

Illinois State University

Campus  
Environmental Sustainability  
Factbook

September 2, 2005

Prepared by students of the  
Department of Health Sciences  
for the  
ISU Green Team

In response to  
**Educating Illinois Action Item 10A**

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# Introduction and Summary

## Introduction

*Educating Illinois 2003-2010* Action Item 10 includes a series of activities intended to promote a “healthy, safe, and environmentally sustainable campus.” Action Item 10A creates a mandate for the University Health Education Coordinating Committee (UHECC), with the assistance of the ISU Green Team, to:

*Coordinat[e] biennial assessments of health, safety, and environmental sustainability and disseminate findings/recommendations for program and service enhancement*

This report is issued in partial fulfillment of this mandate. Specifically, the report is limited to environmental sustainability. In addition, it is limited to a factual presentation of selected items related to environmental sustainability.

In January of 2005 the Green Team assembled data on selected measures of campus environmental sustainability, including utilities, recycling, and waste generation. Students in various majors in the Department of Health Sciences then interviewed key university personnel for background information and developed the text and graphics presented in this report. It is the intent of the Green Team to continuously improve the report on campus environmental sustainability by expanding the number of sustainability measures covered in the report as well as its presentation.

## Summary of Findings

**Utilities** – ISU spends about \$10 million per year on utilities. Electricity and natural gas consumption was steady or declining over the FY02-FY04 period, despite the addition of significant new building square footage on campus. On a per-square-foot basis, natural gas consumption declined about 1% per year and electricity consumption declined over 5% per year, on average. ISU Facilities Services completed a number of energy efficiency improvements on campus during this time period, including lighting upgrades and boiler repairs. Over 9,000 gallons of water is consumed per person per year on campus. During the FY02-FY04 period, no clear trend was observed in water consumption.

**Recycling** – The primary materials recycled from classroom and office buildings, residence halls, and dining halls are aluminum, plastic, glass, paper, and corrugated cardboard. Recycling of most of these materials declined during the FY02-FY04 period. The 23% annual average decline in aluminum recycling is due to the shift from aluminum to plastic in beverage containers on campus. [It should be noted that recycling of several materials not covered in this report, such as construction waste, improved over the period. Since 1989, total material reported as recycled has increased 49%.]

**Waste** – Approximately one-third of the solid waste generated from campus classroom and office buildings is recyclable material that was placed in the trash instead of recycling bins. More than 10 pounds of aluminum per person end up in the trash each year, compared to less than one pound per person that is recycled. For paper, the values are 33 pounds per person in the trash and about 28 pounds per person recycled. ISU’s hazardous waste generation declined about 13% percent per year, on average, though the cause of this decline is unknown. Potentially infectious medical waste, generated from medical facilities on campus, was relatively steady over the time period.

# Utilities

Efficient usage of utilities – electricity, natural gas, and water – are critical aspects of campus environmental sustainability. In 2002, the ISU Office of Energy Management was created to reduce utility costs and improve efficiency. Information on campus energy efficiency and the ISU Energy Management and Utility Infrastructure Improvement Plan is available at the Green Team Website ([www.greenteam.ilstu.edu](http://www.greenteam.ilstu.edu)).

## In this report:

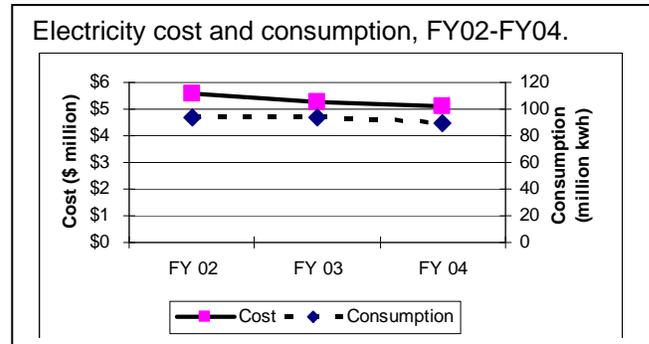
Electricity  
Natural Gas  
Water

# Electricity

Lighting and air conditioning are the two primary uses of electricity on the ISU campus. Of the many other miscellaneous uses, computer technology is the largest.

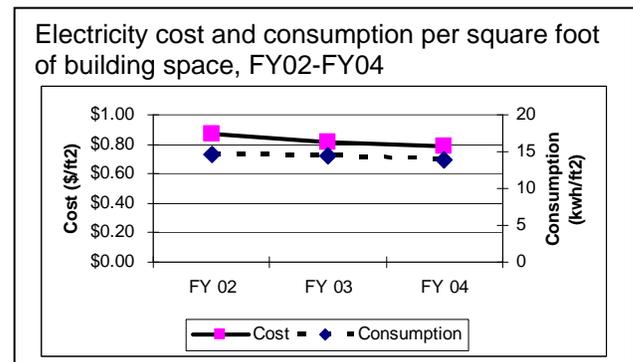
## LIGHTING

Much of the savings in electricity consumption between FY02 and FY04 is due to lighting upgrades and replacements. Lights were replaced in Milner Library, the Bone Student Center, Stevenson Hall, DeGarmo Hall, Center for Visual Arts, McCormick Hall, Fell Hall, Hovey Hall, and the residence halls Watterson, Atkin-Colby and Hamilton-Whitten. In these buildings T12 bulb/magnetic ballast fixtures were replaced with more efficient T-8 bulb/electric ballasts, incandescent bulbs were replaced with more efficient compact florescent bulbs, and incandescent exit signs were replaced with LED exit signs.



## COOLING

During the cooling season (June-Oct), ISU uses about 8 million kilowatt hours (kwh) of electricity for air conditioning, approximately 25% of the total electrical consumption during that time period. Between FY02 and FY04, progress was made in converting the cooling system from stand-alone chillers to a series of overlapping chiller loops, requiring fewer chillers and providing greater reliability.



