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UNI SUSTAINABILITY ANNUAL REPORT

UNI *am leaving a smaller footprint.* 

The University of Northern Iowa is pleased to report on sustainability accomplishments over the past year. This report is based on UNI's recent submission of the Sustainability Tracking Assessment and Rating System (STARS) benchmarking effort for 2010. In order to create a concise, easy to follow document, the 2010-2011 UNI Sustainability Report to the Board of Regents, State of Iowa will only focus on one or two highlights in each categorical area.

To view specific highlights and data related to each Board of Regents, State of Iowa goal, please access UNI's STARS assessment and report through the interactive website at <https://stars.aashe.org/institutions/university-of-northern-iowa-ia/report/2011-03-02/>.

For the third consecutive year, campus sustainability efforts were highlighted in a public setting at the UNI Sustainability Forum. The results of UNI's STARS report and many of the below highlights were presented to the campus and local community by President Ben Allen. This open forum and participation in STARS are a direct reflection on the UNI and Board of Regents, State of Iowa commitment to sustainability.

Planning and Development

Vision: Each institution will demonstrate a commitment to sustainability in its campus master plan, incorporating environmental stewardship.

Progress on Goals:

The University of Northern Iowa recently received a "Gold STAR" for its work in campus sustainability from the Association for Advancement of Sustainability in Higher Education (AASHE). As a charter member of the Sustainability Tracking Assessment and Rating System (STARS), UNI's March 2, 2011 STARS submission marked the culmination of a massive benchmarking effort in campus sustainability. This effort also highlighted UNI as a leader in sustainability through awarding an assessment level of "STARS Gold" to the UNI campus. To date, UNI is one of just nine schools from the United States or Canada to receive a Gold assessment level.

The STARS tool is a transparent sustainability assessment system for institutions of higher education. The tool itself was created through a partnership between AASHE and institutions of higher learning throughout the United States and Canada.

The STARS assessment tool includes the three functional umbrellas consisting of "Education and Research," "Campus Operations," and "Planning, Administration, and Engagement." Within these categories, all of the Board of Regents, State of Iowa goals and vision items are included. Along with each of these, all schools are provided a score for the various survey areas based on the institution's overall progress in sustainability.

Within the three main STARS categories, data and information from across the UNI campus was submitted to the AASHE team for scoring. As shown in Table 1, on the whole, the high scores for the UNI campus reflect many of the values and strengths of the institution.

The high scores in Education and Research are indicative of the commitment that UNI has demonstrated to the culture of sustainability and conservation for the last century starting with offering one of the first two collegiate-level conservation courses in the nation in 1915. This dedication was reflected in this category, as the overall score for UNI was 77.88 out of 100. This score is the third highest of any institution to submit for ranking as of May 4, 2011. Specific highlights related to this are included on page six within the category “Sustainability in the Curriculum.”

The area of Campus Operations is the area of most opportunity for improvement for the UNI campus. The fact that this score is 35.18 out of 100 is influenced primarily by two factors. First, UNI only recently initiated the process of LEED building construction and renovation on campus. Two current capital projects, Sabin Hall, a 55,733 sq. ft building renovation and Panther Village, a 99,905 sq. ft new construction, serve as the first two LEED building projects on campus. Second, renewable energy sources were not heavily utilized to operate campus buildings until the last year. These two factors have domino impacts causing other scores in this category to be negatively impacted.

Finally, in the area of Planning Administration and Engagement, UNI also has an outstanding score. As of May 4, 2011 UNI’s score in this area was noted as the 5th highest of any school to submit for ranking. The scores in this category reflect UNI’s commitment to planning for a sustainable future and ensuring that these plans are made into reality.

Table 1.

Summary of Results	
Score 66.63/100	
Rating: Gold	
Education & Research	77.88%
Co-Curricular Education	17.25 / 18.00
Curriculum	34.40 / 55.00
Research	26.23 / 27.00
Operations	35.18%
Buildings	3.46 / 13.00
Climate	1.75 / 16.50
Dining Services	4.50 / 8.25
Energy	2.90 / 16.50
Grounds	3.00 / 3.25
Purchasing	4.81 / 7.50
Transportation	5.62 / 12.00
Waste	6.30 / 12.50
Water	2.75 / 10.25
Planning, Administration & Engagement	74.84%
Coordination and Planning	18.00 / 18.00
Diversity and Affordability	13.75 / 13.75
Human Resources	19.75 / 19.75
Investment	0.25 / 16.75
Public Engagement	23.09 / 31.75
Innovation	100%
Innovation	4.00 / 4.00

Purchasing

Vision: Each institution shall adopt a campus-wide environmentally preferable purchasing plan that is consistent with best practices in higher education. These policies will increase the purchase of products with a reduced environmental impact, while balancing the purchase decision with fiscal responsibilities.

