WHAT IS OUR PROPOSAL?

The University of Oregon Model for Sustainable Development will address the unique aspects of campus buildings and landscapes by focusing on what matters most:

ENERGY, WATER, AND PEOPLE.

It is important to note that this Model intentionally focuses on new development and it is just one of the many strategies the university must implement to achieve its overall sustainability goals.

PRELIMINARY GOALS FOR NEW DEVELOPMENT:

ENERGY: The University of Oregon will cap campus energy use derived from new development projects (new buildings and major remodels). This goal is achieved by taking a systematic campus-wide (as opposed to building-by-building) approach. New development projects will be required to achieve state-of-the-art energy performance. Beyond that, projects must implement energy-savings measures in existing buildings to offset the resulting fossil fuel energy needs generated by the project. This will ensure a Net Zero Increase in Campus Energy Use from New Development.

WATER: The University of Oregon will Improve the Quality of Campus Stormwater emitted into the region’s waterways. This goal will focus on areas that contribute the most to the degradation of water quality – campus streets and parking lots. New development projects will be required to treat the equivalent amount of stormwater runoff derived from new construction (new buildings and sites), focusing initial efforts on campus streets and parking lots (either on the projects’ development sites or elsewhere on campus).

PEOPLE: The University of Oregon will ensure Sustained Campus Habits. New development projects will be required to educate building users by instituting ongoing techniques to remind occupants how their building operates in order to sustain a shift in building-user behavior.

In addition, all new development must achieve LEED Gold certification.

This is a starting point. As the model is developed, it is our goal to attain even higher standards, including ways to better integrate landscape strategies into building systems.

The university is uniquely poised to create a new sustainable development model. The university community has a wealth of experience in designing and constructing campus buildings and landscapes and is privileged to have an abundance of knowledgeable researchers.
WHY ACT NOW?

We will continue to lead the way.

While our efforts were on the leading edge in 2000 when the UO Sustainable Development Plan and LEED were adopted, portions are now outdated in the fast-paced world of sustainable design. We need to clarify our focus and strengthen best practices based upon current knowledge.

“Many of our green initiatives in academics and operations have been recognized over the years. Working towards climate neutrality is a significant undertaking for a large research institution and requires us to explore new territory, and we will continue to lead the way.”

• President Lariviere’s March 2010 introductory letter to the Climate Action Plan (CAP)

We will respond to our 2010 Climate Action Plan commitment.

The University of Oregon must implement aggressive reduction strategies to meet its goal of net zero emissions as specified in the UO’s 2010 Climate Action Plan:

2010: Stabilize and begin to reduce greenhouse gas emissions
2020: Achieve greenhouse gas levels 10% below 1990 levels
2050: Climate Neutrality

We will focus on issues that matter most to the environment and to our campus: ENERGY, WATER, AND PEOPLE.

Energy: According to the Climate Action Plan, 60% of the university’s emissions are from buildings and facility expansion is the single biggest driver of rising carbon emissions and energy use. Exploring more aggressive standards for new construction is one of the CAP’s four highlighted action items:

“No Construction – Green design can dramatically reduce heating, cooling, and plug loads in our buildings. Currently, all new construction and large renovations must be LEED silver equivalent and exceed state energy code by 20%. However, we will explore adopting more aggressive design standards. A review will be completed within one year ....”

- President Lariviere’s March 2010 introductory letter to the CAP

Water: Water is one of Oregon’s most precious resources. Around the country, polluted and contaminated runoff accounts for 70% of water pollution in urban areas and is the leading cause of poor water quality and the degradation of aquatic habitat. Stormwater runoff from our parking lots and streets has the greatest negative impact on the region’s water quality. Given the unique attributes of our campus — our large physical size with many open spaces and our direct connection to the Millrace and the Willamette River -- we have the ability to significantly improve the region’s water quality and associated natural ecosystems.

People: Promoting energy awareness among people who occupy a building can provide energy savings for a negligible upfront cost (according to the EPA and the Center for the Built Environment at UC Berkeley). More importantly, as an educational institution, we have a particular opportunity and responsibility to educate campus users.
WHAT WOULD IT COST?

ENERGY GOAL: Net Zero Increase in Campus Energy Use from New Development

- All new development projects (new buildings and major renovations) must be LEED Gold.
- All new development projects must implement educational/training opportunities.
- All new development projects must implement energy-saving mitigation measures in other buildings to offset the resulting energy needs of the project.
- If the project meets the Advanced Energy Efficiency Threshold (see below), then the project’s obligation to finance conservation projects elsewhere on campus will be capped at 2% of its total project cost. Central funds would cover any additional costs needed to meet the net zero increase in campus energy use goal.

