



CAMPUS SUSTAINABILITY ASSESSMENT



University of Oregon
May 2007



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University of Oregon

A project of the Environmental Leadership Program

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EXECUTIVE SUMMARY

The University of Oregon has been a leader in sustainability, and has adopted environmental programs, such as campus recycling and access to free public transportation, years before most other institutions. Because of the dispersed decision-making structure of the University, many of the sustainability initiatives have been driven by faculty, staff, and students. However, there has been little coordinated effort to systematically evaluate the effectiveness of these initiatives and the University's overall sustainability. During the 2007 winter and spring terms, seven Master's students in the Environmental Studies Program, under the guidance of the University's Sustainability Coordinator, researched and produced this University of Oregon Campus Sustainability Assessment.

This comprehensive Assessment examines the degree to which campus activities, institutional commitment, and infrastructure reduce the campus footprint and encourage progress toward sustainability. Specifically, the following issues are addressed:

- The University of Oregon's progress toward sustainability;
- The change in the environmental impacts of the University of Oregon's activities over the last five to ten years; and
- The identification of baseline data and creation of benchmarks that can be used for internal and external comparison over time.

Eleven indicators that evaluate the University's progress towards sustainability were chosen. Each indicator is comprised of several measurements. Some of the significant findings for each indicator follow.

KEY FINDINGS

Governance

- University President Dave Frohnmayer signed the American College and University Presidents Climate Commitment in April 2007. At that time, only 5% of American university and college presidents had done so.
- The University has not signed the Tallories Declaration.
- The University has many policies related to sustainability, but most lack clearly defined mechanisms for monitoring and ensuring compliance.
- The University has no full-time Sustainability Coordinator or Office of Sustainability.

Endowment Investment

- As of April 2007, the University had \$400 million in endowed investments.
- No sustainability screening criteria guide the University's endowment investments.

- 138 other institutions of higher education with \$28.7 billion in endowed assets invest all or part of these funds using sustainability screening criteria.
- The University's investment policies are not available to the general public.

Academics & Culture

- Research dollars are not tracked for projects related to sustainability.
- The University has no sustainability-related general education requirement.
- The University has many sustainability-related education and outreach programs. These include 19 research groups, 16 student groups, 11 public outreach programs, four student publications, and four major annual conferences that focus on issues of environmental sustainability.
- 10% of the Associated Students of the University of Oregon's annual \$10 million budget supported campus sustainability programs in 2005-06.
- During the 2005-06 academic year there were more than 12,000 available seats in classes pertaining to environmental sustainability.

Materials Management

- Purchasing data does not include tracking of the procurement of "green" products.
- The University (not including Athletics and Housing) spent \$132 million on supplies and services and \$55 million on capital expenses during the 2006 fiscal year.
- The campus recycling rate was 45% during 2005-06.
- The Green Chemistry program has been internationally recognized for its efforts to reduce hazardous waste.
- The chemical reuse program redistributes used lab chemicals to other researchers. In 2005-06, it redistributed 36% of received chemicals.

Food

- The University has no food procurement or food waste disposal policy.
- More than 50 tons of food waste are reused or composted every year.
- Less than one-half of one percent of food purchased by University Food Services was certified organic in the 2005-06 academic year.
- 75% of coffee sold on campus is Fair Trade certified.
- The campus community used more than 500,000 paper cups for beverages during the 2005-06 academic year.

Greenhouse Gas (GHG) Emissions

- Total campus greenhouse gas emissions for 2004-05 were 35,336 metric tons of CO₂ equivalent.
- 22% of energy used on campus comes from carbon-neutral sources.

Energy

- Campus energy use (measured in millions of British thermal units) decreased by almost 17% from 2000-01 to 2005-06.
- 4% of campus electricity use (1.3% of total campus energy use) comes from on-site solar generation and wind tags.
- The University has saved 1.7 million kWh annually, primarily through conversion to energy-efficient lighting.

Transportation

- In 2006, only 31% of students living off campus drove to school. 65% commuted by bus, bike, foot, or carpool.
- In 2005, 69% of off-campus students and 30% of faculty used alternative transportation.
- There are 4,000 secure bicycle parking spaces on campus.
- All students, faculty, and staff receive free bus passes.

Water

- Campus water use decreased by 13% from 2000-01 to 2005-06.
- The University uses 200,000 kilogallons of water per year. Most of this usage is attributable to irrigation during summer months: water usage is 2.5 times higher in July than in December.

Landscape

- The University uses an Integrated Pest Management (IPM) program to limit use of pesticides.
- There are 6 functioning bioswales on campus.
- 14% of the trees on campus are native to the region.

Building

- It is difficult to obtain information on University compliance with Leadership in Energy and Environmental Design (LEED) and State Energy Efficiency Design (SEED) requirements.
- In 2006, only one campus building met SEED standards.
- More than 80% of the T-12 fluorescent light tubes have been replaced with high-efficiency T-8s.
- The Lillis Business Complex has been called the greenest business school in the nation.

KEY RECOMMENDATIONS

Although it is clear that the University is making progress toward sustainability, there is much opportunity for improvement. Based on the findings from this Assessment, the following high-priority actions are recommended:

1. The University should increase its information-gathering capabilities to allow a more thorough evaluation of sustainability efforts and their successes or failures.
 - a. Make information regarding University endowment investments transparent and easily available to the general public.
 - b. Monitor building operations to ensure compliance with LEED and SEED requirements. Verify that projects that will not be LEED certified still meet LEED qualifications. Ensure the University is in compliance with the State Energy Efficiency Design (SEED) requirement to operate existing buildings at 10% below building code energy conservation requirements.
 - c. Track green purchasing efforts.
 - d. Track University research dollars for sustainability-related projects.
2. The University should continue to invest in reasonable and prudent capital projects that have significant sustainability payoffs.
 - a. Continue to diversify and expand cost-effective renewable energy production on campus.
 - b. Implement energy conservation infrastructure improvements where they will be most effective.
 - c. Expand the use of the Maxicom irrigation control system.
 - d. Make efforts to improve water quality in the Willamette River and Eugene Millrace by increasing the number of bioswales, permeable surfaces, and living roofs.
3. The University of Oregon should establish new policies related to sustainability and modify existing policies.
 - a. Develop a comprehensive greenhouse gas reduction plan with clear goals and strategies to meet the goals of the American College and University Presidents Climate Commitment.
 - b. Ensure that monitoring and compliance mechanisms exist in existing policies related to sustainability.
 - c. Include formal environmental sustainability criteria in the Investment Policy Statement.
 - d. Adopt and financially support a University food procurement and food waste disposal policy.
 - e. Add environmental literacy as a general education requirement.

EXECUTIVE SUMMARY

4. The University should make programmatic changes to support sustainability efforts.

- a. Create and fund an Office of Sustainability.
- b. Expand composting to include post-consumer food waste.
- c. Examine and utilize more alternative and non-chemical means of controlling pests, such as permacultural techniques.

5. The University should repeat this assessment every five years.

Sustainability is an evolving process, not a static condition. These recommendations are based on the University's current performance, with the recognition that circumstances will shift in the future. As the University continues to assess and reform its policies and practices, it will successfully meet the challenges posed by changing environmental conditions. This Assessment will provide momentum for the University's efforts to strengthen its commitment to educate responsible citizens and demonstrate leadership in campus sustainability.



INTRODUCTION

Sustainability efforts across the country have been growing rapidly. As the urgency of environmental problems such as global climate change, depletion of natural resources, air and water pollution, and biodiversity loss have become more widely acknowledged in the United States, many businesses, government agencies, and universities have recognized their responsibilities to minimize the impacts of their activities on the environment and society. Confronting and crafting workable solutions to the impacts of human activities on the environment require an approach that prioritizes sustainability.

The University of Oregon has been a leader in sustainability for decades. In the 1970s, before sustainability was a commonly-used term and before many people knew what recycling meant, University of Oregon students initiated a recycling program on campus. Sustainability efforts on the University of Oregon campus have continued to expand over the last 30 years, and now include efforts as diverse as composting on the campus Urban Farm, the innovative Green Chemistry program, and major initiatives that encourage the use of alternative transportation.



The University of Oregon Mission Statement articulates an institutional commitment to sustainable policies and practices. The Mission Statement affirms that, in addition to a commitment to higher education, the University “[accepts] the challenge of an evolving social, political, and technological environment by welcoming and guiding change rather than reacting to it.”¹ In addition, the Mission Statement expresses a responsibility to promote “the cultivation of an attitude toward citizenship that fosters a caring, supportive atmosphere on campus and the wise exercise of civic responsibilities and individual judgment throughout life.”² Additionally, the Mission Statement

emphasizes the importance of the University of Oregon’s example, implying that the University should be a model of sustainability in terms of its educational goals, its mission to produce conscientious citizens, and its purpose to guide change in response to shifting circumstances.

This Assessment is a comprehensive review that measures the University’s progress toward sustainability. It examines the degree to which University policies, programs, information-gathering capabilities, and infrastructure encourage this progress. It seeks to address the following issues:

- Measure the University of Oregon’s progress toward sustainability;
- Measure the change in the environmental impacts of the University of Oregon’s activities over the past decade; and
- Identify baseline data and create benchmarks that can be used for internal and external comparison over time.

An accurate and honest evaluation of these questions provides valuable opportunities. The documentation of exemplary performance recognizes the University’s leadership and identifies opportunities to build on its successes. In addition, the identification of shortcomings offers occasion for action and improvement. Such an evaluation will also allow the University to compare its performance to the growing number of campuses nationwide that have conducted sustainability assessments. Finally, conducting repeated evaluations of sustainability performance allows the University to make well-informed, effective, long-term changes that promote progress. Timely and meaningful adoption of sustainable practices and policies will help the University respond to global challenges and continue its leadership in campus and community sustainability.

WHAT IS “SUSTAINABILITY?”

A commonly accepted definition of “sustainability” comes from the 1987 report to the United Nations, “Our Common Future,” also known as the Brundtland Report. This document defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”³ The United States Environmental Protection Agency has since defined sustainability as “the ability to achieve continuing economic prosperity while protecting the natural systems of the planet and providing a high quality of life for its people.”⁴ This definition identifies three dimensions of sustainability: environmental, social, and economic.

This report is limited in scope to an assessment of the University's environmental sustainability. Although the social and economic dimensions of sustainability are important to the integrity of global systems and the University community, this Assessment focuses on the environmental dimension and considers the social and economic dimensions as they factor into this main focus. The authors of this report recognize that understanding of sustainability changes over time, and they therefore encourage the thoughtful evolution of the sustainability indicators included in future assessments.

WHAT IS CAMPUS SUSTAINABILITY?

Campus sustainability refers to the degree to which the activities of the University of Oregon conserve natural resources, minimize environmental impacts, and lead society toward sustainability through research, teaching, and public service. The University's activities have impacts not only on campus but also within larger contexts: the Eugene area, the Pacific Northwest, the United States, and the world. The indicators in this report measure activities that take place on campus but have an impact on the environment and society at these different geographic scales.

WHY MEASURE CAMPUS SUSTAINABILITY?

The aim of this Assessment is to recognize University achievements and opportunities for leadership, improvement, and action in environmental sustainability. This Assessment will recognize existing campus sustainability efforts and create the impetus for changes in policies and practices that foster genuine progress towards sustainability.

OBJECTIVES OF THE ASSESSMENT

- The Assessment will document current policies and practices that contribute to sustainability.
- It will identify strengths and weaknesses, and make recommendations for policy and practice changes.
- It will establish a format and precedent for future sustainability assessments.

BENEFITS OF ASSESSMENT AND REPORTING

- The Assessment will increase the accessibility and transparency of sustainability information for University administrators and other interested parties.
- The Assessment will facilitate the tracking of the University's progress toward sustainability by establishing benchmarks and providing baseline data.

- It will recognize the University's leadership in campus sustainability and demonstrate its commitment to sustainability.
- It will facilitate a comparison of sustainability measurements with other campuses.

ABOUT THIS ASSESSMENT

The 2007 University of Oregon Campus Sustainability Assessment was initiated by Steve Mital, the Sustainability Coordinator. Funding for the report was provided by Vice President of Finance and Administration, Francis Dyke. The report was researched and written by seven second-year Environmental Studies graduate students, as the capstone seminar project for the Master's degree.

This Assessment builds on prior work conducted for the University by Joshua Skov of Good Company and Colin Greer McArthur, a former master's student in the Department of Planning, Public Policy, and Management.⁵

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 2. Ibid.
 3. United Nations. 1987. "Report of the World Commission on Environment and Development." General Assembly Resolution 42/83, 4 August 1987 Retrieved. 4/27/07 from <http://www.epa.gov/sustainability/>
 4. United States Environmental Protection Agency. Sustainability. Retrieved 4/27/07 from <http://www.epa.gov/sustainability/>
 5. Colin Greer McArthur, June 2006, "Sustainable Development Indicators Project: Implementation Report"; Colin Greer McArthur, June 2006, "Sustainable Development Indicators Project: Indicators Set"; Good Company, Oct. 2004, "Sustainable Pathways Toolkit for Universities and Colleges: Indicators for Campuses"; Good Company, May 2002, "Sustainability Assessment of the University of Oregon based on Good Company's Sustainable Pathways Toolkit: Final Report."

ABOUT THE INDICATORS

The University of Oregon Campus Sustainability Assessment uses eleven indicators of performance in sustainability. These indicators were chosen because they highlight the activities, policies, and procedures that are most relevant to environmental sustainability on campus. They were also chosen for ease of comparison with the indicators used in sustainability measurements by other colleges and universities. Some desired measurements were not feasible because data were nonexistent, unavailable, or too difficult to acquire, given the constraints of time and labor.

INDICATOR 1: GOVERNANCE

The governance indicator focuses on the extent to which sustainability has been institutionalized into decision making at all levels of University administration. The eight measurements within this indicator fall into five categories: leadership, policies, stakeholder involvement, allocation of human resources, and information systems.

Although campus sustainability efforts can (and do) originate at all levels of the institution – students, faculty, staff, managers – the commitment of high-level administrators to organizing and guiding sustainability efforts is critical to the ultimate effectiveness and efficiency of those efforts.

The sustainability consulting firm Good Company notes that “organizations are best able to confront complex challenges when roles and goals are clear, [and clearly defined goals] can provide a rallying point for collective action.”¹ Through visibly demonstrated leadership and management that ensures well crafted policies, dialogue with stakeholders, the allocation of staff resources, and effective information systems, high-level administrators can create an institutional atmosphere that “empower[s] and inspire[s]...opening the door for broad, decentralized action and grassroots innovation” for sustainability.²

INDICATOR 2: ENDOWMENT INVESTMENT

The endowment investment indicator assesses the extent to which University endowment funds are invested according to environmental sustainability criteria. It focuses on the inclusion of environmental sustainability screening criteria in investment policies and the transparency of those policies.

Endowment investment is included as an indicator because depending on how funds are invested, endowments can have profound positive or negative impacts on sustainability locally, nationally, and globally. In addition to the goal of achieving strong financial returns, investment policies that include

environmental sustainability criteria can serve to align an institution’s investment practices with its commitment to sustainability both on and off campus.



Colleges and universities in the United States hold approximately \$345 billion in endowment investments. The University of Oregon’s endowment reached \$400 million at the end of April 2007.³ If invested according to clearly defined sustainability criteria, this amount of money can promote improved environmental and social conditions.

Many assume that investing according to environmental and/or social criteria involves a trade-off between support for such causes and weaker financial returns. However, according to numerous studies of socially responsible mutual fund performance, this assumption is unfounded: socially responsible funds tend to perform as well as their “unconstrained competitors, and in some cases perform better.”⁴

Many colleges and universities have recognized that their endowment funds can provide desired levels of financial return and also promote better environmental stewardship. These institutions have adopted sustainable investment criteria. In 2005, 138 higher-education institutions with \$28.7 billion in endowed assets invested some or all of these funds according to social responsibility and/or sustainability criteria.⁵

INDICATOR 3: ACADEMICS & CULTURE

The academics and culture indicator assesses the extent to which the University of Oregon has embraced environmental sustainability in its curriculum, research, and public service, and cultivated an environmentally-focused student culture.

Measurements of the curriculum include course offerings related to sustainability and the University’s

capacity for building environmental literacy. This report examines funding and institutional dedication to sustainability research. The assessment of public outreach examines the number of University programs that participate in community outreach that focuses on environmental sustainability. Measurements of the student community include funding for student environmental groups, funding for sustainability conferences and the number of student publications that focus on sustainability issues.

The University of Oregon has a responsibility to foster a sense of environmental conscientiousness in its students. The University offers many opportunities for students to learn about environmental issues and to make a difference. The purpose of this indicator is to assess the extent to which the University of Oregon has embraced a curriculum, research and public service focused on environmental sustainability, and the extent to which the University has cultivated a student culture that is focused on the environment.

INDICATOR 4: MATERIALS MANAGEMENT

The materials management indicator assesses the extent to which the University incorporates sustainability into the procurement and disposal of packaging, office supplies, furniture, computer equipment, and chemicals for custodial, landscaping, research, and teaching use. This indicator also examines campus trends in solid waste and recycling, as well as efforts to reduce waste and properly dispose of hazardous waste.

Solid waste is a significant problem in our society. Landfills carry high financial and environmental costs. Waste is expensive to collect and transport.



Once it is in the landfill, it may release methane, a greenhouse gas, into the air and leach toxic chemicals into the land and groundwater.

The University of Oregon spent \$132 million dollars on supplies and services and an additional \$55.5 million dollars in capital expenses during the 2005-06 fiscal year. These figures do not include expenses for campus auxiliaries, which include Athletics and Housing.⁶ Given its size, the University must purchase materials (paper, chemicals, computer equipment, and so on) wisely to decrease the quantity of waste sent to landfills. It is also important to reuse and recycle materials whenever possible, and dispose of them safely to avoid polluting the environment.

INDICATOR 5: FOOD

The food indicator assesses the extent to which the University incorporates sustainability into food procurement and disposal decisions. The purpose of this indicator is to evaluate the amount of sustainably produced food⁷ purchased by the University, the amount of food wastes reused or recycled by the University, and University initiatives and educational programs regarding food procurement and disposal.

Food procurement and waste disposal are critical issues in the national discussion of sustainability. The procurement and disposal decisions of large institutions such as the University of Oregon have tremendous impact on the environment. The purpose of this indicator is to measure and provide benchmarks for the University's food procurement, waste disposal, and educational initiatives. Sustainable food procurement is a crucial aspect of the University's sustainability leadership.⁸ Sustainable waste disposal is also a key element, especially when one considers that in 1995 consumers and food service providers lost 91 billion pounds of food, which accounted for over one-fourth of the nation's food supplies.⁹

INDICATOR 6: GREENHOUSE GAS EMISSIONS

Global climate change is one of the most serious environmental issues facing society today. Greenhouse gases are responsible for global climate change. The University of Oregon emits greenhouse gases (GHG) through energy use, transportation, and chemical use. The greenhouse gas emissions indicator assesses the University's greenhouse gas emissions and examines current efforts to limit emissions and the potential to decrease them in the future.

The purpose of this indicator is to assess how well the University is performing and what can be done to

ABOUT THE INDICATORS

further decrease its contribution to global climate change.

INDICATOR 7: ENERGY

The energy indicator examines energy use for campus operations. Electricity and natural gas are the two primary sources of energy. Campus electricity can have three sources: Eugene Water and Electric Board (EWEB), the University's central power station, and campus solar arrays.

Energy use is often one of the first areas examined when measuring an organization's sustainability. It is a tangible measurement which many people understand and are familiar with. The financial and environmental benefits of energy conservation are evident.

INDICATOR 8: TRANSPORTATION

The transportation indicator assesses how students and faculty commute to campus and what the University does to promote and support alternative means of transportation.

Transportation is an important indicator of campus sustainability because transportation has a significant environmental impact (i.e., greenhouse gases and other pollutants emitted from the burning of fossil fuels while driving). In addition, universities have an opportunity to influence the transportation choices of thousands of faculty, staff, and students. This can be done using policies and programs that discourage driving alone and provide incentives for alternative means of transportation.

INDICATOR 9: WATER

The water indicator assesses the University's use of water for campus operations, including steam, irrigation, and domestic use.

Even in soggy western Oregon, water use is an important indicator of sustainability. Eugene's water comes from the McKenzie River, home to endangered fish. Water use also consumes other resources. Resources are used to filter and treat water for consumption, and also to treat what goes down the drain and out to the Willamette River. Finally, climate change models predict wetter and warmer winters with less snowpack and hotter summers in the Pacific Northwest.¹⁰ The hotter summers will increase the demand on water supplies, even as supplies are shrinking due to reduced snowpack.

INDICATOR 10: LANDSCAPE

The landscape indicator assesses the extent to which the University has incorporated sustainability goals into landscape design and maintenance and whether it is meeting those goals. The indicator assesses plantings, Integrated Pest Management (IPM), and the management of stormwater. It reviews how the University has minimized the input of chemicals and pollutants into the environment while, at the same time, considers the health of humans, flora, and fauna.

Sustainable landscaping focuses on plants that are well-adapted to the region. Plantings should include species that are native, pest-resistant, and minimize environmental harm (such as the negative impacts that result from invasive species). Plantings that meet these criteria will require minimal application of water, fertilizer, and pesticides and provide habitat for native fauna. Integrated Pest Management (IPM) is a method used to minimize the application of chemical pesticides, which are known to have negative impacts on human health and the environment. Another way to minimize the input of pollutants into the environment is through proper management of stormwater. Untreated and unmanaged stormwater runoff delivers pollutants into waterways and has a negative impact on human health and the environment. The landscape indicator assesses the degree to which the University is minimizing the input of chemicals and pollutants into the environment while protecting human health and the environment.

INDICATOR 11: BUILDING

The building indicator assesses the extent to which the University has incorporated green building and design goals into existing buildings and new construction projects, as well as whether the University is meeting those goals. The indicator includes institutional commitment to green building and design, the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program, the Oregon Department of Energy (ODOE) State Energy Efficiency Design (SEED) program, and the use of energy-efficient lighting on campus.

Buildings consume 70% of the nation's electricity, and are therefore responsible for a significant proportion of the world's greenhouse gases.¹¹ The cumulative impact of buildings in the United States, broadly, and on college and university campuses, specifically, is enormous. Conversely, the cumulative benefit of reducing the consumption and pollution associated with these buildings can be profound. This indicator assesses the degree to which the University's policies and actions

reduce energy consumption through design, construction, and maintenance of campus buildings.

ADDITIONAL NOTES:

Future Revision:

Sustainability assessment is an evolving practice, and the authors recognize that the indicators included here should be revised in future assessments. Revisions might be made to reflect new issues because of technological innovation or the changing availability and accessibility of data.