## COMPUTER TECHNOLOGY

The electricity needed to power computer technology on campus is decreasing. Between FY02 and FY04, flat-panel screens have replaced standard CRT monitors in all of the U-labs (University-operated computer laboratories). This reduced both the electricity consumption for the screen itself and the amount of electricity needed to cool the room. Flat-panel screen monitors generate far less heat than CRT monitors. With many computers in a small space, the temperature difference between the monitors is significant, reducing air conditioning demand. The newer models of computers also are more energy efficient. In addition, more students are bringing laptop computers, rather than desktop computers, which use less energy. Further reductions are expected as new, more energy-efficient monitors are placed in faculty and staff offices or in departmental computer laboratories.

## NEW BUILDINGS

Two new buildings were completed between FY02 and FY04. Both the Center for Performing Arts and the Kaufman Football Building increased the demand for electricity, somewhat offsetting efficiency gains.

**Author:** Gabrielle Blossom, Environmental Health major

**Information Sources:** Ron Kelley, Director, ISU Office of Energy Management; and [www.facilities.ilstu.edu/utilities/EnergyProjects.asp](http://www.facilities.ilstu.edu/utilities/EnergyProjects.asp)

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Cost (\$millions)	\$5.60	\$5.28	\$5.12	-4.4%
Consumption (million kwh)	94.17	93.45	89.89	-2.3%
Cost/ft <sup>2</sup> (\$/ft <sup>2</sup> )	\$0.87	\$0.83	\$0.79	-5.1%
Consumption/ft <sup>2</sup> (kwh/ft <sup>2</sup> )	14.65	14.38	13.83	-2.9%

# Natural Gas

ISU uses natural gas primarily to heat its buildings and provide hot water. Nearly all the natural gas is consumed by the heating plant, where four large boilers generate steam. The steam is piped throughout campus for space and water heating.

## WEATHER

Facility heating requirements are largely determined by the weather conditions. A mild winter can reduce natural gas consumption by up to 20%. Approximately 50% of the annual volume of natural gas is consumed during the winter months of November-February.

## STEAM SYSTEM

Boiler and steam distribution efficiencies were improved over the FY02-04 period. One of the four boilers was re-tubed. Many inoperable steam traps were replaced throughout the steam tunnel system and building mechanical rooms. Uninsulated steam pipes were identified and insulated.

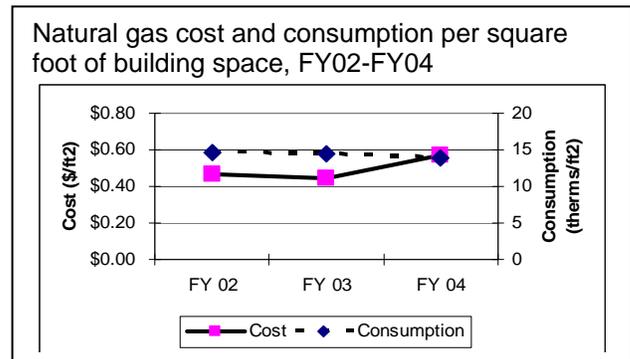
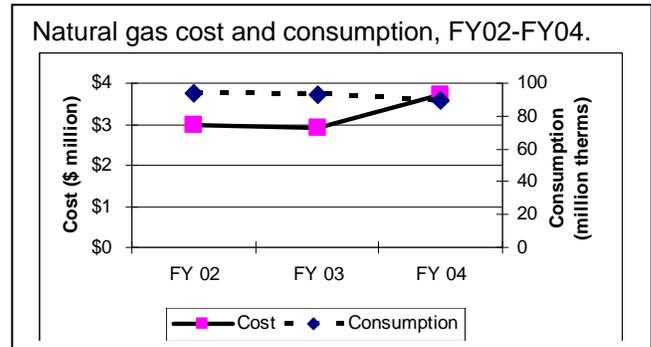
## NATURAL GAS PRICES

The price of natural gas increased substantially over the period. Thus, though consumption of natural gas was relatively steady, expenditures increased an average of about 14% per year.

## NEW BUILDINGS

Two new buildings were completed between FY02 and FY04. Both the Center for Performing Arts and the Kaufman Football Building increased the demand for gas, offsetting efficiency gains.

**Author:** Mike Dziurgot, Health Education major  
**Information Sources:** Ron Kelley, Director, ISU Office of Energy Management; and [www.facilities.ilstu.edu/utilities/EnergyProjects.asp](http://www.facilities.ilstu.edu/utilities/EnergyProjects.asp)



Natural Gas Consumption and Cost by Fiscal Year				
	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Cost (\$millions)	\$2.98	\$2.90	\$3.73	11.6%
Consumption (million therms)	6.47	6.72	6.42	-0.4%
Cost/ft <sup>2</sup> (\$/ft <sup>2</sup> )	\$.46	\$.45	\$.57	11.0%
Consumption/ft <sup>2</sup> (therms/ft <sup>2</sup> )	1.00	1.03	.98	-0.9%

# Water

Overall, ISU uses over 9,000 gallons of water per person per year. The primary use of water on campus is for domestic purposes in the residence hall and dining facilities. Other uses include laundry services, ground watering, campus pools, and air conditioning cooling towers. Water costs include sewer fees.

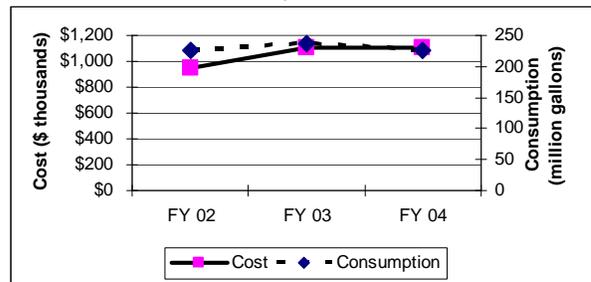
## Housing and Dining

The amount of water used for housing and dining accounts for about two-thirds ISU's yearly consumption. Some of the current water-saving efforts include installation of more efficient shower heads and toilets in the residence halls, as well as overall replacement of some plumbing systems.

