University of South Carolina
Environmental Advisory Committee
Summary of Environmental Policy Assessments

Spring 2005

Prepared By:
Elaine R. Durr

Sustainable Universities Initiative
USC School of the Environment
In October of 2000, the University of South Carolina’s first environmental policy, developed by the Environmental Advisory Committee (EAC), was adopted by the Board of Trustees. The policy notes that in order to monitor progress toward the stated goals, the University will:

- Implement an Environmental Management System for auditing inputs and outputs and quantifying savings from sustainable practices.
- Produce an annual “Environmental State of USC” report under the leadership of the Environmental Advisory Committee.

We have made some progress on developing an Environmental Management System (EMS), and we have been conducting environmental assessments since 2000. Most departments completed a survey in 2000-2001, 2002-2003, and 2003-2004. Each department’s individual survey can be read on the EAC’s website: [http://www.sc.edu/EAC/](http://www.sc.edu/EAC/).

This year, for the first time, we believe we have sufficient data to evaluate trends and begin to truly assess the “Environmental State of USC.” This document provides a summary of each department’s successes and improvements as well as future plans and goals and questions regarding further improvement. USC’s approach to assessing environmental progress began as an attempt to accomplish three goals:

1. To gather preliminary information needed for an EMS
2. To identify indicators for each department that would allow us to measure progress over time and
3. To identify indicators that would be easy for department personnel to gather and report.

The students involved in development of the initial questionnaires relied on both EMS protocols and the suggestions of the National Wildlife Federation’s Campus Ecology program. Over time, some questions were dropped or refined and a few were added. We tried hard to avoid placing an undue burden on department personnel charged with responding to the questionnaire, so that we could conduct the assessment annually.

The need for an annual assessment, as well as our initial interest in using the assessments as a means of beginning work on an EMS, led us to assess by department, rather than according to identified indicators such as campus energy intensity, campus water intensity, recycling infrastructure and rate, true-cost print charging, ecosystem management, transportation demand, and others.

These indicators, however, are addressed within at least one of the departments assessed by USC, making our assessments more or less comparable to those schools that use indicators like those above. USC’s assessments are similar to those of schools that assess by department. Each university has the same basic idea, to determine how well it is doing in regards to environmental stewardship and sustainability and to enhance its performance in the process.
USC could improve its assessment process by increasing inter-department cooperation and information sharing. Several departments are already making efforts to do this; however, it takes extra effort by all parties involved. For example, recycling and purchasing issues affect almost all the departments on campus; but these individual departments are responsible for the overall activities on campus. Both departments are trying to inform the campus community of their policy and efforts, but this is a difficult task.

Upon reviewing this year’s and past assessments, we have identified inconsistencies that need to be addressed to enhance our assessment process. The primary one is changing the questions or format each year. Past assessments varied from year to year making it difficult to identify progress. Now that each department’s assessment is in the same format and the questions have been updated and modified, they should remain relatively un-changed. There will be circumstances that will require changes; however, they should be made carefully to ensure overall consistency.

Another issue that needs to be addressed is the format or type of data collected. Some departments have numerical data such as tons of aluminum cans, amount of water consumed, or price of electricity. Every effort should be made to obtain these numbers in the same format and units each year. One way to accomplish this is to send the previous year’s completed assessment along with the current year’s new, blank assessment. This will allow the individual responsible for completing it to report the data and information in the same manner, even if he or she did not complete the previous year’s assessment. Addressing these inconsistencies in subsequent years will streamline the process allowing us to clearly identify our progress and those areas in need of further improvement.
DINING SERVICES
Successes and Improvements

- The purchase of swordfish was discontinued due to extinction threats.
- Vegetarian and other special needs diets are accommodated.
- Nutritional information is available for items served.
- Students who use an “eco-mug” will receive a discount on beverages inside dining halls.
- Students have the option to “dine-in” rather than get food in a Styrofoam “to-go” container.
- The department purchases recycled content napkins.
- The department has switched to a pressed trophy cup, which uses less Styrofoam, from a complete foam cup.

Stated Plans and Goals

- Changing to a paper cup from a foam cup.
- Launch a campaign to alert customers to use china where available instead of paper.

Questions Raised by the Campus Community

- Would it be possible to provide signs advertising the “eco-mug” option where it is available?
- Would it be possible to offer a discount inside dining halls to students who bring their own mug, regardless of whether it is an actual “eco-mug”?
- Will the campaign to alert customers to use china where available include instructing employees to ask if patrons would like china or Styrofoam?
- Would it be possible to wrap “to-go” sandwiches in paper or place them in plastic bags rather than in Styrofoam containers?
- Due to the recent increases in petroleum prices, would it be more economical to purchase biodegradable “to-go” containers rather than Styrofoam containers?
- Does the department know that the recycling department is willing to pick-up cardboard as needed and will store it elsewhere?
- What can the department and/or campus community do to re-institute the food composting program?
ENERGY SERVICES-UTILITIES

Successes and Improvements

• The department has signed a Performance Contract with Johnson Controls, Inc. to replace boilers, perform campus wide lighting retrofits, replace energy facility chillers, replace energy facility cooling towers, and install water efficient plumbing fixtures campus wide.
• Two independent audits were conducted in 2004.
• Solar water heating is utilized at West Quad.
• Purchasing Energy Star products has become a part of the department’s policy.

