for each campus unit. After a recycling program is instituted in a unit, the program should be periodically reevaluated to determine its effectiveness in removing materials from the waste stream and acceptability to the employees and students in the unit.
1. PROCUREMENT OF PRODUCTS MADE WITH RECYCLED MATERIALS

University departments and units should purchase products with recycled material content whenever cost, specifications, standards, and availability are comparable to products without recycled content. The University will identify those items that are frequently purchased for which recycled-content items can be substituted. Additional preference will be given to the specification of items with the highest percentage content of recycled material.

Examples of products and materials covered include, but are not limited to: office supplies, paper products, building materials, lubricants of all types, reprocessed chemicals, remanufactured parts, landscape products (yard waste), and materials used in pavement construction projects. The use of recycled materials is also encouraged when orders are placed for printed goods (i.e. brochures, catalogs, books, letterheads, business cards, etc). In addition, the procurement guidelines seek to eliminate the purchase of non-recyclable materials when suitable substitutes exist.

To implement this, the campus and the Purchasing Division will:

* 1. Identify any University needs that exist for equipment, supplies, and services for which recycled and/or recyclable products might be available.
		1. By reviewing prior and current requests for equipment, supplies, and services to determine the present usage of recycled and/or recyclable products.
		2. By examining future needs to determine the extent to which they might involve requests for equipment, supplies, and services that might be met by the procurement of recycled and/or recyclable products.
	2. Actively and diligently strive to identify vendors that can competitively supply recycled products.
		1. By reviewing bid responses to determine the availability of commodities manufactured with recycled content.
		2. By utilizing commercial directories and federal, state, and local sources of information to identify marketed products that are manufactured using recycled materials.
	3. Make extra efforts to communicate to campus users the opportunities to meet requirements through the procurement of recycled and/or recyclable products, recognizing that the primary goal of purchasing such products is to reduce waste.
		1. By reviewing specifications and intended product usage to determine if recycled products are available that will competitively and adequately meet identified needs and comply with established state and campus policies and procedures.
		2. By supporting the campus in the identification of recycled products for evaluation and testing to determine their suitability for campus use.
		3. By working with the campus to develop and publish a campus recycled products list; only products from that list will be purchased unless substantial written justification can be made for a non-recycled product.
		4. By coordinating procurement of recycled products with campus users to ensure satisfactory performance, recognizing that if recycled products do not perform satisfactorily, they become waste.
1. WASTE REDUCTION

The first priority of waste management is volume reduction at the source, reducing the original consumption of material. Using less material will reduce material expenses and waste disposal costs and will help diminish the solid waste problem. Campus waste reduction can be effected by the application of a few simple guidelines.

* 1. Paper and paper products represent the largest portion of the campus waste stream. Methods of reducing waste are:
		1. Encouraging two-sided copying and printing. All copying and printing requirements should be two-sided by default. Single-sided copying should be specifically requested.
		2. Limiting printing needs to the actual requirements for distribution. Overruns should be eliminated. Units should routinely review the distribution lists of reports and limit them to essential persons. Campus mailing lists should be continually updated to eliminate unnecessary mailings. Bulletins and brochures can often be posted in a prominent location or circulated within the unit, rather than distributed to individuals.
	2. Use reusable products if at all possible. Examples are durable coffee mugs and drinking cups, metal silverware, rechargeable batteries, and campus mail envelopes.
	3. Purchase products that have a long useful life. By design, some items have greater reliability or are easier to repair than other similar items.
	4. Whenever possible, control the packaging of purchased material. For example, units that buy in bulk quantities often can reduce packaging waste.

**Contact**

More information on sustainable practices (including purchases) and recycling can be found in the University’s [Climate Action Plan, iCAP](http://sustainability.illinois.edu/pdfs/Climate%20Action%20Plan.Final.pdf) (PDF). Additional questions or requests for information can be directed to the Office of Sustainability, (217) 333-4178, or the Office of the Chancellor, (217) 333-6290.

Date Issued: May 3, 1990
Date Revised: August 10, 2011 ([View previous version of this policy](http://cam.illinois.edu/vii/archive/vii-b-9To20110810.htm))
Approved by: Executive Director, Facilities and Services
Use of Services and Stores Policies, Storerooms/Purchases, Section VII/B - 9

Contact Campus Administrative Manual staff to request an addition or revision to the Campus Administrative Manual.