Scaled Campus Users:

The unit “scaled campus users” is used to normalize some of the measurements reported in this Assessment. Normalizing measurements according to scaled campus users allows more accurate comparisons across time and between institutions because different groups use campus facilities unequally; a full-time student living in an on-campus dorm will use more resources than a part-time University employee. Using Good Company’s scaled campus user formula¹¹ as a general guide, campus user groups were given FTE (full-time equivalent) allocations and then totaled to create a scaled campus user value for each fiscal year.¹² In 2005-06 there were 7,316 scaled campus users at the University of Oregon; there were 24,559 full-time and part-time faculty, staff and students. (See Appendix A for scaled campus user calculations.) Throughout this document, “campus users” implies scaled campus users.

1. Good Company, Oct. 2004, “Sustainable Pathways Toolkit for Colleges and Universities: Indicators for Campuses,” p. 25, <http://www.goodcompany.com/lib/documents/>.
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5. “2005 report on socially responsible investing trends in the United States,” Social Investment Forum, p.22, http://www.socialinvest.org/areas/research/trends/sri_trends_re-port_2005.pdf.
6. Harriet Merrick, personal communication, May 25, 2007.
7. For the purposes of this assessment, “sustainably produced food” spans a wide range of issues that include organic, locally grown, and humanely treated foods.
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10. Richard Hill, “Water may split state into haves, have-nots,” *The Oregonian* (April 6, 2007).
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12. Good Company, Oct. 2004, “Sustainable Pathways Toolkit for Universities and Colleges: Indicators for Campuses.”

UO PERFORMANCE SUMMARY

• GOVERNANCE •

Has the University signed the American College & University Presidents Climate Commitment?	YES
Has the University signed the Talloires Declaration?	NO
Are there University policies to guide campus environmental sustainability?	YES
Does the University have a designated body involving diverse campus stakeholders that provides input to the administration on environmental sustainability issues?	YES
Does the University have designated staff positions devoted to the coordination of sustainability efforts?	YES
How many FTEs are allocated to sustainability coordination positions?	1.35
How does the collection of data related to sustainability rate? (excellent/good/fair/poor)	GOOD
How does the accessibility of data related to sustainability rate? (excellent/good/fair/poor)	FAIR

• ENDOWMENT INVESTMENT •

Does the University's endowment investment policy include formal environmental sustainability criteria?	NO
What proportion of the University's endowment is invested according to environmental sustainability criteria?	UNKNOWN
Is the University's endowment investment policy publicly available?	NO
Is a list of companies in which the University invests publicly available?	NO

• ACADEMICS & CULTURE •

Number of research bodies focusing on environmental sustainability research (2006-07)	20
Number of dollars dedicated to sustainability-related research	N/A
Number of departments offering at least one course related to environmental sustainability for the 2005-06 academic year	22
Number of classroom spaces for the 2005-06 academic year in sustainability-related courses	12,377 SPACES
Number of extra-curricular student groups involved with environmental sustainability (2006-07)	16
Total amount of Associated Students of the University of Oregon (ASUO) funding for student groups and campus programs related to sustainability (2006-07)	\$1.13 MILLION
Percent of ASUO budget dedicated to sustainability (2006-07)	10.3%
Number of student publications covering sustainability	4
Number of programs participating in environmental sustainability service and outreach (2006-07)	11
Number of annual conferences related to sustainability (2006-07)	4

• MATERIALS MANAGEMENT •

What is the amount of solid waste sent to the landfill per scaled campus user?	472 lbs.
What is the amount of recycled material per scaled campus user	413 lbs.
Recycling rate	45%
Are there University policies to govern cleaning chemical purchases?	NO
Are there informal procedures to reduce cleaning chemical purchases?	YES
Are there University policies to govern laboratory and teaching chemical purchases?	NONE
Are there University policies and/or programs to minimize chemical purchases and hazardous waste?	YES

• FOOD •

Does the University have a food procurement policy?	NO
What is the amount and percentage of food procured by University housing and on-campus food vendors that is produced in a sustainable manner?	SEE NOTE 1
Does the University have a food waste disposal policy?	NO
What is the amount and percentage of food from University housing and on-campus food vendors that is either reused or composted?	50 TONS²
Are there initiatives and educational programs within the University regarding food procurement and disposal?	YES

• GHG EMISSIONS •

Overall emissions (CO2 equivalent, not including Athletics or any UO air travel. Does include estimate for all commute travel)	35,336³
Emissions from on-campus generated energy	23,341⁴
Emissions from purchased electricity	4,637⁵
Emissions from mission related and commute travel (excludes air travel, commute travel is estimated)	6,960⁶
Estimated percent of the University's energy derived from carbon-neutral sources	22%
Purchased Renewable Energy Credits	2,280
Does the University have a commitment to reduce GHG emissions?	YES
Does the University have a GHG emissions reduction plan?	NO

• ENERGY •

How many kWh/ per campus user?	8,038
How many kWh/per square foot?	13.2
How many Therms/per campus user?	575
How many Therms/per square foot?	0.9
How many mmBtus/per campus user?	85.0
How many mmBtus/per square foot?	0.13
What percent of electricity used on campus is from on-site solar and wind tags?	4.0%
What percent of total energy used on campus is from on-site solar and wind tags	1.3%

UO PERFORMANCE SUMMARY

• ENERGY (CONTINUED) •

How much electricity is from on-site generated renewable energy (solar)?	0.1%
How much electricity is from purchased wind power?	3.9%

• TRANSPORTATION •

What modes of transportation are used by students living off campus to commute to campus?	SEE NOTE 7
What modes of transportation are used by faculty and staff to commute to campus?	SEE NOTE 8
Total number of secure bike parking spaces on campus	4,000
What is the ratio of bike parking to total campus users?	0.16
Total number of vehicle parking spaces	3,200⁹
What is the ratio of vehicle parking spaces to scaled campus users?	0.13
Are free bus passes available for entire university population?	YES
Are there policies or programs that encourage alternative transportation?	YES

• WATER •

What is the total amount of water used (kgals)	193,962
Number of Kgals per campus user	22.6
Number of Kgals per square foot	0.035
Number of Kgals per unpaved acre	1,154
Ratio of July to December water usage (does not include Athletics)	2.54

• LANDSCAPE •

What is the percent of native tree species on campus?	14%
Does the University have a landscaping plan or policy that requires the use of pest-resistant or area-adapted new plantings or the assessment of the environmental impacts of new plantings?	NO
Does the University have an Integrated Pest Management (IPM) program?	YES
How many times have IPM Action Thresholds been exceeded and chemical pesticides been applied (in FY 2006)?	515
Have there been reported or discovered violations of the IPM policy?	NO
Does the University have a policy for the management of stormwater?	YES
Has the University violated the state Best Management Practices for stormwater management?	NO

• BUILDINGS •

What percent of campus gross square footage meets LEED certification standards?	5.18%¹⁰
What percent of campus gross square footage is certified LEED?	2.19%¹¹
What percent of campus gross square footage is SEED verified?	0.24%¹²
What percent of campus gross square footage meets SEED qualification standards?	0.24%¹³
Is the University in compliance with SEED for existing buildings?	NO
Is the University actively changing lighting from T12 to T8 lamps?	YES

NOTES

1. \$16,606 or 0.36%, organic for University Housing; EMU Food Service not tracked
2. 50 tons; percentages not tracked
3. 35,336 Metric Tons
4. 23,341 Metric Tons
5. 4,637 Metric Tons
6. 6,960 Metric Tons
7. Bus = 22%; Bike = 15%; Walk = 22%;
Car - Alone = 31%; Carpool = 6%; Other = 4%
8. Bus = 10%; Bike = 13% Walk = 6%; Car - Alone = 60%;
Carpool = 7%; Other = 4%
9. 3,200-3,300; number fluctuates due to construction
10. 5.18% = 4 Buildings
11. 2.19% = 1 Building
12. 0.24% = 1 Building
13. 0.24% = 1 Building

INDICATOR 1: GOVERNANCE

INDICATOR DEFINITION

The governance indicator assesses the extent to which the University's governance systems support and facilitate campus environmental sustainability. The eight measurements within this indicator fall into five categories: administrative leadership, policies, stakeholder involvement, staffing, and information systems.

MEASUREMENTS

Administrative leadership

Support for campus environmental sustainability from the highest levels of the administration encourages innovation, behavior change, and commitment on the part of other campus stakeholders, such as mid-level managers, staff, faculty, and students. Conversely, a lack of visible commitment by leaders can send a message that campus environmental sustainability is not a high-level priority.

Two commitments created by higher education leaders are used to measure administrative leadership for campus environmental sustainability. The Talloires Declaration (1990) is a "ten-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities" that has been signed by hundreds of university leaders in forty countries.¹ The American College and University Presidents Climate Commitment is a promise to achieve climate neutrality; it had 202 signatories at the end of April 2007.²

Policies

Policy setting at the administrative level is necessary to define the scope of sustainability goals and outline strategies for achieving them. The existence of policies that guide campus environmental sustainability efforts is used to measure this component of governance. Policies are also evaluated qualitatively.

Stakeholder involvement

The involvement of campus stakeholders is essential to ensure that campus environmental sustainability efforts are appropriately directed and designed. It is also necessary to increase the "buy-in" of those who will ultimately implement such efforts. The existence of a designated group of diverse campus stakeholders that provides guidance and feedback to the administration on issues of campus environmental sustainability is used here as a measurement of stakeholder involvement.

Staffing

The allocation of adequate human resources to coordinate a complex array of campus sustainability

INDICATOR MEASUREMENTS



ADMINISTRATIVE LEADERSHIP

Has the University signed the Talloires Declaration?	NO
Has the University signed the American College & University Presidents Climate Commitment?	YES

POLICIES

Are there University policies guiding campus environmental sustainability?	YES
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STAKEHOLDER INVOLVEMENT

Does the University have a designated body involving diverse campus stakeholders which provides input to the administration on environmental sustainability issues?*	YES
--	------------

STAFFING

Does the University have designated staff position(s) devoted to coordinating sustainability efforts?	YES
FTE allocated to sustainability coordination positions	1.35

INFORMATION SYSTEMS

Sustainability-related data collection rating (excellent/good/fair/poor)	GOOD
Sustainability-related data accessibility rating (excellent/good/fair/poor)	FAIR

Data from 2005-06

*Data from 2007

efforts is a crucial function of university governance. Two measurements are used to assess staffing: the existence of positions devoted to sustainability coordination and the total FTE allocated to those positions.

It is difficult to fully define “sustainability coordination” to determine which staff positions to count in this measurement. The Association for the Advancement of Sustainability in Higher Education (AASHE) gives some guidance in this area, distinguishing “paid, sustainability/ environmental coordinators, directors, officers, and managers ... [from] positions focused largely on waste reduction and recycling, or environmental compliance.”³ These latter positions are excluded from AASHE’s definition of “sustainability/ environmental coordinators” because their work may involve the coordination of certain aspects of campus sustainability but it does not tend to include the management and synchronization of all sustainability efforts.

The AASHE definition was used here to determine which staff positions to include in this Assessment because it highlights staff positions that are tasked with bringing together sustainability efforts in all areas of the organization, from facilities to planning to academics. The measurements reported here therefore represent only a portion of the total staff resources allocated to sustainability, because the University supports many other staff positions related to sustainability that do not fit within the AASHE definition.

Information systems

Regular monitoring and assessment of campus sustainability efforts are necessary to ensure that these efforts are effective and that resources are being used efficiently. To accomplish monitoring and assessment, information-gathering systems must be in place, and the information that is gathered must be accessible to sustainability evaluators. This report, the first comprehensive Assessment of the University’s progress toward sustainability, serves as an initial barometer of the state of the University’s information systems.

Two qualitative measurements are used to assess the University’s information systems: a rating of the quality of data collection related to sustainability and a rating of the availability of data related to sustainability. A four-point rating scale of “excellent/good/fair/poor” was used for both measurements. The collection of data related to sustainability was rated based on the existence of the sustainability measurements that were sought during the preparation of this report. The availability of data related to sustainability was rated based on the straightforwardness of obtaining the data that exist.

It is important to note that some relevant measurements were not included in this Assessment because it was known that data would be difficult to acquire or have never been collected. The comprehensiveness of future assessments may be improved if increased data collection allows for the inclusion of additional relevant measurements.

UNIVERSITY PERFORMANCE

The University’s performance in the area of governance includes many important steps toward supporting and facilitating campus sustainability, but room for improvement remains in several areas.

Administrative leadership

The offices of the President and the Vice President for Finance and Administration are responsible for the highest level of governance of the University. The President, David Frohnmyer, oversees the Vice President for Finance and Administration, Frances Dyke, whose office funded this report and oversees most administrative units involved in campus environmental sustainability, including Budget and Finance, Campus Operations, Institutional Research, Public Safety, and University Planning.

The University had not signed the Talloires Declaration as of April 2007, although the Environmental Issues Committee (EIC), the designated campus sustainability advisory body, has advised President Frohnmyer to sign this document. However, in April 2007, President Frohnmyer did sign the American College and University Presidents Climate Commitment in April 2007, an important step in demonstrating administrative leadership and support for campus sustainability. At the time this document was published, less than five percent of university and college presidents had signed this agreement. See Appendix B for the full text of the American College and University Presidents Climate Commitment and Appendix C for the full text of Talloires Declaration.

Policies

There are many policies that guide various aspects of campus environmental sustainability, several of which are linked to form a nested set of guidelines. Appendix D provides links to the policies discussed here.

The major policy that guides campus sustainability is the 1997 Comprehensive Environmental Policy Statement (CEPS), which asserts that the University shall balance fiscal and environmental responsibilities to achieve “environmental excellence” on campus and protect “the public’s right to a healthy, quality environment.”⁴ The policy sets guidelines for environmental education, environmentally preferable purchasing,

INDICATOR 1: GOVERNANCE

resource use, solid waste reduction, minimization of toxic and hazardous waste, and environmentally responsible campus planning and design. Responsibility for monitoring and updating the policy is delegated to the Office of Environmental Health and Safety.

GREEN SPOTLIGHT

Comprehensive Environmental Policy Statement

The CEPS is one of the first policies of its kind adopted by higher education institutions. It was drafted by students in the Community Planning Workshop (PPPM) in 1995. In 1997, the Council of Deans, the Faculty Advisor Council, and the President's Small Executive Staff approved the revised and updated CEPS.

The Campus Plan (updated in 2005) responds to the guidelines for environmentally responsible campus planning and design included in the CEPS. Policy 10 of the Campus Plan posits sustainability as an integral consideration for all campus construction and landscaping. The Sustainable Development Plan (also updated in 2005) is linked to Policy 10 of the Campus Plan and spells out specific approaches to sustainable campus development.

There are a number of additional University policies that guide campus sustainability, including the Recycled Paper Policy, the Wood Products Purchasing Policy, the Bike Plan, the Campus Tree Plan, the Long-Range Campus Transportation Plan, and the Integrated Pest Management program.

It is clear that the University has developed a broad range of policies that set goals and define strategies for campus sustainability. These policies guide actions in many campus units including academics, planning, and facilities. The expansive scope of the CEPS outlines a sweeping vision of sustainability at the University, filled out in more detail through the policies and plans with specific areas of focus discussed above.

However, two shortcomings of the University's sustainability policies deserve mention. First, most of these policies lack clearly defined mechanisms for ensuring compliance. Notable exceptions include the Campus Plan and the Integrated Pest Management policy;

both include compliance monitoring mechanisms.

The Integrated Pest Management program, required by state law, includes built-in compliance mechanisms such as the reporting of violations to the Office of Environmental Health and Safety, which is charged with administering the program and monitoring compliance.

The Campus Plan specifies a process for evaluating the compliance of building projects. The Campus Planning Committee, comprised of seventeen faculty and staff members and two students, is charged with conducting these evaluations and recommending which projects should be approved. However, the policy specifies that only certain interested parties may appeal the recommendations of the Committee. This specification may serve to exclude some campus stakeholders from appealing Committee recommendations that allow noncompliance with the sustainability criteria of the Campus Plan.

Overall, the policies that guide campus sustainability tend not to include specific mechanisms for monitoring compliance. This shortcoming has been noted by University planners, who are hindered in their ability to assess the effectiveness of policies and project plans to achieve desired sustainability goals when compliance is not monitored.⁵

The Campus Plan contains an additional loophole that may impede campus sustainability efforts. The Plan specifies that it is applicable only to projects built on University-owned property. The plan does not apply to "properties leased from others or foundation-owned properties."⁶ This allows the University to accept the donation of facilities that do not comply with the Campus Plan if they are built on land leased from or owned by private entities.

Stakeholder involvement

The Environmental Issues Committee (EIC) is the designated campus environmental sustainability advisory body and is empowered to make recommendations about campus environmental issues to the Vice President for Finance and Administration. The EIC is comprised of students, faculty, and staff from departments and campus units, although there is currently a lack of student representation.

A listserve comprising at least one person from each department on campus is maintained by Karyn Kaplan, the Environmental Resource and Recycling Program Manager. Emails regarding sustainability issues (at the campus level and beyond) are sent regularly. Point people for each department decide which should be forwarded to department listserves.

Staffing

The University currently has three sustainability coordination positions: the .25 FTE Sustainability Coordinator, .5 FTE of the Environmental Resource and Recycling Program Manager's time, and .6 FTE of the Utilities Analyst's time. The total FTE of these three positions is 1.35.

This FTE represents a portion of the total allocation of resources to sustainability coordination, since many other staff positions are dedicated to more specific aspects of campus sustainability. These positions are impossible to fully count because job descriptions do not always specify the FTE devoted to "sustainability-related duties." However, they undoubtedly include jobs that involve responsibilities in areas such as transportation, recycling management, planning, purchasing, landscaping, environmental health and safety, computer recycling, building design, and more.

Overall, the University's allocation of human resources toward sustainability coordination compares favorably to the hundreds of other colleges and universities that have no such designated position.

Information systems

In terms of its collection of data related to sustainability, the University's performance is good on a scale that ranges from excellent to good to fair to poor. Most of the data for the eleven indicators included in this Assessment were collected by various campus units. There were several kinds of data sought for this report which are apparently not collected: data that track research funding related to sustainability, some data related to the meeting of SEED energy requirements for buildings, and information about food procurement and waste management policies. In addition, the proportion of organic food purchased on campus has only been tracked by the housing office since 2006 and is not collected by Erb Memorial Union food service units.

The accessibility of data related to sustainability was rated fair. For the indicators energy, water, food, transportation, and academics and culture, no problems in accessing the data were encountered during the research for this report. For other indicators, some data were extremely difficult or impossible to access. Building SEED and LEED rating data are not stored in a centralized location and therefore extremely difficult, and, at times, impossible to obtain.

Data that are required to calculate GHG emissions figures are decentralized, making them difficult and/or impossible to access. Paper consumption would have been measured but the data are not available. The University of Oregon Foundation's investment policy and a list of companies in which University as-

sets are invested were also inaccessible because this information is not shared publicly by the Foundation. In addition, it was sometimes difficult or impossible to access data from campus auxiliaries, particularly Athletics. These auxiliary units may have significant environmental impacts that are therefore difficult to assess accurately.

RECOMMENDATIONS

- The University should fund a comprehensive research and action plan to reduce GHG emissions by eighty percent by 2050, consistent with the requirements of the Presidents Climate Commitment.
- The Sustainability Coordinator serves an essential coordination and project implementation role in a decentralized university system. The University should create and fund an Office of Sustainability with a full-time sustainability coordinator. This would not be unprecedented: at least sixty-two colleges and universities in the United States and Canada have full-time (thirty hours per week or more) sustainability coordinator positions.⁷
- Policies related to sustainability should be reviewed to identify possible amendments that would create mechanisms for monitoring and ensuring compliance.
- President Frohnmayer should sign the Talloires Declaration, which would demonstrate leadership in sustainability. This recommendation has been made in the past by the Environmental Issues Committee.
- The Environmental Issues Committee should include more faculty and student representatives to improve diversity of feedback to senior administrators.
- The Campus Plan should be amended to prohibit the University from accepting donations of facilities on privately owned property that do not comply with the Plan.
- Administrative directives should encourage the improvement of information systems in the problematic areas of collection and accessibility of data related to sustainability discussed in this chapter.

-
1. University Leaders for a Sustainable Future, "What is the Talloires Declaration?" http://www.ulsf.org/programs_talloires.html.
 2. "American College and University Presidents' Climate Commitment," <http://www.presidentsclimatecommitment.org/html/commitment.php>.
 3. Association for the Advancement of Sustainability in Higher Education, "Directory of Campus Sustainability/Environmental Officers," <http://www.aashe.org>.
 4. University of Oregon, "Comprehensive Environmental Policy Statement," effective July 1, 1997.
 5. Christine Thompson, interview, March 6, 2007.
 6. "University of Oregon Campus Plan," 2005, p.5.
 7. Association for the Advancement of Sustainability in Higher Education, "Directory of Campus Sustainability/Environmental Officers," <http://www.aashe.org>.

INDICATOR 2: ENDOWMENT INVESTMENT

INDICATOR DEFINITION

The endowment investment indicator assesses the extent to which University endowment funds are invested according to environmental sustainability criteria. Investment policies that include environmental sustainability criteria can serve to align an institution's investment practices with its commitment to sustainability both on and off campus.

MEASUREMENTS

The indicator includes four measurements: the inclusion of formal environmental sustainability criteria in the endowment investment policy, the proportion of funds invested in accordance with such criteria, and the transparency of the policy.

Formal Environmental Sustainability Criteria

Investors use a variety of terms to describe investment practices guided by concern for environmental outcomes as well as financial returns. "Socially responsible investing" and "sustainable investing" are two commonly used terms. Although sustainable investing tends to emphasize environmental considerations more than socially responsible investing, both usually include environmental and social criteria.¹ These approaches involve using either qualitative screens – which select companies based on positive social and/or environmental performance – or exclusionary screens – which prohibit investment in undesirable industries or in companies that do not meet certain minimum standards – or both.² Although both social and environmental impacts are relevant to sustainability, it is outside of the scope of this Assessment to consider social criteria. Therefore, the measurements used here ask whether the University's investment policy includes formal environmental sustainability criteria and the percentage of those funds that is invested according to such criteria.

Investment Policy Transparency

As many colleges and universities have embraced sustainable investing, they have also recognized the value of making investment policies that are transparent to campus users and the general public. Doing so aligns investment practices with "the academic tradition of fostering a free flow of information" and promotes "constructive dialogue" between the broader community and officials responsible for investment decisions.³ Transparency is measured here by the availability of the University's endowment investment policy to the public and the public availability of a list of companies in which the University invests.

INDICATOR MEASUREMENTS



FORMAL ENVIRONMENTAL SUSTAINABILITY CRITERIA	
Does the University's endowment investment policy include formal environmental sustainability criteria?	NO
Proportion of the University's endowment invested according to environmental sustainability criteria:	UN- KNOWN
INVESTMENT POLICY TRANSPARENCY	
Is the University's endowment investment policy publicly available?	NO
Is a list of companies in which the University invests publicly available?	NO
Data from 2005-06	

UNIVERSITY PERFORMANCE

The University's overall performance in this area is poor, although some informal efforts are being made to ensure that the endowment is invested in environmentally sustainable ways.