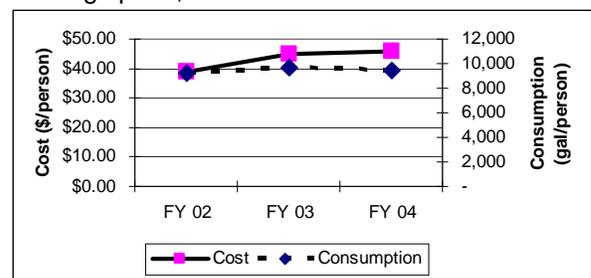
## Campus

Grounds personnel have implemented water-saving techniques, including watering flowers and grass at times of the day when evaporation is minimized such as the morning and evening as opposed to mid-day. Though this does help to save water, campus consumption has been rising throughout FY02, FY03, and FY04.

Water cost and consumption, FY02-FY04.



Water cost and consumption per square foot of building space, FY02-FY04



**Author:** Thomas Malerich,  
Environmental Health major  
**Information Sources:** Ron Kelley,  
Director, ISU Office of Energy  
Management

Water Consumption and Cost by Fiscal Year

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Cost (\$thousands)	\$951	\$1,102	\$1,102	7.2%
Consumption (million gallons)	227	236	226	-0.2%
Cost/person (\$/person)	\$38.78	\$45.13	\$45.91	8.2%
Consumption/person (gal./person)	9,246	9,683	9,399	0.8%

# Recycling

Recycled materials are wastes that have been diverted from disposal. These materials are sent to a variety of businesses that process the materials into new products, reducing the usage of virgin materials as well as demand on landfill space.

One measure of the environmental sustainability of the University is the amount of material diverted from waste to recycling. Though the University recycles a wide array of materials, this year's report focuses on the most commonly recycled materials: aluminum, plastic and glass, mixed paper, and corrugated cardboard. Also included is University recycling of landscape waste.

Two, separate recycling programs operate at ISU. One covers facilities used primarily for educational purposes and funded through General Revenue funds. This includes most campus classroom and office buildings. The second recycling program covers facilities supported by Bond Revenue, including residence halls and dining services.

## In this report:

Aluminum  
Plastic & Glass  
Mixed Paper  
Corrugated Cardboard  
Landscape Waste

# Aluminum

Recycled aluminum is primarily in the form of beverage containers placed in recycling bins in campus buildings and residence halls. Each year, about one pound of aluminum is recycled per person on campus, though this quantity is declining.

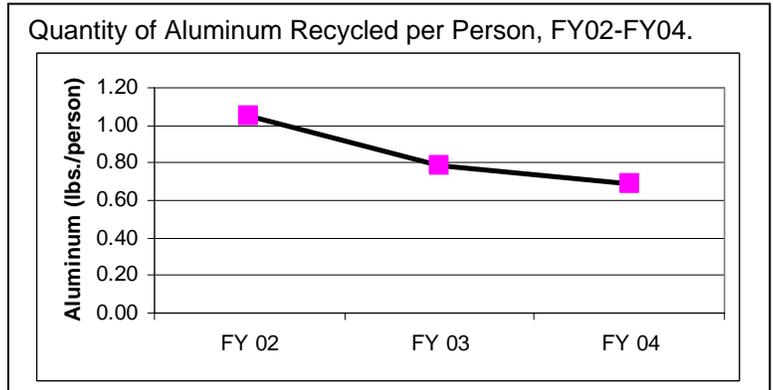
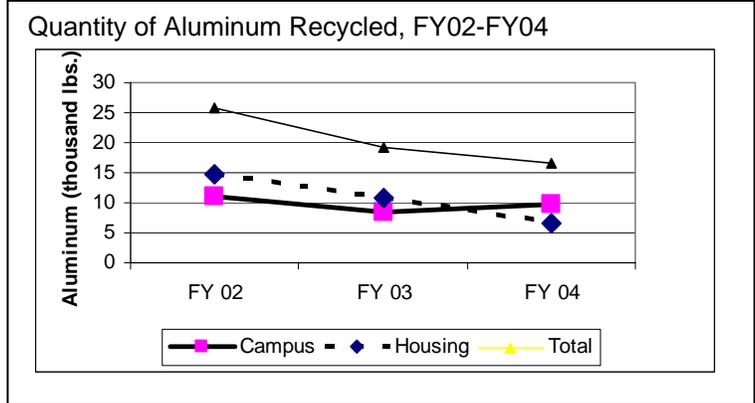
## CAMPUS (GENERAL REVENUE)

Aluminum recycling in campus buildings declined over the FY02-FY04 period. This was due to a continuing trend of substituting plastic for aluminum in campus beverage vending machines. Currently, less than 20% of campus vending machines vend aluminum cans, and this percentage continues to decline.

## HOUSING AND DINING (BOND REVENUE)

Almost all aluminum collected in Bond Revenue facilities is generated in the residence halls, as campus dining halls do not market beverages in aluminum containers. The decline in aluminum in the residence halls is due to the trend toward plastic, rather than aluminum, beverage containers. However, a number of residence halls also experienced temporary interruptions in recycling programs due to a shortage of student workers and pest problems.

**Author:** Stefanie Lessentien, Environmental Health major  
**Information Sources:** Dee Beverly, ISU Campus Recycling



Quantity of Aluminum Recycled by Fiscal Year

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Campus (lbs.)	11,140	8,460	9,860	-7%
Housing (lbs.)	14,673	10,776	6,684	-37%
Total (lbs.)	25,813	19,236	16,544	-23%
Total per Person (lbs./person)	1.05	.79	.69	-22%

# Plastic/Glass

Recycled glass and plastic are primarily in the form of beverage containers placed in recycling bins in campus buildings, dining halls, and residence halls. Because glass and plastic are co-mingled in recycling bins, it is not possible to quantify the recycling of each material separately. Overall, about 5-7 lbs of plastic and glass is recycled each year per person on campus, though recycling rates have fluctuated dramatically over the period and it is difficult to predict a trend.

