

Carbon Neutrality

Climate Action Plan 2010



NORTHERN ARIZONA UNIVERSITY



On behalf of Northern Arizona University, I am pleased to present our Climate Action Plan 2010. Our university has a proud history in environmental sustainability education and action. The environmental science degree program was one of the first in the country, charting the course for today's recognition by the Princeton Review and the U.S. Green Building Council as one of the country's top-rated green universities. This plan, prepared through a collaborative, campus-wide effort, serves as a living document capturing efforts in seven core areas that lead to the ultimate goal of achieving carbon neutrality at NAU. We are participating with other higher education leaders to face the challenges and implement the changes needed to accomplish this goal.

Northern Arizona University is creating a culture of sustainability. This change starts from within, through collaboration at all levels of the institution with strong participation and support from campus leadership. As a higher education institution, we have the responsibility to lead society to significantly plan for and practice climate neutrality. As sustainability pioneers, we must commit to teaching, learning, researching, and advocating sustainability principles. Through the classroom, faculty can encourage the development of visionary leaders and an educated workforce. In the community, the university can expand competencies in biosciences,

renewable technologies, and cross-disciplinary problem-solving to improve quality of life and ensure sustainable practices.

University presidents serve as agents of change to promote sustainability education, research, and operational practices that integrate knowledge across the disciplines. By involving the entire university community in developing and implementing comprehensive action plans to achieve carbon neutrality, we model leadership in carbon emissions reduction. The American College and University President's Climate Commitment (ACUPCC) is a vital resource to achieve this goal.

As a charter signatory of ACUPCC, Northern Arizona University is on track to become carbon neutral by 2020. I invite you to read our plan of action and reflect on how your institution, no matter how large or small, can take action and find solutions to our global climate challenge.

John D. Heager
President
Northern Arizona University

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Executive Summary

Northern Arizona University understands that greenhouse gas emissions are contributing to climate change, and the effects of climate change are already visible. In 2007, President John Haeger became a charter signatory to the American College and universities Presidents Climate Commitment (ACUPCC). There are a number of requirements involved in the commitment, including the development of a Climate Action Plan which establishes goals and actions, ultimately leading the university to climate neutrality by 2020.

The university is working to develop a culture of sustainability; therefore the Climate Action Plan extends beyond the requirements and includes water conservation, green cleaning products, sustainable grounds maintenance techniques, and local food purchasing. In addition, sustainability is being integrated across the curriculum and in campus housing communities.

Many positive steps have already been taken. Academic programs emphasizing sustainability and the environment have been developed and made available to students in both undergraduate and graduate degree areas. All light fixtures have been converted to electronic ballasts and T-8 lamps. The university has made it a standard for all new construction to meet LEED Silver criteria at minimum. Campus Dining composts over 200 pounds of food a week, and donates waste oil to Transportation Services for conversion to biodiesel, which is used in campus buses. These are only a few of the many steps that have been taken to date.

Purpose

The Climate Action Plan seeks to,

- set a date for climate neutrality;
- develop plans for the inclusion of sustainability in curriculum, research, and the campus experience;
- establish interim goals and actions for greenhouse gas emissions reductions;
- identify goals for emissions reductions in the areas of purchasing, energy, operations, transportation, water usage, recycling and waste management;
- identify responsible parties;
- identify financing mechanisms.

Summary of Goals

Interim goals have been identified as a means to reach climate neutrality.

Academics

1. Embed environmental sustainability issues across the curriculum.
2. Prepare students to compete in the green economy. Maintain and develop disciplinary and interdisciplinary programs in environmental sustainability.
3. Partner with the community to provide opportunities for students in the green economy (in concert with Research, Goal 4).

Research

1. Enhance and maintain the university’s emphasis on environmental and sustainability research and graduate education.
2. Increase the university’s impact on environmental and sustainability research through increased publication and outreach activity.
3. Promote the university as a responsible sustainable organization with experience in, and commitment to, sustainable practices.
4. Maintain and expand the opportunities for undergraduate and graduate student research and for student engagement in off-campus environmental and sustainability activities.