The University of Oregon Foundation, a non-profit organization, manages the University's approximately \$400 million in endowment assets. The Foundation's mission is to "provide stable financial support for the University while preserving the purchasing power of endowment and trust funds in the future."⁴ Foundation staff are responsible for the day-to-day management of assets, whereas the policies governing their investment are determined by the Foundation's

65-member Board of Directors. Based on its spending policy, the Foundation determines the percentage of endowment assets distributed quarterly to the University.⁵

Does the University's Endowment Investment Policy Include Environmental Sustainability Criteria?

Currently, the Foundation's Investment Policy Statement defines no formal environmental sustainability criteria for screening investments of endowed assets. According to the Foundation's chief investment officer, such criteria have not been made official because it is difficult to define appropriate standards in an area as broad as sustainability and because it is also difficult to create a set of standards that will be applicable to the varied spectrum of companies in which the Foundation invests.

Proportion of the University's Endowment Invested According to Environmental Sustainability Criteria:

Currently, none of the University's endowment is invested according to formal environmental sustainability criteria. However, the Foundation's staff does address sustainability concerns on a case-by-case basis when screening potential new investments.⁶ Because screening based on environmental impacts is not formally required but appears to occur on an informal basis, it is impossible to determine the exact proportion of the University's endowment that is invested according to sustainability criteria.

Is the University's Endowment Investment Policy Publicly Available?

The Foundation's Investment Policy Statement is not publicly available. However, the Foundation's website gives a brief description of the philosophy guiding the investment of endowed assets: "to invest in a manner that maximizes returns with a prudent level of risk."⁷

Is a list of companies in which the University invests publicly available?

The Foundation does not make public a list of companies in which it invests.

- The Foundation's Board of Directors should consider making the investment policy and practice information publicly available. Although there may be legitimate reasons for keeping this information out of the public domain, the Board should also consider the benefits of transparency, including the opportunities for "constructive dialogue" with other University stakeholders that can arise.

-
1. Sustainable Investment Network, "What is Socially Responsible Investing?" <http://www.sustainableinvesting.net/Main/index.php/what-is-si/>.
 2. SRI International, Inc., "Investing in Socially Responsible Mutual Funds," <http://www.socialfunds.com>.
 3. Sustainable Endowments Institute, "College Sustainability Report Card 2007: Executive Summary," p.13, <http://www.endowmentinstitute.org/sustainability>.
 4. UO Foundation, "About the Foundation," <http://uofoundation.org/htdocs/about.html>.
 5. UO Foundation, "Foundation Investment Policy," http://uofoundation.org/htdocs/invest_policy.html.
 6. Jay Naymet, interview, March 8, 2007.
 7. UO Foundation, "Foundation Investment Policy," http://uofoundation.org/htdocs/invest_policy.html.

RECOMMENDATIONS

- The feasibility of including environmental sustainability criteria in the Investment Policy Statement should be studied by an appropriate group, such as a sub-committee of the Foundation's Board of Directors. Analysis of investment policies adopted by other higher education institutions may be useful in this process. A partial list of these resources is included as Appendix E to this report.

INDICATOR 3: ACADEMICS & CULTURE

INDICATOR DEFINITION

The academics and culture indicator assesses the extent to which the University of Oregon has promoted engagement with environmental sustainability issues in four areas: research, curriculum, student culture, and public service and outreach.

MEASUREMENTS

Research

This measurement includes two facets: the number of units (including centers, laboratories, programs, and institutes) that conduct research pertaining to environmental sustainability and the budget dedicated to environmental sustainability research.

One of the major goals of the University of Oregon is to promote research that advances knowledge. Research institutions create a space for innovation and discovery which can further sustainability efforts. Large amounts of money are invested in research, but how much of this is devoted to research focusing on sustainability?

Curriculum

The University’s mission is to provide high-quality education. Two measurements assess the degree to which the University’s curriculum focuses on environmental sustainability. The first measurement is the number of departments offering at least one undergraduate course related to environmental sustainability per academic year.

The second measurement examines the number of available classroom spaces for courses related to environmental sustainability. Given the growing demand for environmentally-literate professionals, the number of available classroom spaces in environmental sustainability courses was used to measure the University of Oregon’s capacity to provide students exposure to sustainability issues.

The Environmental Studies Program compiles a list of environment-related courses every quarter. This list includes undergraduate courses that are taught primarily in the College of Arts and Sciences, but also in the School of Allied Arts and Architecture, the School of Journalism and Communication and the College of Business. Using the Environmental Studies Program course lists, the number of available classroom spaces and the number of departments offering these classes was summed over each academic year for 1995-96, 2000-01, and 2005-06.

The course lists produced by the Environmental Studies Program provided a comprehensive inventory of sustainability-related courses offered at the Univer-

INDICATOR MEASUREMENTS



RESEARCH	
Number of research bodies focusing on environmental sustainability research (2006-07)	20
Number of dollars dedicated to environmental sustainability research	N/A
CURRICULUM	
Number of departments offering at least one course related to environmental sustainability for the 2005-06 academic year	22
Number of classroom spaces for the 2005-06 academic year in sustainability-related courses	12,377
STUDENT CULTURE	
Number of extra-curricular student groups involved with environmental sustainability (2006-07)	16
Total amount of ASUO funding for student groups and campus programs related to sustainability (2006-07)	\$1.13 MILLION
Percent of ASUO budget dedicated to sustainability (2006-07)	10.3%
Number of student publications covering sustainability	4
PUBLIC SERVICE AND OUTREACH	
Number of programs participating in environmental sustainability service and outreach (2006-07)	11
Number of annual environmental sustainability conferences (2006-7)	4

sity over time. An additional search was performed to identify any courses related to sustainability that did not appear on the Environmental Studies Program course lists. Several additional courses were found in the Architecture department.

Student Culture

Quantifying the extent to which students are engaged in sustainability issues is another valuable way of gauging campus culture. Four measurements were used to assess this complex idea: the number of sustainability student groups focusing on environmental issues, the amount of funding they received from the Associated Students of the University of Oregon (ASUO), the amount of ASUO funding provided to sustainability-related programs on campus, and the number of student publications addressing environmental sustainability issues.

The number of student groups with a focus on environmental sustainability was determined by reading student group mission statements. A student group is defined as a student-led group that is recognized by the University. A student group may or may not receive funding from the ASUO. ASUO funding for student groups and campus sustainability programs was reported both as total dollars as well as the percentage of the ASUO budget this represents. These data were obtained from the ASUO budget book.

Public Service and Outreach

Every university is part of a larger community. Providing students with opportunities for public service and outreach can increase awareness of sustainability issues. This measurement includes three elements: the number of service and outreach programs which include a focus on environmental sustainability issues, the number of annual environmental sustainability conferences, and the amount of funding for environmental sustainability conferences provided by the ASUO.

UNIVERSITY PERFORMANCE

Research

There are seven major research institutions and centers at the University that focus on sustainability: 1) Institute for a Sustainable Environment, 2) Solar Energy Center, 3) Center for Ecology and Evolutionary Biology, 4) Oregon Institute of Marine Biology, 5) Center for Housing Innovation, 6) Oregon Transportation Research and Education Consortium (OTREC), and 7) the Sustainable Supply Chain Management Center.¹ These institutes and centers conduct diverse research related to sustainability. For example, the Institute for a Sustainable Environment houses the Climate Leadership Initiative, which conducts research on the im-

pact of climate change on Oregon's forest resources and provides a technical assistance program.² OTREC involves researchers from several Oregon University system schools and was federally mandated 2005. The newest addition is the Sustainable Supply Chain Management Center in the College of Business, which was launched in spring 2007.³

Numerous smaller research organizations and projects exist within these larger institutions and laboratories (Table 3.1).

TABLE 3.1

Research Institutes, Labs, Centers, and Programs

- Center for Ecology and Evolutionary Biology
- Center for Housing Innovation
 - Energy Studies in Buildings Laboratory
- Community Service Center
 - Community Planning Workshop
 - Resource Assistance for Rural Environments
- Environmental Change Research Group
- Environmental and Natural Resource Law Program
- Green Chemistry Program
- InfoGraphics Lab
- Institute for a Sustainable Environment
 - Geographic Information Systems Lab
 - Ecosystem Workforce Program
 - Resource Innovations
- Neighborhoods Lab
- Oregon Institute of Marine Biology
- Oregon Transportation Research and Education Consortium
- Solar Energy Center
- Solar Radiation Monitoring Lab
- Sustainable Supply Chain Management Center

Two major science laboratories focus on sustainability research at the University of Oregon - the Green Chemistry Program and the Solar Radiation Monitoring Laboratory.⁴ The Green Chemistry Program has gained international attention and more than one hundred educators from all over the world have attended "Green Chemistry in Education" workshops at the University of Oregon.⁵ The Solar Radiation Monitoring Laboratory collects data on solar radiation in the Pacific Northwest and makes these data accessible to the public.

INDICATOR 3: ACADEMICS & CULTURE

These data can then be used for projects such as passive solar design.

In addition to the list in Table 3.1, numerous faculty members, graduate students, and undergraduates conduct research on environmental sustainability who may not be affiliated with a specific research organization.

GREEN SPOTLIGHT

Energy Studies in Buildings Laboratory

Research at the Energy Studies in Buildings Laboratory focuses on the effect of land use and transportation systems on resource and energy use. These researchers develop design tools that create energy efficient communities and buildings.

While it is clear that sustainability-related research is occurring at the University, data on the amount of money going to this research is not readily available. The decentralized nature of the University of Oregon presents a challenge for collecting this type of information, but since research comprises a large portion of the University’s agenda, collecting this data in the future would be informative.

Curriculum

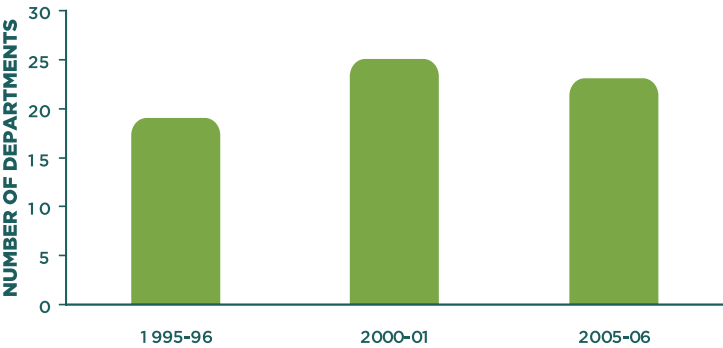
Education is the first step in creating awareness of environmental sustainability issues. Students at the University of Oregon can engage with environmental sustainability issues from a wide array of disciplinary and interdisciplinary perspectives. Of the eight colleges and professional schools comprising the University of Oregon, six offer courses in environmental sustainability. This includes the School of Architecture and Allied Arts (AAA), the College of Business, the College of Arts and Sciences (CAS), the Graduate School, the School of Journalism and Communication, and the School of Law.

Of the forty-six undergraduate majors offered within the College of Arts and Sciences, twenty-two (48%) included courses related to environmental sustainability in the 2005-06 academic year. Two of those majors, Environmental Studies and Environmental Science, are designed specifically to help students develop an interdisciplinary understanding of environmental issues. The Environmental Studies Program also offers a minor in Environmental Studies,

as well as Masters and PhD programs in Environmental Studies.

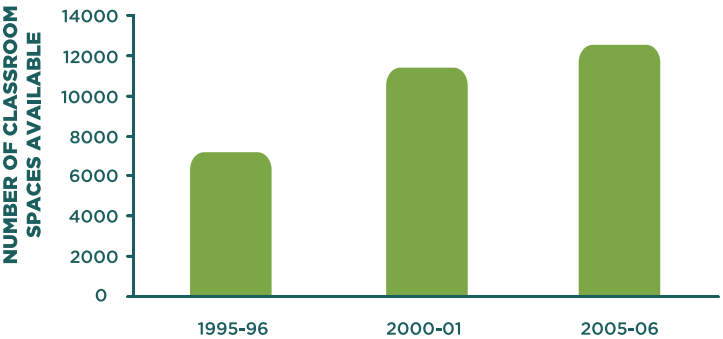
Twenty-five departments were included on the official course lists produced by the Environmental Studies Program in 2000-01, and twenty-two in 2005-06. The three departments not present in the 2005-06 academic year were Management, Finance, and Physics.

FIG. 3.1: N° OF DEPARTMENTS OFFERING ENVIRONMENTAL SUSTAINABILITY COURSES



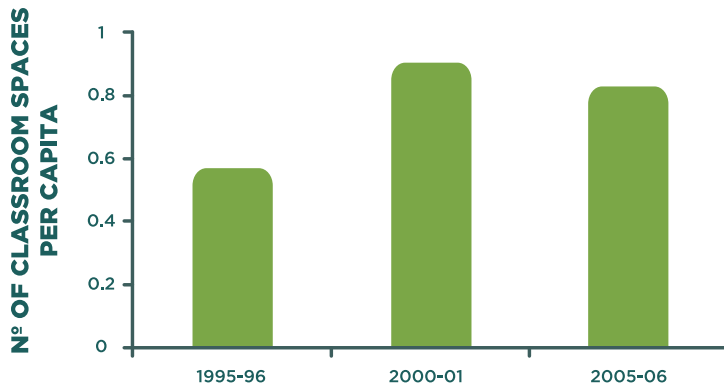
Although the number of classroom spaces available has increased over time, the largest increase was from the 1995-96 to the 2000-01 academic years (Fig. 3.2). This increase is most likely due to the expansion of the Environmental Studies Program to include an Environmental Science major. The addition of this major resulted in additional courses on the Environmental Studies course list. This does not mean new courses were added to the science departments supporting the Environmental Science Major.

FIG. 3.2: SEATS IN ENVIRONMENTAL COURSES INCREASES OVER TIME



Although the total number of classroom spaces has increased over time, the number of classroom spaces per capita (by the total number of full-time undergraduates) has decreased since 2000-01 (Fig. 3.3).

FIG. 3.3: N° OF CLASSROOM SPACES PER CAPITA



Although classroom capacity for the graduate and professional programs on campus was not calculated, it is important to note that many of these programs do have a significant emphasis on environmental issues. The School of Law is well-known for its expertise in environmental law, offering an Environmental and Natural Resources Law Program and an Environmental Law Clinic. The College of Business is emerging as a leader in sustainable business practices and the School of Architecture focuses much of its curriculum around sustainability. The architecture program states its first objective as “the promotion of broad inquiry into the integrative nature of environmental issues and design.”⁶

Student Culture

The University of Oregon has a long history of student involvement in sustainability issues. Currently, sixteen student groups on campus focus on sustainability issues (Table 3.2).

Over the last decade, eight new student groups that focus on sustainability have emerged. The most recently formed student groups are the Environmental Club, Environmental Policymakers and Planners, Design Bridge, and Livability and Transportation.⁷ Other recently formed student groups include: Sustainable Business Group, Coalition Against Environmental Racism, Ecological Design Center, and the Center for the Advancement of Sustainable Living.

The second facet of student culture examined was the amount of funding these groups received from the ASUO. The ASUO is a non-profit organization funded by student fees and functions as the student government of the University of Oregon. Membership in the ASUO consists of all students who have paid current quarter or semester student fees. The mission of the ASUO is to develop the social, educational, cultural, and physical prowess of its members and strengthen their individual and collective interests within the

University and in the community. The ASUO is a student-run organization that works on various campaigns at the campus, city, state, and federal levels.

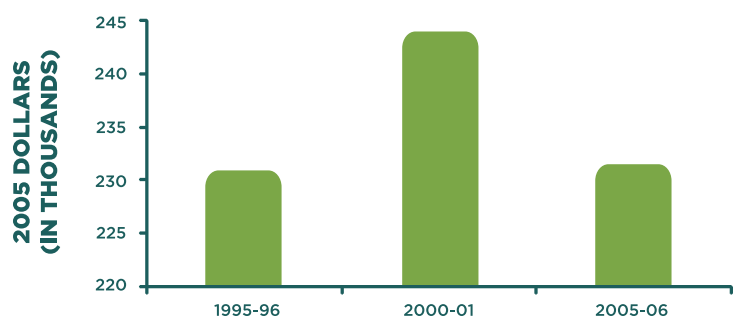
TABLE 3.2

Student Groups

- Center for the Advancement of Sustainable Living
- Coalition Against Environmental Racism
- Design Bridge
- Ecological Design Center
- Environmental Club
- Environmental Policymakers and Planners
- Journal of Environmental Law and Litigation
- Land Air Water
- Livability and Transportation
- Oregon Law Students Public Interest Fund
- Oregon Marine Students Association
- Oregon Student Public Interest Research Group
- Species Equality through Action
- Survival Center
- Sustainable Business Group
- The Student Insurgent

Funding of sustainability-oriented student groups by the ASUO increased and then decreased over time (Fig. 3.4). In 1995-96, there were ten ASUO-funded student groups⁸ that focused on environmental sustainability, twelve ASUO-funded student groups in 2000-01, and twelve ASUO-funded student groups in 2005-06. Although most groups received an increase in ASUO funds from 2000-01 to 2005-06, Oregon Student Public Interest Research Group received \$25,000 fewer dollars in 2005-06.⁹ All 1995-96 and 2000-01 dollar amounts have been converted to 2005 dollars to correct for inflation.¹⁰ For 2005-06, \$231,481 went to student groups related to sustainability.

FIG. 3.4: ASUO FUNDING OF SUSTAINABILITY STUDENT GROUPS



INDICATOR 3: ACADEMICS & CULTURE

In addition to supporting student groups, the ASUO annually supports numerous sustainability projects on campus. Of their total 2006-07 budget of \$10.9 million,¹¹ ASUO provided \$680,000 to Lane Transit District to provide free bus passes for all students.¹² ASUO also contributed \$176,700 to the Campus Recycling Program in 2006-07. Many other sustainability-related programs receive ASUO funding, such as the Energy Conservation and Alternative Futures Fund (ECAFF).¹³

GREEN SPOTLIGHT

Energy Conservation and Alternative Futures Fund

The Energy Conservation and Alternative Futures Fund (ECAFF) provides funding for student initiatives focusing on energy conservation and increasing renewable energy at the University of Oregon. Students created ECAFF in 2005 and dedicate approximately \$35,000.00 annually in student fees to the fund. ECAFF funds buy solar panels, materials for a biodiesel processor, and renewable energy credits for the Erb Memorial Union.

In addition to these annual programs, a one-time \$100,000 over-realized fee allocation went to the Ecological Design Center in 2001 to install solar panels on the Erb Memorial Union and the Student Recreation Center. A similar over-realized fee allocation process was recently completed in April 2007 with nearly \$200,000 going toward the purchase of three biodiesel vans for Campus Recycling and the building of a biodiesel processor.¹⁴

In summary, the ASUO spent \$1.13 million or 10.3% of its budget for 2006-07 on twelve sustainability-related student groups and three campus programs, including Campus Recycling, ECAFF, and bus passes.¹⁵

The final measurement examined was the number of major student publications that cover sustainability produced at the University of Oregon, including *Ecotone*, *Journal of Environmental Law and Litigation*, *The Student Insurgent* and the campus newspaper, *the Oregon Daily Emerald*.

Public Service and Outreach

The University of Oregon provides a wide variety of opportunities for public outreach. Many programs and projects help students connect with their community.

Eleven programs specialize in community outreach focused on environmental sustainability.¹⁶ For example, the Community Planning Workshop (CPW) has provided planning assistance to communities, agencies, and organizations throughout Oregon since 1977. Graduate students have the opportunity to work on planning and public policy problems for CPW clients. CPW projects include Natural Resource Policy, Land Use Policy, and Sustainable Development.¹⁷

The Environmental Leadership Program gives students the opportunity to work with government agencies, nonprofit organizations, and local businesses on environmental and sustainability issues. Projects in 2006-07 examined issues of restoration stewardship, environmental education, and corporate sustainability, among others.¹⁸

Community members also have an opportunity to learn more about sustainability issues through the University's Continuing Education Division, which offers sustainability leadership workshops and a certificate program.¹⁹

In addition, many student groups, faculty members, and departments participate in public outreach that are difficult to track and thus not included in this measurement.

TABLE 3.3

Public Service and Outreach Programs

- Community Service Center
 - Community Planning Workshop
 - Oregon Natural Hazards Workshop
 - Resource Assistance for Rural Environments
- Environmental and Natural Resources Law
- Environmental Law Clinic
- Environmental Leadership Program
- Neighborhoods Laboratory
- Resource Innovations
- School Garden Project
- Sustainability Leadership Program

In addition to public service and outreach programs, conferences held at the University provide opportunities for students, faculty and staff to interact with

the surrounding community on sustainability issues. Currently four major student-organized sustainability conferences occur at the University of Oregon annually. These include: 1) Sustainable Advantage Conference, 2) Holistic Options for Planet Earth Sustainability (HOPES), 3) Public Interest Environmental Law Conference, and 4) the Environmental Justice Conference.

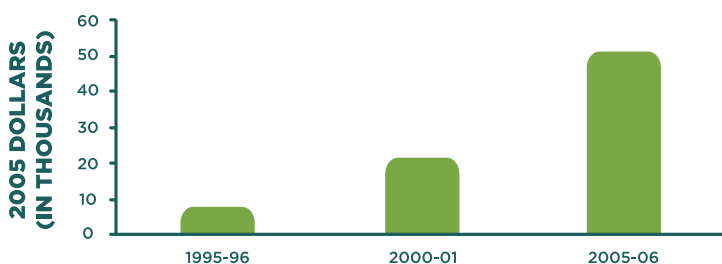
GREEN SPOTLIGHT

Public Interest Environmental Law Conference

The Public Interest Environmental Law Conference is the premier international gathering for environmentalists, with over 3,000 activists, attorneys, students, scientists, and concerned citizens from over fifty countries uniting annually. The conference is celebrating its 25th year and is the oldest and largest event of its kind. Past keynote speakers include environmental giants such as Robert Kennedy Jr., Ralph Nader, Vandana Shiva, Terry Tempest Williams, David Brower, and Winona LaDuke.²⁰

University funding for sustainability conferences has increased over time (Fig. 3.5).²¹ The increase in funding for these conferences may be due in part to the growing public interest in these conferences. The number of conferences has increased from three in 1995-96 to four in 2005-06. The total funding for sustainability conferences in 2005-06 was \$50,875 (2005 dollars).

FIG. 3.5: ASUO FUNDING FOR SUSTAINABILITY-RELATED CONFERENCES



RECOMMENDATIONS

- Develop a new environmental literacy general education requirement for all undergraduate students.
- Track funds awarded to sustainability-related research.
- Track membership in student groups.

