

University of Wisconsin Oshkosh

Campus Sustainability Plan

2014

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The UW Oshkosh Campus Sustainability Plan for 2014 and beyond was crafted by the Campus Sustainability Council and Office of Sustainability with the help and input of students, staff, faculty, and the administration.

Executive Summary

In 2002, the University of Wisconsin Oshkosh signed the Earth Charter, thereby pledging to pursue a course of sustainability. The Earth Charter asks signatories to advocate “respect and care for the community of life” by supporting efforts that protect “ecological integrity,” advance “social and economic justice,” and promote “democracy, nonviolence and peace.” For UW Oshkosh, this pledge means infusing sustainability in all that it does from academics to student affairs, research, service, outreach, facilities operations and management, and administration. Building on this pledge, UW Oshkosh signed the American College and University Presidents Climate Commitment (ACUPCC) in 2007, which obligates campuses to strive for climate neutrality by mid-century or sooner.¹ A year later, UWO released its first Campus Sustainability Plan, which catalyzed many efforts that have helped move campus along the sustainability path.

The Campus Sustainability Council has just completed an updated Campus Sustainability Plan that holds to the principles expressed in the university’s mission and commitments and will continue the progress of the past – e.g., the biodigesters, the University Studies Program, Fair Trade Campus designation, and national sustainability recognition. The update adopts an organization that places all UW Oshkosh functions into a “campus as a living, learning laboratory” framework with goals and objectives grouped by:

the university’s larger mission
negative impacts on people and the planet
the management of sustainability initiatives at UW Oshkosh.

Objectives and goals related to the “mission” involve academics, research, service, outreach, and student affairs. The “impacts” group considers goals and objectives that pertain to eliminating and/or minimizing our negative impacts on people, communities, and the environment and generating positive impacts (e.g., achieving climate neutrality, improving human health through better nutrition and by reducing water and air pollution). The “management of sustainability” group involves goals that will further institutionalize sustainability at UW Oshkosh (e.g., including sustainability in campus strategic planning and in job descriptions). An overarching objective is to engage and empower students by purposefully and strategically using the campus, off-campus sites, the curriculum, and co-curricular activities.

The updated Campus Sustainability Plan includes more than 170 specific goals. Responsibilities for implementing most of the goals fall under the domain of campus operational units (e.g., Facilities Management, Dining Services, and Academic Departments). Specific planning goals will undergo feasibility studies as appropriate before implementation. The plan is housed in sections on the Campus Sustainability website. The plan will be updated at least annually and will encourage and consider suggestions from the larger campus community. The Campus Sustainability Council soon

¹*Climate neutrality* means that the institution operates with a net of zero fossil greenhouse gas (GHG) emissions, which may be achieved by minimizing such emissions to the extent possible and by using carbon offsets and renewable energy credits to mitigate any remaining emissions.

will begin the process of moving the Campus Sustainability Plan into the strategic planning process as a Key Operational Plan that will both stand alone and cut across other Key Operational Plans in a way similar to Inclusive Excellence, thereby infusing sustainability into all university affairs.

Summary of Objectives and Goals

General objectives

Goals are tied to the following broad objectives as appropriate:

- Developing the “Campus as a living-learning laboratory”
- Engaging and empowering students and other university stakeholders to maximize their understanding of, and ability to act on the sustainability challenges of our time

Goals are organized according to the following priority areas:

- Advance the mission of UW Oshkosh – including academics, research, service, outreach, and student affairs – to more fully address the sustainability challenges
- Minimize the university’s negative impacts on people, their communities, and the planet (e.g., achieving climate neutrality, improving human health through better nutrition and by reducing water and air pollution)
- Institutionalize sustainability planning, leadership, and organization to ensure that the efforts of the sustainability community become integrated into decision-making on campus.

Priority goals relate to:

I. The academic mission of the university

- A. Develop a Sustainability Leadership Certificate Program for students, which will involve studies, mentoring, and internships
- B. Implement a “green dot” (or other indicator) certificate program in Sustainability Studies

II. Reducing and eliminating negative impacts especially related to human and planetary health and climate neutrality

- A. Adopt the Real Food Challenge, a national student-based program designed to improve the sustainability of campus dining services
- B. Design and build a student-run Greenhouse
- C. Divert 90% of organic waste to the biodigester
- D. Fund and adopt appropriate measures to convert fully to single stream recycling
- E. Develop a comprehensive campus transportation plan
- F. Improve bicycling culture and bicycle facilities on campus
- G. Require LEED certification for all new construction at gold or above
- H. Analyze monthly resource consumption data and use to track performance

III. Management of sustainability

- A. Begin to integrate sustainability into the university’s strategic planning process by introducing the plan as a Key Operational Plan that will both stand alone and be integrated into other Key Operational Plans similar to Inclusive Excellence
- B. Raise the profile of sustainability through programming that targets new students and staff
 1. Include sustainability in new job descriptions and new employee training

2. Incorporate sustainability into student orientation materials through Odyssey and Residence Life and develop an online “green living” guide

Sustainability Vision:

With a deep sense of responsibility, the University of Wisconsin Oshkosh is committed to progressively reducing its ecological footprint and working through its academic mission to fashion a durable world with resilient, prosperous, and just communities.

Summary: Since the Previous Campus Sustainability Plan

As a leader in sustainability for colleges and universities, the University of Wisconsin Oshkosh has made great strides in completing many of the recommendations made in the 2008-2012 Campus Sustainability Plan (CSP).

The campus’ commitment to reducing energy consumption is apparent through many installations such as solar thermal and photovoltaic panels, geothermal installations, and three anaerobic biodigesters that operate as combined heat and power facilities. All of these have contributed to reducing the use of fossil fuels for electricity and heating, all of which are down from levels in 2000.

Campus freshwater usage is down by 41% from 12 years ago, and total suspended solids in stormwater runoff is down by more than 40%, thereby meeting the goal set in 2008.

Other areas such as Transportation, Purchasing, Dining Services, and Solid Waste Management and Recycling, have improved over the past five years as part of the original Campus Sustainability Plan. It should be addressed in future Campus Sustainability Plans that individual plans (e.g., “Purchasing”) be a part of the CSP. In addition, reporting on sustainability in general from numerous areas of campus life should be improved to help solidify a campus culture focused on sustainability.

Some highlights from the past five years include pioneering the Zimride program in Wisconsin, which allows campus community members to easily carpool via an online program. Also, UW Oshkosh became the first designated Fair Trade campus in the nation, in addition to making measurable sustainable dining service choices such as “trayless” dining, which reduces water use and waste, and offering local and vegetarian food options. The campus has also participated in Recyclemania a national competition designed to promote the importance of recycling and waste minimization. In 2014, the campus attained its best Recyclemania numbers to date and finished first in Wisconsin in food waste diversion. Waste reduction has also been achieved through move-in day and move-out day diversion activities. In 2013, the campus diverted one ton of goods from the landfill to Goodwill during move-out.

The campus has recently undergone a major general education overhaul named the University Studies Program (USP). This new take on general education provides students with learning opportunities in three main areas: intercultural competency, civic engagement, and sustainability. Even before the introduction of the USP in fall 2013, the campus had made some notable

achievements in bringing sustainability into the curriculum. An example of this commitment is seen through the Winnebago Project, which was offered annually to help faculty introduce sustainability into courses that they already teach.

Students have also encountered sustainability throughout campus outside of the classroom through events such as Earth Charter Week in the fall and Earth Week in the spring. Sustainability can be seen on campus in other ways such as converting grass and annual plant beds to perennial plantings and prairie gardens. The installation of retention ponds, which mimic wetlands, have helped to mitigate environmental contamination associated with stormwater runoff.

UW Oshkosh has certainly proven itself to be a leader in upholding the values of sustainability among campuses around the nation. The numerous goals and recommendations set in 2008 that have been met show the campus' dedication to working towards a sustainable future. The 2013/2014 academic year marks the transition to a new Campus Sustainability Plan with a renewed campus commitment. UW Oshkosh will continue to take the steps necessary to improve its sustainability.

Administration: Managing Sustainability

The University of Wisconsin Oshkosh has made considerable progress toward building a sustainability infrastructure in the administration and organization of the university. One goal in the original Campus Sustainability Plan was to establish an organization capable of supporting campus sustainability initiatives as soon as feasible. Toward this goal, UWO formed a Campus Sustainability Council and hired a Director of Sustainability. The council meets regularly (bi-weekly), and the Campus Sustainability Director has been funded full-time since 2008. The new plan will build upon these accomplishments, both of which will continue to be cornerstones of UWO's new plan for organizational and administrative capacity development and governance. Two unmet recommendations from the first plan will be carried forward to the new plan: designation of sustainability responsibilities for administrators and establishing a sustainability endowment fund. Moving forward, the broad administrative objective in the new plan is to institutionalize sustainability across campus through a shared vision and strategic planning. Goals toward this end will be to integrate sustainability into UWO's strategic planning process, which includes Key Operational Plans and Master Planning. [Sustainability plan citations](#)

Administration Goals

Objective: To institutionalize sustainability through a shared vision and mission for true sustainability across campus.