Progress on Goals:

In order to provide accurate reporting in accordance with UNI's STARS benchmarking efforts, an assessment of purchasing patterns across campus was conducted. This process included items such as paper and computers, but also spilled over into food purchases for our dining centers and campus markets.

- ✓ *Computer Purchasing* – EPEAT® is the registry system for greener electronics. Products registered in EPEAT® must meet 23 required environmental performance criteria. They are then rated Gold, Silver or Bronze based on the percentage of 28 optional criteria. Over the last year at UNI, 92.2% of the computer purchases have gone toward machines registered as EPEAT® Silver or higher. Moreover, 90.7% of computer expenditures have been on EPEAT® Gold units.
- ✓ *Green Cleaning* – The University of Northern Iowa has entered into a joint purchasing agreement with the University of Iowa for Green Cleaning Products. Over the first six months of this contract an expenditure breakdown reflects 43% of cleaning products purchased as being Green Seal, EcoLogo, or EPA Compliant.
- ✓ *Office Paper* – All office paper purchased at the University of Northern Iowa is through a joint bid with the University of Iowa. During the last year all purchases made through this purchasing contract were a minimum 30% post consumer recycled content.
- ✓ *Food Purchasing* – During the past year 50% of all food expenditures of food served in UNI Dining facilities was locally purchased or produced.

Energy and Climate

Vision: Institutions shall commit to pursuing climate neutral operations through energy efficiency, conservation, on-site generation and strategic procurement of clean and renewable energy.

Progress on Goals:

Many departments at UNI have been leaders in helping the institution strive toward meeting energy and climate goals. Included in that list are the efforts of faculty and students within the College of Natural Sciences.

- ✓ During the past year, Industrial Technology faculty and students worked with UNI Facilities Services to design and install a hybrid power station on south campus. The 12 kilowatt station harnesses two complementary renewable energy sources, utilizing both solar and wind power. The project is not only estimated to save energy equivalent to 11 MWh annually, but it also will reduce nearly 16,000 pounds of CO₂ each year. Additionally this project has incorporated educational outcomes and community outreach by providing a hands-on remote laboratory application through a dynamic website and promotes Science Technology Engineering Mathematics (STEM) Education at UNI.

- ✓ Another project that has involved UNI faculty and students making a difference in Energy and Climate includes joint work between the Physics and Chemistry Departments. Through a grant from the Iowa Office of Energy Independence, these two departments are working toward creation of novel hydrogen storage materials for hydrogen fuel cell applications. Because of the success of this work, in April UNI student, Adam O'Shea, was selected to participate in the "Posters on the Hill" conference. This experience allowed him to meet with senators and representatives from across the country to discuss the potential impact of this research on developing future technologies related to alternative energy. This cutting edge work allows UNI to create new tools of today to address the problems of tomorrow.

Materials and Recycling

Vision: Regent institutions shall reduce the volume of materials and resources consumed, and reuse or recycle resources and materials whenever possible, with the long-term objective of contributing to the development of a waste-free society.

Over the last year, a number of highlights have occurred related to materials and recycling on the UNI campus. Significant progress in waste diversion has occurred through move out programs like Panther Pickup and the elimination of printed course catalogs starting with the 2010 academic year. However, probably the most impressive single program recently evolved within the UNI Department of Residence (DOR).

During the fall of 2009, student employees for the Recycling and Reuse Technology Transfer Center (RRTTC) partnered with numerous campus organizations to implement a pilot program in Rider Hall, the Rider Recycling Revolution. The premise of the project was to provide each individual dorm room with a recycling bin to make recycling more convenient. The recycling program was proven effective. In the first semester of the project, recycling in Rider Hall increased 210% from the previous semester's average. The RRTTC won the distinction of "Best School Recycling Program" in 2010 from the Iowa Recycling Association for this innovative project.