Based upon preliminary research, we estimate that, over the next ten years, this proposal would cost:
- approximately 0.5% to 6% of each individual total project cost (based upon recent construction projects), or
- a total maximum of approximately 18 million dollars in first costs.

Note: These investments typically have an estimated simple payback of 18 years. For example, the university would be saving well over $500,000/year in energy utility costs from the ten recent construction projects if this energy policy were already in place. Also, all funds would not be needed up front. Rather, they would be needed incrementally as development projects occur.

Funding sources: As proposed, up-front costs would be shared by new development project funds and central funds in order to:
- reduce the financial burden of a single project and account for the underlying differences in energy use for different building types (e.g., a typical classroom versus a lab);
- provide a financial incentive for development projects to strive for energy efficiency;
- provide an opportunity to solicit donor funds; and
- repay central funds over time with annual savings resulting from decreased energy use.

Auxiliary projects would be eligible for loans rather than outright payment from central funds. It is assumed that auxiliary projects would achieve a net zero increase in campus energy use by implementing conservation projects in other auxiliary facilities.

The Advanced Energy Efficiency Threshold is a step above the LEED Gold energy requirements. The intent is to ensure that the energy use derived from new development is thoughtfully addressed before allocating funds to existing campus buildings to meet the net zero increase in campus energy use goal. This threshold would be established by a small council of knowledgeable individuals. It is possible that, to start, it would be equivalent to the Architecture 2030 requirement (60% better than the regional standard Energy Use Index for a similar building type) and ramp up to a higher standard over time.

Beyond the above requirements, projects may apply to the central fund for up to 50% of the cost to implement energy conservation measures that exceed the Advanced Energy Efficiency Threshold.
This optional goal is designed to provide an incentive to pursue excellence in energy conservation design. Central fund allocation would be determined on a case-by-case basis.

**Examples:** If the Lorry I. Lokey Laboratories had been required to meet this goal, it would have added about 5.4% ($805,000) to the total project cost. This additional cost would have been shared by the project fund and the central fund; the Lokey Labs project fund would have been responsible for the cost to achieve LEED Gold, training, the Advanced Energy Efficiency Threshold, plus an additional 2% of the cost to achieve net zero campus energy use (3.7% total). The remaining amount (about 1.7%) would have been covered by central funds.

Similarly, the East Campus Residence Hall project cost would have increased by about 3.2% ($2,163,000). As an auxiliary, it would have had the option to borrow some of the funds needed to pay for energy conservation measures in other residence halls to achieve a net zero increase in campus energy use.

If the College of Education Project (HEDCO/University High) had been required to meet this goal, it would have increased the total project cost by about 0.6% ($325,000) of the total project cost. The added cost is lower because energy savings resulting from building renovations as part of the College of Education project offset most of the increased energy use from the new building. The Allen Hall project is similar. In fact, the resulting energy savings from building renovations will likely offset all of the added energy use from the new building. However, pursuing LEED Gold certification and training would increase the Allen Hall project cost by about 1.2% ($185,000).

**WATER GOAL: Improved Quality of Stormwater**

**What would it cost?** This goal would redirect some of the current efforts to address project-related stormwater to focus more on campus areas with relatively low water quality — streets and parking lots. The cost associated with this shift would be minimal, if any. New development projects already are required by city code to treat run-off derived from new construction (new buildings and sites). New development projects still would be responsible to treat the equivalent amount of stormwater run-off (as defined by City code); however, a determination would be made about how much project-related stormwater should be treated versus stormwater from campus streets and parking areas. In general, if the project does not treat the majority of the project-related stormwater, it must accommodate the potential to treat it in the future. This goal will require coordination with the City.

**PEOPLE GOAL: Sustained Campus Habits**

**What would it cost?** It is estimated that educational opportunities and techniques required to sustain a shift in occupant behavior would require a minimum investment of $35,000 per project (significantly less that 1% of total project cost). This cost is based on the following assumptions:

- An annual series of **in-person training sessions** designed for faculty and staff occupying the building as well as Facilities Services staff during the first two years of occupancy.
- Distribution of **informational materials** (e.g., written and email notices, temporary signage, announcements, etc.) during the first two years of occupancy.
- **Permanent integrated educational elements** highlighting key sustainable building and landscape strategies with a focus on behavior (e.g., informational kiosk or series of plaques)
- An **electronic dashboard program** that provides real time energy use.