1. Data from a search in the University Bulletin of research institutions with a focus on sustainability, http://www.uoregon.edu/~uopubs/bulletin/research_institutes_a.shtml
2. <http://climlead.uoregon.edu/>
3. <http://lcb.uoregon.edu/news/news.php?issue=031307&story=centers>
4. "Sustainability Database," <http://sustainability.uoregon.edu/>
5. Ibid.
6. University of Oregon Course Catalogue, <http://www.uoregon.edu/~uopubs/bulletin/architecture.shtml#curriculum>
7. Because these students are so new, they have not yet received University funding and are therefore not included in the budget analysis.
8. The Solar Energy Information Center and the HOPES student groups merged in 2001-02 to form the Ecological Design Center. The budgets for these groups were included in this analysis. The Ecological Design Center was counted as two groups for the 1995-96 and 2000-01 years.
9. ASUO Budget Book.
10. <http://oregonstate.edu/cla/polisci/faculty/sahr/cv2005x.pdf>
11. 2006-07 ASUO Budget Book.
12. 2006-07 ASUO Budget Book.
13. Steve Mital, personal communication, 2007.
14. Ibid.
15. ASUO Budget Book.
16. Data from a search of the University of Oregon's Sustainability Database for Public Service, <http://sustainability.uoregon.edu/search/index.php>
17. Community Planning Workshop, <http://www.uoregon.edu/~cpw>
18. Environmental Leadership Program, <http://www.uoregon.edu/~ecostudy/elp>
19. Sustainability Leadership, <http://sustain.uoregon.edu>
20. <http://www.pielc.org/history.html>
21. Data were missing for one conference in 2005-06; the 2006-07 data were used instead after conversion to 2005 dollars.

INDICATOR 4: MATERIALS MANAGEMENT

INDICATOR DEFINITION

The materials management indicator assesses the sustainability of the University’s procurement, recycling, reuse, and disposal policies and procedures concerning paper, computer equipment, chemicals, furniture, and other materials.

MEASUREMENTS

Measurements for procurement include purchasing policies for paper, computers, eating utensils, and general equipment and supplies. Equipment reuse programs are also measured.

Measurements for waste and recycling include total tons of solid waste generated, pounds of solid waste per scaled campus, the annual recycling rate, types of recyclable materials, recycling infrastructure, and efforts to reduce waste.

Measurements for chemicals include purchasing and disposal policies.

The authors did not measure the toxicity of chemicals because of the difficulties involved in determining the quantities used and then calculating the percentage of active ingredients and their respective toxicities.

The authors did not measure the total amount of recycled paper purchased by University departments and programs because the data are difficult to aggregate.

UNIVERSITY PERFORMANCE

The University of Oregon spent \$132 million dollars on supplies and services and an additional \$55.5 million dollars in capital expenses during the 2005-06 fiscal year. These figures do not include expenses for campus auxiliaries which include Athletics and Housing.¹ Given its enormous size, the University can send a meaningful signal to the market in favor of sustainable goods and services.

There is currently no way to track or estimate the amount of money spent on sustainable goods and services. While any attempt to classify good and services as sustainable will be problematic, a centralized attempt can and should be made to collect data that reveal the extent to which University purchasing supports the market for green goods and services. Until such data are available it is impossible to quantitatively assess University’s purchasing.

The University’s performance in materials management is strong in several areas, but room for improvement remains in others. Strengths are in the award-winning Campus Recycling Program, Reusable

INDICATOR MEASUREMENTS



SOLID WASTE & RECYCLING	
Waste sent to landfill per scaled campus user	472 lbs.
Recycled material per scaled campus user	413 lbs.
Recycling Rate	45%
CHEMICAL PROCUREMENT & DISPOSAL POLICIES	
University policies governing cleaning chemical purchases?	NONE
Informal procedures to reduce cleaning chemical purchases	YES
University policies governing lab and teaching chemical purchases?	NONE
University policies and/or programs to minimize chemical purchases and hazardous waste?	YES
Data from 2005-06	

Office Supply Exchange (ROSE), Surplus Furniture Exchange, Department Surplus Listings website, and Computer Harvest Program. Additional strengths are in the use of “green” (less toxic or nontoxic) custodial chemicals, the chemistry department’s Green Chemistry program and Reuse Chemical Database, and Environmental Health and Safety’s Reuse Chemical Facility for unused chemicals.

The Comprehensive Environmental Policy Statement, adopted in 1997, addresses purchasing, waste reduction, and minimizing hazardous waste.

Weaknesses exist in the lack of monitoring of departmental paper purchasing, the lack of tracking of and policy for chemical purchasing, and the lack of composting post-consumer food waste. The Comprehensive Environmental Policy Statement is a step in the right direction, but it serves only as a set of guidelines; it is not enforced.

Comprehensive Environmental Policy Statement and Materials Management

Section II of the Comprehensive Environmental Policy states, "The University will strive to obtain maximum value for its expenditures and will work towards obtaining the 'best value' by balancing short and long-term costs, maintenance, life-cycle, and environmental costs in purchasing goods and services."²

Section IV addresses waste reduction: "The University will establish policies and processes that will reduce solid waste generation; first through reduction, secondarily through reuse, and finally through recycling."³

Section V deals with minimizing and tracking hazardous waste: "The University...will continue to establish policies and processes to maintain efficient use, tracking, storage, and disposal of hazardous and toxic materials."⁴

PROCUREMENT

University Recycled Paper Policy

The University policy on recycled paper, adopted in 2003, provides the following guidelines for purchasing paper:

"Any University of Oregon request for bids or quotes for purchase of paper products, including authorized printing from outside vendors, shall include a solicitation of bids or quotes for recycled paper and papers that have not been bleached with chlorine or other hazardous materials. No specification shall require the use of paper products made exclusively of virgin materials, nor specifically exclude the use of recycled paper or tree-free products.

"Unless otherwise specified, University Printing Services will provide and use chlorine-free recycled paper with 100% post-consumer content. At a minimum, all University paper products shall consist of at least 50% recycled content with at least 30% post-consumer content and be chlorine-free. Use of heavily dyed and neon papers is discouraged."⁵

The recycled paper policy also recommends strategies for eliminating unnecessary paper use, including using e-mail, double-sided copying and printing, using half-sheets of paper for all brief, printed on-campus

TABLE 4.1

Solid Waste & Recycling

	TOTAL SOLID WASTE	SOLID WASTE PER CAPITA	RECYCLING RATE
1995-96	1562.8 TONS	152 lbs.	42%
2000-01	1734.8 TONS	167 lbs.	41%
2005-06	1744.8 TONS	146 lbs.	45%

communications, and using targeted mailing lists to reduce volume.⁶

Note: Each department or program is responsible for purchasing its own paper products. Thus, the above guidelines are recommended but not mandated or tracked since purchasing was decentralized in June 2004 because of high "middleman" costs.⁷

Wood Products Purchasing Policy

In accordance with Executive Order No. EO-00-07, the University's Sustainable Development Plan, and the Comprehensive Environmental Policy Statement, "...all campus projects are encouraged to purchase and use certified sustainably harvested wood products whenever possible. Additionally, the University of Oregon highly discourages use of old growth wood products in campus purchasing."⁸

Purchasing and Use Policies

According to William Kasper, the purchasing manager of Facilities Services, aside from the paper-purchasing guidelines and the governor's executive orders, all purchasing decisions are "based upon best value and sustainability guidelines set up by [each] department."⁹ In decisions lacking policy guidelines, Kasper notes, "We use sustainability thinking in every decision we make - everything from recycled content, life-cycle costing, transportation issues, local business access, environmental impact, etc. We are working on a benchmarking program that will help us track our decisions. ...These scenarios are all part of the best value practices we use."¹⁰

On January 17, 2007, at Kasper's invitation, Good Company presented a workshop to Facilities Services buyers and shop supervisors on definitions, strategies, and benchmarks of sustainable purchasing.

INDICATOR 4: MATERIALS MANAGEMENT

The workshop focused on devising strategies for making sustainable purchases.

Policies or Systems that Govern the Purchase of Custodial Cleaning Products

Facilities Services maintains a list of approved chemicals that can be used for cleaning. To be added to this list, a chemical must go through a rigid evaluation and review of its Material Safety Data Sheet (MSDS).¹¹ Facilities Services has decreased the number of cleaning chemicals used from 250 to 49.

Policies or systems that Govern the Purchase of Chemicals for Teaching and Research Labs

There is no University-wide policy governing the purchase of chemicals for use in labs. Each department or lab purchases chemicals independently, and there is no system to track purchases across the University.¹² For this reason, it is not possible to measure the percent of nontoxic chemicals purchased for teaching and research.

University Environmental Health and Safety has created some casual, smaller-scale programs to eliminate certain hazardous chemicals across campus, such as a mercury thermometer purchase and replace program.

RECYCLING

Campus Recycling Program

Karyn Kaplan manages the Campus Recycling Program, which employs five full-time staff, thirty-six students, as well as volunteers for special events. Karyn Kaplan and students in the activist group, the Survival Center, expanded the Campus Recycling Program during the 1989-90 academic year. Before this, the University recycled only newspaper and paper from Campus Printing operations. Since the University institutionalized the program in 1991, more than two dozen materials have been added to the list of recyclables. The program has won many awards, including the 1997 National Recycling Coalition Outstanding School Recycling Program Award and the 2005 Environmental Protection Agency's University Partner of the Year Award.¹³

The program is funded by Facilities Services, the Associated Students of the University of Oregon (ASUO), and University Housing. Some support comes from paper revenues and campus vending contracts. Facilities Services contributes more than \$150,000 annually. The ASUO (through student incidental fees) contributed \$176,700 for the 2006-07 academic year, and campus vending provides \$7,000/year. University Housing pays two-thirds of the position for a Housing Recycling Coordinator.¹⁴

Recycling Infrastructure

Recycling sites are located on each floor of every academic building and in most department offices and copy rooms. These drop-off sites accept bottles, cans, and five different grades of paper (white, color/office pack, low-grade, newspaper, and corrugated cardboard).

Twenty outdoor drop-off sites for the same materials exist in front of or near campus buildings. For additional information about the University's recycling information, see Appendix F.

TABLE 4.2

List of Recyclable Materials

Materials Recyclable at Standard Indoor or Outdoor Sites	Materials Recyclable by Special Arrangement
<ul style="list-style-type: none">• Aluminum cans• Books• Campus directories• Copy machine toner cartridges• Glass beverage containers• Junk mail• Laser cartridges• Metals: uncontaminated aluminum foil, steel cans, aluminum pie pans, etc.• Paper• Plastics (#1-5)• Transparencies• Wax-coated drink box containers	<ul style="list-style-type: none">• Cardboard• Cassette tapes• Compac discs• CD cases• Diskettes• Ink cartridges• Leaves• Motor oil• Wood waste, X-mas trees, yard waste, pallets• Phone books• Scrap metal• Tennis ball cans• Tires, video-cassettes, wire

Some additional materials are recyclable by special arrangement. For a complete list of recyclable materials and materials requiring special disposal, see Appendix G.

Additional Efforts to Reduce Waste

Campus Recycling undertakes several efforts to minimize waste, including using biodegradable Biosolo

bags to collect public compost and easy-to-empty totes for vendor compost, selling reusable mugs at conferences,¹⁵ and renting reusable plastic plates for receptions.¹⁶

The ASUO banned styrofoam food service containers from campus in 1989.¹⁷

GREEN SPOTLIGHT

Computer Harvest

“As of May, 2005, over 5,400 computers and other e-items have been gathered for Surplus Property. On the de-manufacturing side, over 16 tons of glass, 12 tons of metals, 4 tons of circuit boards, and 3 tons of plastic have been recycled. The Computer Harvest is a FREE service to University departments wishing to discard state-owned property.”¹⁸

The Erb Memorial Union has implemented several practices to reduce waste: a \$0.25 discount on all drinks sold into a refillable mug; composting all coffee grounds, filters, and kitchen produce; and transferring cooking oils to Sequential Biofuels for biodiesel production.¹⁹

Reusable Office Supply Exchange (ROSE)

ROSE is a free self-service program for dropping off and picking up surplus office supplies, such as pens and pencils, manila folders, calculators, and staplers. The service, which is located in 180 Prince Lucien Campbell, is available to faculty, staff, graduate teaching fellows, and student groups. A key is available from the English office during regular hours.²⁰

Surplus Furniture Exchange

Facilities Services will remove unwanted furniture for a fee, but free furniture may be picked up from the site at 2020 Franklin Blvd. It is open Monday - Friday from 12:30-1:00 p.m.²¹

Department Surplus Listings Website

Department staff can advertise and search for computer equipment, furniture, electronics, and other surplus supplies using an online database.²² E-mail notices are sent out automatically when a desired item is listed by another department.

Computer Harvest

The Department of Environmental Health and Safety will pick up nonworking and obsolete equipment for de-manufacturing and recycling. This service is free to University departments wishing to discard state-owned property.²³

Policies or Systems that Minimize the Disposal of Hazardous Waste

In 1994, the University chemistry department created the Reuse Chemical Database and, in 2000, University Department of Environmental Health and Safety began managing the Reuse Chemical Facility for all campus users. The Reuse Chemical Facility accepts usable chemicals that are no longer needed and makes them available to University researchers and programs. This minimizes the flow of hazardous waste to the landfill and reduces unnecessary purchasing. Currently, there are three rooms where chemicals can be donated. As of February 2006, thirty-six percent of all donated chemicals had been reissued to labs around campus.²⁴

GREEN SPOTLIGHT

Reuse Chemical Database

The University strives to reduce the amount of hazardous waste it adds to the environment. One step in this direction is the Reuse Chemical Database, created by the chemistry department in 1994. In 2000, Environmental Health and Safety began managing the Reuse Chemical Facility, which accepts unwanted but usable chemicals and makes them available to University researchers and programs. Contact the Department of Environmental Health and Safety for access to the database.

Custodial Chemicals

Facilities Services has made significant strides in reducing the number of chemicals used for cleaning. They have also been successful in using “green” chemicals. Chemicals are classified “green” if they are from the third-party-certified Sustainable Earth product line from Coastwide Labs. In 2006, 92% percent of the total volume of custodial chemicals used was classified as “green.”

INDICATOR 4: MATERIALS MANAGEMENT

Custodians employ many alternatives to pesticides. The Erb Memorial Union uses soap, water, and brushes to remove many pests. Housing staff use nontoxic Dr. Bronner's peppermint soap for silverfish and boric acid mixed with mint jelly for sugar ants. The staff also puts boric acid into dead air spaces between walls during construction to deter pests such as spiders, silverfish, termites, and ants.

Landscaping Chemicals

Roger Kerrigan, Exterior Maintenance Team Supervisor of Facilities Services, is in charge of purchasing pesticides for Facilities Services and the Health Center. One other main purchaser of pesticides is the University pest management contractor. Housing makes its own purchases, but the pest management contractor applies the chemicals. Housing applies very few pesticides, and the Erb Memorial Union has applied no chemicals for years. Athletics does its own exterior applications using Integrated Pest Management, whereas the pest management contractor is in charge of interior applications.

Facilities Services strives to be sustainable in fertilizer use. Groundskeepers use exclusively Woodburn slow release nitrogen fertilizer and zinc sulfate. They have reduced phosphorous application because it can cause water pollution.

Groundskeepers do not spray pesticides on University lawns; pesticide use elsewhere is discouraged but left to the discretion of each individual groundskeeper.

A Note on Fertilizer Use

Because many pesticides are mixed with fillers (e.g., crushed walnut shells), the best way to measure the amount of the actual chemical applied is by way of the active ingredient rather than by the bulk weight. Time and labor constraints prevented this report from analyzing the active ingredients in fertilizers used.

Teaching and Research Laboratory Chemicals

It is not possible to evaluate the use of chemicals for teaching and research because there is no policy that directs sustainable purchasing of chemicals.

University Green Chemistry Program

Despite the lack of a University-wide policy for chemicals procurement, the chemistry department has received international attention for its Green Chemistry program.²⁵ The program uses fewer toxic chemicals to teach the same concepts and techniques found in traditional chemistry experiments. The Green Chemistry program also created a database of Greener Educational Materials available for use by anyone.

RECOMMENDATIONS

- Track "green" purchasing at the University. An annual report showing the percent of University green purchasing would provide valuable and instructive feedback.
- Establish sustainable chemical purchasing policies. All research and teaching laboratories should prioritize the use of nontoxic chemicals and allow the use of toxic chemicals only if no other options exist.
- Track the purchasing of chemicals. Establish a system to track the purchasing of chemicals campus-wide; track the toxicity of purchased chemicals.
- Expand Green Chemistry. Spread the philosophy of the Green Chemistry program to all research and teaching laboratories that use chemicals.
- Monitor departmental paper purchasing. Currently each department or program is responsible for buying its own paper using University guidelines. Departmental paper purchasing should be monitored to ensure that it conforms to the Recycled Paper Policy.
- Expand composting. Although pre-consumer food waste goes to an on-site Earth Tub composter, post-consumer food waste is not currently recovered.²⁶ The composting program should be expanded to accept post-consumer food waste.
- Print theses and dissertations on recycled paper. Currently, the Graduate School requires that graduate students print their theses and dissertations on non-recycled paper,²⁷ which conflicts with the stipulations of the University Recycled Paper Policy. In 2003, over 1,200 students received a Master's, doctoral, or law degree from the University.²⁸ The University should allow, if not mandate, the printing of theses and dissertations on recycled, post-consumer paper.
- Create disincentives for disposable food and beverage containers. Erb Memorial Union food servers could greatly reduce waste by charging customers extra for each beverage purchased in a disposable cup, in addition to the current policy of giving a \$0.25 discount to those who buy drinks in reusable mugs.

1. Harriet Merrick, personal communication, May 25, 2007.
2. "Comprehensive Environmental Policy Statement for the University of Oregon." issued by Vice President for Administration, 1997.
3. Ibid.
4. Ibid.
5. University of Oregon, Policy Statement 4.000, Facilities Services, Equipment, Facilities, "Recycled Paper Policy," April 8, 2003, <http://policies.uoregon.edu/ch4k.html>
6. Ibid.; Harriet Merrick, telephone conversation, May 14, 2007.
7. Steve Mital, personal communication, 2007
8. Campus Recycling Program, "Wood Products Purchasing Policy," <http://www.uoregon.edu/~recycle/UOPolicies.htm>
9. William Kasper, e-mail correspondence, April 5, 2007.
10. William Kasper, e-mail correspondence, May 4, 2007.
11. <http://sustainability.uoregon.edu/search/viewarea.php?id=60>
12. Kay Coots, interview, March 2007.
12. <http://sustainability.uoregon.edu/search/viewarea.php?id=60>
12. Kay Coots, interview, March 2007.
13. Campus Recycling Program, <http://www.uoregon.edu/~recycle/aboutus.htm>
14. Campus Recycling Program, <http://www.uoregon.edu/~recycle/PrgmStru.htm>
15. Campus Recycling Program, <http://www.uoregon.edu/~recycle/event.htm>
16. Karyn Kaplan, personal interview, March 14 2007.
17. Campus Recycling Program, <http://www.uoregon.edu/~recycle/event.htm>
18. Department of Environmental Health and Safety, "The University of Oregon Computer Harvest," <http://oehs.edu/Computer%20Harvest/Computer%Harvest.html>
19. John Costello, "EMU Foods Green Efforts," e-mail correspondence, April 5, 2007.
20. University of Oregon Campus Recycling Program, "Reusable Office Supply Exchange."
21. Campus Recycling Program, "Surplus Furniture," <http://www.uoregon.edu/~recycle/surplusfurniture.htm>
22. "Department Surplus Listings," <http://surplus.uoregon.edu/login.php?force>
23. Department of Environmental Health and Safety, "The University of Oregon Computer Harvest," <http://oehs.edu/Computer%20Harvest/Computer%Harvest.html>
24. Bill Beckett, E-mail communication, May 2007.
25. <http://sustainability.uoregon.edu/search/viewarea.php?id=41>
26. Campus Recycling Program, <http://www.uoregon.edu/~recycle/Composting.htm>
27. University of Oregon Graduate School, "Style and Policy Manual for Theses and Dissertations," <http://gradschool.uoregon.edu/?page=styleManual#ch3>
28. University of Oregon Office of the Registrar, "Statistics and Historical Data," <http://registrar.uoregon.edu/stats/histstats.htm>

INDICATOR 5: FOOD

INDICATOR DEFINITION

The food indicator assesses the extent to which the University makes sustainable food procurement and disposal decisions. The purpose of this indicator is to measure and provide benchmarks for the University’s food procurement, waste disposal, and educational initiatives.

MEASUREMENTS

This indicator includes two measurements regarding food procurement: the existence of a food procurement policy and the amount and percentage of sustainably produced food provided by University Housing and on-campus food vendors. For the purposes of this Assessment, “sustainably produced” food spans a wide range, including organic, locally grown, and humanely treated animals. The food indicator also includes two food waste disposal measurements: the existence of a food waste disposal policy and the amount and percentage of unused food and food discards that are either reused or composted. Finally, this indicator measures the existence of initiatives and educational programs at the University regarding food procurement or disposal.

UNIVERSITY PERFORMANCE

Food procurement and waste disposal are critical issues in the national sustainability discussion. The procurement and disposal decisions of large institutions such as the University of Oregon have tremendous impact on the environment. To illustrate the size of this impact, University Housing purchased over \$4.5 million worth of food products in the 2005-06 academic year.¹ In addition, Erb Memorial Union Food Service generated approximately \$3 million in sales: approximately \$1.4 million at its seven self-operated units and \$1.65 million at the four lessees.² Assuming a 50-percent mark-up, Erb Memorial Union (EMU) Food Service units purchased approximately \$1.5 million worth of food products last year. Finally, more than 500,000 paper cups were sold to customers at University food outlets.³

Commitment to sustainable food procurement is a crucial aspect of an institution’s sustainability leadership.⁴ Sustainable waste disposal is also a key element, especially when one considers that in 1995 consumers and food service providers lost 91 billion pounds of food, which accounted for over one-fourth of the nation’s food supplies.⁶

The University’s performance in this area is mixed. Because there are no existing University policies regarding food procurement or disposal,

INDICATOR MEASUREMENTS



FOOD PROCUREMENT	
Does the University have a food procurement policy?	NO
What is the amount and percentage of food procured by University Housing and on-campus food vendors that is sustainably produced?	\$16,606, or 0.36%⁵
FOOD DISPOSAL	
Does the University have a food waste disposal policy?	NO
What is the amount and percentage of food from University Housing and on-campus food vendors that is either reused or composted?	50 TONS
EDUCATION	
Are there initiatives and educational programs within the University that are concerned with food procurement and disposal?	YES
Data from 2005-06	

University Housing and Erb Memorial Union Food Service decide individually the extent to which they will procure sustainably produced food and reuse or compost the discards. In addition, the four lessees in the EMU operate independently of EMU Food Service oversight. Although there is no overarching policy, both University Housing and EMU Food Service do participate in food reuse and composting efforts. To varying extents, both also engage in sustainable food procurement efforts for some of their

dining venues. Finally, there are a number of efforts and educational programs at the University that are concerned with food procurement and disposal.