As a result of the success of the pilot program, the UNI DOR implemented a similar program across all of the halls on campus as well as in their dining facilities. The expanded program has had tremendous results. In total, 4,400 residents on campus now have easy access full service recycling. Department wide, recycling increased over 300% in residence halls in the last year. Taking into account the current weights measured from recycling materials in all 10 residence halls, the UNI DOR diverted more than 80,000 pounds of paper, cardboard, plastic, glass and tin from the landfill during the academic year. This equates to an average of nearly 20 pounds of recycling for every student in the residence halls.

Transportation

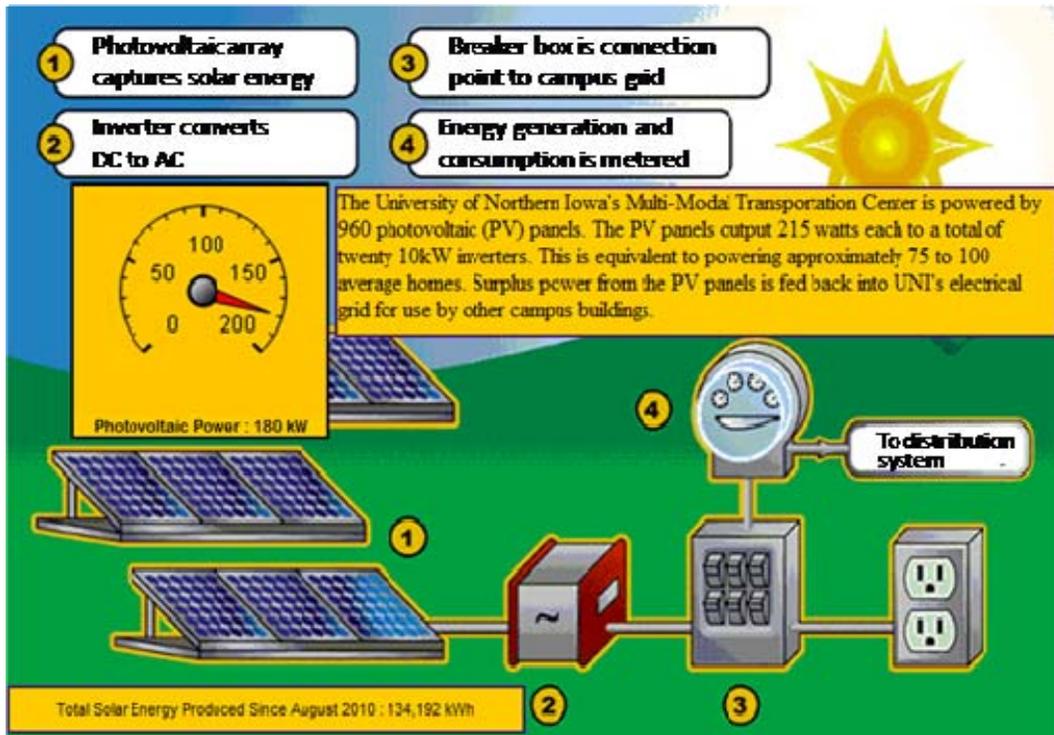
Vision: Regent institutions shall develop transportation strategies that increase fuel efficiency and reduce fuel use, air pollution and carbon dioxide emissions while providing opportunities for alternative transportation including bicycle and pedestrian infrastructure.

Progress on Goals:

On August 27, 2010, UNI dedicated the Multimodal Transportation Center (MTC). This center ties together several modes of transportation and is a collaboration between UNI, the City of Cedar Falls, the City of Waterloo and the Metropolitan Transit Authority. The facility is a stop for three separate public transit systems, provides easy access to the area bike trails, and supplies needed additional parking for the campus community and visitors. The MTC also supports UNI's ongoing commitment to sustainable practices by reducing vehicular traffic around campus.

As with many projects, the MTC addressed more than one set of Regents sustainability goals. In addition to the many benefits related to transportation, 960 crystalline photovoltaic panels produce 215 watts each to a total of twenty 10kW inverters. This is equivalent to powering approximately 75 to 100 average homes. The energy produced, working in conjunction with the building's geothermal heating system, supplies all the energy needed for the building, making it a net-zero building, one of Iowa's first. Surplus power from the PV panels is fed back into UNI's electrical grid for use by other campus buildings. As shown in Figure 1, within the facility, a real time meter showing how much energy is currently being produced and used, as well as the facilities total production to date is prominently displayed.

Figure 1.