Stated Plans and Goals

• Low flow fixtures will be installed in future projects.
• Install energy-efficient windows in all new projects.
• A Biomass Energy plant will be built on campus.

Questions Raised by the Campus Community

• In light of increasing electricity and water rates, what can the department and/or campus community do to reduce consumption per square foot? See appendix A. Note: Water is the only utility that shows a decrease in consumption per square foot for FY 02/03 and 03/04.
• Is it possible to track energy and water use by building to assist monitoring efforts and students interested in doing research projects?
• Would it be possible for the department to publicize or expand its policy of purchasing Energy Star rated products to the entire campus?
• What can the department and/or campus community do to reduce the University’s stormwater fee?
ENVIRONMENTAL HEALTH & SAFETY

Successes and Improvements

- The department has developed an EMS, which was ISO 14001 certified in 2002.
- Hazardous Waste
  - The overall amount and cost of hazardous waste disposal has declined, even though the price per pound of hazardous waste disposal has increased.
    - 1999-2000: 46,500 pounds @ $79,216 ⇒ $1.70 per pound
    - 2002-2003: 21,900 pounds @ $73,422 ⇒ $3.35 per pound
    - 2003-2004: 18,650 pounds @ $52,141 ⇒ $2.80 per pound
  - The department has created a booklet which provides information about and encourages the exchange of surplus chemicals.
- Radioactive Waste
  - The cost associated with radioactive waste disposal has declined.
    - 1999-2000: $23,000
    - 2002-2003: $13,000
    - 2003-2004: $12,907
  - USC does not have an on-site incinerator.
- Infectious Waste
  - The overall amount of infectious waste generated and the associated disposal cost has declined.
    - 1999-2000: 19,248 pounds @ $7,500 ⇒ $0.40 per pound
    - 2002-2003: 12,547 pounds @ $6,824 ⇒ $0.54 per pound
    - 2003-2004: 16,677 pounds @ $5,837 ⇒ $0.35 per pound
- Work Environment
  - All complaints are handled with an assessment of the area and recommendations for improvement.

Stated Plans and Goals

- Continue yearly examinations of department activities to identify objectives and targets to reduce impacts on the environment, health, and safety.
- Recycle 10% of the surplus hazardous chemicals to prevent them from becoming part of the hazardous waste stream.

Questions Raised by the Campus Community

- Hazardous Waste
  - What steps could be taken by the department and/or the campus community to increase surplus hazardous chemicals recycling?
- Radioactive Waste
  - Since the decay in storage program for solid radioactive waste will not be put in place, are there other methods the department could explore to reduce the quantity of radioactive waste?
- Infectious Waste
  - What steps could be taken by the department and/or the campus community to reduce the amount of infectious waste generated?
- Work Environment
  - Could the department take a proactive approach to the mold issues on campus to alleviate the influx of complaints that occur at certain times of the year?
FACILITY SERVICES ENVIRONMENTAL SERVICES

Successes and Improvements
- Plastic, aluminum can, and cardboard recycling has increased. See appendix B.
- The department has joined the EPA WasteWise Program but still needs to submit its goals.

Stated Plans and Goals
- Improve recycling collections on campus.
- Expand markets and materials accepted.

Questions Raised by the Campus Community
- Could the department do more frequent pick-ups?
- Could the department expand its electronics waste recycling program?
- Would it be possible to conduct regular waste composition studies to assist the department in tracking its progress?
**HOUSING**

**Successes and Improvements**

- The West Quad was completed in 2004 and is awaiting LEED certification.
- A variety of educational programs regarding sustainability issues are in place at West Quad in conjunction with the Living Learning Center.
- Green cleaning products are used at the West Quad.
- The department conducts Move-In and Move-Out recycling programs, which combined recycle nearly 50 tons of materials each year including: cardboard, cement blocks, wood, food, clothing, and toiletries.
- Paper towels are being phased out and replaced with reusable products.
- Public restrooms utilize refillable dispensers and hand dryers. Some use automatic fixtures, the use of which will expand in coming years.
- Motion sensors and occupancy detectors will be installed in residence halls during the 2005 summer.
- Energy efficient washers and dryers are used in residence halls saving approximately 2 million gallons of water and $20,000 per year.
- All department equipment is required to be Energy Star rated.