Goals:

- Develop a shared vision of sustainability, that pervades institutional administration and decision making at all levels
- Identify and adopt best management practices for sustainability governance, including:
 - Open and transparent flow of information
 - Administration/decision makers/governance willing to wrestle with the hard questions and tradeoffs of sustainability and to justify decisions in terms of sustainability
 - Mechanisms to ensure that sustainability is considered in campus decision-making
 - Clarify roles of different university constituents in sustainability governance (Campus Sustainability Director, Vice Chancellors, Campus Sustainability Council, Oshkosh Student Association)
- Fulfill sustainability-related commitments made in the past (ACUPCC, Fair Trade, Earth Charter), and develop concrete plans to realize these commitments
- Promote the UW Oshkosh campus as a living laboratory by providing administrative oversight for the seamless interaction of operations, teaching, research, and outreach
- Engage with nationally recognized sustainability assessment mechanisms *such as* the AASHE STARS program or the Sustainable Endowment Institute
- Develop a permanent office for the Campus Sustainability Initiative, including:
 - A physical space sufficient to meet present and projected needs
 - Staff sufficient to meet present and projected needs

- Administrative support sufficient to meet present and projected needs.
- Revise and update CSC bylaws to:
 - Reflect shared vision of sustainability
 - Broaden membership (athletics, faculty development, Foundation, IMC)
 - Clarify role of the CSC
- Institutionalize roles for sustainability governance by having CSC bylaws approved by administration and all 4 governance groups (Faculty, Academic Staff, Classified Staff, Oshkosh Student Association)
- Develop, enhance, and institutionalize opportunities to involve students in the governance and administration of university sustainability initiatives
- Designate sustainability responsibilities for Administrators to institutionalize the university's commitment to sustainability. (from 2008 Plan, Organization)
- Update the Sustainability Director's job description to reflect responsibilities consistent with the new Campus Sustainability Plan.
- Establish a sustainability endowment fund.
- Establish policies for sustainable investing consistent with the strategic plan and mission of the institution.

Co-Curricular and Residence Life

Programs for students outside of the classroom can be equally as important for growth and development as knowledge learned within the formal curricular/classroom structure. While Reeve Union and student organizations offer numerous avenues for students to explore a range of interests and gain experience, co-curricular programming specifically focused on sustainability has not been well-developed. Although many existing programs and student organizations are related to sustainability, not all students have these experiences and much work remains in this area. Working to develop and highlight learning about sustainability through such programs will serve the university's mission and further institutionalize sustainability at UW Oshkosh.

Since the Previous Plan

Awareness of sustainability across the campus community has not been strongly demonstrated. Programs associated with extra-curricular programming that have been implemented include the Eco-Reps, the Sustainability Office internship program, waste reduction events during move-in and move-out, and Recyclemania, a national waste management competition. Recommendations from the previous plan that were not implemented include Community Advisory sustainability program requirements, sustainability training for employees, and sustainability as an integral part of the first year experience and orientation programs.

The campus has been offering sustainability events every year for the past five years associated with the Earth Charter in fall and Earth Week in April. These events have been fairly successful, although adequate financial and personnel support has not been established. The campus has hosted state conferences related to sustainability, but other events such as athletics have not incorporated sustainability and a campus wide calendar of sustainability events, such as on a webpage, has not been implemented.

The Campus Sustainability Office has been integral in providing sustainability internships to students over the past five years. Other internship opportunities related to sustainability have included Fair Trade and Community Engagement interns. Recommendations that have not been completed are the development of service-learning opportunities by departments and student organizations. The use of off-campus university property has not been utilized for service learning and internship opportunities.

UW-Oshkosh has certainly raised itself as a leader in sustainability among campuses across the nation. Still, the campus mission for sustainability outreach could be improved. While the community at large has been invited to campus sustainability events, etc., the outreach to the community specifically has not been strong. Outreach efforts that were not completed from this plan include the installation of kiosks and campus signs highlighting campus sustainability efforts to the community, as well as the explicit use of sustainability efforts in general campus promotion materials.

Co-Curricular and Residence Life Goals

Objective: To increase student understanding of sustainability across campus and connect sustainability knowledge to experiences outside of the classroom.

Goals:

- Athletics
 - Use major events (sports, graduation) to highlight sustainable practices. This includes increased recycling bins and sustainably-sourced materials for all aspects of events
- Events
 - Use major events (sports, graduation) to highlight sustainable practices. This includes increased recycling bins and sustainably-sourced materials for all aspects of events
- Outreach
 - Develop a regularly updated Sustainability Tour of campus that highlights our sustainability successes as a campus
 - Have a campus-wide Sustainability Calendar that is easily accessible on and off campus. (from 2008 Plan, Events)
 - Update the Sustainability website to become a "go-to" place to the campus community and the community-at-large can access all information related to campus sustainability.
- Residence life
 - Partner with facilities to develop waste management strategic programming that diverts waste generated during move-in/move-out days
 - Develop materials and programs so that sustainability is a key component of first year experience and orientation.
 - Further develop programming with CAs in Residence Life to enhance Green Rooms and Green Lifestyles programs begun by Eco-Reps and Sustainability Advisers to emphasize energy and water conservation, alternative transportation, reduced consumption, and better waste management.
- Sustainability Leadership Program
 - Identify study abroad experiences related to sustainability and ensure learning outcomes reflect measurable gains in sustainability literacy
 - Develop new study abroad courses focused on sustainability.

Construction and Major Renovation

Construction and renovation on any college campus are directly related to sustainability in numerous ways. Before construction even begins, sustainability should be considered in the planning of building. During construction additional materials are being used and waste is created. The university is responsible for this waste and for the increase in energy use for construction.

There can be many challenges to keeping building construction and renovation sustainable; containing runoff and air pollution just to name a few. It is in the best interest of the campus to face these challenges before the groundbreaking.

A very important component of construction and renovation is life cycle analysis (LCA). LCA is important because it assesses the life a material, from creation to the end of its life. LCA also uses some externalities to assess materials (e.g. environmental costs). Materials that are sustainably sourced or created, and last a long time rate high in life cycle analysis. One example of a highly-rated building material is bamboo. Bamboo is excellent for construction as it is very strong (higher tensile strength than steel) and also stores more carbon than many other plants on Earth.

In contrast, a material that would not rate as high in life-cycle analysis is asphalt, which consumes numerous chemicals and resources, especially fossil fuels, in its creation. Asphalt also does not maintain its integrity over time, compared to other materials used for similar applications. One way to tackle these challenges is to embrace sustainability guidelines and rating systems. The Leadership in Energy and Environmental Design (LEED)

Green Building Rating System, established in 1994, provides a framework of design standards for assessing building performance through a variety of environmental indicators. Constructing new buildings and renovating buildings to LEED specifications will ensure the sustainability of the building over its lifetime.

LEED Details

The LEED rating system addresses six major areas:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation and Design Process

LEED recognizes achievements and promotes expertise in green building design and construction through a comprehensive system offering project certification, professional accreditation, training and practical resources.

LEED certification of construction projects is based upon a scoring system with a set of required “Prerequisites “ and a variety of “Credits” in the six major categories listed above. Buildings can qualify for four levels of certification:

- Certified: 40 to 50% of non-innovation points
- Silver: 50-60%
- Gold: 60-80%
- Platinum: over 80%

LEED certification is obtained after submitting an application documenting compliance with the requirements of the rating system. (Click [here](#) for detailed UWO green building descriptions)

Since the Previous Plan

The goal of achieving LEED Silver on all new building construction as well as building renovations has been met. All construction projects completed after 2007 have been given a LEED rating and have achieved a “Silver” status or higher, including the newest academic building Sage Hall, which has achieved a Gold ranking. Monitoring other rating systems has not been conducted.

Construction and Major Renovation Goals

Objective: Design, construct and renovate buildings to a rigorous, innovative sustainability standard seeking net-zero buildings.

Goals:

- Continue to require Leadership in Energy and Environmental Design (LEED) certification for all new construction with the goal to meet or exceed criteria for Gold Certification
- Explore the potential to pursue a LEED Platinum and/or a net-zero energy building as opportunities arise with sufficient financing available
- Establish specific targets for credits within LEED categories that will result in high performance buildings
- Submit one pilot building for LEED Existing Building certification by 2014 to meet or exceed criteria for Gold Certification
- Require LEED Existing Building certification for 20% of all existing facilities by 2020
- Large renovation projects should at minimum comply with LEED Commercial Interiors or New Construction criteria at the Platinum certification level
- Employ life cycle analysis (LCA) and full-cost accounting to evaluate all human and environmental costs and benefits (especially for negative externalities) over the entire life of each building project
- Monitor the development of other sustainability and energy efficiency related rating systems to include net-zero energy, Passive House. Adopt best practices regarding sustainable building design and construction as they develop
- Consider hosting workshops on green and alternative homes and living spaces to help pass on best practices to student body and the wider community

Curriculum and Research

Introduction to Academics (Curriculum and Research)

“Sustainability implies that the critical activities of a higher education institution are (at a minimum) ecologically sound, socially just, and economically viable, and that they will continue to be so for future generations. *A truly sustainable college or university would emphasize these concepts in its curriculum and research, preparing students to contribute as working citizens to an environmentally sound and socially just society.* The institution would function as a sustainable community, embodying responsible consumption of food and energy, treating its diverse members with respect, and supporting these values in the surrounding community.” – Association of University Leaders for a Sustainable Future (www.ulsf.org)

The teaching and learning of students (curriculum) and the investigation and generation of new knowledge by faculty (research) are the heart of higher education, and it is in this academic arena that universities can potentially have the greatest impact on sustainability.