University Housing is responsible for University Catering services and eight on-campus student dining venues, including two all-you-can-eat buffets and six à la carte locations.⁷ EMU Food Service operates three retail outlets and four satellite coffee shops; it also leases retail space to four independent lessees.⁸ In addition to these outlets, EMU Food Service oversees campus-wide vending machines.⁹

A unique arrangement exists among various offices within the University to collect pre-consumer food wastes for composting. The participating parties (Campus Recycling, University Housing, EMU Food Service, the Landscape Architecture Department's Urban Farm, and the Sustainability Coordinator) coordinate and sign a contract that delineates their obligations.¹⁰ Approximately 10,000 pounds of pre-consumer food scraps are composted annually on site and used by the University of Oregon's Urban Farm.¹¹ Both University Housing and EMU Food Service also have several other arrangements for reusing or recycling pre-consumer food wastes.

It should be noted that, for the purposes of assessing food procurement and waste disposal, this indicator considers only University Housing and EMU Food Services. Although the Athletic Department does procure food and dispose of related wastes for its athletic events, this is outside the scope this Assessment. In addition, the law school independently operates a café and a local restaurant, *Marché*, offers catering services and operates a café on campus in the Jordan Schnitzer Museum of Art. *Marché* emphasizes the use of local and seasonal foods.¹²

Food Procurement

The University has no food procurement policy, nor does University Housing or EMU Food Service. Because there is no overarching policy, University Housing and EMU Food Service decide individually the extent to which they will procure sustainably produced food.

University Housing selects sustainably produced products when it can obtain them for a minimal cost difference. In addition, University Housing purchases limited organic and sustainably produced food products for its à la carte dining venues on a case-by-case basis.¹³ The product order guides allow University Housing to select organic or conventionally grown produce. During the 2005-06 academic year, University Housing purchased \$16,606 of organic produce, or 0.36% of its total food purchases. This figure does not include all sustainably produced food products,

however. Non-organic but sustainably produced food products offered at various venues currently include items such as grass-fed beef and direct-till wheat grain.¹⁴

EMU Food Service has undertaken several efforts to provide sustainably produced foods at the seven retail outlets it oversees. Seventy-five percent of the coffee sold at these outlets is Fair Trade, organic, and shade-grown. The other twenty-five percent is provided by a member of the Rainforest Alliance.¹⁵ In addition, EMU Food Service purchases cage-free eggs for almost all uses and has set a goal of trying to procure local products through the "Farm-to-College" program, which connects campuses with local food producers.¹⁶

The four lessees in the EMU operate independently of EMU Food Service oversight and may consequently make food procurement choices without regard for University preferences.¹⁷ One of these tenants, Holy Cow, offers a variety of locally grown, organic, vegetarian selections.¹⁸ Because two of the other lessees are national chains, University efforts to encourage them to deviate from the national corporate model may have little effect.¹⁹ EMU Food Service may consider including contractual language pertaining to sustainable food procurement when the outlets renew their leases. However, because student fees do not contribute to EMU Food Service's operations, its ability to pressure tenants in this regard is limited by its need to retain tenants that contribute a significant proportion of the business in the EMU.²⁰

Neither University Housing nor EMU Food Service has tracked the amount or percentage of all sustainably produced foods that they procured for the 2005-06 academic year. Although University Housing recently began tracking organic purchases, this information does not include all sustainably produced foods. University Housing also began tracking sales of organic food products in April 2007, which will illuminate the level of student demand for these products.²¹

Food Disposal

The University does not have a food waste disposal policy, nor do University Housing or EMU Food Service. Like food procurement, both entities decide independently the extent to which they will engage in sustainable disposal practices.

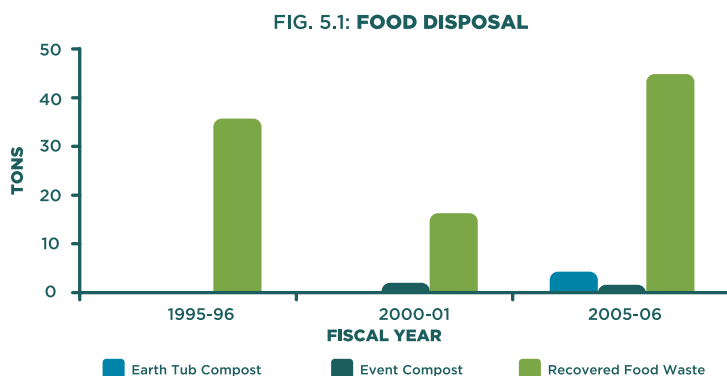
The Campus Recycling Program collects data provided by University Housing and EMU Food Service regarding the amount of food discards that are reused. The Sustainability Coordinator collects food composting data.²² These data do not include the percentage of food wastes reused or composted.

INDICATOR 5: FOOD

University Housing participates in food reuse and food composting programs. Several times a week it provides prepared, but unused, food products to Food for Lane County (FFLC), collects its cooking oil for Sequential Biofuels, and delivers wastes from its vegetable preparation room in the Central Commissary Kitchen to Campus Recycling for compost in the Earth Tub (an industrial-sized composting unit on the University's Urban Farm).²³ For an additional fee, University Catering customers may request that food wastes from their events be delivered to and composted by Rexus, an independent composting company.²⁴

EMU Food Service collects coffee grounds, filters, and kitchen scraps for compost in the Earth Tub from the seven retail outlets it oversees. In 2007 it also began supplying Sequential Biofuels with used cooking oil.²⁵ Holy Cow, an independent lessee in the EMU, collects its pre-consumer vegetable scraps for a local hog farmer. During academic breaks when the EMU is closed, Holy Cow also donates any unused food to a local Eugene restaurant.²⁶

For the fiscal year 2005-06, a total of 50.37 tons were reused or composted. Of this total, 44.7 tons were recovered food waste from University Housing donated to Food for Lane County, 1.48 tons were event compost collected at University Catering events, and 4.19 tons were pre-consumer food discards and coffee grounds collected by University Housing and EMU Food Service and composted in the University's Earth Tub.²⁷ Over time, as illustrated in Figure 5.1, the University has collected more food for reuse and recycling and has added means of recovery, although the percentage of food wastes composted still remains relatively small.



Although the amount of total recovered food waste tonnage delivered to FFLC is significantly greater than the amounts for either the Earth Tub compost or event compost, it is worth noting that the FFLC recovery figure does not necessarily equate to

usability. The quality of the food collected may vary widely, and some may be entirely unusable for FFLC.²⁸ Furthermore, it is possible that differences over time in the amount of recovered food waste collected reflects efficiency of university food production rather than a greater effort toward reuse. The most significant aspect of these data appears to be the trend toward providing more avenues for recycling food wastes.

Much improvement could be made in post-consumer waste collection. Post-consumer composting is still available under only limited circumstances: (1) by request and for a fee through University Catering and (2) free of charge at limited special events, such as the twice-yearly street fairs.²⁹ Such composting efforts do not yet constitute a significant portion of the food waste composting program.

Nonetheless, food waste disposal initiatives continue to progress at the University. A new student group, the Biodiesel Initiative, was awarded a \$12,500.00 grant from the ASUO in April 2007.³⁰ This group is working with the University Sustainability Coordinator and the Green Chemistry Program to collect the estimated 3,500 gallons of used cooking oil produced annually on campus and to convert them into biodiesel for use in the University fleet. Both University Housing and EMU Food Service have agreed to donate all of their spent cooking oil to the program when the processor is built.³¹

Education

The University provides a number of educational programs related to food procurement and disposal. Over time, it has offered food-focused courses in a number of departments, including Sustainable Agriculture (Environmental Studies), Food and Culture (Anthropology), Human Ecology/Food (International Studies), Diet and Agriculture (Geography), Philosophy of Agriculture (Environmental Studies), and Community and Rural Development (Planning, Public Policy and Management).³²

Two projects within the Landscape Architecture Department offer students the opportunity for hands-on experience. First, the School Garden Project enlists students to establish and maintain gardens at Lane County schools.³³ Second, the Urban Farm program offers spring, summer, and fall classes for approximately 80 students per term to learn about organic farming practices. The farm provides food to its students, FFLC, and for market. It also provides a location for academic studies (e.g., study of bee populations) and for the recycling of compostable materials.³⁴

Overall Performance

Overall, the University's efforts do appear relatively positive when compared to other campuses. It has strengthened its food reuse and recycling programs over time and is gradually procuring more sustainably produced food products. It is important to note that sustainable food procurement and disposal are still developing areas, and many campuses do not yet address them as separate issues. It will be important in future years to assess the extent to which the University's commitment to these issues continues to grow.

For this indicator, the University of Oregon's greatest strength appears to be the extent of grass-roots, bottom-up support for sustainable food procurement and disposal.³⁵ One can see mid-level management support for sustainability initiatives in efforts such as the collection of cooking oils for Sequential Biofuels, the purchase of organic shade-grown coffee by EMU Food Service, and, perhaps most significant, the alliance of various University offices to collect and compost pre-consumer food wastes. Student-led efforts have also been effective. The student campaign for cage-free eggs, for example, resulted in the use of cage-free eggs in almost all situations by food vendors under EMU Food Service control.

RECOMMENDATIONS

- Draft a University food procurement and waste disposal policy. This would demonstrate institutional commitment to this issue and provide support and motivation for University Housing and EMU Food Service to make food procurement and disposal decisions in consultation with each other and with less emphasis on immediate financial pressures. It would also demonstrate the University's commitment to continuing to strengthen its leadership role in the sustainability field.
- The addition of specific language within the Comprehensive Environmental Policy Statement would also be beneficial, particularly in the sections on environmentally responsible purchasing policies and minimization of solid waste production.
- Financial and staffing support for procurement or disposal initiatives would facilitate more sustainable procurement and disposal practices.
- Both University Housing and EMU Food Service should investigate options for collecting post-consumer waste for compost. Changes in University behavior in this area would have substantial impact because of the size of the institution and the number of people served by University Housing and EMU Food Service.
- University Housing and EMU Food Service should make use of the resources provided by the Com-

munity Food Security Coalition's "Farm-to-College" Program to find local sources for sustainably produced food.³⁶

- In conjunction with the American College and University Presidents Climate Commitment, the University should undertake a research project to assess the miles traveled (i.e., emissions impact) of the food products it purchases and develop ways it can reduce impacts.

1. Tom Driscoll, personal communication, May 17, 2007.
2. John Costello, "Annual Customer Counts for EMU Food Service," personal communication, May 21, 2007.
3. Jenny Bedell-Stiles, unpublished research, April 2006.
4. Husbandry Institute, "Programs: Sustainable Food Procurement Initiative," www.husbandryinstitute.org/programs/SFPI/index.htm
5. This figure includes only those foods purchased by University Housing that are specifically designated as organic. It does not include all "sustainably produced" foods.
6. Linda Scott Kantor, Kathryn Lipton, Alden Manchester, and Victor Oliveira, 1997, "Estimating and Addressing America's Food Losses," Economic Research Service, U.S. Department of Agriculture, 1.
7. University Housing, "University Housing Dining Venues," <http://housing.uoregon.edu/dining/venues.php>
8. Erb Memorial Union, <http://www.emu.uoregon.edu>
9. John Costello, interview, April 6, 2007.
10. Steve Mital, interview, May 8, 2007.
11. Steve Mital, personal communication, May 11, 2007.
12. Marché, <http://www.marcherestaurant.com>.
13. Tom Driscoll, interview, April 4, 2007.
14. Ibid.
15. John Costello, "EMU Green Efforts," interview, April 6, 2007.
16. Ibid. See also Community Food Security Coalition, <http://www.farmtocollege.org>
17. These tenants include Holy Cow, the Marketplace, Panda Express, and Subway. John Costello, interview, April 6, 2007.
18. Willamette Farm and Food Coalition, "Locally Grown: 2007 Foods and Wines of Lane County and Surrounding Areas," p. 34.
19. John Costello, interview, April 6, 2007.
20. Ibid.
21. Tom Driscoll, interview, April 4, 2007.
22. Ibid.
23. Ibid.; Steve Mital, interview, May 8, 2007.
24. Karyn Kaplan, interview, March 14, 2007. See also Rexius, <http://www.rexius.com>
25. John Costello, interview, April 6, 2007.
26. "EMU Student Center Waste Reduction," <http://sustainability.uoregon.edu/search/index.php>
27. Karyn Kaplan, "UO Fiscal Waste Composition Study 2005-2006," interview, March 14, 2007.
28. Tom Driscoll, interview, April 4, 2007.
29. Steve Mital, interview, May 8, 2007.
30. Steve Mital, personal communication, May 11, 2007.
31. Steve Mital, interview, May 8, 2007.
32. Data gathered from previous years' class schedules.
33. "School Garden Project," <http://sustainability.uoregon.edu/search/index.php>
34. "Urban Farm," <http://sustainability.uoregon.edu/search/index.php>
35. Steve Mital, interview, May 8, 2007.
36. Community Food Security Coalition, <http://www.farmtocollege.org>

INDICATOR 6: GHG EMISSIONS

INDICATOR DEFINITION

Global warming is the most serious environmental issue facing society today. Greenhouse gases (GHG) are responsible for global warming. The University of Oregon emits greenhouse gases through energy use for lighting, electrical appliances, heating and cooling, and transportation. The greenhouse gas indicator assesses overall emissions and assesses what the University has done to limit emissions. The purpose of this indicator is to evaluate how well the University is doing and what can be done to decrease the University's contribution to global warming. Assessment of this indicator includes measurements for total GHG emissions, emissions from University energy consumption, transportation related emissions, carbon-neutral energy use, renewable energy credits, and GHG emissions reduction policies and plans on campus.

MEASUREMENTS

Every member of the University community is responsible for greenhouse gas emissions. Facilities Services operates the Central Power Plant and distributes power to all campus buildings. It has primary responsibility for emissions management. The Department of Public Safety plays an important role in reducing emissions as well because it manages the alternative transportation programs for the University. Athletics and Housing have some responsibility for emissions as well.

The following sections describe the individual measurements used to assess the University's performance in relation to greenhouse gas emissions.

Overall Emissions

An estimate was made of all GHG emitted by the University, including heating, cooling, lighting, mission-related travel, and commute travel.

Emissions by Activity

These measurements estimate the amount of GHGs emitted from university activities including energy generated on campus through natural gas combustion, purchased electricity from the local utility, and transportation. Transportation includes University mission-related travel, and commute travel, but does not include air travel.

Mission-related or business travel is all travel done on behalf of the University. This measurement relies on data from the University and the Oregon Department of Administrative Services (the state agency that manages the motor pool).

INDICATOR MEASUREMENTS



OVERALL EMISSIONS	
Overall emissions (CO2 equivalent - (not including Athletics, or any UO air travel. Does include estimate for all commute travel))	35,336 METRIC TONS
Emissions from on-campus generated energy	23,341 MT
Emissions from purchased electricity	4,376 MT
Emissions from mission related and commute travel (excludes air travel, commute travel is estimated)	6,690 MT
CARBON-NEUTRAL ENERGY	
Estimated percent of energy derived from carbon-neutral sources	22%
Purchased Renewable Energy Credits	2,280
POLICIES	
Does the University have a commitment to reduce GHG emissions?	YES
Does the University have a GHG emissions reduction plan?	NO
<small>Emissions and carbon-neutral data for CY 2004 from Good Company. All other data from 2006-07</small>	

Emissions from commute travel were estimated based on results from 2005 and 2006 University commute survey data.¹

Carbon-Neutral Electricity Use

This measurement estimates the amount of University electricity that comes from carbon-neutral energy sources. It includes electricity purchased from the local utility and electricity generated by on-site solar arrays.

Renewable Energy Credits

Renewable Energy Credits (RECs), also called Green tags or Tradable Renewable Certificates (TRCs), represent the property rights to the environmental benefits from renewable energy sources. The owner of the REC can legally claim to have purchased renewable energy. Purchasing RECs is a way to support carbon-neutral renewable energy by providing a subsidy to producers of these clean energy sources.² Each REC represents the environmental benefits from one megawatt hour of renewable energy (one million watts).

Greenhouse Gas Emissions Policy

This measurement asks whether the university has policies and plans in place to reduce University emissions over time.

UNIVERSITY PERFORMANCE

The Pacific Northwest produces a considerable amount of energy using hydroelectric dams, which do not emit greenhouse gases but have other significant environmental impacts. This means that greenhouse gas emissions per kilowatt-hour (kWh) of electricity are much lower in the Northwest than in other regions of the United States. For example, the national average is estimated at approximately 1.55 pounds of CO₂ per kWh.³ The University buys electricity from Eugene Water and Electric Board (EWEB) which estimates it releases 0.18 pounds of CO₂ per kWh.⁴ Figure 6.1 shows the sources of electricity purchased and/or generated by EWEB and then sold to the University. Only 7% comes from a GHG emitting source (natural gas). The University's low GHG emissions (especially when compared to Universities in the East and Midwest that rely heavily on coal for electricity generation) are due in large part to the independent decision making at EWEB.

In 2004, approximately 27% the University of Oregon's total energy was purchased from EWEB. The other 73% comes from burning natural gas in an on-campus boiler, which produces a significant amount of emissions.

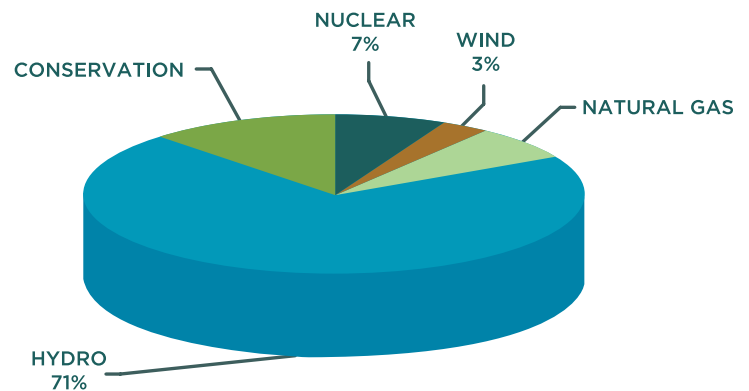
Overall Emissions

The total emissions for the University of Oregon during the 2004 calendar year were estimated at 35,336 metric tons of CO₂ equivalent.⁵ This number includes

all University energy consumption, and mission-related and commute travel. This number does not include air travel because mileage for air travel is not tracked by the university.⁶ These estimates also do not include energy consumption for the Athletics Department or any travel related to Athletics.

Total energy consumption on campus decreased by 19% from 2001 to 2004. This is despite significant growth in student population and building square footage. (See Energy Indicator for more information.) Greenhouse gas emissions have likely dropped by a similar percentage, though a rigorous estimate of 2001 emissions is not available.

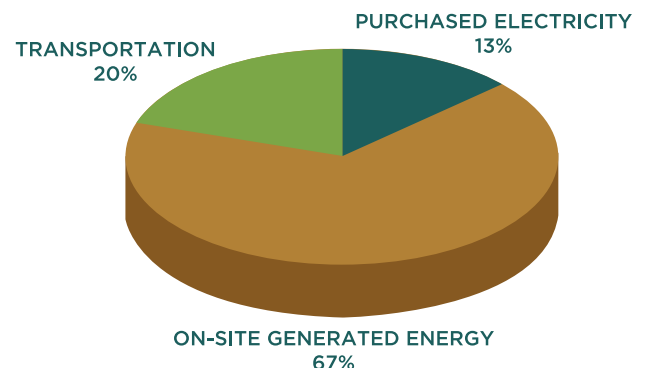
FIG. 6.1: EWEB 2005 RESOURCE PORTFOLIO MIX



Emissions by Activity

Figure 6.2 below shows sources of GHG emissions on campus.⁷ The University of Oregon purchased 429,842 MMBtus (million British thermal units) of natural gas in 2004.⁸ The gas is burned in the Central Power Station to produce steam for heating. Some electricity is also co-generated from waste heat produced at the campus boiler. The operators of the campus boiler vary the output of electricity as the relative prices of purchased and co-generated electricity fluctuate. Therefore, the ratio of co-generated to purchased electricity varies from year to year.

FIG. 6.2: MAJOR SOURCES OF GHG EMISSIONS AT THE UNIVERSITY OF OREGON



INDICATOR 6: GHG EMISSIONS

The majority of University emissions come from energy generated on campus for heating. The University recently authorized \$14 million to replace out-dated, inefficient boilers in the Central Power Station. These upgrades will increase the efficiency of on-campus energy generation and significantly decrease the associated emissions.⁹

Carbon-Neutral Energy Use

In 2004 the University purchased 48,300,000 kWh of electricity from EWEB (not including electricity for Athletics and Housing). Based on data provided from EWEB, at least 80% of its resource mix is carbon-neutral. Therefore, 38,400,000 kWh of electricity consumed by the University is carbon-neutral. In other words an estimated 22% of the total energy consumed by the University is carbon-neutral.

Renewable Energy Credits

In April 2005, the student body elected to increase fees to purchase 2,280 renewable energy credits for the student union building. Students buy the renewable energy credits from EWEB which supports on-going development of environmentally friendly renewable energy sources.

A small amount of electricity is also generated by solar panels on campus buildings installed in recent years.

Greenhouse Gas Emissions Policy and Plans

In April 2007 President Frohnmayer signed the American College and University Presidents Climate Commitment, which states that the University will cut greenhouse gas emissions by 80% by the middle of the century. To meet that goal, the University will have to adopt an aggressive emissions reduction plan. (for the complete text of the Commitment, see Appendix A).¹⁰

In theory, this initiative should have a significant impact on University practices. However, a comprehensive greenhouse gas reduction plan will need to be developed to respond to the Climate Commitment. The University supports many transportation alternatives to driving alone to campus. For more information on these initiatives see the transportation indicator.

Finally, Oregon Governor Ted Kulongoski has publicly committed to a goal of moving all state agencies, including the Oregon University System, to 100% renewable electricity use by 2010.¹¹ This goal has not yet been issued as an executive order or codified in legislation, but the University may be required to dramatically increase its use of renewable electricity in the next several years.