## CAMPUS (GENERAL REVENUE)

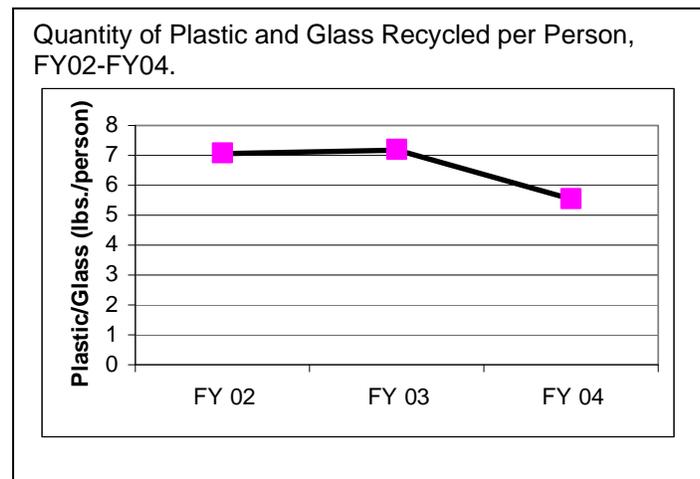
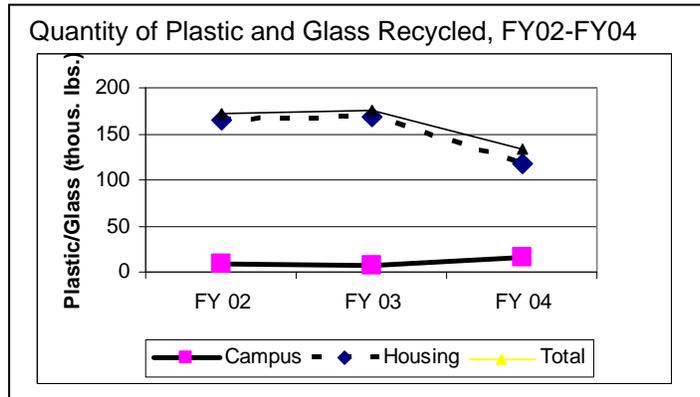
Plastic/glass recycling in campus buildings demonstrated an overall increase for the period. Glass is a relatively small percentage of this co-mingled material from campus, so the increase is likely due to the trend toward plastic beverage containers in campus vending machines.

## HOUSING AND DINING (BOND REVENUE)

Plastic and glass are collected in both the residence halls and dining halls. This consists almost entirely of beverage containers. Plastic packaging and service ware used in the dining halls is not recycled. The large quantity of plastic/glass collected in bond revenue facilities, as compared to general revenue facilities, is due to the high glass content of materials collected.

**Author:** Brenda Houy, Environmental Health major

**Information Sources:** Dee Beverly, ISU Campus Recycling



Quantity of Plastic and Glass Recycled by Fiscal Year

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Campus	8,405	6,704	15,070	33%
Housing	164,140	168,515	117,564	-16%
Total	172,545	175,219	132,634	-13%
Total per Person	7.03	7.17	5.5	-12%

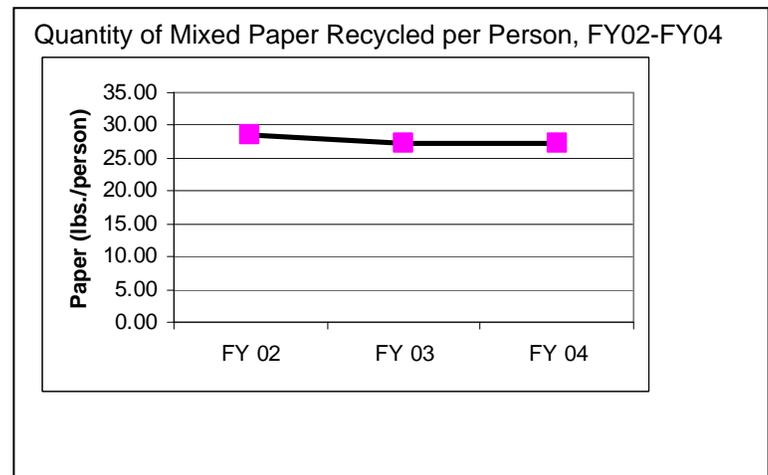
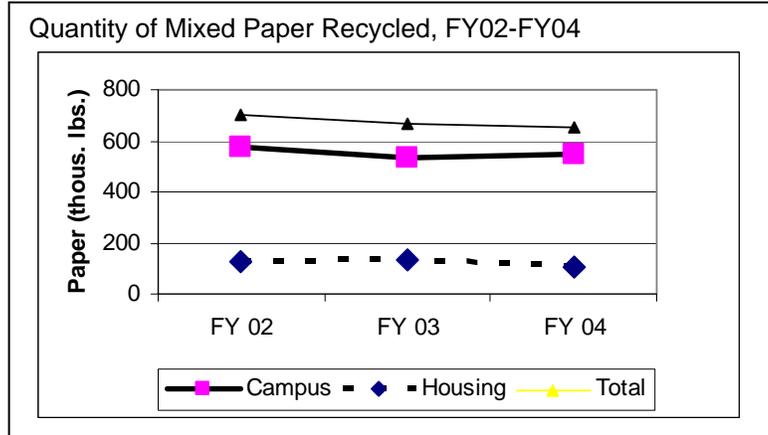
# Mixed Paper

Mixed paper consists of fourteen different types of paper ranging from high grade office paper to low grade newspaper. Contaminated paper is sorted out at the processing center and the remaining paper is sorted into paper industry standards. Overall, about 28 lbs of mixed paper is recycled each year per person on campus, and this recycling rate has declined slightly over the period.

## CAMPUS (GENERAL REVENUE)

Mixed paper recycling bins are located in the hallways of campus buildings for paper generated by students, faculty, and staff. In addition, most faculty and administrative offices contain desk-side paper recycling bins.

Significantly more mixed paper is generated in campus buildings (General Revenue) than in the residence halls (Bond Revenue), and this is due to the contribution of faculty and administrative offices on campus. The quantity of recycled mixed paper from campus declined slightly over the FY02-FY04 period, though it is difficult to predict a trend.



## HOUSING AND DINING (BOND REVENUE)

Mixed paper in Bond Revenue facilities is generated primarily through recycling bins located on each floor of the residence halls, though some is also generated through Bond Revenue administrative offices. Dining halls generate relatively little paper, and paper identified during the sorting of trash-chute waste is generally too contaminated to recycle.