Water and Landscape

Vision: Regent institutions shall pursue water saving and efficiency measures, including collection technologies and re-use mechanisms.

Progress on Goals:

- ✓ In the fall of 2010, the U.S. Environmental Protection Agency developed a pilot program within EPA's educational branch. Each EPA region was assigned a team of OnCampus EcoAmbassadors. Students from across the nation interviewed, but only 26 students were chosen for an assignment in the program. EPA Region 7, which includes Iowa, Missouri, Kansas and Nebraska, was represented by three students from the University of Northern Iowa. These students acted as ambassadors for all institutions of higher learning in the Midwest EPA Region.

As OnCampus EcoAmbassadors, the students partnered with UNI's Facilities Services to implement membership in EPA's voluntary Pesticide Environmental Stewardship Program (PESP) program. PESP promotes the adoption of innovative, alternative pest control practices such as Integrated Pest Management (IPM). Over the course of spring semester in 2011, the UNI EcoAmbassadors worked with UNI Facilities Services staff to document the current practices employed on campus and determine areas that could eliminate inefficiencies. These students then authored a comprehensive IPM plan for the UNI campus. This plan was not only a benefit to the UNI campus to make operations more transparent, but in April 2011 this plan also received a Bronze award from the EPA for outstanding IPM. The students involved in this project were recently given the opportunity to travel to Washington, D.C. to meet with EPA administration, including EPA Administrator, Lisa Jackson to highlight this extraordinary work.

- ✓ Additionally, the City of Cedar Falls and UNI have partnered on a venture resulting in a wetland demonstration area adjacent to campus. The project has environmental benefits and offers educational opportunities, while increasing the ever growing amount of native landscapes visible at UNI. Recently, UNI was awarded the 2011 Partnership Award at the Cedar Valley Business and Industry Appreciation Awards.

Sustainability in the Curriculum

Public Universities

Vision: Regent institutions will pursue a sustainable future through the curriculum by:

- Providing educational opportunities for students to facilitate their acquisition of the knowledge, skills, and collaborative work ethic necessary to engage effectively in public discourse and policy debate and in other hands-on problem-solving in matters relating to environmental, social, and economic sustainability;
- Providing educational programs that prepare students for sustainability-related careers (e.g. in wind power and other green industries, biobased energy and other biobased products, governmental organizations, international economic or policy organizations, non-governmental organizations, farmers, researchers, engineers, writers, or teachers);

- Providing opportunities for students to participate in sustainability-related research, the “greening” of campus infrastructure, civic engagement, and internships;
- Exposing students to ideas and issues related to a sustainable, balanced, and ethical future for the planet and its inhabitants, including (1) the dynamics of biological population growth and decline in the natural world, predator-prey models, overexploitation of natural resources, and energy balances; (2) how human behavior affects the natural world and the ability of earth to sustain life; and (3) the stochastic interplay of human and natural factors in determining the long-run population growth path for human and non-human species; and
- Helping students understand how to make informed rational decisions as consumers, workers, resource owners, and citizens electing government officials by taking into account the effects of human actions on human welfare in this and future generations.
- Helping students think in terms of economic, social, political, and environmental sustainability, as well as environmental health.

Progress on Goals:

Sustainability in Education and Research is one of the three overarching categories in STARS. In order to have a fully up to date report, a number of surveys were developed to determine the campus wide extent of sustainability in the academic experience of students. The surveys resulted in UNI being noted as a leader in the arena of sustainability in Education and Research on campus. Some of the highlights are listed below.

- ✓ From 2008-2011 the UNI course catalog listed 45 sustainability-focused and 149 sustainability-related courses out of the 2,667 total course offerings
- ✓ During the same period, 27 out of 34 academic departments offered at least one course with a sustainability theme
- ✓ 78% of UNI graduates experienced learning outcomes related to sustainability
- ✓ A number of academic programs offer sustainability immersive experiences
- ✓ UNI conducted a sustainability literacy assessment of undergraduate students in 2010
- ✓ Dr. Carl Bollwinkel, professor in UNI's Center for Energy and Environmental Education received the 2010 Aldo Leopold Environmental Education Award. This award was presented jointly by the Iowa Association of Naturalists and Iowa Conservation Education Council
- ✓ UNI was awarded the opportunity to host the 2011 World Championship of Intercollegiate Solar Boating
- ✓ Dr. William Stigliani, professor in UNI's Center for Energy and Environmental Education finished his term on the Iowa Climate Change Advisory Council
- ✓ UNI hosted the 22nd North American Prairie Conference
- ✓ Fifty faculty members at UNI conduct research related to sustainability
- ✓ During the past year, 17 out of 26 academic departments that conduct research have at least one faculty member working on sustainability related research

- ✓ Twenty-one academic departments give positive recognition to interdisciplinary research during the tenure and promotion process.