RECOMMENDATIONS

- Develop a comprehensive greenhouse gas reduction plan with clear goals and strategies to meet the American College and University Presidents Climate Commitment.
 - Focus on energy efficiency. Projects that decrease on-campus energy generation will be high-leverage opportunities to reduce campus emissions. Therefore, particular attention should be paid to efficiency and conservation measures that reduce heating and hot water use on campus, as these energy needs are primarily supplied by on-campus energy generation. Outside experts can identify and finance projects. Siemens and Johnson Controls are examples of two companies that specialize in energy assessments, capital improvements and performance contracting (guaranteed energy savings).
 - Develop effective education and outreach programs aimed at behavior change. Faculty, staff, and students can conserve a great deal of energy by turning off lights and computers when not in use.
 - Consider changing thermostat set points for heating and cooling. Small changes to acceptable room temperatures can have large energy savings.
 - Increase support for renewable electricity by purchasing renewable energy credits from EWEB.
-

1. "Choices Survey," 2005; "University of Oregon Student Transportation Survey," 2006.
2. American Wind Energy Association, http://www.awea.org/greenpower/gp_how2.html
3. Energy Star, http://www.energystar.gov/index.cfm?c=energy_awareness.bus_energy_use
4. Jim Maloney, Eugene Water and Electric Board (EWEB), 2007.
5. Data from draft Good Company report, 2007. Different greenhouse gases have varying heat-trapping potencies. For example, one metric ton of methane (CH₄) is 23 times more potent than one metric ton of CO₂ over a 100 year period. Because of the varying potency of greenhouse gases and the different lengths of time they reside in the atmosphere, emissions of different greenhouse gases are often converted into metric tons of CO₂ equivalent, based on their respective heat-trapping potency, or 'global warming potential' (GWP). For example, the GWP of CO₂ is 1, and the GWP of CH₄ is 23. Therefore, one ton of CH₄ = 23 tons CO₂ equivalent. Greenhouse gas emissions in this document are expressed in terms of metric tons of CO₂ equivalent.
6. A 2004 greenhouse gas emissions calculation by Good Company found that the majority of air travel is booked through three travel agencies, none of which tracks air miles.
7. Tom Williams, EWEB, May 2007.
8. Josh Ruddick, EWEB, February 2007.
9. Alan Smith, personal communication, May 29, 2007.
10. American College and University Presidents Climate Commitment, organized and managed by ecoAmerica, Second Nature, and the Association for the Advancement of Sustainability in Higher Education (AASHE).
11. "Governor Kulongoski moving state government to 100-percent new renewable energy," press release, March 2006, http://governor.oregon.gov/Gov/p2006/press_031006.shtml

INDICATOR 7: ENERGY

INDICATOR DEFINITION

The energy indicator examines the use of energy at the University of Oregon. There are four main areas of measurement for this indicator: electricity, natural gas, mmBtus (million British thermal units), and renewable energy.

MEASUREMENTS

Three of the main measurement areas - electricity, natural gas, and mmBtus - are normalized for both campus users and campus square footage. This allows better comparisons over time and between institutions.

Electricity

Electricity used on campus comes from three sources: it is purchased from the Eugene Water and Electric Board (EWEB), generated at the University's Central Power Station, or generated on campus through photovoltaic arrays. However, only the electricity purchased from EWEB and generated on-campus by solar power is included for this measurement. Up to 30% of electricity can be generated by the Central Power Station but the amount changes from year to year depending on natural gas and electricity prices. Therefore, this indicator by itself is not fully indicative of the electricity use on campus.

Natural Gas

Natural gas used on campus is purchased from NW Natural. The primary use of natural gas is to power the University's Central Power Station. The power station primarily burns natural gas, although on occasion, distillate oil is used as fuel. The power station cools and heats all of campus and can create enough electricity through co-generation to power up to 30% of the campus.¹

MmBtus

Btus, or British thermal units, is a common measurement of energy and allows direct comparison of different forms of energy, such as electricity and natural gas. Calculations for this measurement used the following standard conversions: 1 kWh is 3,413 Btus, and 1 therm of natural gas is 100,000 Btus. One mmBtu is 1,000,000 Btus. This is the best measurement to use when comparing energy use between years.

Renewable Energy

The measurement of renewable energy includes both on-site generated energy from renewable sources (solar) and wind power tags purchased from EWEB. It does not include the renewable energy included within EWEB's standard service (3% wind, 71% hydro-power²) because the goal is to benchmark the Univer-

INDICATOR MEASUREMENTS



ELECTRICITY	
kWh/campus user	8,038
kWh/square foot	13.2
NATURAL GAS	
Therms/campus user	575
Therms/square foot	0.9
mmBtus	
mmBtus/campus user	85.0
mmBtus/square foot	0.13
RENEWABLE ENERGY	
Percent of electricity used on campus from on-site solar and wind power tags	4.0%
Percent of total energy used on campus from on-site solar and wind power tags	1.3%
On-site generated renewable electricity (solar)	0.1%
Purchased wind power	3.9%
Data for FY 2005/2006	

sity's commitment to renewable energy, independent of what the utility supplies.

UNIVERSITY PERFORMANCE

The University of Oregon's use of electricity and natural gas has become more sustainable since fiscal year 2000-01. Table 7.1 shows that, although electric-

ity use has increased in the last five years, natural gas use has decreased, leading to a 23% percent overall decrease in the mmBtus used per campus user. Figure 7.1 shows total University energy consumption (including natural gas and electricity) over the last five years.

**FIG. 7.1: UNIVERSITY OF OREGON
ENERGY CONSUMPTION, JULY 2000-JUNE 2006**



There are a few reasons that might help explain the drop in mmBtus per campus user. First, the number of campus users increased by 7.6% during this period, yet the square footage of campus buildings only increased 4.2%. University square footage did not increase as fast as the number of users, which would lower any normalized per user measurement. However, the mmBtus/square foot also decreased by 20%, which likely indicates that the University's use of energy is more efficient in 2005-06. Many efficiency upgrades, such as updating fluorescent lighting and installing awnings and fan timers, occurred in the last five years.

Percent Renewable

The University has three solar photovoltaic arrays on campus. A 3 kW system was installed on the EMU in 2002, a 44 kW array was installed on the Lillis Business Complex in 2003, and a 12 kW system was installed on the Student Recreation Center (SRC) in January 2005. The solar array on Lillis was the second largest in all of Oregon at the time of installation.³ For fiscal year 2005-06, 0.1% of the total electricity used on campus was generated from the Lillis and SRC solar arrays.⁴

The University also purchases wind power through EWEB. A student initiative in 2005 raised student incidental fees by \$0.60 a term to purchase enough wind power to cover the estimated electricity use of the EMU, or 2,280,000 kWh. The University also purchases 100% wind power for the University chancellor's home and 50% wind power for the University president's home. The combination of the solar ener-

gy generated on-site and the purchased wind power is 4.0% of the University's electricity use or 1.3% of total energy consumption including natural gas.

GREEN SPOTLIGHT

Energy Efficiency Upgrades

From 2001 to 2003, the University spent \$540,000 on energy efficiency upgrades. These included occupancy sensors, heat pumps, time clocks, valve replacements, and, especially, lighting upgrades from T12 to T8 fluorescent lighting. These upgrades save approximately 1.7 million kWh annually, or enough electricity to power 140 average Eugene homes.

RECOMMENDATIONS

- Continue to diversify and expand cost-effective renewable energy production on campus.
- Implement energy conservation infrastructure improvements where they will be most effective.
- Purchase and install software that centrally powers down campus computers. Other universities have done this and reduced electricity consumption significantly. Visit www.verdiem.com for details.
- Allow students who live in residence halls to buy green power from EWEB.
- Complete conversion of fluorescent lighting from T12s to T8s.
- Athletics should start tracking usage of electricity and natural gas electronically and for longer than the five-year state law requirement.
- Develop and implement a program to educate University users and University Housing residents about energy conservation.

INDICATOR 7: ENERGY

TABLE 7.1

Electricity and natural gas usage at the University of Oregon during fiscal years 2000/01 and 2005/06. Total mmbtus per campus user decreased 22.5% during this period

	FISCAL YEAR 2000/2001	FISCAL YEAR 2005/06	PERCENT CHANGES
Total electricity (kWh), including Athletics	N/A	65,304,723	N/A
Total electricity (kWh), not including Athletics	52,117,495	58,805,834	12.8%
kWh/user	7,662	8,038	4.9%
kWh/square foot	11.6	13.2	13.1%
Total natural gas (therms), including Athletics	N/A	4,297,413	N/A
Total natural gas (therms), not including Athletics	5,679,422	4,209,699	-25.9%
Therms/user	835	575	-31.1%
Therms/square foot	1.3	0.9	-28.9%
Total mmbtus, including Athletics	N/A	652,626	N/A
Total mmbtus, not including Athletics	745,819	621,674	-16.6%
Mmbtus/user	109.6	85.0	-22.5%
Mmbtus/square foot	0.17	0.13	-20.0%
Total renewable (kWh)	0.0	2,378,981	N/A
Scaled campus users	6,802	7,316	7.6%
Square footage	4,475,169*	4,665,186*	4.2%

Source: University of Oregon Facilities Services, Housing and Athletics, and EWEB; our calculations

*The square footage does not include athletic facilities since 2000/01 energy consumption information was not available for Athletics.

1. <http://facilities.uoregon.edu/cps/>
2. Eugene Water & Electric Board, "Facts and Figures 2005,"
<http://www.eweb.org>
3. <http://lcb.uoregon.edu/ribboncutting/solar.html>
4. The solar arrays on the EMU are not metered. The amount generated by these arrays is small and not likely to change the overall percentage of energy generated on-site.

INDICATOR 8: TRANSPORTATION

INDICATOR DEFINITION

The transportation indicator assesses how students, faculty and staff get to campus and the ways in which the university promotes and supports alternative transportation.

MEASUREMENTS

The transportation program at University of Oregon is the responsibility of the Department of Public Safety. To assess the transportation program four different measurements were used: mode of transportation for commuters, total number of secure bike and vehicle parking spaces, the ratios of bike and vehicle parking space to scaled campus user, and policies and programs.

There is a significant amount of information about transportation that is not included in this report, such as information on campus bike use and recommendations for additional alternative transportation programs. The University has performed numerous assessments. Interested parties can find these documents on the University planning website (<http://uplan.uoregon.edu>).

Mode of Transportation

Periodic campus-wide surveys were performed to determine what mode of transportation students and faculty were using to get to the University each day. Results from these surveys were used to evaluate the success of the University's alternative transportation programs.

Parking Space Ratio

The total bike and vehicle parking numbers and their respective ratios to total campus users (all full-time and part time faculty, staff, and students) show how much infrastructure exists to support bicyclists and drivers and gives some insight into their relative popularity.

Alternative Transportation Policies & Incentives

Alternative transportation policies provide a measurement of University commitment to promoting alternative transportation. Specific policies assessed were free bus passes and carpooling incentives.

UNIVERSITY PERFORMANCE

Mode of Transportation

Results of the 2006 student transportation survey is presented in Figure 8.1. The results show the modes of travel used by the 73% of students living off campus. They do not show the commuting patterns of the 27% of students living on campus. A student transportation survey was also conducted in 1996

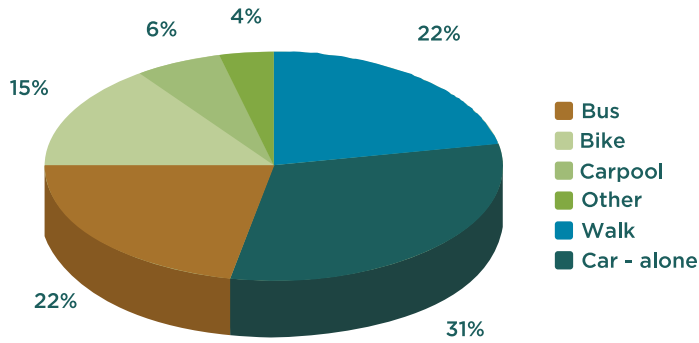
INDICATOR MEASUREMENTS



MODE OF TRANSPORTATION USED	
Mode of transportation used by students to commute to campus	Bus = 22% Bike = 15% Walk = 22% Car Alone = 31% Carpool = 6% Other = 4%
Has the University signed the American College & University Presidents Climate Commitment?	Bus = 10% Bike = 13% Walk = 6% Car Alone = 60% Carpool = 7% Other = 4%
PARKING SPACE RATIO	
Total number of secure bike parking spaces	4,000
Ratio of bike parking to total campus users	0.16
Total number of vehicle parking spaces	3,200 - 3,300*
Vehicle parking spaces/scaled campus user	0.13
University-wide free bus pass program?	YES
Policies and programs that promote alternative transportation	YES
Faculty and Staff commute data 2005; All other data 2006 *Number fluctuates due to construction	

but the methods were significantly different and no useful comparison can be made.

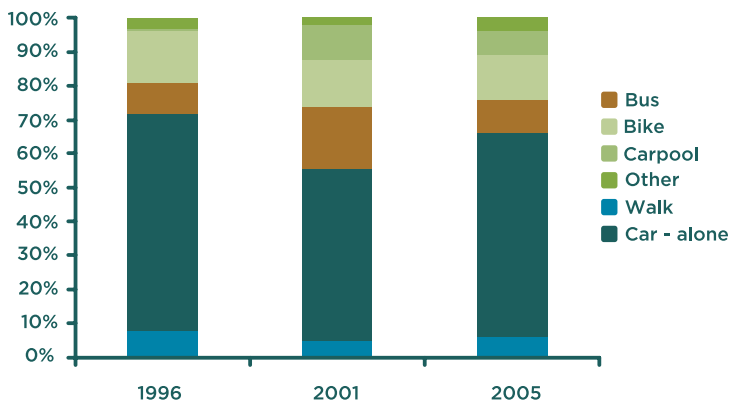
FIG. 8.1: STUDENT COMMUTE TO CAMPUS IN 2006



The data show that only 31% of students drove alone to campus. The majority are using alternative means of transportation. When asked what would be the best way to encourage the use of alternative transportation, the majority of students said “more convenient bus routes.”¹

Figure 8.2 provides comparative information for the modes of transportation used by faculty and staff in 1996, 2001, and 2005.

FIG. 8.2: FACULTY & STAFF COMMUTE TO CAMPUS



The majority of faculty drive alone to campus. When asked what would be the best way to discourage driving alone, faculty said they would be very willing to carpool but were not aware of carpooling incentives.² An effective education and outreach campaign would apprise faculty and staff of alternative transportation modes supported by the University and might reduce the number of faculty and staff who drive to campus alone.

Parking Space Ratio

The University invested over \$400,000 to build a biking infrastructure by 1996.³ Currently, the University of Oregon provides 4,000 secure bike parking spaces on campus. There are 0.16 bike parking spaces for every scaled campus user or nearly enough spaces to accommodate one-sixth of the entire University population.⁴

The University provides 3,200 – 3,300 vehicle parking spaces, an approximate ratio of one parking space for every eight scaled campus users.⁵ This is one of the lowest ratios of vehicle parking spaces to people in the nation.⁶ The University of California at Berkeley has approximately one spot for every 5.8 campus user and the University of Colorado at Boulder has approximately one parking spot for every 2.6 campus users. According to Fred Tepfer in the University Planning Office, the extremely low vehicle parking ratio is both a result of successful alternative transportation programs and acts as a disincentive to driving to campus because parking is so limited.⁷

Alternative Transportation Policies & Incentives

The University supports a number of additional programs to promote alternative transportation.

GREEN SPOTLIGHT



Free Bus Passes for University Population

Since 1988 student fees provide bus access for the entire student population.⁸ The Department of Public Safety provides free bus access for all faculty and staff. All students, faculty, and staff can ride the bus anywhere in the service district for free.

INDICATOR 8: TRANSPORTATION

Carpooling Incentives

Groups that carpool to campus with three or more people can receive a reduced rate parking permit at forty percent of the standard cost.⁹ Carpools are also given specially located parking spaces. However, in a survey of students, it was found that eighty percent were not aware of the program.¹⁰

Park-and-Ride

Lane Transit District provides 26 park-and-ride locations.¹¹ Of these, seven offer direct service to the University. The remainder require a transfer at the down-town station. This program allows University members to park at no cost outside the city core and use public transportation to complete their commute. Since the 1970s, the University has also provided park-and-ride services to many sporting events.¹²

Shuttle Service

The University provides a Saferide to bus stops and other local destinations.¹³

Guaranteed Ride Home

The guaranteed ride home is a program for faculty and staff who ride the bus to campus. In the event of an emergency, the University will pay for transportation (i.e., a taxi).

To learn more about the transportation plan visit uplan.uoregon.edu and view the alternative modes of transportation forum.

RECOMMENDATIONS

- Conduct effective outreach to faculty and staff regarding transportation alternatives
- Continue to work with Lane Transit District to develop convenient bus service to the University

1. Data compiled from "Choices Survey," 1996; "LTD University of Oregon Faculty and Staff Transportation Survey," January 2001; "Choices Survey," 2005; and "University of Oregon Student Transportation Survey," 2006.
2. "Choices Survey," 2005.
3. "Choices Survey," 1996.
4. Ibid.
5. Estimated with the use of data from Ken Boegli, Parking/Transportation Manager.
6. Ibid.
7. Fred Tepfer, interview, 2007.
8. "Choices Survey," 1996.
9. "Choices Survey," 2005.
10. "Choices Survey," 1996; "LTD University of Oregon Faculty and Staff Transportation Survey," January 2001; "Choices Survey," 2005; and "University of Oregon Student Transportation Survey," 2006.
11. Department of Public Safety, "To the UO there are BETTER ways to go," informational pamphlet on alternative transportation.
12. <http://www.ltd.org>
13. <http://safetyweb.uoregon.edu>



INDICATOR 9: WATER

INDICATOR DEFINITION

The water indicator assesses the University of Oregon’s use of water for campus operations including steam, irrigation, and domestic use.

MEASUREMENTS

The primary measurement used for this indicator is kilogallons (kgals). Kgal usage is normalized three ways: campus user, building square footage, and unpaved acres on campus. Unpaved acres on campus attempts to approximate the amount of campus that is irrigated. These three normalizations are not great— individually, they all miss important elements of campus water use. Until irrigation water use is metered separately, there is no good way to separate domestic water use from outside water use. The ratio of July to December water use estimates the difference between peak irrigation and regular domestic water use.

UNIVERSITY PERFORMANCE

The University of Oregon’s use of water has become more sustainable from fiscal year 2000-01 to 2005-06. Total water consumption has decreased by almost 13% during this time period. A comparison of kgals per campus user shows that water use decreased by more than 19% during the previous five years. However, this does not reflect any changes in the amount of water used by University athletics.¹ See Table 9.1 for a comparison of water use in 2000-01 to use in 2005-06. Figure 9.1 shows the monthly consumption of water from the beginning of fiscal year 2000-01 to the end of fiscal year 2005-06. The sharp increase in water consumption during the summer provides some insight into the amount of water used for irrigation.

The sharp decrease in kgals per campus user is more likely a reflection of the increase in campus users than it is in efficiency gains.

The overall 13% drop could be explained, at least in part, by efficiency measures installed on campus. Much of the water use occurs during the summer (see Figure 9.1); the ratio of water use during the summer to use during the winter is almost 2:1.² This is especially significant considering there are thousands fewer campus users during the summer.

Facilities Services has been installing the Maxicom irrigation control system on campus to increase irrigation efficiency. Currently, 30-40% of the irrigation system is controlled by Maxicom.³ Maxicom is a fully automated system that determines watering levels

INDICATOR MEASUREMENTS



Total water used (kgals)	193,962
Kgals/campus user	22.6
Kgals/square foot	0.035
Kgals/unpaved acre	1,154
Ratio of July to December water use (does not include Athletics)	2.54
Data for FY 2005/06. Includes athletics except for ratio of July to December water use.	

based on weather information collected on campus. The program is also able to detect any leaks in the irrigation system and automatically shuts off water to the leaking area. Other studies have shown Maxicom decreases water use from between 30-70%.⁴

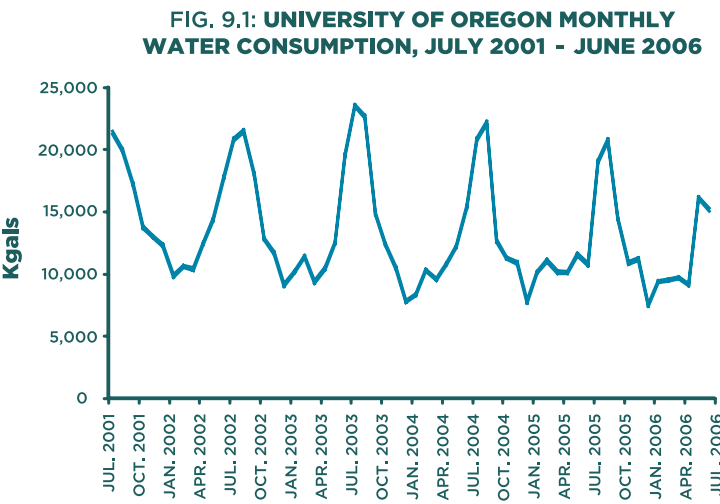


TABLE 9.1

Water use at the University of Oregon during fiscal years 2000/01 and 2005/06. Overall water use decreased almost 13% during this time period 2005/06.

	FISCAL YEAR 2000/01	FISCAL YEAR 2005/06	PERCENT CHANGES
Total water use, including Athletics (kgals)	N/A	193,962	N/A
Total water use, not including Athletics (kgals)	189,722	165,256	-12.9%
Kgal/user	27.9	22.6	-19.0%
Kgal/sq. foot	0.042	0.035	-16.4%
Kgal/unpaved acre	1,325	1,154	-12.9%
Ratio of July water use to December	3.03	2.54	-16.1%
Scaled campus users	6,802	7,316	7.6%
Square footage	4,475,169*	4,665,186*	4.2%

Source: University of Oregon Facilities Services, Housing and Athletics; our calculations

*The square footage does not include athletic facilities since 2000/2001 water consumption information was not available for athletics.

RECOMMENDATIONS

- Continue to expand the use of the Maxicom irrigation control system to all irrigated University-affiliated lands (including Athletics).
- Evaluate the existing domestic fixtures across campus and the cost-effectiveness of retrofitting older models with more efficient fixtures, including no flush urinals, 0.5 gpm faucets, 1 gpm showerheads, and 1 gpf toilets.
- Evaluate the efficiency of all existing industrial dishwashing and laundry facilities on campus, including Housing and Athletics, and retrofit where cost-effective.
- Athletics should start tracking water use electronically and for longer than the five-year state law requirement.
- Develop and implement a program to educate University users and University Housing residents about water conservation.

1. University of Oregon athletics keeps records for only five years, as required by state law, so information was not available for fiscal year 2000/01.
2. Summer is July, August, and September, and winter is January, February, and March. Ratio is 1.89.
3. Roger Kerrigan, interview, March 19, 2007.
4. <http://sustainability.uoregon.edu/search/viewarea.php?id=40>
5. This calculation does not include athletics.

Irrigation water is not metered separately on the University campus, so actual savings resulting from Maxicom are not available. However, main campus water use during July, August, and September decreased by 24% from 2000 to 2005.⁵ The ratio of July's water use to December's water use also decreased from 2000 to 2005: 3.03 to 2.54.

INDICATOR 10: LANDSCAPE

INDICATOR DEFINITION

The landscape indicator assesses the extent to which the University has incorporated sustainability goals into landscape design and maintenance and whether the University is meeting those goals. The indicator measurements include plantings, Integrated Pest Management (IPM), and stormwater. This indicator assesses the ways in which the University has minimized the input of chemicals and pollutants into the environment.

MEASUREMENTS

Plantings

Sustainable landscaping focuses on plants that are well-adapted to the region. Plantings should include species that are native, pest-resistant, and minimize environmental harm (such as the negative impacts that result from invasive species). Plantings that meet these criteria will require minimal maintenance in terms of application of water, fertilizer, and pesticides and provide habitat for native fauna.