Curriculum

One of our primary responsibilities as an institution of higher education is to educate our students, the next generation of leaders and citizens, on the meaning and potential applications of sustainability. We can and should give them the perspectives and skills they need to engage responsibly with the urgent sustainability challenges facing human societies in the 21st century. Furthermore, the breadth and complexity of sustainability issues makes this concept highly relevant to a liberal arts education (e.g., Rhodes 2006, Sherman 2008, Wiessman 2012). Sustainability requires and enhances the skills, knowledge, and abilities essential to a liberal arts education, including critical thinking, deep knowledge and broad perspective, interdisciplinarity and the ability to synthesize information, and a sense of responsibility and citizenship. In this way sustainability has the potential to “powerfully validate the liberal arts” as it makes liberal arts skills a requirement for success in the modern workplace and highlights their values to employers (Weissman 2012). Along these same lines, sustainability brings a distinct immediacy and relevance to students’ educations by situating their learning in real and vital 21st century challenges.

Finally, sustainability has the potential to transform not only what we teach, but how we teach (Sherman 2008). According to Weissmann (2012), “Virtually every [education for sustainability] agenda stresses the need to connect the classroom with local, regional, and global communities with an emphasis on place-based experiential learning.” The clear links between sustainability and real-world problems encourages high-impact pedagogical practices such as problem-based learning, community and service learning, applied projects, and research. This in turn encourages us to transform our thinking about learning at our institutions.

If sustainability requires experiential learning, what better place for students to practice than their university? Cortese (2001, 2003) promotes a model of the sustainable university in which teaching, research, community outreach, and operations are understood as deeply intertwined, forming “a linked and interdependent web of the students' learning experience.” This view of the university in which all aspects of the institution are seen as relevant to student learning, combined with a focus on experiential learning, leads us to the goal of the university as a *living lab*: “a given place where problem-based teaching, research, and applied work combine to develop actionable solutions that make that place more sustainable.” (Portland State University)

Since the Previous Plan

The overall goal of the last Campus Sustainability Plan was to link the university’s formal teaching and learning goals to sustainability, in order to ensure that students have diverse and extensive opportunities to engage with sustainability, and, ideally, to ensure that every student encounters sustainability while at UW Oshkosh. UW Oshkosh has made great strides in this area. In 2008, sustainability was made one of the Essential Learning Outcomes for students, clearly making sustainability a core priority for student learning at UW Oshkosh.

Through extensive pedagogical support, professional development, and community building (notably the Winnebago Project Faculty College, run from 2008-2011), we coached over 30 faculty on how to bring sustainability into their teaching, resulting in a number of disciplinary courses on sustainability and broad support for the general idea of bringing sustainability into the curriculum.

Pedagogical tools were also developed to support this (for example, a sustainability rubric and an online repository of teaching information). Perhaps most importantly, sustainability was incorporated as one of the core concepts on which our new general education program, the University Studies Program (USP), is built. As of Fall 2013 all students must take at least one course that explores the Sustainability Signature Question (“How do people understand and create a more sustainable world?”), ensuring that all students engage with sustainability while at UW Oshkosh. This also required extensive professional development and training of faculty and instructional staff on how to bring sustainability into the classroom. UW Oshkosh is among only a handful of universities in the country that have made this kind of curricular commitment to sustainability.

Academic programs focused on sustainability have also been developed, including the College of Business Minor in Sustainable Management and an online Masters in Sustainable Management that is run collaboratively by several UW System institutions. Finally, a University Leadership Fellow for Sustainability was appointed in late 2010. This half-time administrative position is filled by a faculty member and is focused on advancing the academic component of sustainability at UW Oshkosh. The efforts and actions facilitated by having a faculty member devoting half their time to this work was crucial to advancing sustainability in the curriculum at UW Oshkosh in the past several years, in particular sustainability in the USP.

Research

Faculty research has the potential to produce innovative solutions that can help address the many sustainability challenges we face. In addition, if collaborative methods are prioritized such research can also build strong connections between disciplines and between campus and community.

Sustainability has become a legitimate academic field unique in its ability to generate transformative results that can have a real impact on human societies, but it remains elusive to researchers due in part to the complexity of the issues it addresses, its trans-disciplinary nature, and youthfulness as a scholarly field. William Clark, writing in the *Proceedings of the National Academy of Sciences*, described sustainability science as an applied trans-disciplinary field of investigation. He stated: “Like ‘agricultural science’ and ‘health science,’ sustainability science is a field defined by the problems it addresses rather than by the disciplines it employs” (Clark 2007, p. 1737).

Many faculty engage in research that has strong links to sustainability, but are only trained to pursue research opportunities in their primary discipline. Although they may be interested in transdisciplinary approaches in general and sustainability in particular, they lack the training and support to begin such projects. Much need exists to build the research capacity of faculty at UW Oshkosh to engage with sustainability. [Sustainability plan citations](#)

Curriculum Goals

Objective: To continue supporting our successes in academics through student leadership and sustainability-focused curriculum that transcends departments and classroom walls.

Goals:

Support and build upon our successes and strengths

- Support and better integrate existing programs/efforts: Environmental Studies major/minor, College of Business Sustainable Management minor, Renewable Energy Institute, biodigester projects
- Continue to build and support faculty and instructional staff expertise/community around teaching sustainability, including in the USP
 - Continue Winnebago Project for faculty/instructor development, perhaps targeted versions for different units/groups (e.g. Nursing, Education, Biology, etc.), or targeted towards specific sustainability issues (e.g., climate change or Fair Trade)
 - Diversify options for developing expertise (e.g., book clubs? Short sessions offered throughout semester? CETL Scholars projects?)
 - Invest in a sustainability resource room/gathering center- a “space” on campus where those interested in the teaching of sustainability can gather and where we can house resources related to the teaching of sustainability
 - Continue to support the Leadership Fellow for Sustainability position in some form, even if the number of course releases (currently 3 per year) is cut down to allow for greater flexibility for departments and cost savings for the administration

Renew our commitment to sustainability across the curriculum, to ensure that students continue learning about sustainability beyond the USP

- Implement a “green dot” or other indicator system and/or a Sustainability Certificate that students can earn after completing a certain number/combo of courses. This will incentivize students taking more sustainability courses than required, even if they are not ES majors/minors.
- Target Explore instructors to get them to make sustainability a major part of their courses, so all students encounter sustainability beyond their Quest courses
- Reach out to units that have not yet had broad involvement (e.g., College of Nursing and College of Health and Human Services)
 - Assess barriers to involvement
 - Develop targeted faculty development and programming options that fit needs
 - Work on community building: for example, use low-stakes co-curricular events (e.g., Earth Week) to attract and begin involvement
- Develop associated Sustainability Leadership Program for students that includes:
 - Common academic component
 - Leadership training
 - Immersion experience
 - Community-based internships
 - Outcome: certificate or minor (Sustainability Leadership)

Develop and implement an assessment plan for student sustainability literacy

- Revisit current Sustainability Rubric and determine if this is an effective tool
- Determine how we will assess sustainability literacy, and what specifically we will be assessing (for example, will we want to assess the effectiveness of different measures such as USP, or just sustainability literacy generally?)
- Determine timeframe for implementation
 - Prioritize implementation before we have gone through one cycle of the new USP program, and after

Develop campus as a “Living Lab”: “A given place where problem-based teaching, research, and applied work combine to develop actionable solutions that make that place more sustainable. This requires a joint commitment from students, faculty, staff, and local residents to design, implement, adapt, and teach new approaches that address issues of equity, economy, and ecology.” (Portland State University’s Living Lab program)

- Incorporate and link existing efforts that could support this effort or fall under this umbrella (e.g., ERIC lab, biodigesters, Renewable Energy Institute, new Sustainable Technology Program and Viessmann professorship, USP)
- Determine resources and institutional support needed to achieve (e.g., personnel needs, faculty and staff development, community partnerships)
- Prioritize development of a centrally located campus garden as a learning tool, perhaps run with the assistance of a community partner (Growing Oshkosh)
- Develop associated Sustainability Leadership Program for students that includes:
 - Common academic component
 - Leadership training

- Immersion experience
- Community-based internships
- Outcome: certificate or minor (Sustainability Leadership)

Research Goals

Objective: Support faculty development focused on teaching sustainability and conducting sustainability-focused research.

Goals: Legitimize sustainability research and build faculty interest, capacity, and participation

- Hold workshops to encourage:
 - participatory research (include stakeholders)
 - trans-disciplinary research
 - knowledge-to-action oriented research
- Begin regular sustainability seminar series (bringing in outside speakers) focused on cutting edge research in sustainability
- Provide incentives for faculty to engage in sustainability research
 - Work with Faculty Development to provide special funds/incentives for faculty submitting proposals for sustainability related research. This may be modeled after the External Grants Expansion Program, where faculty get seed money to help them develop proposals that will be submitted to external funding organizations (e.g., National Science Foundation)
- Develop collaborative faculty-student research programs focused on sustainability
- Work with new initiatives (e.g., Renewable Energy Institute, Veissmann partnership) to provide funding or other support for sustainability research by our faculty
- Apply for NSF funding or other external grants to support institutional sustainability research

Energy

Energy is one of the most contentious issues in the world today. It touches nearly every aspect of our lives and is of critical concern for the economy and realizing modern living standards. Yet our reliance on fossil fuels as the primary energy source that drives our society is problematic. Fossil fuel resources are finite and the conventional sources are past or near the peak of their production curves (Kerr 2009), which portends escalating prices, conflicts over access and control, and the environmentally risky exploration of unconventional resources. Unconventional fossil energy resources, while abundant in the context of the “in-place” resources, yield far less energy to society than conventional resources.

Moreover, the combustion of fossil fuels already is implicated in major environmental problems including pollution, land degradation, biodiversity loss, and global warming (Rockström *et al.* 2009). With a significant percentage of world oil reserves in unstable countries, energy policies in the U.S. and other major fossil fuel importing countries are being tied increasingly to matters of national security.