**Stated Plans and Goals**

- Seek ISO 14001 certification.
- Expand education and promotion of sustainability and recycling to residents with Environmental GA.
- Improve recycling infrastructure.
- Continue current programs.
- Increase use of environmentally friendly products.
- Complete the Environmentally Preferred Purchasing Program.
- Expand green renovations.
- Complete a “green renovation document.”
- Complete a West Quad case study and cost analysis.
- Continue documenting procedures under the BEST program.
- Expand use of occupancy sensors.
- Expand green cleaning program to all residence halls.
- Implement a green award/recognition program for staff.
- Expand custodial award for recycling and cleaning training.

**Questions Raised by the Campus Community**

- Will future residence halls be built with LEED certification in mind?
- Does the department plan to adopt an EMS of its own?
LANDSCAPING SERVICES
Successes and Improvements
- A pesticide usage form has been developed and is routinely used.
- Landscape waste is composted.
- About 10% of the irrigation systems on campus are drip irrigation systems.
- Chemical usage has remained about the same in recent years, even though campus area has increased.
- The department is using more compost and mulch in flower beds in place of chemical fertilizers and herbicides.
- The department uses devices that vacuum up leaf litter rather than blow it, which facilitates collection and reduces air-borne debris.

Stated Plans and Goals
- Expand the initiative to develop an EMS and seek ISO 14001 certification.
- Investigate using lower emission and noise level engines.

Questions Raised by the Campus Community
- Would it be possible for the department to use an alternative to the currently used leaf blowers?
- Are there additional ways for the department to reduce the amount of chemicals it uses?
- Will the department continue to install drip irrigation systems where possible?
- Because atrazine is so hazardous, would it be possible to discontinue its use since only one gallon of it is used a year?
**PURCHASING**

*Successes and Improvements*

- The paper products, except bond paper, purchased by the department for the entire campus contain a minimum of 50% post consumer recycled content; previously some products contained less than 50% post consumer content.
- Toner cartridges and electronics are collected for remanufacture, and the department purchases remanufactured toner cartridges and furniture.
- The department works with the State Surplus Property Office to recycle, reuse, and resale surplus items.
- Since 2000, the department’s purchases of copy paper have decreased 14%, and bond paper purchases have decreased 16%.

*Stated Plans and Goals*

- In November of 2005, the department will seek a five year term contract for the recycle/resale of surplus electronics to include computers and CRT monitors.

*Questions Raised by the Campus Community*

- Would it be possible for the department to purchase a bond paper that contains some recycled content?
- Would it be possible for the department to increase the collection and purchase of remanufactured products?
VEHICLE MANAGEMENT

Successes and Improvements

- The department has two additional shuttle buses for a total of eleven.
- The use of bio-diesel and electric powered vehicles has increased, which in turn has decreased the department’s use of petroleum based fuels.
- The department will be installing an E-85 fueling station, which will fuel the 100 E-85 compatible fleet vehicles.

Stated Plans and Goals

- The department plans to designate 30 administrative cars (Ford Tauruses) and 40 small maintenance trucks (Ford Rangers, Chevrolet S10’s) as ethanol (E-85) only vehicles.
- Data will be collected on the use of these vehicles to determine the reduction in gasoline usage and air emissions.

Questions Raised by the Campus Community

- What steps could the department take to increase knowledge regarding the benefits of carpooling and public transport?
- Would it be possible for the department to purchase recycled batteries or re-treaded tires?
APPENDIX A
Electricity and Water Consumption and Unit Cost

Electricity: Changes in Consumption (Kwh)/Sq.Ft.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 93/94</td>
<td>2.4%</td>
<td>0.0%</td>
<td>3.0%</td>
<td>0.8%</td>
<td>2.9%</td>
<td>1.0%</td>
<td>2.0%</td>
<td>4.4%</td>
<td>7.1%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>FY 94/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 95/96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 96/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 97/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.8%</td>
</tr>
<tr>
<td>FY 98/99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 99/00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 00/01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 01/02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 02/03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 03/04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Electricity: Changes in Unit Cost (Kwh)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 93/94</td>
<td>0.7%</td>
<td>5.3%</td>
<td>0.0%</td>
<td>1.9%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>1.1%</td>
<td>5.2%</td>
<td>4.9%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>FY 94/95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 95/96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 96/97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 97/98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-2.8%</td>
</tr>
<tr>
<td>FY 98/99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 99/00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 00/01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 01/02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 02/03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 03/04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B
Recycling Amounts

**Plastic**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>0.25</td>
</tr>
<tr>
<td>2002-2003</td>
<td>0.57</td>
</tr>
<tr>
<td>2003-2004</td>
<td>0.65</td>
</tr>
</tbody>
</table>

**Aluminum Cans**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>1.5</td>
</tr>
<tr>
<td>2002-2003</td>
<td>2.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>4.6</td>
</tr>
</tbody>
</table>