Energy and Climate Change

1. Return to 2000 carbon levels by 2014.
2. Return to 1990 carbon levels by 2018.
3. Achieve carbon neutrality by 2020.

Operations

1. Implement and maintain university technical standards so all new construction is built to strict energy standards.
2. Reduce the impact of chemicals used on campus.
3. Increase the use of local, organic, and fair-trade food in dining halls as local food production increases.

Procurement

Improve Environmentally Preferable Purchasing (EPP) on campus through enhanced cooperation between the Purchasing Department and the Office of Sustainability, with the goal being of a formalized EPP policy.

Recycling and Waste Minimization

1. Create a zero waste campus.
2. Improve the utilization of Property Surplus Services on campus, encouraging reuse across campus.
3. Promote the “move-out” donation program in the residence halls.
4. Create a graduate assistant position responsible for recycling and waste minimization initiatives.

Transportation

1. Decrease greenhouse emissions from commuting each year.
2. Reduce campus fleet emissions each year.
3. Develop a system to centrally track all air travel.

Water

1. Reduce the annual use of potable water per square foot of building space by 20 percent by 2015 (using 2002 as the baseline year).
2. Develop ways to make water consumption data available to users.

Introduction

History of Sustainability

Sustainability and climate change awareness have long been core elements of the university’s mission and goals with major efforts dating back to the 1970s. Current sustainability efforts include waste management practices, renewable source energy purchases, water conservation initiatives, a bicycle share program, a public transportation partnership, and a building standard of minimum of U.S. Green Building Council LEED Silver certification. The Flagstaff campus is currently home to four LEED-certified and three LEED-pending facilities which include the LEED Platinum-certified, international award-winning Applied Research and Development Building. As a testament to the university’s total commitment to sustainability, the entire campus from the operations areas to the curricular arm of the institution are pursuing sustainability measures as a priority for the 21st century. At Northern Arizona University we are committed to living, learning, researching, and advocating sustainability principles in order to create a culture of sustainability.

Sustainability at Northern Arizona University 1973-Present

Institute for Tribal Environmental Professionals founded to assist American Indian tribes in the management of environmental resources through effective training and education programs.

Ponderosa Group, an interdisciplinary faculty effort to green the curriculum, begins offering faculty workshops and seminars to incorporate environmental sustainability into courses across the university.

McAllister Endowed Chair in Community, Culture, and the Environment established to help students, residents, and professionals conceptualize interdisciplinary solutions for the challenges of sustainable living; Merriam-Powell Center for Environmental Research initiated to promote inter-disciplinary environmental research, education, and outreach activities throughout the region.

Center for Sustainable Environments formed as a catalyst for interdisciplinary collaboration on conservation and restoration of natural and cultural resources. Master of Science in Environmental Sciences and Policy for training of professionals in sustainable resource management approved and initiated.

The National Institute for Climate Change Research chose Northern Arizona University to host its Western Region Center.

President John Haeger becomes a charter signatory to the ACUP Climate Commitment; Applied Research and Development Building earns LEED Platinum certification, in addition to two LEED Gold certifications for The W. A. Franke College of Business building and the Engineering and Technology building. Sustainability and Stewardship of Place was included as one of the seven goals in the University Strategic Plan.

The Green Fund student fee is established to generate funding for renewable energy, energy efficiency, and sustainability projects; Faculty Senate approved environmental sustainability, diversity, and global education as core university themes for student learning outcomes; NAU selected by the Princeton Review and U.S. Green Building Council as one of America’s top-rated green colleges; Master of Science in Climate Science and Solutions developed by Northern Arizona University and funded by National Science Foundation; Extended Campuses facility earns LEED Gold certification.

1973	1992	1994	1995	1996	1998	1999	2000	2001	2004	2005	2006	2007	2008	2010	
Northern Arizona University establishes one of the first environmental degree programs in the country.		University wins National Recycling Coalition Competition.		Master of Arts in Sustainable Communities established (originally, “Master of Liberal Studies”) as an interdisciplinary graduate program with a focus on sustainability and the community.		Ecological Restoration Institute established to conduct research and education in sustainable ecosystem management.		Henry O. Hooper Student Fund established to grant annual awards to students for environmental sustainability projects.		President John Haeger approves the Campus Environmental Sustainability Plan.		Bachelor’s program in environmental studies, including BS and BA in Sustainability, approved and initiated. Undergraduate course in interdisciplinary climate mitigation completes first greenhouse gas inventory for the campus. University adds requirement for sustainable operations and purchase of local, organic, and fair-trade products to the ten-year dining services contract.		Faculty, staff, and students form the Environmental Caucus to advance the institutional commitment to sustainability. President John Haeger creates the Office of Sustainability.	