Under this backdrop and amid recent disasters such as the Deepwater Horizon *oil spill* in the Gulf of Mexico in 2010, renewable energy resources are being promoted as alternatives to fossil fuels that must be developed for societies to achieve sustainably. The State of Wisconsin is well positioned to expand the use of its biomass, wind, solar, and other renewable energy resources.

Yet optimism surrounds the possibilities of acquiring natural gas through hydraulic fracturing (fracking), but the verdict on the long-term viability is still out on this technology for three basic reasons. Although natural gas burns much cleaner than coal and oil, and produces about half the CO₂ emissions at the stack compared to coal, it has two properties that give us cause for concern: first, it has a tendency to leak and escape into the atmosphere unburned as “fugitive emissions.”^[1] This quality can be controlled, but tends to occur at all phases of the life cycle from extraction to distribution and storage right up to the point of combustion.

Second, molecule for molecule CH₄ has a much greater global warming potential (GWP) than CO₂. The number used to describe the difference between the two often is 25x, which is the number for a 100-year timeframe. The difference over 20 years, however, is more than 100x.^[2] Because climate change looms so very large, some authorities argue that the shorter time period should be used. Either way, because the global warming benefits of methane over coal ignore fugitive emissions, those benefits decrease with increasing amounts of fugitive emissions.

Moreover, because the global warming potential of natural gas is much greater than CO₂, a relatively small percentage of leakage can negate all benefits at the stack. Recent studies have shown that leaks can be found to release around 9% of gas along all aspects of extraction, transportation, and burning.

Additionally, fracking's other environmental impacts including freshwater contamination, freshwater depletion, and anthropogenic earthquakes should be factored into the accounting as negative externalities. Although campuses are not required to include such costs, it is not unreasonable to consider them and to make plans with them in mind.

Energy Efficiency

It has been said the cheapest watts or therms are the ones you don't use. Although obvious, the importance of the statement is that investments in efficiencies typically pay for themselves in relatively shorter time periods than investments in renewable energy installations such as wind and solar.

We waste 69% of the electricity that we generate with fossil fuels through transmission losses and waste heat at power plants. In the transportation sector, we waste 75% of the potential work capacity of the fossil fuels to transport people.

Since the Previous Plan

The campus electricity consumption is down by 5.75% from 2005. Campus energy audit data was reviewed resulting in the installment of classroom light sensors, consolidating building usage, and replacing incandescent bulbs with LED bulbs. These recommendations paired with the installation of green roofing, has reduced campus energy consumption. While many of the appliances purchased for the campus are Energy Star-rated, this is not an absolute. Other on-going efforts yet to be completed include permanently reducing light levels in hallways by 20%, conversion of pneumatic control systems to direct digital control, and the conversion of inefficient HVAC systems. Establishment of connected plug load guidelines and installation of a Thermal Ice Storage Facility have not been performed. Energy usage feedback and education to campus users was also not reported.

Campus use of fossil fuels for heating is down by 8% from levels in 2000, which does not meet the original goal of a 50% reduction from 2000 to 2012. After reviewing campus energy audit data, some improvements were made including replacement of old windows with high-efficiency double-pane windows and building consolidation during low-usage periods. Assessments were made in using an alternative biomass fuel source at the Campus Heating Plant. Installation of solar hot water heaters and secondary heating and cooling systems (not connected to the central unit) also contributed to the campus's reduction of energy consumed for heating. Feedback on energy usage data and education to the campus was not reported.

With the exception of a wind turbine installation, the campus has made great progress in pursuing the ambitious goal of becoming 100% independent of fossil fuel usage for electricity, heating and cooling. Energy analysis of the campus heating plant has been conducted as well as evaluation of the potential for pressure reducing steam turbines for electrical generation. Installation of a biomass electricity generation facility (the biodigester) has led to reduced energy consumption as well as

installation of photovoltaic panels. The feasibility of installing biodiesel peak load shaving generators has also been studied. [Sustainability plan citations](#)

Energy Efficiency Goals

Objective: Reduce growth adjusted energy consumption by 20 % from the 2012 base consumption level by 2019.

Goals:

Collect and disseminate data and information on campus energy use to enable better assessment and increase awareness in the campus community.

- Install Johnson Controls Inc., Panoptic utility metering and management system to collect real time data. Sub-meter energy intensive functions within facilities as budget permits. Provide information on real time, on-site, renewable energy generation. Correct identified deficiencies in system operations.
- Perform advanced analysis of monthly consumption information for all utilities: electricity, water, natural gas, steam, coal, gasoline, and diesel. Organize data on consumption by areas such as academic, general and residences. Rank facilities by energy consumption per square foot.
- Install recently completed energy dashboard in the Reeve Memorial Union. Install electronic energy displays in additional buildings, especially residence halls.
- Identify a benchmarking tool to compare building energy use on campus with similar buildings on other campuses (such as U.S. EPA Energy Star rating system) and establish benchmarking goals
- Publish (in print and online) a quarterly and annual energy consumption report with comprehensive and summary data and ensure that the data are available for annual reporting requirements including for the American College and University Presidents Climate Commitment (ACUPCC).

Reduce energy consumption by establishing policies and educating the community about standards that encourage behavior change.

- Update and disseminate campus-wide temperature, humidity, indoor air quality and lighting standards.
- Create educational materials explaining policies and conservation programs specifically targeted to students, faculty and staff.
- Develop and disseminate appropriate guidelines for the use of energy consuming office and personal equipment and appliances such as refrigerators, coffee pots and space heaters.
- Utilize existing policy and procedure documents such as the “Guide to the General Operating Procedures” and “Green Office Certification” to help communicate with the Community.
- Re-tool the Green Office program to optimize its effectiveness.
- Continue to refine the Sustainability Advisors program (previously the Eco-Reps) toward behavior change for energy conservation. Produce educational information on how savings

reductions not only benefit campus directly but also the degree to which energy savings, especially of electricity have a “multiplier effect” due to the huge wastes in the upstream of electricity production, which is estimated to about 69% in the U.S.

Reduce energy consumption through the performance of renovations, upgrades and retrofits to existing building inventory.

- Perform lighting retrofits of existing buildings. Particular attention should be focused on interior LED/fluorescent tube replacement in drop ceiling systems. Perform retrofits when fixture costs drop making economic sense while also meeting U.W. System energy payback requirements. Also look at de-lamping opportunities and reduce lighting levels to minimum IES standards. Install task lighting.
- Perform HVAC retrofits as necessary to meet basic efficiency standards. Emphasis should be given to the installation of variable air volume systems with direct digital controls and demand control ventilation. Replace old, inefficient pumps and motors. Install variable frequency drives where appropriate.
- Examine the laboratory fume hood inventory for possible energy savings. Evaluate the need for each hood and consider the elimination of all non-essential hoods. Evaluate the need for ducted fume hoods in teaching laboratories and consider the replacement with ductless fume hoods. Upgrade all ducted fume hoods with the latest variable air volume technologies.
- Examine IT mainframe computer facility for energy saving HVAC retrofit potential. Upgrade cooling systems to meet current cooling efficiency standards.

Coordinate efforts to reduce peak electrical demand energy use.

- Meet with representatives of the local electrical utility (WPS) to determine feasibility of initiating demand control strategies during periods of high electrical demand. Proceed with demand control strategies if feasible.
- Explore opportunities for technological solutions such as thermal storage and on-site electrical generation with fuel cells.

Encourage energy conservation practices with incentives.

- Establish a campus conservation award program.
- Develop a method to assign the campus energy budget at the college, department or building level to shift a portion of the responsibility for conservation to building users.
- Reward departments or units for conservation efforts through energy savings.

Maximize building operational energy efficiency

- Continue to actively manage the heating/cooling schedules for campus facilities utilizing the Johnson Controls Metasys control system.
- Continue to emphasize the scheduling of classes to the fewest buildings at any given time. Pay particular attention to weekends and summer class scheduling.
- Continue to utilize the Johnson Controls FPI continuous commissioning software to identify and correct deficiencies in HVAC equipment operation.
- Consider modifying chiller/re-heat requirements in summer to reduce overall energy consumption.

Energy Choices and Climate Change Goals

Objective: Reduce reliance on fossil CO₂ emitting energy sources with renewable energy.

Goals: Reduce the fossil CO₂ emissions from the campus heating plant 30%, by 2019.

- In 2020, the heating plant is scheduled for a major renovation and upgrade. Investigate the potential for including a biomass boiler to the portfolio of equipment that will provide heat to the campus. Also consider the possibility of incorporating a co-generation capability to the upgraded facility.
- Consider the implementation of geo-thermal heating and cooling to all future new construction and major renovation projects. Particular attention should be given to the installation of innovative hybrid geo-thermal systems that accommodate partial loads of facilities.
- Continue to provide annual maintenance to repair steam traps and damaged steam line insulation.
- Pursue all other opportunities to make the heating plant more energy efficient.
- Investigate the possibility of building a second biodigester to produce methane that could be added to the fuel mix of the heating plant.
- Incorporate Passive House Standards for passive solar design into future designs to the extent possible, especially with regards to insulation standards.

Reduce the CO₂ emissions/energy consumption from the campus central chiller plant.

- Consider the installation of thermal ice storage technology, either at the central plant or at individual building sites.
- Continue to provide annual maintenance to ensure the highest level of operation efficiency of equipment.
- Consider the installation of absorption chillers as appropriate.
- Consider the modification of summer work/teaching schedules to start and end earlier in the day so as to avoid high cooling loads in late afternoon.