Integrated Pest Management (IPM)

Integrated Pest Management is a system of pest control that encourages the use of non-chemical pesticides to control pests.¹ Action Thresholds are levels of pest infestation beyond which chemical treatment is permitted.² Avoiding the use of chemical pesticides is ideal because “pesticides can cause harm to humans, animals, or the environment because they are designed to kill or otherwise adversely affect living organisms.”³

Stormwater

Untreated and unmanaged stormwater runoff, especially from impervious surfaces, collects pollutants that are already present in the environment. These pollutants then enter waterways and negatively affect water quality.⁴ Stormwater from the University flows into the Millrace and the Willamette River.⁵

Considered a water pollution point-source (at the municipal, state, and federal levels), stormwater runoff falls under the Clean Water Act (CWA) that is administered by the United States Environmental Protection Agency (EPA) using the National Pollutant Discharge Elimination System (NPDES) permitting system.⁶ Nationwide, NPDES stormwater management is most commonly performed using Best Management Practices (BMPs).⁷ The City of Eugene holds an NPDES permit and follows the Oregon Department of Environmental Quality (DEQ) BMPs.⁸

INDICATOR MEASUREMENTS



PLANTINGS	
What is the percent of native tree species on campus?	14%
Does the University have a landscaping plan or policy requiring the use of pest-resistant or area-adapted new plantings, or assessment of the environmental impacts of new plantings?	NO
INTEGRATED PEST MANAGEMENT	
Does the University have an Integrated Pest Management (IPM) program?	YES
How many times have Action Thresholds been exceeded and chemical pesticides been applied (in FY 2006)?	515
Have there been reported or discovered violations of the IPM policy?	NO
STORMWATER	
Does the University have a policy for stormwater management practices?	YES
Has the University violated the state Best Management Practices (BMPs) for stormwater management?	NO
Data from FY 2005-06	

UNIVERSITY PERFORMANCE

Plantings

What is the percent of native tree species on campus?

The 2001 Campus Tree Plan reported that in 1996, 14% of tree species on campus were native.⁹ Facilities Services maintains an Atlas of Trees database, but has only recently been keeping inventory of species na-

tive to the Willamette Valley. Currently, data relating to native species are not easily accessed from the database.¹⁰

Does the University have a landscaping plan or policy that requires the use of pest-resistant or area-adapted new plantings, or an assessment of the environmental impacts of new plantings?

There is no written policy or legal requirement.¹¹ The Campus Tree Plan states a commitment to maintain trees as a part of the campus landscape and to recognize the environmental importance of trees, but it provides only recommendations.¹² However, exterior maintenance team supervisors do review plans for new plantings and use pest-, drought-, and frost-resistant plantings whenever possible.¹³

Integrated Pest Management

Does the University have an Integrated Pest Management (IPM) Program?

The University of Oregon's Integrated Pest Management Program was initiated as a documented program in February of 1994 and is administered by the Department of Environmental Health and Safety.¹⁴ In 1991, the Oregon State Legislature enacted ORS 634, which contains ORS 634.650-670, dealing with Integrated Pest Management.¹⁵ The Oregon Department of Agriculture (ODA) Plants Division administers the IPM program.¹⁶ Monitoring is currently performed by way of self-reporting to the Oregon Department of Agriculture.¹⁷ However, each agency sets its own Action Thresholds.¹⁸ In the case of the University of Oregon, strong efforts are made to control pests by means other than chemical pesticides, and care is taken to protect human health and safety when pesticides are applied.¹⁹

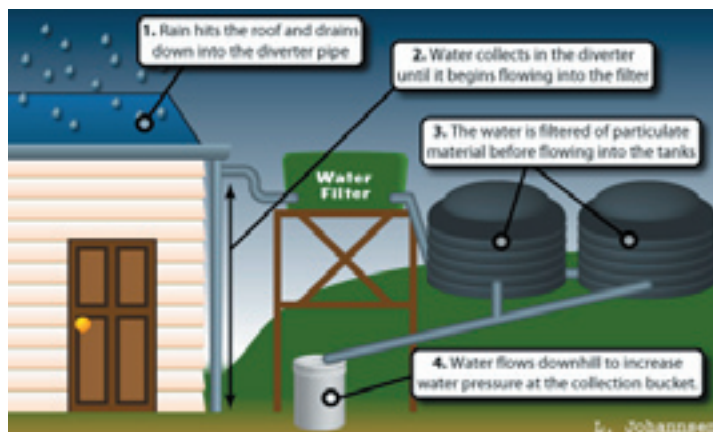
How many times have Action Thresholds been exceeded and chemical pesticide treatments been applied?

There were 515 interior and exterior chemical pesticide treatments during fiscal year 2006.²⁰ Data were either nonexistent (FY 1996) or incomplete (FY 2001) for other indicator benchmark years. The Department of Environmental Health and Safety began collecting data on chemical pesticide treatments in 2001, although the state did not require this until 2007.²¹

Have there been reported or discovered violations of the IPM policy?

The Department of Environmental Health and Safety has not encountered any violations.

GREEN SPOTLIGHT



Outdoor Program Barn Rainwater Catchment System

During the winter of 2006-07, the Outdoor Program completed the installation of a rainwater catchment system on its equipment facility (the Outdoor Program Barn). The system collects the rain runoff from the roof of the barn and collects it in two 1,500 gallon tanks. This water is then used to help clean equipment and vans.

Illustration from: <http://outdoorprogram.uoregon.edu/index.php?page=resources§ion=catchment>

Stormwater

Does the University have a policy for stormwater management practices?

The University follows the Oregon DEQ "Recommended Best Management Practices for Stormwater Discharges" (1997).²²

Has the University violated the state Best Management Practices (BMPs) for stormwater management?

No violations have been reported or discovered. The University's stormwater falls under the jurisdiction of the City of Eugene, which holds a NPDES stormwater discharge permit issued by the DEQ.²³ The permit includes BMPs and guidelines for monitoring and reporting.²⁴

Landscape

The University's overall performance in landscaping is good. The use of tree species native to the

INDICATOR 10: LANDSCAPE

Willamette Valley and new plantings that minimize environmental impact are positive actions in this area. The University is meeting legal requirements of both the IPM program and the stormwater BMPs, with no reported or discovered violations. However, 515 interior and exterior chemical pesticide applications in 365 days have an undeniable detrimental impact on human health and the environment. In addition, without data from previous years, this Assessment is incomplete because it does not indicate if the number of chemical pesticide applications has increased or decreased over time.

GREEN SPOTLIGHT

Millrace Bioswale

The Millrace Bioswale is located near the intersection of Franklin Boulevard and Onyx, and drains stormwater flowing from Franklin Boulevard and nearby parking lots before that water enters the Millrace. Stormwater runoff containing pollutants and entering the storm drains is filtered and absorbed by the soil rather than flowing directly into waterways and adversely affecting water quality. This bioswale was constructed by Stan Jones, Department Head and Associate Professor of Landscape Architecture, as part of a student-driven project. Every aspect of the construction was carried out using sustainable principles. The Millrace Bioswale is part of the University's "Sustainability Initiatives Tour."²⁵

In certain cases in all three measurements (plantings, IPM, and stormwater), efforts have been made on the part of individuals to exceed the legal requirements to protect human health and the environment. In addition, there are a number of other efforts that have been made that are worthy of discussion. Most of these efforts are directed primarily or consequentially toward the preservation of permeable surfaces on campus. Permeable surfaces allow stormwater to infiltrate the soil, not only reducing runoff but also removing pollutants and recharging the underground aquifer.²⁶

Campus Plan "Policy 2: Open-space Framework" outlines the University's requirement to preserve and extend the open-space and landscape framework on campus.²⁷ Campus Plan "Policy 12: Design Area Special Conditions" organizes campus design areas based on these designated open spaces. The commitment to preserve and extend open space on campus not only demonstrates the University's commitment to open space, but also preserves the amount of permeable surfaces on campus.

During fiscal year 2001, the University's permeable surfaces were 39.5% of the gross acreage on campus (including buildings, parking lots, the Millrace, etc.).²⁸ During fiscal year 2006, the University's permeable surfaces had increased to 49% percent.²⁹

In addition, the University has installed living roofs and bioswales across campus. Living, or vegetated, roofs have numerous benefits, including the improvements in air quality, increased biodiversity, energy conservation, reduction in the urban heat island effect, noise abatement, and the control and recycling of stormwater runoff. There is one functional living roof on campus (Many Nations Longhouse) and the infrastructure for a second (Lillis pre-existing green roof).³⁰ There are many opportunities to improve and expand green roofs on campus. The successful green roof on the Many Nations Longhouse and the unsuccessful green roof attempt on the Lillis Business Complex provide valuable learning opportunities.

Bioswales are "long shallow channels [that] allow run-off to flow in sheets through vegetation, slowing and filtering the flow [and acting] to temporarily store and infiltrate the run-off into the ground."³¹ There are at least 6 functioning bioswales on campus and one more is proposed.³² They include a bioswale that drains the Many Nations Longhouse living roof and the Millrace bioswale discussed in the Landscape "Green Spotlight."³³

RECOMMENDATIONS

- Update and modify the Atlas of Trees database to ensure the ease of accessing information relating to the environmental impacts of plantings, such as area-adapted and native species.
- Examine and modify Action Thresholds for IPM to ensure there are fewer chemical pesticide applications.
- Examine and utilize more alternative and non-chemical means of controlling pests. Utilize permaculture principles.

- Make efforts to improve water quality in the Millrace and Willamette River. Increase the number of permeable surfaces. Install more bioswales and living roofs.

- United States Environmental Protection Agency, "Integrated Pest Management and Food Production," <http://www.epa.gov/pesticides/factsheets/ipm.htm>
- University of Oregon, Environmental Health and Safety, Integrated Pest Management Program, <http://oehs.uoregon.edu/policies/ipm/policy.html>
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- Roger Kerrigan, "Grounds Fiscal 2002/03 Report for: University of Oregon, Facilities Services, Exterior Team (RCAG index)."
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- Tim King, personal communication, 2007.

INDICATOR 11: BUILDING

INDICATOR DEFINITION

The building indicator assesses the extent to which the University has incorporated green building and design goals into existing buildings and new construction projects and whether the University is meeting those goals. The indicator includes institutional commitment to green building and design, participation in the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) program, compliance with the Oregon Department of Energy (ODOE) State Energy Efficiency Design (SEED) program, and the use of energy efficient lighting on campus.

MEASUREMENTS

Institutional Commitment

The Comprehensive Environmental Policy Statement (CEPS), issued in July 1997, specifies building design and operation requirements.¹ This policy outlines the University of Oregon's commitment to maximize energy efficiency and utilize conservation measures in new, existing, and renovated buildings when feasible. The document specifies that each University unit is required to establish its own subpolicies, and the Office of Environmental Health and Safety is responsible for the administration, monitoring, and review of the policy.

In addition, both the Long Range Campus Development Plan (1991)² and the new Campus Plan (2005)³ require adherence to the building design and operation requirements within the University of Oregon's Sustainable Development Plan (SDP, 2000). The Long Range Campus Plan's adherence requirement preceded the release of the SDP.⁴ The Campus Plan (2005) "Policy 10: Sustainable Development" deals specifically with the requirement to adhere to the SDP.⁵ The SDP requires that all University construction projects meet with LEED and SEED requirements.⁶

Leadership in Energy and Environmental Design (LEED)

The SDP was adopted in October 2000 and required that every construction project meet the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) program qualification standards.⁷ The SDP did not mandate that buildings go through the expensive certification process. All projects initiated one year after the SDP implementation date (October, 2001) were required to use LEED scorecards to self-assess.

In November 2004, the state of Oregon Department of Administrative Services (DAS) issued a

INDICATOR MEASUREMENTS



LEED	
What percent of campus gross square footage meets LEED certification standards?	5.18% (4 bldgs)
What percent of campus gross square footage is certified LEED?	2.19% (1 bldg)
SEED	
What percent of campus gross square footage is SEED verified?	0.24% (1 bldg)
What percent of campus gross square footage meets SEED qualification standards?	0.24% (1 bldg)
Is the University in compliance with SEED for existing buildings?	NO
LIGHTING	
Is the University actively changing lighting from T12 to T8 lamps?	YES
Data from FY 2005-06	

policy manual for sustainable facilities development guidelines to comply with the Governor's Executive Order (EO-00-07; EO-03-03) and Oregon State Law (ORS 184.421 - 184.470).⁸ This policy manual requires self-assessment of construction projects undertaken by various state agencies, including the University of Oregon. This self-assessment is based on LEED Version 2.0 criteria. New construction projects must meet the scorecard equivalent of LEED Silver rating, and renovations must meet the point equivalent of

LEED rating. This means that buildings must be built so that they are capable of being LEED certified but do not actually go through the certification process. Construction projects must include a certified LEED professional team member and a sustainability plan. The DAS LEED 2.0 also requires agencies to create a maintenance plan that details the inclusion of sustainable methods that address the site, water efficiency, energy and atmosphere, materials and resources, and indoor air quality.⁹ The SDP, updated in 2005, reflects this DAS LEED 2.0 requirement.

State Energy Efficiency Design (SEED)

The Sustainable Development Plan (2005) also requires that all new construction projects comply with the Oregon Department of Energy's (ODOE) State Energy Efficiency Design (SEED) program, established in 1991 by Oregon State Law.¹⁰ The law requires that state agencies, including the University of Oregon, work with ODOE to utilize Energy Conservation Measures (ECMs). In 2001, the law was amended and now includes the requirement that projects constructed after June, 2001 exceed Oregon state building code energy conservation requirements by 20% and that all existing buildings exceed building code energy conservation requirements by 10%.¹¹ This means that measures must be taken to retrofit existing buildings that do not operate within this legal requirement.

New SEED program guidelines issued in December 2004 require an 18-month post-occupancy verification of projects. This verification process is based on evaluation by a third-party commissioning agent and utility bills submitted to ODOE, which are then compared with the energy usage predicted by the building energy model. Buildings that meet or exceed the 20% requirement are deemed to be in compliance.¹² Those buildings that are not in compliance are required biennially to submit a plan detailing how goals will be met.¹³

Lighting

T8 lighting, which includes either lamps or electronic ballasts or both, reduces energy usage in commercial and institutional settings.¹⁴ Replacing T12 lamps, which are less energy efficient, with T8 lamps can reduce energy usage at the University.

UNIVERSITY PERFORMANCE

Leadership in Energy and Environmental Design (LEED)

What percent of campus gross square footage meets LEED, LEED Silver, and LEED Silver 2.0 certification standards?

5.18% (4 buildings) currently

6.09% (7 buildings), including proposed constructions

What percent of campus gross square footage is certified LEED?

2.19% (1 building)

Buildings that are designed to qualify for LEED certification and buildings that have been LEED certified are summarized in Table 11.1.¹⁵

TABLE 11.1

Percent of Campus buildings that meet LEED Certification Standards

University Building	Percent of Total Campus Gross Square Feet (6,202,430), includes proposed construction
Lillis Business Complex	2.19%
Living Learning Center	1.94%
East Campus (Moss Street) Children's Center	0.24%
University Health and Counseling Center	0.81%
Integrative Science Complex Phase 1 (ONAMI)	0.29%
Peterson Hall Renovation (Lillis Phase II)	0.31%
Gilbert Hall Renovation (Lillis Phase II)	0.31%
Percent Completed	5.18%
Percent completed & proposed	6.09%

State Energy Efficiency Design (SEED)

What percent of campus gross square footage is SEED verified?

0.24% (1 building); the East Campus (Moss Street) Children's Center is the only University building to be verified in compliance with SEED through the 18-month post-occupancy verification process.¹⁶

INDICATOR 11: BUILDING

What percent of campus gross square footage meets SEED qualification standards?

0.24% (1 building); beyond the East Campus Children’s Center, the percent of campus gross square footage that meets SEED qualification standards is unknown. SEED evaluations are decentralized and not assembled in one location or held by one person. Gathering these data was determined to be too time intensive.

Is the University in compliance with SEED requirements for existing buildings?

The Oregon University system is the only state agency that is not in compliance with the requirement that existing buildings use 10% less energy than required by building code conservation requirements.¹⁷

Lighting

Does the University have a policy for changing lighting from T12 to T8 lamps?

There is no written or official plan or policy in place for replacing existing T12 lamps with T8 lamps.

Is the University actively changing lighting from T12 to T8 lamps?

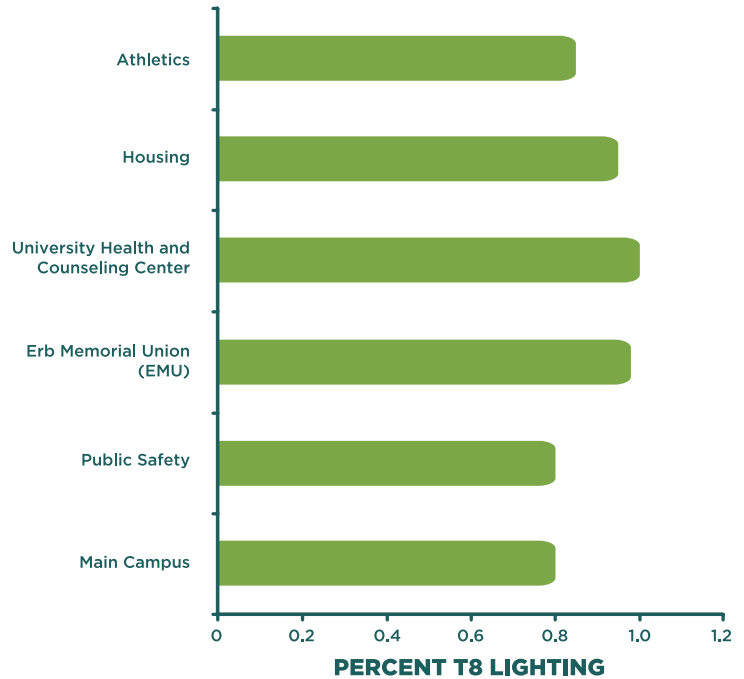
More than 80% of campus fluorescent lights have been changed to T8s. This transformation takes advantage of Eugene Water and Electric Board (EWEB) Energy Smart Services¹⁸ incentives, but is in need of adequate funding.¹⁹ The percentage of T8 lamps on campus is summarized Figure 11.1.²⁰

The University’s performance in this area is excellent. Although there is no written policy or program for changeover, efforts are being made in all sectors of the University to change lamps from T12 to T8, thereby reducing energy requirements.

Institutional Commitment

The University’s performance in this area is uncertain. Neither the Comprehensive Environmental Policy Statement (1997), nor the Sustainable Development Plan (2000, 2005) offers any mechanisms to ensure compliance or accountability within the University itself. As a result, of the projects initiated one year after the 2000 adoption of the Sustainable Development Plan, many did not complete the required self-assessment using LEED scorecards.²¹ In addition, the SDP (2005) itself offers no mechanism to ensure compliance with SEED requirements. The only check is the self-assessment and reporting to the statewide program every biennium as required by the DAS.²²

FIG. 11.1: PERCENT T12 LIGHTING CONVERTED TO T8 LIGHTING



The University has only one building that is LEED Silver certified: the Lillis Business Complex. This building is a fabulous demonstration of green building and design and incorporates many such features, including, in 2006, the “second-largest photo-voltaic array in the State of Oregon”.²³ Lillis has been “recognized as the most environmentally friendly business school facility in the country.”²⁴ But, no other new constructions or renovations at the University have been LEED certified.

It is common knowledge that the LEED certification process is an expensive one. The choice not to certify University buildings can certainly be justified based on the expense. However, because buildings do not go through the certification process, there is no way to verify that the LEED-qualifying characteristics incorporated into the design, which are identified on a LEED scorecard, are incorporated into the final completed product. There is no way to assess whether buildings identified in this report as being designed to qualify for LEED actually meet LEED certification standards when they have been built. In addition, construction projects across the University often share the same core set of LEED qualifying characteristics.²⁵ This implies that construction projects incorporate only the qualifying characteristics that require the least expense and effort, and that little innovation or measures beyond those required are incorporated into building design and/or construction.

Although LEED does embody strong green building and design standards, progress towards sustainability arguably requires measures beyond those required by LEED. The Assessment has revealed that the University is not implementing green building and design goals beyond what is required by law, and, in fact, that the University is not even meeting the standards that are required by law. This is evidenced by the lack of verification of construction projects built to meet LEED certification standards, the lack of verification of buildings constructed before the implementation of the SEED 18-month post-occupancy verification requirement, and the lack of compliance with SEED requirements for existing buildings. The lack of mechanisms within the University to ensure compliance with the CEPS and the SDP contribute to this reliance on state legal requirements and state enforcement mechanisms. The SDP does indeed require that new and existing buildings adhere to LEED and SEED guidelines, as is required by state law. However, there are no mandates that have been generated from within the University to ensure that data collection and enforcement responsibilities are met. As a result, the University currently has many buildings that have not been evaluated to verify compliance with these requirements.

For both LEED and SEED, there is no one office or individual responsible for overseeing project qualifications, managing LEED or SEED scorecards, or gathering information into a central database. Gathering LEED scorecards or qualifying information for this report proved difficult because of this decentralization. Gathering SEED evaluations or qualifying information for this report was logistically impossible because every University building maintains this information in a different location. This decentralization prohibits the establishment of an inventory of green building and design goals and practices. Decentralization also prohibits the identification and correction of noncompliance and the identification of avenues for improvement.

RECOMMENDATIONS

- Monitor building operations to ensure compliance with LEED and SEED requirements.
- Verify that projects that will not be LEED certified still meet LEED qualifications.
- Ensure that the University is in compliance with the SEED requirement to operate existing buildings at 10% below building code energy conservation requirements.
- Dedicate a staff position to manage and supervise the LEED and SEED requirements of the Sustainable Development Plan.

- Create and maintain a database of all LEED scorecards and SEED evaluations, and maintain these records in a central location.
- Complete conversion of fluorescent lighting from T12s to T8s.
- Examine ways, in addition to the installation of T8 lamps, to continue to reduce energy consumption in University buildings.