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Campus	575,205	534,536	546,840	-2.6%
Housing	128,140	132,240	107,291	-8.5%
Total	703,345	666,776	654,131	-3.6%
Total per Person	7.03	7.17	5.5	-2.6%

**Author:** Peter Ramsay, Safety Major

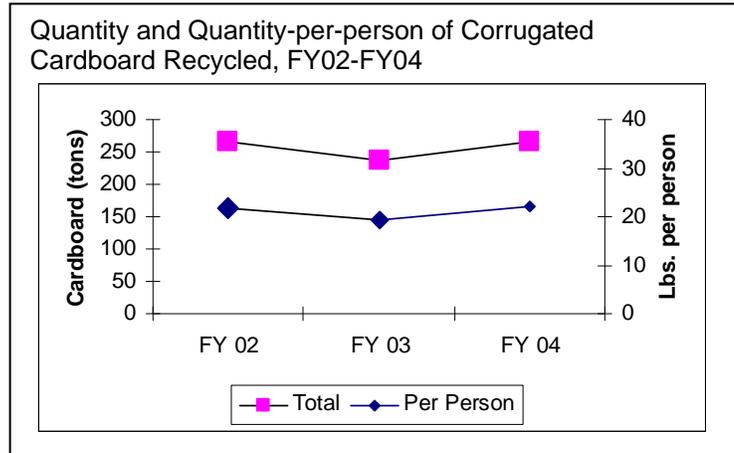
**Information Sources:** Dee Beverly, ISU Campus Recycling and <http://www.facilities.ilstu.edu/campuservices>

# Corrugated Cardboard

ISU generates corrugated cardboard waste from two major sources. The majority is generated from move-in activities at the residence halls. The remainder comes from campus office and dining facilities operations. However, because all cardboard is collected through one collection operation, separate data for each source are not available. About 20 pounds of corrugated cardboard per person is recycled annually.

## RESIDENCE HALL MOVE-IN

The largest single source of recycled corrugated cardboard is August “move-in” at the residence halls. The University makes a significant effort to capture this cardboard before it enters the waste stream. Large outdoor areas are fenced off at each residence hall for students and their families to place their empty boxes. However, the process is very sensitive to weather conditions, and the drop in cardboard recycling during FY03 of about 58,000 lbs has been attributed to rain during the move-in that year.



## UNIVERSITY OPERATIONS

During the school year, the University generates corrugated cardboard waste from a variety of operations. It is gathered at 13 pick-up locations on campus and then compacted. The compacted cardboard is then picked up by route drivers and taken to a local fiber

Quantity and Quantity-per-person of Corrugated Cardboard Recycled by Fiscal Year

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Total (tons)	265	236	267	0.4%
Per person (lbs/person)	22	19	22	1.5%

recycler. The largest single source of cardboard from University operations is from Campus Dining Services. Again, August is the month with the greatest generation of recycled cardboard from University operations as offices, residence halls and dining services restock for the new school year.

**Author:** Shane Bartik, Environmental Health major

**Information Sources:** Dee Beverly, ISU Campus Recycling, and <http://www.uhs.ilstu.edu/ResidentialLife/>

# Landscape Waste

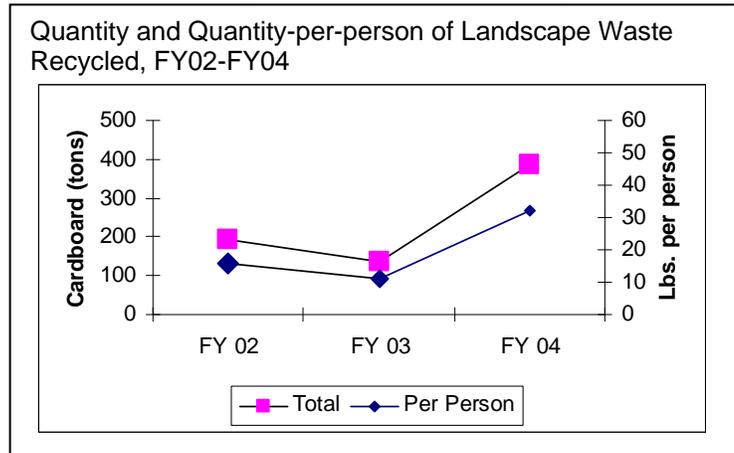
Landscape waste generated by ISU is collected and trucked to the Town of Normal for chipping. These chips are then used for mulch on campus. About 20 pounds of landscape waste per person is generated on campus each year.

## CAMPUS

Illinois State University's grounds staff collect brush, trees and plants, from around campus. ISU collects, on average, about 477,000 pounds of landscape waste around campus each year. The collection of landscape waste is very high during the months of April through October, while during the months of November through March, collection is usually minimal.

## WEATHER

Weather has a significant affect on the quantity of collected landscape waste in a given year. Ice, wind, and snowstorms can create large quantities of such waste. Extreme weather events account for the large fluctuations in landscape waste generated over the FY02-FY04 period.



**Author:** Erica Jankiewicz, Clinical Laboratory Science major

**Information Sources:** Dee Beverly, ISU Campus Recycling

Quantity and Quantity-per-person of Landscape Waste Recycled by Fiscal Year

	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Total (tons)	193	136	386	41%
Per person (lbs/person)	16	11	32	42%

# Waste

Environmental sustainability requires that measures be taken to continuously reduce the generation of waste, to recycle the waste that cannot be eliminated, and to properly dispose of the waste that cannot be recycled. Success in these efforts is tracked through the following waste categories:

**Solid Waste** – Generated through “trash” receptacles throughout campus. An important component of this waste is recyclable materials that were placed in trash receptacles instead of recycling bins.

**Hazardous Waste** – Hazardous wastes generated across campus are from the Heating Plant, trade shops, and grounds maintenance; as well as teaching and research activities in academic departments such as Chemistry, Biological Sciences, Technology, and Art. Waste that meets the legal definition for ignitability, corrosivity, reactivity or toxicity is classified as “hazardous.”