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Climate Change Commitment

Founded in 1899, Northern Arizona University’s mission is to provide an outstanding undergraduate residential education that is strengthened by research, graduate and professional programs, and sophisticated methods of distance delivery. The university aims to produce graduates prepared to contribute to the social, economic, and environmental needs of a changing world. The institutional culture at the university inspires students to become active citizens, leaders, visionaries, and problem solvers with an understanding of global issues. Among these issues is the pressing crisis of global climate change. As an institution, there is an understanding that graduates will be faced with unprecedented challenges related to energy security, environmental degradation, and sustainable economic development. Northern Arizona University is preparing graduates to face these challenges by making the campus a living laboratory where research, experiential learning, and curriculum can be realized through the use of the campus as a model of adaptation through sustainability.

The ACUP Climate Commitment is a groundbreaking pledge to develop a comprehensive action plan to achieve carbon neutrality. It provides the university with the opportunity to continue its leadership among institutions of higher education by modeling ways to reduce carbon emissions.

ACUPCC signatories committed to initiating two or more of seven specified tangible action options to reduce greenhouse gases within two years of their implementation start date. Northern Arizona University implemented the following:

- establish a policy that all new campus construction will be built to at least the U.S. Green Building Council’s LEED Silver standard, or equivalent
- adopt an energy-efficient appliance purchasing policy requiring purchase of ENERGY STAR certified products in all areas for which such ratings exist
- encourage use of, and provide access to, public transportation for faculty, staff, students, and visitors

The 2020 goal for carbon neutrality involves:

- updating the university emissions inventory
- meeting the interim milestones set for becoming carbon neutral,
 - by 2014 reduce carbon footprint to year 2000 levels
 - by 2018 reduce carbon footprint to 1990 levels
 - by 2020 reduce carbon footprint to net zero carbon levels
- taking immediate steps to reduce greenhouse gas emissions
- integrating sustainability into the curriculum and making it part of the educational experience.

Development of the Climate Action Plan

This Climate Action Plan is a collaborative effort among administration, operations, and academic personnel. The plan is intended to be a living document to be shared campus-wide and adapted as campus conditions and available technology change.



Implementation of the Climate Action Plan

Strategies for reaching carbon neutrality include conservation programs, energy efficiency strategies, renewable and alternative energy production, and if necessary, the purchase of carbon offsets. The university will first develop a plan to create a culture that embraces conservation of energy and water. The systems currently in place will be evaluated to ensure that all areas in which efficiency measures can be implemented are identified. After all current systems are addressed the university will seek opportunities to develop on-site production of renewable and alternative energy. In addition, the university recognizes that carbon offsets may be necessary to reach carbon neutrality, however, this option will not be used until exhaustive efforts to reduce the carbon footprint have been made.

Tracking sustainability initiatives will be conducted using the AASHE STARS program (Sustainability Tracking, Assessment, and Rating System). This system will determine areas of strength and weakness and provide guidance for annual recommendations. Each year, the Environmental Caucus—a collaborative group of faculty, staff, and students—will make specific recommendations to the university president so that stated goals can be met. Because the university is taking a whole-campus approach to carbon neutrality, many departments and units will be responsible for executing this plan. All responsible parties will be asked to annually report on the status of initiatives and carbon reduction strategies so that progress can be tracked. This holistic approach will help shape the institution’s ten-year plan, and ensure that both long and short-term goals are on track.

Structure of the Report

The climate action plan is presented in seven sections. Each section includes an introduction, goals, actions, responsible party, measures of success, benefits, timeline, challenges, and opportunities.