The Office of the Executive Vice President and Provost has supported the UNI Faculty Leadership in Sustainability Education Program comprised of a core group of 26 UNI tenured or tenure-track faculty. Because disciplines taught in UNI's four Colleges are all relevant to a holistic understanding of sustainability, all faculty were invited to apply. The program is guided by the highly successful Ponderosa/Piedmont model. This model, endorsed by AASHE, has helped more than 250 faculties across the U.S. to take steps toward curriculum innovation in their universities and colleges.

Sustainability in Economic Development/Research/Outreach:

Vision: To pursue a sustainable future through economic research development and outreach by:

- Becoming a world leader in research related to the strengths of the three public universities.
- Helping Iowa businesses understand challenges and opportunities of a carbon-limited world.
- Developing and improving alternative energy sources.
- Serving as models and consultants to local, state, regional, national, and international industries, governments, and communities in issues related to sustainability.
- Developing public policy and practices for sustainable agriculture, community education for a sustainable lifestyle, sustainable tourism, solutions to problems of solid waste, reduction of pollution in metal casting, bioremediation of hydrocarbon contaminated soils, understanding ground water and surface water contamination, use of embedded sensors and software for systems control, use of geographic information systems to assess water quality and ecological damage, environmental threats to public health, and multimedia to communicate findings of sustainability research to the public.

Progress on Goals:

Each of the last three years the University of Northern Iowa has hosted a public forum on sustainability on campus. The 2011 event, held prior to Earth Day, was used as a vehicle to communicate our progress toward a sustainable campus with the UNI and Cedar Valley community. Over 500 people attended the daylong festivities, including 150 participants in facilitated visioning discussions focused on five topics of interest to UNI students, faculty, and staff. The event also highlighted the outstanding work by groups and individuals on campus, including:

- ✓ Paul Meyermann, Assistant Director, Operations Planning – Stormwater and landscape management with dedication to fostering development of partnerships.
- ✓ Dr. Reg Pecen, Professor and EET Program Coordinator in Industrial Technology – Dedication to students and commitment to integrating concepts of sustainability within the classroom.
- ✓ UNI Department of Residence – Outstanding commitment to sustainability in everyday operations.
- ✓ Amy Buckendahl, Caitlin Rafferty and Paul Davis – Student interns for the U.S. Environmental Protection Agency on the UNI campus.

On Earth Day a team of UNI students won second place in the Sam's Club Environmental Sustainability Challenge held in Bentonville, Ark. The team, working with local Sam's Club management, helped a local Waterloo business become more environmentally sustainable by replacing paper towels with hand dryers, switching to 100-percent biodegradable to-go cups, and installing a commercial dishwasher.

As a result of this partnership the small business realizes savings each month in the form of 336 gallons of water, six tons of eliminated cardboard and reduced expenses of \$150. The UNI students applied business, economic and entrepreneurial concepts to this project and created a sustainable approach for a local business with tremendous success.

Finally, the Institute for Decision Making (IDM), a unit of the University of Northern Iowa's Business and Community Services Division recently worked with the City of Fairfield, Iowa along with city officials to develop a community-wide sustainability plan. The plan lays out three main goals for the community and the steps to achieve these goals. The three goals include:

- To create and maintain the sustainability culture.
- To create jobs, wealth and opportunities for investment, with sustainable investment.
- To achieve sustainable community design and public policy and infrastructure.

Nearly the entire community was involved in the development of the plan because of the use of the visioning and planning model implemented by IDM. The city mayor and 19 other community members from all walks of life made up the Fairfield Sustainability Commission. More than 40 local businesses and organizations vetted the plan and offered their assistance.

Communities across Iowa are taking notice of Fairfield's innovative sustainability plan, and some are even looking to develop similar strategies. Fairfield's sustainability plan is paving the way for the future and setting an example for communities throughout the nation.

Currently the UNI Institute for Decision Making is working with other groups across the state to help facilitate the strategic planning process for sustainable communities and organizations.