**Special Wastes** – Includes potentially infectious medical waste (PIMW - containing human bodily fluids or tissues or other potentially infectious materials), asbestos, PCBs, and non-hazardous oils and industrial process waste.

**Universal Wastes** – Includes batteries, mercury-containing equipment, thermostats, and high mercury light bulbs.

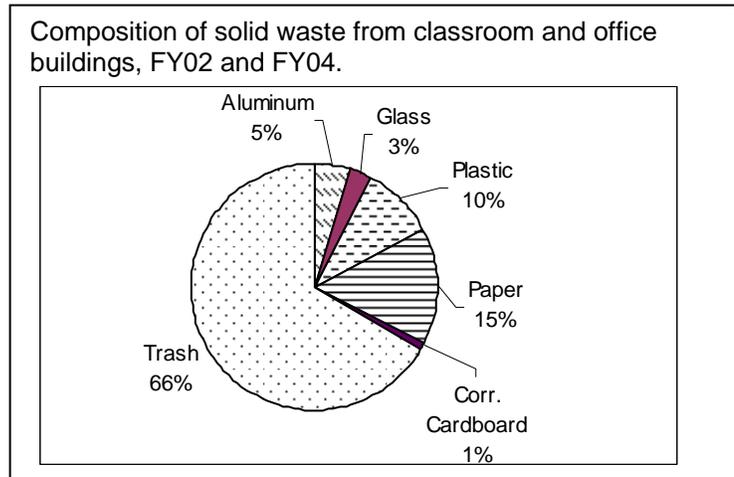
Hazardous, special, and universal waste disposal is handled by the ISU office of Environmental Health and Safety.

## In this report:

Solid Waste (including wasted recyclables)  
Hazardous Waste  
Special Waste (PIMW, asbestos, PCBs, oils)  
Universal Wastes (batteries, fluorescent light bulbs)

# Recyclables in Solid Waste

Though ISU has had a recycling program since 1993, some recyclable materials continue to enter the solid waste stream. The amount of recyclable material in the waste stream is one measure of the effectiveness of the campus recycling program. Two, separate solid waste programs operate at ISU. One covers facilities used primarily for educational purposes and funded through General Revenue funds. This includes most campus classroom and office buildings. The second program covers facilities supported by Bond Revenue, including residence halls and dining services. Though waste audits have been performed for some Bond Revenue facilities, they are not sufficient to characterize the amount of recyclables that entered the solid waste stream. Thus, this report is limited to General Revenue solid wastes.



## SOLID WASTE

The General Revenue solid waste program collects solid waste in 19 dumpsters across campus with an average size of about 3.5 cubic yards. It is estimated that these dumpsters are about 80% full, on average, when dumped, and this value has remained steady over the FY02-FY04 period. Thus, ISU generates about 2,646 tons of solid waste each year.

## WASTE AUDIT

There have been two waste audits to determine percentage of solid waste that is composed of recyclable materials, one in 2002 and one in 2004. For each audit, over 100 bags of garbage are selected from the largest campus buildings. The bags are opened and sorted by student volunteers from the Environmental Health major. Quantities of recyclable paper are likely underestimated since paper that has been contaminated while in the trash is not counted as recyclable.

## RESULTS

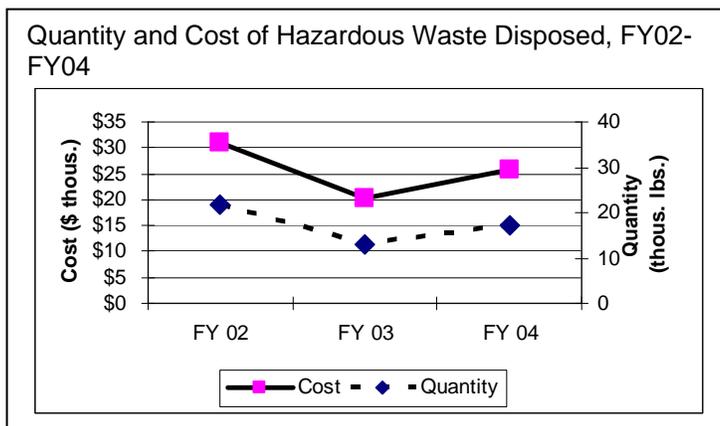
Approximately one-third of solid waste is recyclable. The largest component of this is paper, followed by plastic.

**Author:** Peter Finley, Environmental Health major. **Information sources:** Dee Beverly, ISU Campus Recycling.

Composition of solid waste from classroom and office buildings, FY02 and FY04.						
	Aluminum	Glass	Plastic	Paper	Cardboard	Trash
Percentage of solid waste	4.8%	2.7%	9.8%	15.3%	0.9%	66.6%
Quantity (tons)	127	71	259	405	22	1,761
Per person (lbs/person)	10.4	5.9	21.3	33.3	1.8	144.8

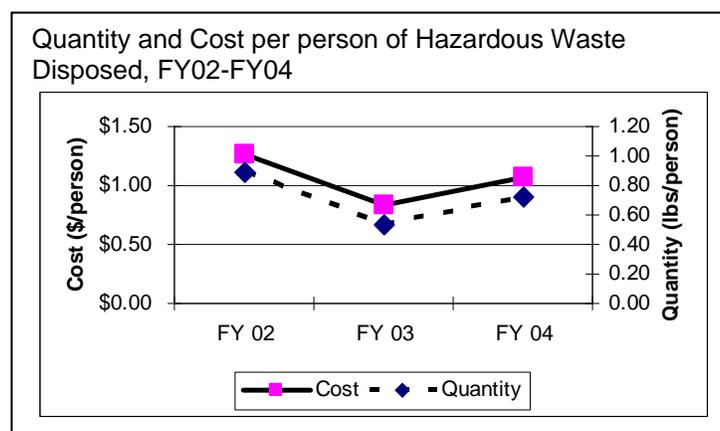
# Hazardous Waste

ISU generates hazardous waste from three primary sources: Research waste, cleaning waste, and machinery waste. Overall, ISU generates less than one pound of hazardous waste per person per year, and this quantity is generally declining. Hazardous waste quantities generated at a University are largely dependent on the maintenance or construction activities, and the type and amount of research conducted during any given year. For example, some research activities may require the synthesis of a given material during one year and then extensive analytical review the next. This pattern of activity can result in wide variations in waste volumes generated from year to year.