- Academics and Research
- Energy and Climate Change
- Operations
- Procurement
- Recycling and Waste Minimization
- Transportation
- Water



Section 1

Academics and Research

Introduction

Environmental sustainability is a value that Northern Arizona University has long endorsed in its mission and strategic planning. The university has a rich legacy of faculty scholarship, sponsored projects, community outreach, and programmatic activity related to sustainability. Our efforts are focused on enhancing cultural, built, and environmental systems, examining the interfaces between each of these areas, and developing interdisciplinary solutions to environmental and sustainability challenges. Current marketing initiatives emphasize this long-term commitment to environmental sustainability to improve outside support for curricular and research efforts in environmental and sustainability studies.

Academics

Central to the university's ability to achieve student success in environmental sustainability is the development of opportunities for engaged scholarship, pedagogy, and community relationships through both curricular and co-curricular learning activities. While expanding specific degree programs in environmental and sustainability fields, emphasis will be placed on introducing sustainability concepts to every student. Through activities including the Global Learning Initiative, environmental and sustainability issues and concepts will be embedded across the curriculum.



Goal 1

Embed environmental sustainability issues across the curriculum.

Action 1. Establish environmental sustainability as one of three new university-level student learning outcomes: The Global Learning Recommendations of the Task Force on Global Education.

The Task Force on Global Education was established to address the university's Strategic Plan, Goal 4 on global engagement. This will be achieved through the following three student learning outcomes.

Global education: analyze, synthesize, and evaluate the interconnectedness and interdependence of the human experience on a global scale

Environmental sustainability: acquire the skills and knowledge to understand the importance of, and options, for environmental sustainability in local and global terms, and acquire an understanding of the range of ethical perspectives concerning the uses of natural resources and the impact of these perspectives on creating a sustainable relationship to the natural environment

Diversity: learn about, and critically reflect upon, the nature and consequences of diversity in the social (e.g., ethnic, religious, cultural) world and the natural environment

The Faculty Senate adopted three core university thematic student learning outcomes in January 2010 that will apply to all undergraduate students in their majors, the Liberal Studies Program, and in co-curricular programming. The university will provide students with opportunities within their degree and minor programs, the Liberal Studies Program, international study and experiences, and co-curricular learning experiences to acquire knowledge and develop competencies associated with global engagement, diversity, and environmental sustainability.

Action 2. Develop the Environmental Caucus at Northern Arizona University.

To address the university’s Strategic Plan, Goal 3: commitment to a vibrant sustainable community, the Environmental Caucus (EC) provides discussion and feedback from members to identify the integral connections between areas emphasized in the strategic plan (elevate the environmental, economic, social, and cultural vitality of our communities through collaborative stewardship of place). The EC facilitates creative and strategic communication across campus and the community to advance the commitment to sustainability and to promote education, research, and collaboration on the environment. The caucus is open to faculty, staff, students, and environmental partners of the university, and operates through consensus-based decision making. Self-organized action teams develop recommendations and oversee implementation of projects.

Improve Curriculum: the Ponderosa 2.0 Project

The Ponderosa 2.0 Action Team of the caucus builds on a long-established history at the university of “greening” the curriculum through the Ponderosa Project. Ponderosa 2.0 consists of faculty, staff, and students working together to develop and conduct continuing education workshops for faculty on issues of sustainability and the teaching of sustainability. It also is working to establish 10 to 12 First Year Seminars in partnership with related graduate programs to address issues of sustainability and linkages to community. Faculty will work together to improve existing and planned courses across the curriculum by developing course components emphasizing sustainable practices. The group will convene a student-focused forum to identify what important issues need to be addressed and how to create the opportunities to meet them.

Action 3. Northern Arizona University will promote campus-wide learning opportunities by incorporating sustainability themes into the Provost’s and President’s Lecture Series, the Building for Community series, or other lecture opportunities.

Responsible Party

Global Learning Committee (working on implementation) and Chief Academic Officer (Provost). Chair of the Environmental Caucus is responsible for the success of the caucus’ activities and initiatives.

Measure of Success

Evidence of success will be measured through regular assessment of student learning conducted within degree programs, Liberal Studies, international program, and co-curricular programs.



Goal 2

Prepare students to compete in the green economy. Maintain and develop disciplinary and interdisciplinary programs in environmental sustainability.

Action

Northern Arizona University acknowledges that to develop new careers for the green economy will require more than one discipline or program of study. The university currently offers an undergraduate environmental studies degree with a focus on sustainability. Our interdisciplinary graduate programs include environmental sciences and policy, sustainable communities, and climate science and solutions. These programs develop professional skills for the green economy in three general areas.