1. "Comprehensive Environmental Policy Statement," 1997, <http://policies.uoregon.edu/ch4i.html>
2. "Long Range Campus Development Plan," 1991, http://www.uoregon.edu/~uplan/CampusPlan/CampusPlan1991/1991_LRDPtoc.html
3. "Campus Plan," 2005, <http://www.uoregon.edu/~uplan/CampusPlan/CampusPlan.html>
4. "Sustainable Development Plan," 2000, 2005, <http://www.uoregon.edu/~recycle/PDFdocuments/SDPFull.pdf>
5. "Campus Plan," 2005, <http://www.uoregon.edu/~uplan/CampusPlan/CampusPlan.html>
6. "Sustainable Development Plan," 2000, 2005, <http://www.uoregon.edu/~recycle/PDFdocuments/SDPFull.pdf>
7. U.S. Green Building Council, Leadership in Energy and Environmental Design program, <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>
8. Executive Order No. EO-00-07; Executive Order No. EO-03-03; O.R.S. 184.421 through 184.470.
9. Department of Administrative Services Policy Manual, Facilities Division, #125-6-010, effective Nov. 1, 2004, "Sustainable Facilities Standards and Guidelines," <http://www.oregon.gov/DAS/FAC/docs/1256010.pdf>
10. O.R.S. 276.900-915.
11. Mike Rosenberg, Oregon Department of Energy, personal communication, 2007.
12. Ibid.; Oregon Department of Energy, State Energy Efficiency Design (SEED) program.
13. Mike Rosenberg, Oregon Department of Energy, personal communication, 2007.
14. American Council for an Energy Efficient Economy, "Emerging Technologies and Practices," 2004, http://www.aceee.org/pubs/a042_1i.pdf
15. Shawn Peterson, 2007, "Capital Projects (over \$50,000)/ by date 1991-2006"; Dorene Steggell, personal communication, 2007; Nancy Wright, personal communication, 2007; Fred Tepfer, personal communication, 2007.
16. Dorene Steggell, personal communication, 2007; Mike Rosenberg, Oregon Department of Energy, personal communication, 2007.
17. Mike Rosenberg, Oregon Department of Energy, personal communication, 2007.
18. Eugene Water and Electric Board, "Energy Smart Services," <http://www.eweb.org/business/energy/energysmart/index.htm>
19. Gregory Haider, personal communication, 2007.
20. Ibid.; Dana Winitzky, personal communication, 2007; Gordon Melby, personal communication, 2007; Bob Beals, personal communication, 2007.
21. Fred Tepfer, personal communication, 2007; Christine Thompson, personal communication, 2007.
22. Ibid.; Fred Tepfer, personal communication, 2007.
23. Lundquist College of Business, "Lillis Business Complex: Open for Business," <http://lcb.uoregon.edu/complex/>
24. Ibid.
25. Fred Tepfer, personal communication, 2007.

RECOMMENDATIONS SUMMARY

KEY RECOMMENDATIONS

The following recommendations have been identified as high-priority actions for the University of Oregon to take to strengthen its commitment to sustainability:

1. The University should increase its information gathering capabilities to allow a more thorough evaluation of sustainability efforts and their successes or failures.
 - a. Make information regarding University endowment investments transparent and easily available to the general public.
 - b. Monitor building operations to ensure compliance with LEED and SEED requirements. Verify that projects that will not be LEED certified can still meet LEED qualifications. Ensure that the University is in compliance with the SEED requirement to operate existing buildings at 10% below building code energy conservation requirements.
 - c. Track “green” purchasing. An annual report showing the percent of University green purchasing would provide valuable and instructive feedback.
 - d. Track funds awarded to sustainability research and public service projects.
2. The University should continue to invest in reasonable and prudent capital projects that have significant sustainability payoffs.
 - a. Continue to diversify and expand cost-effective renewable energy production on campus.
 - b. Identify buildings where conservation efforts will be most effective and implement changes.
 - c. Expand the use of the Maxicom irrigation control system.
 - d. Make efforts to improve water quality in the Millrace and Willamette Rivers by increasing the number of bioswales, permeable surfaces, and living roofs.
3. The University of Oregon should establish new policies related to sustainability and modify existing policies.
 - a. Develop a comprehensive greenhouse gas reduction plan with clear goals and strategies to meet the goals of the American College and University Presidents Climate Commitment.
 - b. Review policies related to sustainability and identify amendments that would create mechanisms for monitoring and ensuring compliance.
 - c. Include formal environmental sustainability criteria in the Investment Policy Statement.
 - d. Adopt and financially support a University food procurement and disposal policy.
 - e. Add environmental literacy as a general education requirement.

4. The University should make programmatic changes to support sustainability efforts.

- a. Create and fund an Office of Sustainability.
- b. Expand composting to include post-consumer food waste.
- c. Examine and utilize more alternative and non-chemical means of controlling pests such as permaculture principles.

5. Repeat this Assessment every five years.

ALL RECOMMENDATIONS

The recommendations from all of the indicators are compiled below. Recommendations have been classified according to the following categories:

Information

These recommendations suggest that the University change or add ways to collect data.

Education

These recommendations include suggestions for encouraging or changing campus user behaviors.

Capital

These recommendations involve capital expenditures on physical infrastructure.

Program

These recommendations suggest programmatic or implementation changes, such as adding staff.

Policy

These recommendations suggest changes or additions to University policy.

• GENERAL •

Evaluate the social and economic sustainability of the University's activities.

PROGRAM

• GOVERNANCE •

The University should fund a comprehensive research and action plan for reduction of GHG emissions in compliance with the American College and University Presidents Climate Commitment.

POLICY

Create and fund an Office of Sustainability with a full-time sustainability coordinator.

PROGRAM

Review policies related to sustainability to ensure monitoring and compliance mechanisms exist.

POLICY

President Frohnmayer should sign the Talloires Declaration.

POLICY

The Environmental Issues Committee should include more faculty and student representatives to improve diversity of feedback to senior administrators.

PROGRAM

The Campus Plan should be amended to prohibit the University from accepting donations of facilities on privately owned property that do not comply with the Plan.

POLICY

Administrative directives should encourage the improvement of information systems in the areas of collection and accessibility of data related to sustainability.

POLICY

• ENDOWMENT INVESTMENT •

Include formal environmental sustainability criteria in the Investment Policy Statement.

POLICY

Make the investment policy and practice information publicly available.

INFORMATION

• ACADEMICS & CULTURE •

Develop a new environmental literacy general education requirement for all undergraduate students.

POLICY

Track funds awarded to sustainability research and public service projects.

INFORMATION

Track membership in student groups.

INFORMATION

• MATERIALS MANAGEMENT •

Track the University's "green" purchases. An annual report showing the percent of University green purchasing would provide valuable and instructive feedback.

INFORMATION

Establish sustainable chemical-purchasing policies.

POLICY

Track the purchasing of chemicals. Establish a system to track the purchasing of chemicals campus-wide; track the toxicity of purchased chemicals.

INFORMATION

Expand Green Chemistry. Spread the philosophy of the Green Chemistry program to all research and teaching laboratories that use chemicals.

PROGRAM

Monitor departmental paper purchasing.

INFORMATION

Expand composting to include post-consumer food waste.

PROGRAM

RECOMMENDATIONS SUMMARY

• MATERIALS MANAGEMENT (CONTINUED) •

Print theses and dissertations on recycled paper.

PROGRAM

Create disincentives for disposable food and beverage containers.

PROGRAM

• FOOD •

Draft a University food procurement and waste disposal policy.

POLICY

Insert specific language in the Comprehensive Environmental Policy Statement regarding sustainable food procurement and waste disposal.

POLICY

Provide financial and staffing support for food procurement and disposal initiatives.

POLICY

Expand composting to include post-consumer food waste.

PROGRAM

Make use of “Farm-to-College” resources.

PROGRAM

Assess the miles traveled (i.e., emissions impact) of the food products purchased by the University, in conjunction with the American College and University Presidents Climate Commitment.

INFORMATION

• GREENHOUSE GAS EMISSIONS •

Develop a comprehensive greenhouse gas reduction plan with clear goals and strategies to meet the American College and University Presidents’ Climate Commitment.

POLICY

Focus on increasing energy efficiency. Projects that decrease on-campus energy generation will be high-leverage opportunities to reduce campus emissions. Therefore, particular attention should be paid to efficiency and conservation measures that reduce heating and hot water use on campus, as these energy needs are primarily supplied by on-campus energy generation. Outside experts can identify and finance projects. Siemens and Johnson Controls are examples of two companies that specialize in energy assessments, capital improvements and performance contracting (guaranteed energy savings).

CAPITAL

Develop effective education and outreach programs aimed at behavior change. Faculty, staff, and students can conserve a great deal of energy by turning off lights and computers when not in use.

EDUCATION

Consider changing thermostat set points for heating and cooling. Small changes to acceptable room temperatures can have large energy savings.

PROGRAM

Increase support for renewable electricity by purchasing renewable energy credits from EWEB.

PROGRAM

• ENERGY •

Continue to diversify and expand cost-effective renewable energy sources on campus.

PROGRAM

Implement energy conservation infrastructure improvements where they will be most effective.

CAPITAL

Purchase and install software that centrally powers down campus computers. Other universities have done this and reduced electricity consumption significantly. Visit www.verdiem.com for details.

CAPITAL

• ENERGY (CONTINUED) •

Allow students who live in residence halls to buy green power from EWEB.	POLICY
Complete conversion of fluorescent lighting from T12s to T8s.	CAPITAL
Athletics should start tracking usage of electricity and natural gas electronically and for longer than the five-year state law requirement.	INFORMATION
Develop and implement a program to educate University users and University Housing residents about energy conservation.	EDUCATION

• TRANSPORTATION •

Conduct effective outreach to faculty and staff regarding transportation alternatives.	EDUCATION
Continue to work with Lane Transit District to develop convenient bus service to the University.	PROGRAM

• WATER •

Continue to expand the use of the Maxicom irrigation control system.	CAPITAL
Evaluate existing domestic fixtures across campus and the cost-effectiveness of retrofitting older models with more efficient fixtures.	CAPITAL
Evaluate efficiency of all existing industrial dish-washing and laundry facilities on campus, including Housing and Athletics, and retrofit where cost-effective.	CAPITAL
Athletics should start tracking water use electronically and for longer than the five-year state law requirement.	INFORMATION
Develop and implement a program to educate University users and University Housing residents about water conservation.	EDUCATION

• LANDSCAPE •

Update and modify the campus atlas of trees database to make it more accessible.	INFORMATION
Examine and modify Action Thresholds for IPM to ensure there are fewer chemical pesticide applications.	PROGRAM
Examine and utilize more alternative and non-chemical means of controlling pests, such as permaculture principles.	PROGRAM
Make efforts to improve water quality in the Millrace and Willamette Rivers by increasing the number of bioswales, permeable surfaces, and living roofs.	CAPITAL

• BUILDINGS •

Monitor building operations to ensure compliance with LEED and SEED requirements.	INFORMATION
Verify that projects that will not be LEED certified still meet LEED qualifications.	PROGRAM
Ensure that the University is in compliance with the SEED requirement to operate existing buildings at 10% below building code energy conservation requirements.	INFORMATION
Dedicate a staff position to manage and supervise the LEED and SEED requirements of the Sustainable Development Plan.	PROGRAM
Create and maintain a database of all LEED scorecards and SEED evaluations.	INFORMATION
Complete conversion of fluorescent lighting from T12 to T8 fluorescent lighting.	CAPITAL
Examine ways to continue to reduce energy consumption in University buildings.	CAPITAL

APPENDICES

APPENDIX A: SCALED CAMPUS USERS

The breakdown of the Scaled Campus User (SCU) calculations for FY 2000/01

	FULL TIME			PART TIME			SCALED CAMPUS USERS
	NUMBER	SCU FTE	TOTAL SCU	NUMBER	SCU FTE	TOTAL SCU	
Faculty & Staff	2,684	0.25	671.00	852	0.13	106.50	777.50
Graduate Teaching/Research Fellows	-	0.25	-	1,172	0.08	97.57	97.57
Student Employees	-	0.25	-	2,287	0.06	142.94	142.94
Enrolled Students	15,303	0.15	2,295.45	2,514	0.08	188.55	2,484.00
Residential Students	3,300	1.00	3,300.00	-	0.50	-	3,300.00
Total			6,266.45			535.56	6,802.01

The breakdown of the Scaled Campus User (SCU) calculations for FY 2005/06

	FULL TIME			PART TIME			SCALED CAMPUS USERS
	NUMBER	SCU FTE	TOTAL SCU	NUMBER	SCU FTE	TOTAL SCU	
Faculty & Staff	2,948	0.25	737.00	1,052	0.13	131.50	868.50
Graduate Teaching/Research Fellows	-	0.25	-	1,288	0.08	107.23	107.23
Student Employees	-	0.25	-	2,466	0.06	154.13	154.13
Enrolled Students	18,011	0.15	2,701.65	2,458	0.08	184.35	2,886.00
Residential Students	3,300	1.00	3,300.00	-	0.50	-	3,300.00
Total			6,738.65			577.20	7,315.85

The FTE used to calculate the Scaled Campus User (SCU) value for each type of user

	FULL TIME SCU FTE	PART TIME SCU FTE
Faculty & Staff	0.25000	0.12500
Graduate Teaching/Research Fellows	0.25000	0.08325
Student Employees	0.25000	0.06250
Enrolled Students	0.15000	0.07500
Residential Students	1.00000	-

APPENDIX B:**AMERICAN COLLEGE AND UNIVERSITY PRESIDENTS CLIMATE COMMITMENT**

We, the undersigned presidents and chancellors of colleges and universities, are deeply concerned about the unprecedented scale and speed of global warming and its potential for large-scale, adverse health, social, economic and ecological effects. We recognize the scientific consensus that global warming is real and is largely being caused by humans. We further recognize the need to reduce the global emission of greenhouse gases by 80% by mid-century at the latest, in order to avert the worst impacts of global warming and to reestablish the more stable climatic conditions that have made human progress over the last 10,000 years possible.

While we understand that there might be short-term challenges associated with this effort, we believe that there will be great short-, medium-, and long-term economic, health, social and environmental benefits, including achieving energy independence for the U.S. as quickly as possible.

We believe colleges and universities must exercise leadership in their communities and throughout society by modeling ways to minimize global warming emissions, and by providing the knowledge and the educated graduates to achieve climate neutrality. Campuses that address the climate challenge by reducing global warming emissions and by integrating sustainability into their curriculum will better serve their students and meet their social mandate to help create a thriving, ethical and civil society. These colleges and universities will be providing students with the knowledge and skills needed to address the critical, systemic challenges faced by the world in this new century and enable them to benefit from the economic opportunities that will arise as a result of solutions they develop.

We further believe that colleges and universities that exert leadership in addressing climate change will stabilize and reduce their long-term energy costs, attract excellent students and faculty, attract new sources of funding, and increase the support of alumni and local communities. Accordingly, we commit our institutions to taking the following steps in pursuit of climate neutrality:

1. Initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible.
 - a. Within two months of signing this document, create institutional structures to guide the development and implementation of the plan.
 - b. Within one year of signing this document, complete a comprehensive inventory of all greenhouse gas emissions (including emissions from electricity, heating, commuting, and air travel) and update the inventory every other year thereafter.
 - c. Within two years of signing this document, develop an institutional action plan for becoming climate neutral, which will include:
 - i. A target date for achieving climate neutrality as soon as possible.
 - ii. Interim targets for goals and actions that will lead to climate neutrality.
 - iii. Actions to make climate neutrality and sustainability a part of the curriculum and other educational experience for all students.
 - iv. Actions to expand research or other efforts necessary to achieve climate neutrality.
 - v. Mechanisms for tracking progress on goals and actions.
2. Initiate two or more of the following tangible actions to reduce greenhouse gases while the more comprehensive plan is being developed.
 - a. Establish a policy that all new campus construction will be built to at least the U.S. Green Building Council's LEED Silver standard or equivalent.
 - b. Adopt an energy-efficient appliance purchasing policy requiring purchase of ENERGY STAR certified products in all areas for which such ratings exist.
 - c. Establish a policy of offsetting all greenhouse gas emissions generated by air travel paid for by our institution.
 - d. Encourage use of and provide access to public transportation for all faculty, staff, students and visitors at our institution
 - e. Within one year of signing this document, begin purchasing or producing at least 15% of our institution's electricity consumption from renewable sources.
 - f. Establish a policy or a committee that supports climate and sustainability shareholder proposals at companies where our institution's endowment is invested.

3. Make the action plan, inventory, and periodic progress reports publicly available by providing them to the Association for the Advancement of Sustainability in Higher Education (AASHE) for posting and dissemination. In recognition of the need to build support for this effort among college and university administrations across America, we will encourage other presidents to join this effort and become signatories to this commitment.

Signed,

The Signatories of the American College & University Presidents Climate Commitment

APPENDIX C:**THE TALLOIRES DECLARATION: UNIVERSITY PRESIDENTS FOR A SUSTAINABLE FUTURE**

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources. Local, regional, and global air pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of “green house” gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature. Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible.

The university heads must provide the leadership and support to mobilize internal and external resources so that their institutions respond to this urgent challenge. We, therefore, agree to take the following actions:

1. Use every opportunity to raise public, government, industry, foundation, and university awareness by publicly addressing the urgent need to move toward an environmentally sustainable future.
2. Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward a sustainable future.
3. Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and responsible citizens.
4. Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional school students.
5. Set an example of environmental responsibility by establishing programs of resource conservation, recycling, and waste reduction at the universities.
6. Encourage the involvement of government (at all levels), foundations, and industry in supporting university research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with nongovernmental organizations to assist in finding solutions to environmental problems.
7. Convene school deans and environmental practitioners to develop research, policy, information exchange programs, and curricula for an environmentally sustainable future.
8. Establish partnerships with primary and secondary schools to help develop the capability of their faculty to teach about population, environment, and sustainable development issues.
9. Work with the UN Conference on Environmental and Development, the UN Environment Programme, and other national and international organizations to promote a worldwide university effort toward a sustainable future.
10. Establish a steering committee and a secretariat to continue this momentum and inform and support each other's efforts in carrying out this declaration.

Jean Mayer, President and Conference convener Tufts University, U.S.A.; L. Avo Banjo, Vice Chancellor University of Ibadan, Nigeria; Robert W. Charlton, Vice Chancellor and Principal University of Witwatersrand, Union of South Africa; Michele Gendreau-Massaloux, Rector l'Academie de Paris, France; Augusto Frederico Muller, President Fundacao Universidade Federal de Mato Grosso, Brazil; Calvin H. Pimpton, President and Emeritus American University of Beirut, Lebanon; T. Navaneeth Rao, Vice Chancellor Osmania University, India; Stewart Saunders, Vice Chancellor and Principal University of Cape Town, Union of South Africa; David Ward, Vice Chancellor Canipinas, U.S.A., Pablo Arce, Vice Chancellor Universidad Autonoma de Centro America, Costa Rica; Boonrod Binson, Chancellor Chuaialongkorn University, Thailand;

APPENDICES

Constance W. Curris President University of Northern Iowa, U.S.A.; Adamu, Nayaya Mohammed Vice Chancellor Ahmadu Bello University, Nigeria; Mario Ojeda Gomez President Colegio de Mexico, Mexico; Wesley Posvar, President University of Pittsburgh, U.S.A.; Pavel D. Sarkisow, Rector D. I. Mendeleev Institute of Chemical Technology U.S.S.R.; Akilagpa Sawyerr, Vice Chancellor University of Ghana, Ghana; Carlos Vogt, President Universidade Estadual de Brazil; Xide Xie, President Emeritus Fudan University, People's Republic of China.

(<http://www.iisd.org/educate/declarat/tallore.htm>)

APPENDIX D: SELECTED UNIVERSITY POLICIES RELATED TO CAMPUS SUSTAINABILITY

- Comprehensive Environmental Policy Statement (<http://policies.uoregon.edu/ch4i.html>)
- Campus Plan (<http://uplan.uoregon.edu/CampusPlan/CampusPlan.html>)
- Sustainable Development Plan (<http://uplan.uoregon.edu/subjects/Sustainability/SDPFull.pdf>)
- Recycled Paper Policy (<http://policies.uoregon.edu/ch4k.html>)
- Wood Products Purchasing Policy (<http://www.uoregon.edu/~eic/woodpurchasepolicy.html>)
- Bike Plan (<http://uplan.uoregon.edu/plandoc/BikePlan.html/>)
- Campus Tree Plan (<http://uplan.uoregon.edu/plandoc/BikePlan.html>)
- Long-Range Campus Transportation Plan (<http://www.uoregon.edu/~uplan/subjects/transpo/TransPlan1976.pdf>)
- Integrated Pest Management Program (<http://oehs.uoregon.edu/policies/ipm/policy.html>)

APPENDIX E: EXAMPLES OF COLLEGE AND UNIVERSITY SUSTAINABLE INVESTMENT POLICIES

- Duke University: Guidelines on Socially Responsible Investing
(http://www.dukenews.duke.edu/2004/02/investing_0204.html)
- Hampshire College: Policy on Socially Responsible Investing
(http://www.hampshire.edu/upl/fpg_1_9_1147118026.pdf)
- Princeton University: Guidelines for Resources Committee Consideration of Investment-Driven “Social Responsibility” Issues
(<http://www.princeton.edu/%7Evpc/Reports/GUIDELINES%20FOR%20RESOURCES%20COMMITTEE.pdf>)
- Stanford University: Statement on Investment Responsibility Concerning Endowment Securities
(http://www.stanford.edu/dept/ucomm/apir/investment_responsibility/)
- University of Vermont: Policy Statement on Moral, Social, and Ethical Considerations In Investment and Shareholder Resolutions
(http://www.uvm.edu/trustees/previous_structure/standing_com/investment/meetings/2006_may18resolutions.pdf)
- University of Wisconsin System: Regent Policy 97-1: Investment and Social Responsibility
(http://www.uwsa.edu/bor/policies/bor_pols.pdf)

APPENDIX F: COMPREHENSIVE RECYCLING INFRASTRUCTURE DESCRIPTION

At the student union, housing cafeteria, and faculty club kitchen, recycling services are available for cooking grease, wood pallets, and metals.

Facilities Services recycles a range of shop waste, including wood scrap, metals (copper and brass), telephone wire, car tires, car batteries, antifreeze, and motor oil.

At large events, vendors can recycle glass, metals, low-grade paper, cardboard, and plastic. They can also compost food waste. The University community can recycle bottles, cans, and newspapers. For some events, composting has expanded beyond vendors to include the University community.

Campus Recycling collects styrofoam packing peanuts, large or padded envelopes, Tyvek envelopes, bricks, and cinder blocks for reuse.

Campus Recycling collects special materials (wood, metal, and nonrecyclable foam core) from Architecture and Allied Arts studios during each finals week.¹

1. Campus Recycling Program Website.
<http://www.uoregon.edu/~recycle/Material.htm>

APPENDIX G: RECYCLABLE MATERIALS AND MATERIALS REQUIRING SPECIAL DISPOSAL

RECYCLABLE ITEMS	RECYCLABLE BY SPECIAL ARRANGEMENT	COLLECTED FOR REUSE	RECYCLED OR DISPOSED BY SPECIAL ARRANGEMENT
Aluminum cans Books Copy machine toner cartridges Glass beverage containers Junk mail Laser cartridges Metal: uncontaminated aluminum foil, steel cans, aluminum pie pans, etc. Wax coated drink box containers Newspaper paper: white, colored, paperboard, butcher paper, paper bags, magazines, unbleached “white” paper Campus directories Plastics (bottles, tubs, jars, no lids, #1-5) Transparencies	Cardboard Cassette tapes Compact discs Compact disc cases Diskettes Ink cartridges Leaves Motor oil Pallets Phone books Scrap metal Tires Tennis ball cans (no lids) Video cassettes Wire Wood waste Christmas trees Yard waste	Bricks and cinder blocks Bubble wrap large or padded envelopes Office furniture Styrofoam packing peanuts Tyvek envelopes	Aerosols Batteries (including car batteries) Fluorescent lights and light tubes Solvents, liquids, paints





UNIVERSITY OF OREGON