## RESEARCH WASTE

Much of the waste produced by ISU has come from chemical, biochemical, and other research facilities. The majority of waste generated from research is incinerated off campus.



## CLEANING WASTE

Certain cleaning solvents cannot be washed down the drain but instead must be handled as a hazardous waste. Spent solvent from parts-washing machines is used in the petroleum industry.

## MACHINERY WASTE

Maintenance, construction, lawn care, and a number of other activities have the potential of producing hazardous waste. A partial increase in hazardous waste in FY 04 was due in part to Freon contamination in oil, requiring the waste to be categorized as hazardous.

Hazardous Waste Quantity and Cost by Fiscal Year				
	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Cost of Disposal	\$31,068	\$20,351	\$25,761	-10.3%
Quantity Disposed (lbs.)	21,893	12,982	17,337	-13.1%
Cost per person (\$/person)	\$1.27	\$0.83	\$1.07	-9.2%
Quantity per person (lbs/person)	0.89	0.53	0.72	-11.9%

**Author:** Martin Crimmens, Environmental Health major

**Information Sources:** John Goodman of Environmental Health and Safety; Dr. Marjorie Jones of the Chemistry Department; <http://www.ehs.ilstu.edu/chemical/hazpickup.shtml>.

# Potentially Infectious Medical Waste (PIMW)

Potentially infectious medical waste is any material that contains human blood, tissue, or bodily fluids. It also includes used sharps, scalpels, needles, syringes, etc. used in medical services or research. Each department is responsible for managing its infectious waste. ISU generates PIMW in three major areas: Student Health Services, the Laboratory Schools, and Clinical Laboratory Sciences.

## STUDENT HEALTH SERVICES (SHS)

SHS provides examinations, treatments, urgent care, and minor surgical procedures to students. Within SHS the items generated and disposed of include centrifuge tubes, blood sample tubes, sharps, gauze, and exam gloves. These items are a normal part of treating patients in an outpatient clinic setting.

## LABORATORY SCHOOLS

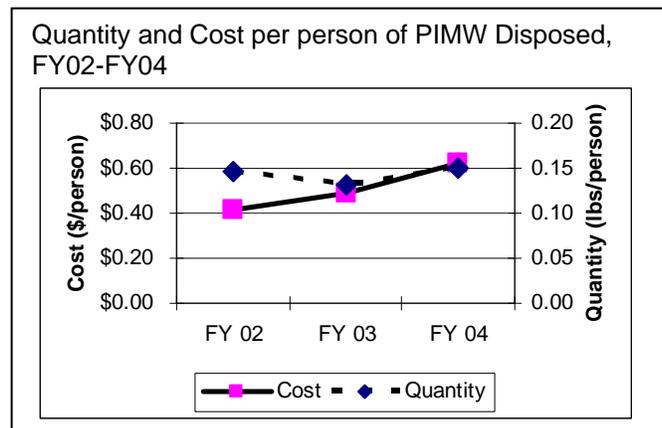
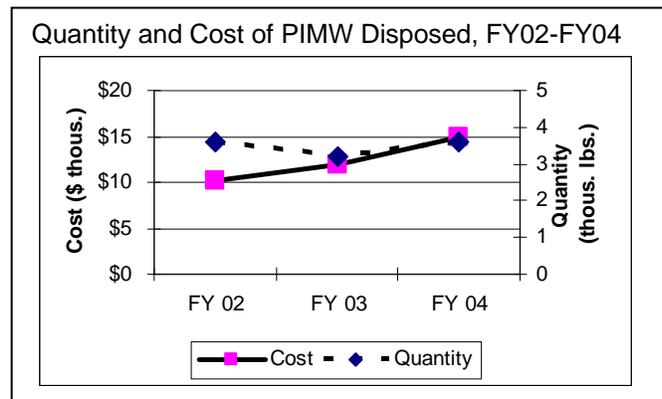
The Laboratory Schools include both Thomas Metcalf Elementary and University High School. Items disposed of include gauze, exam gloves, and other blood contaminated items. These would primarily be generated from the minor medical treatment of students within the schools.

## CLINICAL LABORATORY SCIENCE

The Clinical Laboratory Science academic program generates PIMW as a part of instructional laboratory activities. Students study all areas of laboratory medicine including chemistry, hematology, immunology, microbiology, and blood banking. PIMW items generated include sharps, blood sample tubes, and exam gloves. This waste is very similar to the PIMW that would be generated by a medical laboratory.

## WASTE REDUCTION

PIMW generation has been relatively constant, through costs have increased substantially. PIMW at Student Health Services is reduced by segregating non-infectious waste items like tissues and exam table paper from potentially infectious material. Over the years there has been a general increase in the cost of disposal of the waste.



PIMW Quantity and Cost by Fiscal Year				
	FY 02	FY 03	FY 04	Ave. Annual Change (%)
Cost of Disposal	\$ 10,212	\$ 12,000	\$ 14,860	23%
Quantity Disposed (lbs.)	3,602	3,205	3,605	0%
Cost per person <sup>2</sup> (\$/person)	\$0.42	\$0.49	\$0.62	24%
Quantity per person (lbs/person)	0.15	0.13	0.15	1.1%

**Author:** Jessica Williamson, Clinical Laboratory Science major

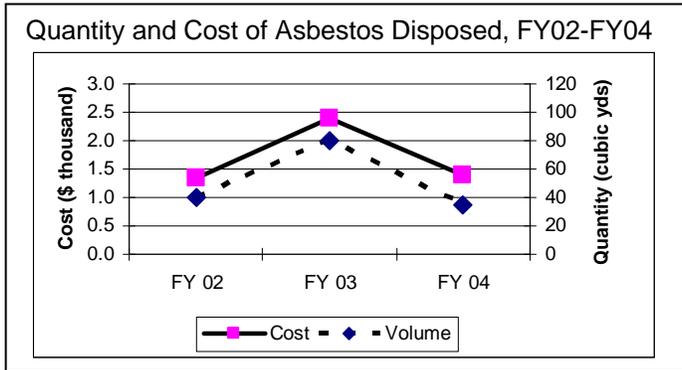
**Information Sources:** Chris Fish, Environmental Health major; <http://www.ehs.ilstu.edu/dept/industrial/pathogen.htm>; <http://www.shs.ilstu.edu/FAQ/FAQClinic.htm>; and [http://www.healthsciences.ilstu.edu/cls/what\\_is.shtml](http://www.healthsciences.ilstu.edu/cls/what_is.shtml)

# Asbestos, Oils and PCBs

Three other forms of special wastes collected by ISU are asbestos, non-hazardous oils, and polychlorinated biphenyls (PCBs). These wastes are generated from both general revenue and bond revenue operations.