Develop specific technologies within engineering and natural sciences disciplines, including: biology; chemistry; chemical, mechanical, and electrical engineering; environmental sciences and policy; forestry; and physics.

Implement new technologies, practices, and policies. To ensure that new technologies are economically and socially viable and widely utilized, our business, economics, environmental studies, political science, sociology, psychology, humanities, and environmental studies students apply their education to sustainability issues. Majors in sociology, psychology, and the humanities also work on environmental education and environmental justice issues to provide a more fertile social setting for acceptance and use of sustainable concepts and technologies.

Improve ecosystems services. A fundamental concept of sustainable living is to recognize, value, and protect the services that healthy ecosystems provide. Majors in environmental sciences, biology, forestry, geology, civil and environmental engineering, and resource management all study ecosystems and their components from different perspectives.

Responsible Party

Chief Academic Officer (Provost) is responsible for all academic initiatives.

Measure of Success

Evidence of success as outlined in the assessment plan for each academic program.

Goal 3

Partner with the community to provide opportunities for students in the green economy (in concert with Research, Goal 4).

Action 1. Technology Research Initiative Fund (TRIF) and Education, Research, and Development for the New Economy (ERDENE)

TRIF is a special investment in higher education made possible by the passage of Proposition 301 by Arizona voters in 2000. TRIF proceeds are administered by the Arizona Board of Regents (ABOR) and allocated to the state’s public universities. Every five years, ABOR approves a TRIF budget plan for the three state universities. The current TRIF budget period is FY2007-2011. During this period, Northern Arizona University’s TRIF agenda is focusing on the following goals:

- stimulate entrepreneurship, innovation, and research and development (R and D) to support Arizona’s knowledge-based economy
- increase access to higher education to prepare a skilled workforce to meet the needs of Arizona’s expanding economy
- invest in infrastructure that will promote R and D partnerships with business, enhance technology transfer, and connect knowledge creators with knowledge users
- develop new, and expand existing, programs to prepare students for high technology industries in Arizona

ERDENE, supported through a TRIF program, builds on the university’s well-established leadership in environmental science and technology and emphasizes five major areas: ecological restoration, renewable energy technologies, water resources, applied research for sustaining rural communities, and comprehensive monitoring and management of complex systems. The program also builds on the university’s strong connection with rural Arizona and success in building collaborative partnerships with private, public, tribal, and non-profit entities. It encourages research, teaching, and public outreach, and enables the university faculty, staff, and students to address the interrelated environmental, economic, and social needs of the 21st century.

Action 2. Northern Arizona University will continue to develop sustainable practices and technologies through its continued support of the Northern Arizona Center for Emerging Technologies (NACET) and the Coconino County Sustainable Economic Development Initiative (SEDI).

NACET is a small-business assistance program founded through collaborative relationships among the university, the City of Flagstaff, the Northern Arizona Council of Governments, and many others in the local business community to help entrepreneurs and startups succeed in northern Arizona. NACET offers hands-on consulting to high-tech, science, and renewable energy firms and links client companies to specialty labs and equipment, intellectual property, and capital resources. It also creates synergies through an extensive network of faculty, staff, interns, and alumni from local academic institutions.

SEDI fosters innovative approaches to economic development appropriate to who we are and where we live. Five areas of development include: sustainable tourism, resource-based industries, energy efficiency and renewable energy, green materials and projects, and micro-enterprises.

Responsible Party

The Office of Vice President for Research is responsible for reporting measures of success for TRIF and ERDENE to ABOR. Directors are responsible for other organizations.

Measure of Success

Evidence of success will be outlined in the assessment plan for each organization.

Research

The research enterprise enriches student learning and is a valuable mechanism for improving environmental and sustainability outreach and management activities.

Goal 1

Enhance and maintain the university’s emphasis on environmental and sustainability research and graduate education.

This goal will be accomplished through continued strategic investment and effort. Northern Arizona University’s Research and Graduate Education Task Force report, a basis for institutional strategic planning, identified Environment and Sustainable Systems as one of four areas and emerging directions in which the university should focus.