Increase on-site renewable energy based production to meet 40% of campus energy demand by 2020.

- Monitor and pursue all federal, state, local and campus incentives/grants for renewable energy opportunities.
- Identify facilities suitable for roof mounted, fixed, solar photovoltaic installations.
- Identify parking lots and other sites suitable for pole mounted, solar photovoltaic, tracking systems.
- Identify sites suitable for small wind turbine installations.
- Identify facilities suitable for the installation of fuel cell technology.
- Install systems as funds become available.
- Identify facilities suitable for the installation of solar thermal technology.

Increase the purchase of off-site renewable energy.

- Increase the purchase of off-site renewable energy (currently 23%) to 35% by 2019.

- Explore the further potential for off-site development of large scale renewable energy generation through public-private partnerships such as is currently being pursued with bio-digester development.
- Consider such installations for the production of gas for use in the heating plant.

Environmental Health & Safety

With more than 13,000 students, faculty and staff at UW Oshkosh, not to mention numerous visitors and community members that utilize the campus in some way; maintaining a healthy environment can seem difficult. The health of the campus community is extremely important at UW Oshkosh, and human health is directly related to the health of the environment. Broadly speaking, human health and environmental health are related in numerous ways; keeping the air and watershed free from pollutants is extremely important not only for human health, but for reducing our impacts on the the environment.

Human health is also impacted by our exposure to chemicals and cleaning products, as well as other potentially-hazardous substances. The university takes a serious stand on the use and disposal of hazardous materials to ensure proper handling and safety when working with these kinds of materials.

Another important aspect of this is what the general population may think of when someone mentions the word "health". The Student Health Center offers a wide variety of services to ensure that students are healthy and informed about staying healthy. For employees, good health is also encouraged, and the university emphasizes the importance of healthy communities through healthy habits and exercise. Some programs are offered to faculty and staff to keep those working at UW Oshkosh, happy and healthy.

Furthermore, safety is also primary concern across campus. A dedicated team addresses risk assessment and safety on campus and deals with highlighted issues. The university police work hard on day-to-day issues to ensure that the campus remains a safe place to work, learn, and live. It is through great communication that health and safety can be achieved for everyone at UW-Oshkosh and working towards this goal will lead to promoting a healthier community and a healthier City of Oshkosh. Sustainability plan citations

Environmental Health and Safety Goals

Objective: To ensure that practices regarding campus health and safety are compliant with the best and most recent standards.

Goals:

- Ensure that training for hazardous waste and biohazard waste is performed regularly and properly
- Develop a better inventory of chemicals across campus (use "the cloud" system).
- Assess and address adequate sharps containers in bathrooms/sporting events
- Promote Health/Risk assessments for all employees

- Develop a better reporting process for accidents and hazards (potentially using some kind of app or social media). Ensure better follow-up on accident reporting and prevention. (Risk Management Team collaboration)
- Partner with Ignite, a student organization, to promote healthy choices and educate the campus about tobacco use.
- Look into the use of ductless fume hoods and the appropriateness of their implementation
- Increase the number of students with health insurance (estimated 30-35% uninsured)
- Promote the Family Planning Waiver - (for females: women's health needs, reducing unplanned pregnancies, for males: STD testing)
- Assess and address the UW-Oshkosh shooting range in the basement of Polk (Pb ammunition/problems associated with cleanup and disposal)
- Partner with the City of Oshkosh to establish an on-campus "Drug Drop" for the campus community to properly dispose of medications, drugs, etc.
- Increase awareness of counseling and mental health advocacy on campus
- Increase the number of flu shots given
- Increase students awareness and utilization of the "health advocates" on campus

Food Systems

Stating that food is critical to life is obvious, but underscoring the importance of food to quality lives and to sustainability is essential, especially on a college campus where learning takes place in all settings both in and out of the classroom. Food, of course, provides nourishment, but it is much more than that when talking about sustainability. It touches all facets of the complex Earth system and occupies a unique place in our lives as a cultural symbol.

Food on campuses including UWO, like food in society in general is highly industrialized, unhealthy in part, and derived in a system that is mostly unsustainable with large inputs of fossil fuels and connections to land degradation and pollution, among other maladies.² Figure 2 depicts the heavy hand that fossil fuels have in food in the United States. For every food calorie we consume, 10 calories of fossil fuel based energy is also consumed in the production, distribution and disposal of that food.

Since the Previous Plan

Through its declaration as a Fair Trade campus and other Dining Services decisions, UW Oshkosh has made great strides in reducing its environmental impact and has demonstrated a commitment to social responsibility. Successes include implementing meatless options at all food locations in Blackhawk Commons throughout the week. Many of the foods served on campus are declared to be of local origin -- from Wisconsin and neighboring states. With the opening of the university's dry anaerobic biodigester on the west side of campus, Dining Services now diverts most of its organic waste from landfills. The digester produces biogas for electricity generation and thermal heat. At present the digester generates approximately 8% of UWO's electricity needs. The digestate is turned into compost.

Blackhawk Commons also features cage free whole eggs, local milk, organic cheese and coffee, and Fair Trade coffee. Eliminating food trays from dining reduced food waste by 17 percent. Energy Star rated electrical equipment has reduced energy use by 20 percent and a trash compactor reduces the frequency of waste pick up, thereby reducing embodied energy and tipping fees in downstream operations. The 24 rooftop solar thermal panels produce more than 1,800 therms to heat water for the kitchen. Reeve Union vendors sell Fair Trade coffee and chocolate in addition to handcrafts and jewelry.

The current food service provider, Sodexo, is an important partner in developing sustainable food systems on campus. Its recent announcement that it has partnered with the "Real Food Challenge" to advance sustainable food systems on campuses across the country is welcomed news at UWO. The

² These issues are complex and interconnected. For a range of materials that cover the industrial nature of food, health aspects, and food systems sustainability in general, see: Goody 1997, Moss 2013, Pfeiffer 2006, Pollan 2001, Pollan 2007a, Schechter *et al.* 2010, Schlosser 2002, and Warner 2013.

Real Food Challenge is a program initiated by students that calls for 20% real food by 2020 in member campuses. UWO has begun the internal process to establish an RFC chapter. As with purchasing, the upstream and downstream operations of dining services will be increasingly evaluated for embodied energy and lifecycle costs. [Sustainability plan citations](#)

Food Systems Goals

Objectives: Move campus to a food system that provides nutritious and healthy foods that are produced, delivered, prepared, and post processed in socially just and environmentally sound ways. Become a “Real Food” campus to achieve or exceed the goal of 20% real food by 2020, and will strive to do its part in helping UWO become a zero organic waste campus also by 2020.

Goals:

Food Production

- Initiate a campus gardens program to grow herbs and other cost effective foods for campus dining facilities. Herbs are often a good choice because many are expensive to procure through vendors due to short shelf lives and are easy to grow. Examples include basil, cilantro, oregano, and parsley. Other foods may include garlic, greens, late-season crops and crops with long shelf lives like squash.
- Greenhouse to produce food for campus
- Consider rooftop gardens for the dual purpose of managing stormwater and growing edible plants
- Involve a variety of student organizations, classes, and others who are interested to make it a campus-wide initiative
- Consider planting and landscaping using [Permaculture techniques](#) on campus that stack functions by creating food forests (trees, shrubs, herbs, and other perennial edible/medicinal plants) and serve to educate and feed students in the process

Food Supply

- Engage in farmer’s markets off and possibly on campus that promote locally-grown foods
- Identify and secure cage-free liquid eggs to compliment the cage-free whole eggs that we now purchase
- Source food as local, organic, and [Fair Trade](#) as possible
- Increase local, vegan, organic, and Fair Trade options
- Source products (e.g., cans and plastic containers) that are free of [bisphenol-A and other known endocrine disruptors](#) as possible. Prioritize BPA-free cans
- Evaluate source of palm oils and soy products to avoid those associated with tropical deforestation
- Evaluate sources of shrimp to avoid products associated with mangrove destruction in the tropics
- Healthy foods only to be served with a focus on low/healthy fat, non-processed, vegan, organic, as well as sustainably sourced products
- Source pork products from pork raised free of gestational crates

- Explore the value of prioritizing/requesting products containing cellophane instead of petroleum based plastics

Food Operations

- Restart “Feed the Beast” to encourage the diversion of all organic wastes from dining and facilities to the biodigester. Initiate the effort with a campaign to divert all pizza boxes from res halls to the digester
- Expand the use of reusable and biodegradable to-go containers and eating utensils
- When reusable options don’t work, Dining Services should try to use biodegradable convenience products, such as napkins, eating utensils, beverage containers, etc.
- Increase energy conservation: lighting, equipment, HVAC, condense operations where possible
- Recycle or reuse all waste from dining services: biodigester for compostable waste, recycle all cardboard, paper, plastic, metal, glass, recycle all equipment appropriately or re-use
- Biodiesel production or other on-campus alternative of used fryer oil, use biodiesel in campus vehicles and equipment
- Green certified chemicals for cleaning, increase from 10% annual purchase
- Separate production/storage area in Board Dining to address allergy issues such as a gluten free zone, and should address as many allergies as possible

Education/Collaboration

- Develop a “local food” day in Board Dining with educational materials on the value of local food procurement
- Expand dining program to include more vegetarian options and fewer meat options throughout the week and promote the values of meatless dining.
- Use the “Fair Trade Fridays” program to educate the community on the merits of Fair Trade products
- Work with food service provider to increase and improve sustainable dining programs
- Create a forum/event for faculty, students, area farmers, food suppliers, and community members to discuss sustainability in the context of food and build partnerships
- With the Real Food Challenge in mind, practice transparency and provide students with more information so they know where their food is coming from, what is in it, how it is grown/raised, the value of Fair Trade and other certified food products, and the quality of the nutrients, which may include: posters/signs, food labels, pamphlets, videos, and messages through electronic social media
- Encourage stakeholder input through suggestions boxes and emails to food@uwosh.edu and sustainuwo@uwosh.edu

Grounds and Custodial Maintenance

Sustainable landscape management poses numerous challenges on most college campuses for a variety of reasons including cultural factors that favor weed-free manicured lawns and the relative ease of maintaining turf areas compared to alternative landscapes. The University of Wisconsin Oshkosh sits on along the Fox River and covers approximately 170 acres of land. Reducing the impacts on the Fox River and on human health is a priority for the campus. In the warmer months, turf and plantings maintenance takes priority to provide an aesthetically pleasing landscape for students, faculty, staff, and visitors.