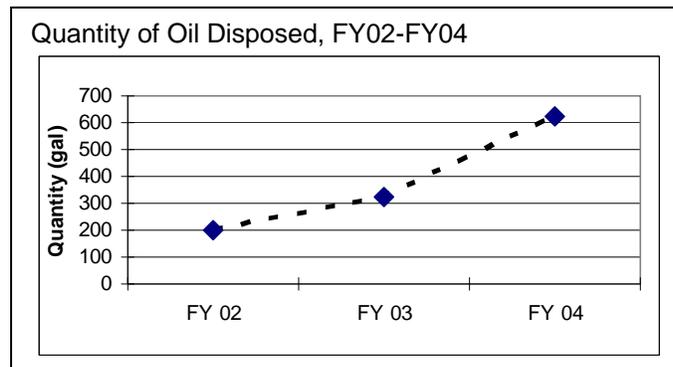
## ASBESTOS

Production of asbestos waste varies from year to year on Illinois State University's campus. FY03 saw a sharp increase in asbestos waste due to a number of large asbestos abatement projects on campus. Large projects in FY03 involved abatement at U High, Fell Hall, DeGarmo, Atkin-Colby, the Bone Student Center tunnel, Hamilton-Whitten, and Turner Hall.



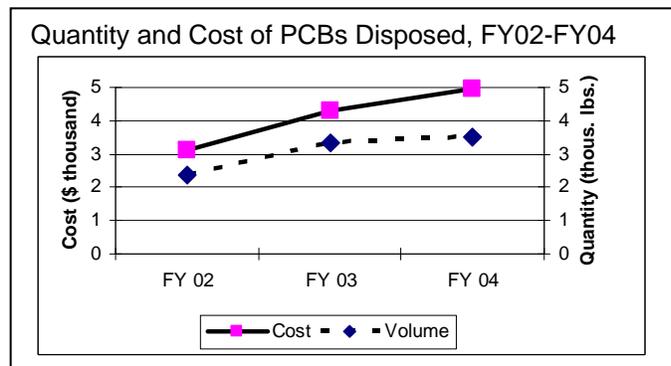
## NON-HAZARDOUS OIL

Non-hazardous oil is generated as a result of maintenance activities, primarily for vehicles. Reported quantities of non-hazardous oil waste have increased each year from FY02 to FY04 due, in part, to increased vehicle maintenance. More efficient record keeping has also contributed to the apparent increases. Additionally, the non-hazardous oil tank at the garage was drained twice during FY04, when it is usually done once a year. As a result, the amount produced for FY05 will likely drop.



## PCBs

At Illinois State University, the majority of PCB waste production has come from older PCB-containing light ballasts that are removed during lighting upgrades. The replacement ballasts do not contain PCBs. Consequently, PCB waste production is expected to decline in the future.



**Author:** Chris Fish, Environmental Health major; and Gabrielle Blossom, Environmental Health major.

**Information Sources:** John Goodman, ISU Office of Environmental Health & Safety.

# Vehicle Batteries and Fluorescent Lights

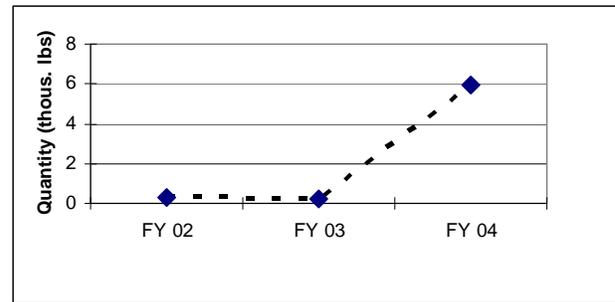
## VEHICLE BATTERIES

Campus vehicles require batteries for operation. Though waste batteries have been recycled for many years, data were not maintained until FY04.

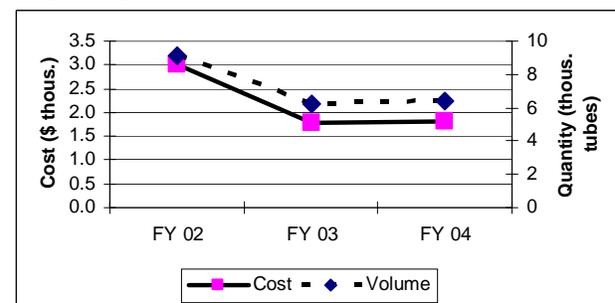
## FLUORESCENT LIGHTS

Standard fluorescent light bulbs contain mercury and must be recycled to prevent the mercury from being released into the environment. In FY02, the University began purchasing low-mercury (green-tipped) fluorescent tubes that can be disposed as solid waste. For this reason, there was a significant decline in the number of fluorescent tubes recycled from FY02 to FY03. As the older tubes are phased out, the number of tubes that are recycled will continue to decrease until all have been replaced by green-tipped bulbs in fixtures that accept such bulbs.

Quantity of Batteries Recycled, FY02-FY04



Cost and Quantity of Fluorescent Tubes Recycled, FY02-FY04



**Author:** Chris Fish, Environmental Health major, Gabrielle Blossom, Environmental Health major

**Information Sources:** John Goodman, ISU Office of Environmental Health & Safety.