**LEED GOAL: Gold Certification**

**What would it cost?** The cost to achieve LEED Gold versus LEED Silver is likely to be minimal relative to total project costs. Most of the recent projects already meet LEED Gold equivalency.

The cost to certify a LEED building is estimated to be about $150,000 and would ensure that projected energy savings and sustainable benefits are realized.
HOW DID WE DEVELOP THIS PROPOSAL?

We asked. We listened.

In the past year we posed the question to key campus constituents about how to move forward with a new model for sustainable development:

- We held initial meetings with key campus staff, the Campus Planning Committee, and City staff.
- We reviewed current sustainable models and examples from other institutions.
- We held a round table conversations attended by faculty, engineers, architects, and UO staff.

These initial conversations helped define the areas of focus.

We must focus on issues that matter most: ENERGY, LANDSCAPES, and PEOPLE.

Highlights from the June 21, 2010 Sustainability Round Table Summit.

Attendees:
CPRE Staff
GZ Brown, UO faculty
Jane Brubaker, UO Campus & Grounds
Kirk Davis, Glumac Engineers.
Ihab Elzeyadi, UO faculty
Mike Hatten, SOLARC
Jeff Madsen, FS Energy

Steve Mital, UO Sustainability Director
Lisa Petterson, SERA Architects
John Reynolds, UO faculty
Eric Ridenour, SERA Architects
Gregg Sanders, SERA Architects
Josh Skov, The Good Company
Roxi Thoren, UO Faculty

The summit resulted in a lively conversation. Below is a sample of comments, suggestions, and questions:

- You can’t build a sustainable building and then walk away
- Scale Jumping – co-generation approach – buildings can help each other
- Zero energy campus
- Funding models must change
- Energy analysis (compared to carbon analysis) is better calculated & understood.
- Social sustainability
- 1 fume hood can use as much energy as a single house

What can we most successfully address?
- Consider the unique campus setting
- Training students to live in a sustainable way is likely our greatest environmental impact.
- Financial implications

- Use intellectual resources of campus - link education to sustainability
- What will our sustainable campus look like?
- What are our values?
- Pick what is important and work on it
- Rely on facts not feelings
- Not about metrics – about the least damage we can do
- Next Building is always better
- No increase in campus carbon footprint while expansion and growth continues
- Ecodistricts: Pair Buildings projects with infrastructure projects, share heating and cooling loads, storm water treatment and use
- Every measure we take must maximize educational value
HOW DO WE MOVE FORWARD?

Our next step is to follow UO leadership’s direction to solicit broader input and refine the proposal’s goals.

This draft proposal incorporates suggestions from key staff administrative departments (primarily Facilities Services and the Sustainability Director), and initial input from AAA faculty at two round table sessions.

Our next step is to follow UO leadership’s direction to solicit broader input and refine the proposal’s goals.

Campus Planning and Real Estate will lead the project over the course of the next three months with the Campus Planning Committee serving as the primary review body. We will perpetuate participation of AAA faculty and broaden discussions with associated administrative departments.

We will solicit professional assistance as necessary, for example to determine the appropriate Advanced Energy Efficiency Threshold goal.

Also, we will work with the City to determine how best to implement the proposed stormwater goal within the context of the current stormwater code.

Summary of proposed input process:

- Continue to work with round table advisors, key UO staff, and the Campus Planning Committee to finalize the draft model.
- Solicit feedback from other key UO faculty/staff/students including:
  - Facilities Services
  - Sustainability Director
  - AAA
  - Dean’s Working Group
  - Auxiliaries (in particular Student Affairs and Athletics)
  - Vice Presidents and representatives
  - Vice Provosts and representatives
  - Environmental Issues Committee
  - ASUO
  - Student Sustainability Coalition
  - University Senate, and
  - other interested individuals/groups.
- Provide opportunities for broader campus-wide feedback (check-in meetings and open house)
- Hold a public hearing and present the proposal to the Campus Planning Committee for review and recommendation to the president by June 2011.

For more information: contact Christine Thompson, University of Oregon Campus Planning and Real Estate (cthomps@uoregon.edu, 541-346-5572). To obtain a copy of this document, please visit our website: http://uplan.uoregon.edu/