In the colder months, snow removal, salt and sand application dominate grounds maintenance duties to ensure safe travel whether walking, biking, or driving through campus. All of these present the UW Oshkosh grounds crew with challenges to keeping these practices as sustainable as possible for the campus, which has made a serious commitment to sustainability.

Similarly challenging is maintenance of clean buildings. For a campus that is committed to sustainability, procuring environmentally-friendly cleaning products that achieve the highest level of cleanliness is a top priority. These products should not be hazardous, but also must keep the surfaces clean, an important matter when considering the health of roughly 15,000 people as they move about the different buildings on campus. A balance between cleanliness and reducing negative environmental impact should be sought.

Since the Previous Plan

The campus' efforts to ensure sustainable grounds maintenance have greatly increased over the past five years. Many recommendations have been completed including increasing the number of permanent plantings as well as using native plants. Rain garden areas have been established to reduce effect of storm water runoff and salt has been partially replaced with sand during the winter months for slippery conditions. Composting in general has also increased. Recommendations that have not been completed include the construction of a greenhouse facility for plant propagation, installation of drip irrigation, and testing environmentally safe herbicides and other lawn chemicals. [Sustainability plan citations](#)

Grounds Goals

Objectives: Develop and manage a unique landscape that stresses sustainability, functional “working” grounds, safety, and aesthetics.

Goals:

Develop a master campus landscape plan.

- Form a working group to draft a sustainable campus master landscape plan and gain approval

Develop a campus landscape management plan that relies on sustainability best practices.

- Form a working group to draft a sustainable campus landscape management plan and gain approval

Install landscaping materials in accordance with the master plan.

- Maximize the use of locally sourced, native plant material that is well suited for the local environment. Such plant material will require less fertilizer, irrigation, or pesticide. Emphasis should be placed upon perennials rather than annuals
- Utilize the widest genetic base among individual species
- Eliminate existing invasive exotic species
- Include endangered, rare species to the extent possible
- Include useful plants (e.g., pest deterrents, nitrogen-fixing plants, edibles and medicinals) for pedagogical and practical purposes
- Reduce turf area and monocultures in favor of diverse native ground covers, tree canopies, prairies, understory trees and shrubbery
- Maintain and update the campus tree inventory on an annual basis. Continue to participate in Tree Campus U.S.A.
- Dedicate a significant portion of campus to fruit and vegetable production
- Consider a sugar maple stand along the river
- Integrate Permaculture thinking into grounds maintenance that focuses on biomimicry and ecological restoration - to include planting food, medicine, and other species that benefit insects, act as nitrogen fixers, provide habitat, and increase biodiversity and learning opportunities
- Create signage that provides students, staff, and visitors with opportunities to learn about plant species(uses, functions, details, etc.), as well as planting purposes

Create or enhance wildlife habitat locations on campus.

- Create more natural prairie areas such as exist near the Rec and Wellness Center and the Halsey Science Building, allowing for aesthetic considerations (e.g., more flowering plants) in some landscape designs
- Expand woodland plantings to provide more habitat suitable for woodland species
- Enhance wildlife habitat by providing artificial structures, such as bat and bird houses, beehives, and artificial water basins as appropriate and permissible

Reduce the quantity and impact of harmful, chemical based, landscaping maintenance products and techniques

- Use organic fertilizers to the maximum extent possible. The grounds shop already owns equipment necessary to make compost tea organic fertilizer
- Incorporate integrated pest management practices to deal with seasonal pests
- Work to minimize or eliminate toxic chemicals from landscape management
- Reduce the use of salt based “ice melt” from sidewalks

- Work with the biodigester and University partners to use created compost on university grounds
- Reduce the area under turf that must be mowed with gasoline powered lawn maintenance equipment

Custodial Maintenance Goals

Objective: Clean buildings and handle pests using sustainable “Best Practices”.

Goals:

Clean facilities in an environmentally sound manner.

- Utilize Green Seal certified cleaning products throughout campus.
- Replace worn out vacuum cleaners with HEPA filter upright vacuums.
- Utilize microfiber cloths that can be laundered as needed.

Handle indoor pests in an environmentally sound manner.

- Incorporate integrated pest management practices to deal with indoor pests.

Human Resources

Human resources, in general, refers to the workforce of a business or establishment. The management of human resources is concerned with talent, demographics, and skill sets necessary to accomplish all of the duties of a given workplace. Human resources on a college campus is a very diverse group indeed, with instructional faculty of varying degrees, administrative staff, as well as staff that oversee daily campus operations. At UW-Oshkosh, the human resources management team works to encourage diversity and inclusiveness among the faculty and staff. An integral part of sustainability is social justice, basic human needs, and fairness, which are equally important in human resources management. As a campus that is deeply committed to sustainability, all employees should understand the definition of sustainability* and should make it a part of their job.** UW Oshkosh provides an excellent work environment where employees feel safe and welcome as well as opportunities for individuals to reach their professional goals.

Since the Previous Plan

The original Campus Sustainability Plan drafted in 2007 did not include Human Resources as a key component. As part of this next edition, Human Resources and Sustainability will be brought together to ensure an understanding of sustainability among UW Oshkosh's faculty and staff. The plan will also address appropriate instances for sustainability language to be incorporated into job descriptions and core competencies. Sustainability plan citations

Human Resources Goals

Objective: To achieve sustainability understanding in 100% of campus faculty and staff by 2019.

Goals:

- Include sustainability language in appropriate position descriptions for all departments on campus.
 - The Office of Sustainability will draft language to be included into appropriate position descriptions, which will be approved by the HR Director and the head of the department.
- Include sustainability language in Core Competencies so that every employee exhibits an understanding of the campus' definition of sustainability.
 - The Office of Sustainability will draft sustainability language to be included into Core Competencies, which will be approved by the Administration and the HR Director.
- Continue to improve and expand health programs designed to empower its employees to take charge of their personal health and wellness (Well Oshkosh, Healthy Titans, Weight Watchers, etc.)
- Provide UW Oshkosh job applicants and finalists with marketing materials which convey the University's position as a sustainability campus. Use these marketing materials in all recruiting efforts.

- Incorporate sustainability awareness and education in New Employee Orientation and On-boarding practices for new University Staff, Academic Staff, and Faculty.

Information and Learning Technology

In an age of ever-changing technology, it is in an institution's best interest to keep pace with technological advancements. These advancements not only allow better, more efficient virtual information storage, but also allow for easier dissemination and sharing of information, something that is critical to education in the 21st century. As a result of these technological advancements come more efficient systems of energy usage, reducing electricity consumption, which is typically powered by the burning of fossil fuels. Information and learning technologies can also be made more efficient through reducing materials consumption in printing* as well as moving to online learning**. Equally important is the recycling of electronic waste (known as E-waste), which includes numerous household devices such as refrigerators, as well as computers and cell phones. E-waste accounted for 20-50 million metric tons of global municipal waste in 2006 (Robinson 2009).

Since the Previous Plan

Campus electricity consumption is down 6% since 2005, in part due to upgrades made to information and learning technologies. All campus computer labs are set to energy efficiency settings and all printers are set to print two-sided as default. Initially computer labs were using 100% recycled-content paper, and recently switched to 30% recycled content-paper because of high-volume usage and printer maintenance issues. Online course offerings have increased, potentially reducing students traveling to campus, reducing parking space issues as well as fossil fuel emissions (although this is likely minimal). [Sustainability plan citations](#)

Information and Learning Technology Goals

Objective: Maximize use of learning technologies powered by renewable energy sources and reduce consumption of electricity.

Goals:

Reducing energy consumption

- Retrofit all campus servers to the most efficient system possible with a similarly efficient setup and ventilation system to reduce heating and cooling costs of the server rooms.
- Ensure practical energy-saving settings are in place for typical cases in labs.
- Purchase energy efficient equipment.
 - Continue to seek out the most energy efficient options when purchasing equipment.
- Convert remaining CRT monitors to LCD.
- Make power strips available, especially to residence hall students.
 - This also should entail an educational component about the importance of reducing energy consumption and how students can make easy changes in places like dorm rooms.

Printing

- Set a lower limit on student printing to discourage waste and to reduce spending.

- Re-investigate 100% recycled-content paper use for campus printers, and begin using where applicable.

Hybrid classes/online learning

- Investigate classes that can be converted to hybrid or completely online.
 - This allows for the reduction in the number of students traveling to campus, reducing carbon emissions.

Recycling

- Expand partnerships to properly recycle e-waste, such as the Apple recycling program.
- Develop better systems for campus community members to have their e-waste recycled
 - Develop an online form
- Hold an annual e-waste recycling day
 - This project should include cooperation from Academic Computing, Facilities, the Office of Sustainability, and students.

Purchasing

The purchase or exchange of goods between two parties has been historically based upon price and quality, where both parties receive maximal benefit. Such exchanges in the past decade however, have changed due to stresses on the planet because of resource extraction, environmental degradation, and political purchasing power resulting in an unfair distribution of environmental costs (i.e. pollution), typically incurred by disenfranchised groups across the globe without the ability to “pay” for relief from such costs (Boyce 2007).

Today, purchasing goods typically involves some level of recycled materials as well as a concern for the labor used to create the goods or provide the services. In a sustainable situation, goods created are made from recycled and renewable resources using renewable energy, if applicable. The people who make these good should be working in a safe, pollution-free environment and should be paid a fair wage. The materials going into sustainably produced goods typically are:

- High content from post-consumer recycled materials
- Low embodied energy (energy consumed to extract, manufacture, distribute and dispose)
- Recyclable
- Non-toxic
- Energy efficient
- Durable and/or repairable
- Produced in an environmentally- and socially-sustainable manner

From the demand side, life-cycle analysis should be considered, to choose products that are environmentally preferable based on predetermined criteria (Curran 2001). Developing a thorough list of guidelines for environmentally preferable purchasing is key to an institution’s success. Numerous colleges and universities have developed their own criteria for environmentally preferable purchasing based on individual state standards or using a software program that encompasses several predetermined criteria based on national standards³.

Equally important is consideration of embodied energy, or the total direct and indirect energy required to produce goods or services (Costanza 1980). Embodied energy assumes that primary economic factors such as land, labor, and capital are not independent of one another; these are typically thought of as independent factors by traditional methods of valuation. Through input-output analysis, a truer measure of economic value can be determined for individual goods or services, which incorporates the energy required to produce such goods or services (the input) and the energy derived or produced from the product or service (the output). For example, in the American food system, 10 calories are put into the agro-ecosystem to produce one calorie of food. Rather, the amount of energy put into producing and transporting food to individuals is significantly higher than the actual energy an individual derives from the food. So, if one were to compare apples to apples, an apple produced in Wisconsin and eaten by a Wisconsinite has much lower embodied energy, and

³ Such as BEES (Building for Environmental and Economic Sustainability), which provides in-depth criteria for green building materials.

thus a lower carbon footprint, than an apple that is produced in Washington and eaten by the same Wisconsinite. It is in the best interest of an institution to incorporate all of these criteria when making truly sustainable purchasing decisions.

History as of 2007

At the present time, the campus purchasing process is quite de-centralized, with departments and individuals making independent purchasing decisions. Although there are proscriptive state purchasing guidelines, including directions on which vendors are to be utilized for specific products, there is no major emphasis on sustainable purchasing.

The following items are currently purchased with recycled content in accordance with the state contract guidelines:

- Toilet Paper
- Copier paper
- Computer Monitors
- Photo Copiers

Over the past several years, incandescent lights have been replaced with compact fluorescents fixtures in many of the Residence Halls.

Custodial Services began purchasing environmentally safer cleaning chemicals in 2006.

Food vendors, campus retail stores, and Dining Services have made some sustainable products (e.g., fair trade, organic, local, cruelty-free, etc.) available for sale and special events.

Since the Previous Plan

While green and socially just products have been made available to the campus community in convenient locations (The University Bookstore and the Corner Convenience Store), the direct purchasing policies upholding these sustainable purchases has not been overtly addressed. The purchasing of paper made from 100% recycled material illustrates the problem of not having a clear purchasing policy. It was announced in UW Oshkosh Today in 2011 that the campus was buying paper made with 100% recycled content. That purchasing procedure continued for a 1.5 years, but a decision was eventually made to return to the 30% recycled content in high volume labs with little or no explanation.

The campus has committed itself to being a Fair Trade university (the first in the nation); still a formal purchasing plan that targets sustainability goals has not been developed. Numerous individuals from across campus departments purchase a myriad of items, but there is not a single document that directs their purchasing goals to sustainable options. This is also not monitored by the campus' purchasing officials.

Although the campus is somewhat restricted in its purchasing behaviors by State and UW System guidelines, the campus will have to increasingly consider embodied energy and life cycle analysis in campus purchasing decisions.

A formal UW Oshkosh Purchasing Plan steered by a purchasing work group would better serve the campus' mission of upholding sustainability through purchasing. [Sustainability plan citations](#)

Purchasing Goals

Objective: To increase the number of sustainable purchasing policies for more than 50% of campus spending by 2019.

Goals:

- Create and manage a Shop@UW folder for UW Oshkosh Preferable Supplies to promote and make it easier to purchase supplies that are energy star-rated, recycled-content, etc.
- Ensure proper training of individuals about the suggested "green" list of products
- Purchase recycled content paper with a preference of 100% recycled-content.
- When applicable, life cycle analysis will be included into new contracts in anticipation of ACUPCC requirements.
- When applicable, new contracts will include language about the provider using smart-size packaging that will help reduce packaging waste along with using recyclable packaging.
- When possible, track sustainable purchases and report this to the Sustainability office as well as to campus community annually. (This includes Fair Trade).
- Ensure that clothing, etc. is Worker's Rights Consortium approved. This applies to contracts for goods providers for campus retail (University Bookstore).

Transportation

Transportation systems vary from place to place, but the issues associated with these systems across the globe are very similar. Fuel efficiency, safety, and carbon emissions are just some of the factors that should be considered when developing new transportation systems or enacting plans. Issues associated with transportation systems are also of concern among colleges and universities. The campus population needs to be able to travel to and from, as well as throughout campus, safely. Many campuses are seeing major shifts in their “average” student. A current “average” student works long hours, sometimes full-time, and may live off campus. With the exception of major metropolitan universities, this student likely uses a vehicle to get to and from campus, because of an ever-changing, fast-paced and full schedule. Students working long hours to pay for tuition may feel the struggle between keeping up in class and making ends meet. Such problems linked with transportation can affect retention, graduation rates, not to mention student success in general. Until campuses see a major shift in transportation policy from that which is dominated by motorized vehicles to policies that are bicyclist and pedestrian friendly (in conjunction with increased cost of fossil fuels), change is unlikely (Akar and Clifton 2009).

Sustainable transportation planning and research is limited in the peer-reviewed literature, but should be conducted on college campuses, which serve as a microcosm for society and could help change public policy and attitudes towards sustainable transportation (Balsas 2003). Campuses with a serious commitment to environmental stewardship may grapple with a large commuter population as a major problem, in terms of extensive parking needs as well as associated carbon emissions. It is in the best interest of campuses such as these to assess and balance the needs of a diverse campus population and an efficient transportation system.

Since the Previous Plan

After the original plan was adopted, some great initiatives related to transportation have been put in place. UW-Oshkosh pioneered the Zimride program for the UW System, allowing students a better avenue to find carpooling opportunities. The campus also maintained strong connections with the Oshkosh Transit System, and bus ridership was up over 100,000 rides during the 2011-12 academic year. In addition, a major pedestrian mall as well as other pedestrian-friendly crossings and bike lanes were constructed to provide safer routes for students, faculty and staff to get to and around campus. Sustainability plan citations

Transportation Goals

Objective: To reduce fossil fuel emissions and the campus carbon footprint associated with transportation.

Goals:

Transportation

- Create a comprehensive Campus Transportation Plan to balance the needs of all commuters to campus. (2008 plan)
 - The Plan will be drafted by the Transportation Committee, which will encompass all aspects of Transportation and Parking.
 - The Plan will include regular studies about the ever-changing transportation-related issues on campus such as parking spaces, fuel efficiency, biking infrastructure, etc.
 - The Plan will implement programs that will reduce the carbon footprint of campus related to transportation.
 - The Committee will provide annual reports on progress made on projects and studies over the course of the year.
- Establish incentives for resident students to opt out of bringing a car to campus. (2008 plan)
- Establish a rent-a-car program for resident students.
- Increase awareness and education about means of alternative transportation such as OTI, Zimride, and vanpooling from Appleton/Neenah.
- Provide an online calculator for the true cost of car ownership in an effort to reduce students with cars on campus (resident students in particular). (Partnership with Admissions/Student Affairs/Res Life).
- Reassess moped parking guidelines and usage on campus for safety reasons.
- Establish progressive goals for transforming campus fleet vehicles to fuel-efficient vehicles (hybrids, electric, biofuel, etc.). (2008 plan)
- Participate in a carbon offset program for all campus-related air travel (especially related to Study Abroad and OIE).

Alternative Transportation

- Increase the number and quality of bike facilities on campus to encourage students, faculty, and staff to bike to campus. These facilities should address factors such as different kinds of bikes and bike locks, inclement weather, and concentrated areas of use on campus.
- Create incentives for students, faculty, and staff that bike to campus.
 - Tire inflation station/sell parts in the book store
 - Bike company associated with campus for biking needs. Monthly/weekly visits to campus for maintenance.
 - Establish regular events related to biking and alternative transportation to engender a campus biking culture.
 - Partner with the City of Oshkosh to help connect the city and campus and create a biking culture as a means of outreach and education.

Parking policies

- Assess and re-line parking lots when applicable to ensure maximum parking space is achieved. This should be done initially but should not be maintained, as the campus will strive to move away from encouraging individuals from commuting to campus by vehicle.
- Establish carpool spaces in each parking lot. The number of spaces allotted will be lot-dependant, but each lot should have at least one.

- Electric vehicle, hybrid vehicle, etc. preferred parking spaces closer to buildings. These should be designated per parking lot based on the size of the lot, with larger lots having more of these kinds of spaces, and each lot should have at least one.
- Offer different options of parking permits (students that only visit campus on selected days can still pay for the sem/yr but can only park M/W/F or T/Th at a discounted rate).
- Establish an easy online program for visitors and community members coming to campus to find parking space. This should include being able to print a parking permit before coming on campus as well as regularly providing ample parking space for visitors and community members.

Waste Management

Reduce, Re-use, Recycle is a common phrase, especially well-known by those who are extremely environmentally conscious. In this context, reduce means to use fewer materials, resulting in less waste. Re-use means using something that is seemingly at the end of its life for another purpose. Recycle refers to putting materials into a system that creates other materials born out of what was recycled. Reducing, re-using, and recycling materials helps the environment because less material is being thrown “away”, which means that landfills should get smaller over time and materials are diverted for better use. This kind of superior system is called a cradle-to-cradle system, rather than a cradle-to-grave system.

These ideas may stem from a priori knowledge or are intrinsic to some individuals. However, a majority of the human population does not overtly consider their waste stream in day-to-day life. Many human beings throw things “away”, without every considering where “away” is. “Away” is place that can be nearby, like a local county landfill. “Away” can also be the ocean, or the shores of a country on the other side of the world, or a field somewhere, where the “garbage” piles stand as high as houses. Often, there are people living in or near “away”. For these people, away is home, and they have to deal with the end-of-life “waste” that crowds their community. The social aspect of waste is tantamount to the environmental havoc that “garbage” wreaks on the natural world, sullyng rivers and killing wildlife. Anthropogenic pollution, specifically litter and “garbage” that has not been properly dealt with, but rather has been left on the roadside, or in a park, or tossed out of a moving car, serves as a statement for how much respect humanity has for the health of the environment.

The University of Wisconsin – Oshkosh has taken serious steps in sustainability and analyzed its waste stream to help combat the issues faced by solid waste management. The university is home to the first dry fermentation anaerobic digestion facility, “the biodigester” – which turns organic waste into energy. When the facility is operating at maximum capacity, it provides an equivalent of 10% of the university’s electricity.

The facility consumes waste from dining halls and campus grounds, waste that would otherwise be bound for the landfill and creates energy. Through projects such as the biodigester, the university has shown its commitment to improving solid waste management and landfill diversion. A continuation of similar projects will help bring the university to the forefront of the sustainability movement across campuses and will assist the university down the path towards carbon neutrality.

Since the Previous Plan

UW-Oshkosh certainly has a long history of recycling from e-waste to paper. Still, the campus has not met its goal of reducing solid waste production by 30% before 2012 from levels in 2000. The campus has made efforts to promote recycling throughout campus and at major events, as well as through campus competitions (Recyclemania). Other targets met include composting campus garden waste as well as identifying drop-off and recycling sites for hazardous materials and chemicals. However, the development of a Solid Waste Management Plan and the creation of a committee to construct

and oversee this plan has not been accomplished. General awareness on campus about recycling, and proper disposal or recycling of materials has not been relayed to the campus community to keep them educated about issues related to solid waste.

Waste Management Goals

Objective: Reduce production of municipal solid waste by 10% from 2012 levels by the end of 2017.

Goals:

Reduce municipal solid waste by educating the campus community in a way that encourages behavior change.

- Prioritize becoming a zero organic waste campus by 2017.
- Divert at least 75% of plastic wrap from Central Stores (shipping and receiving). Purchase a baler, if deemed necessary.
- Continue participation in Recyclemania waste competition. Provide resources necessary to increase promotion of this event.
- Provide ongoing education of the campus regarding the campus biodigester facility. Encourage the segregation of organic waste for use in the biodigester.
- Host educational movies on campus regarding waste such as "Plastic Planet".
- Utilize students to conduct waste stream audits. Publicize results.
- Encourage faculty and staff to select only electronic versions of magazines and trade publications.
- Encourage campus departments to produce only electronic versions of annual reports, brochures, or other correspondence.
- Create brochure regarding the surplus equipment program.

Increase the diversion of materials from the waste stream.

- Identify areas that are underserved and add additional recycling containers to campus facilities and grounds.
- Purchase and install organic food waste recycling containers.
- Continue to enhance recycling efforts during move-in and move-out days in campus residence halls.
- Support efforts to procure biodegradable plastics for waste bags and eating utensils to reduce the amount of contamination in the waste stream.
- Encourage faculty and staff to clean out offices. Recycle all discarded paper waste materials.

Water

Fresh water has been argued as the most critical resource the planet offers; its availability is plummeting due to increased human consumption. Human activity is also affecting the world's water supply due to increased pollution such as runoff and greenhouse gas emissions, which ultimately affect the world's oceans. Current estimates show that a large portion of the global population is experiencing fresh water stress, ultimately caused by a much smaller portion of the human population. In an ever-changing biosphere, demand outweighs the effects of greenhouse warming on the planet in terms of fresh water shortage and raises serious concerns for the state of available freshwater in the future. (Vorosmarty et al. 2000). The University of Wisconsin – Oshkosh rests on the shores of the Fox River, a major contributor of the Fox Valley waterway, and is in close proximity to Lake Winnebago, the largest inland lake in Wisconsin. It is crucial for the university to uphold strong environmentally sound practices related to fresh water usage and storm water management. In this respect, the university should serve as a shining example, as well as offer guidance and education concerning water management to the greater community.

Water conservation measures: History as of 2007

2000-2001

- Replaced 1,005 older 4.18 gallon per flush (gpf) toilets with 1.6 gpf toilets.
- Installed low-flow faucet restrictors on sinks throughout the campus.

These efforts resulted in savings of over **11 million** gallons per year.

2004-2005

Replaced natural grass football field at Titan Stadium with an artificial grass surface that requires no irrigation. This effort resulted in an estimated savings of **0.85 million** gallons per year.

2005-2006

- Retrofitted water-cooled systems at Blackhawk Commons, Scott and Gruenhagen with air cooled equipment
- Replaced 63 older 4.18 gpf toilets with 1.6 gpf toilets
- Installed 5 waterless urinals

These efforts resulted in savings of 6 million gallons per year.

Prior to the enactment of the WPDES permit requirements, the University of Wisconsin Oshkosh had undertaken the following steps related to stormwater management:

1. Developed a stormwater management plan (currently in final draft status, awaiting DNR approval).
2. Performed routine semi – annual cleaning of parking lots.
3. Performed routine litter patrols of the campus
4. Required the mandatory installation of silt fences around construction sites.

Since the Previous Plan

UW-Oshkosh has made great strides in reducing its fresh water consumption and almost meeting its goal of a 50% reduction by 2012. Compared to the level of consumption in 2000, campus fresh water usage is down by 41%. This has been made possible in part by the installation of low-flow bathroom facilities. The campus has also improved its landscaping and water use to some degree, although direct use of storm water basins or ponds have not been used a landscape watering source. Also, campus water usage data or a formalized report on water waste and usage has not been addressed or reported to the campus community.

The original campus goal of reducing total suspended solids (TSS) in stormwater runoff by 40% before 2013 has been met. This goal was met due to increased partnership with the City of Oshkosh and the implementation of SLAMM modeling to determine runoff levels as well as implementation of DOA/DSF erosion control guidelines and civil engineering and site work design guidelines for construction. Educational signage about “no dumping”, a website about storm water runoff, as well as regular presentations during campus events may have also contributed to meeting this goal. Recommendations not met include reducing the amount of ice-melt salts in winter as well as re-routing roof drains away from the storm sewer system into retention ponds. [Sustainability plan citations](#)

Major Objectives

Objectives: Reduce campus wide fresh water consumption by 20% (per sq. ft.) from 2012 levels by 2019. Divert stormwater for irrigation use and comply with DNR stormwater permit requirements.

Goals:

Embrace latest water saving technologies.

- Install the latest version of waterless urinal device in a test location.
- Get feed-back from users regarding odor and cleanliness.
- Pursue additional installations if feedback is positive.
- Continue to install dual flush, low flow toilets as part of the major renovation/new construction process.
- Require at least two LEED water efficiency credits for new construction projects.

Reduce reliance on potable water for irrigation.

- Install rain barrels at Oviatt House, Pollock House, and the Multicultural Education Center.
- Connect barrels to drip irrigation systems.
- Install underground cistern to capture storm water in appropriate location. Connect to irrigation systems.
- Construct synthetic grass fields for intermural sports activities and thereby eliminate the need for intensive irrigation, fertilization and pesticide application.
- Install grey water capture system at one facility. Divert water to irrigation.
- Install drip irrigation in beds, as appropriate, throughout the campus.

- Minimize the need for irrigation by installing automatic controls to monitor ground moisture content.

Educate faculty, staff and students regarding freshwater conservation and stormwater management.

- Continue to conduct storm water management public education training and public outreach through the riverfront clean-up during Earth Week.
- Create educational materials concerning freshwater conservation.
- Provide coupons to students, faculty and staff for car washes and automobile oil changes.
- Track and publicize the water savings from fixture upgrades.

Continue efforts to comply with Wisconsin Pollutant Discharge Elimination System (WPDES) permit requirements.

- Install bio-filters and other BMP's as required on all new construction projects.
- Install green roofing to mitigate stormwater runoff on existing and new buildings. Strive to achieve a goal of having green roofing on 10% of campus inventory by 2019.
- Disconnect roof drains from selected buildings and divert water to ponds, cisterns, or other storm water retention devices.
- Monitor the development of porous pavements. When a suitable product comes available, install and test on campus.