- Become the number one university for environmental and sustainability research.
- Maintain and expand partnerships with federal, state, tribal, and non-governmental organizations and agencies, and with the private sector to improve sustainable practices.



Action

Northern Arizona University will assist faculty and staff in the successful completion of an increasing number of sponsored projects in environmental and sustainability fields. Currently, the university ranks in the top three of its peer group for sponsored project dollars received. The goal is to remain at the top of our peer group and to join the top 100 research universities in the country—something no other peer institution has accomplished. The State of Arizona’s Technology Research Initiative Fund enables the ERDENE program to develop initiatives with off-campus partners to promote private enterprise initiatives in sustainability, and to develop green jobs. Our relationships with SEDI and the NACET continues to grow.

Responsible Party

The Office of Vice President for Research is responsible for reporting measures of research performance to ABOR, including environmental and sustainability research.

Measure of Success

One of the metrics to be used by the Vice President for Research will be the National Science Foundation (NSF) determinations of the amount of sponsored project support in environmental fields. The number of new partnerships established with off-campus partners in sustainability and environmental management will be tracked.

Goal 2

Increase the university’s impact on environmental and sustainability research through increased publication and outreach activity. The university particularly interested in demonstrating how non-traditional interdisciplinary approaches can be used to improve sustainable practices.

Action

Northern Arizona University will continue to emphasize the importance of research and scholarly activities for tenure-track faculty. Increasing the number of publications in environmental and sustainability fields can now be tracked more successfully using the Web of Science search tool.

Responsible Party

The Office of Vice President for Research is responsible for reporting measures of research performance to ABOR, including environmental and sustainability research.

Measure of Success

The field of ecology is already the number one area of publication for the university and we look to build upon that success. We will use Web of Science search tools to determine increases in university publications in environmental and sustainability fields and to look for evidence of increased interdisciplinary partnerships.

Goal 3

Promote the university as a responsible sustainable organization with experience in and commitment to sustainable practices.

Action

The university will develop targeted initiatives to promote work in the environment and sustainability. Some of these initiatives will be directly tied to completing components of the Climate Action Plan. NAU will continue to develop and promote the use of the Green NAU website to promote interdisciplinary initiatives.

Responsible Party

The Vice President for University Advancement will oversee targeted initiatives to promote the university’s work in environment and sustainability.

Measure of Success

Evidence of successful promotion of Northern Arizona University will be in the form of increased development activity related to environmental and sustainability programs at the university.



Goal 4

Maintain and expand the opportunities for undergraduate and graduate student research and for student engagement in off-campus environmental and sustainability activities.

Action

Northern Arizona University will build upon successful programs that provide students with research and internship activities in environmental and sustainability fields. Students are involved in local projects that reduce the energy impact of housing, transportation, and food and water systems. Existing programs such as the Ecological Restoration Institute’s internship program, the Undergraduate Mentoring in Environmental Biology program, the National Science Foundation Research Experience for Undergraduates program in environmental sciences, biology, and chemistry, the Hooper Undergraduate Research Awards, and Hooper Sustainability Awards will be maintained and new programs developed (see Opportunities, below). The Office of Sustainability continues to seek support for its internship program originally established through the Center for Sustainable Environments.

Responsible Party

The principal investigator or program director for each program will be responsible for its continued success. Coordinators in the College of Engineering, Forestry, and Natural Sciences, the School of Earth Sciences and Environmental Sustainability, and the Master of Sustainable Communities will track the number of student participants.

Measure of Success

The number of student participants in research, internships, and engaged learning experiences will be tracked.

Benefits

Embedding environmental sustainability issues across the curriculum will increase student awareness and assist in creating a culture of sustainability on campus. It will also encourage students to seek out research opportunities in the areas of environment and sustainability, and help to make the campus a living laboratory.

Timeline

Efforts in this area are currently underway and will adapt to changing needs over time.

Challenges

A variety of pressures on public research universities has resulted in decreased resources available for research, outreach, and public service.

Expected declines in state funding and continued financial pressures on the TRIF/ERDENE programs will pose serious challenges as the university continues to promote partnerships and sustainable activities, expand sustainability curriculum, and provide in-depth learning experiences to an increasing population of students.

Opportunities

Our unique cultural setting on the Colorado Plateau provides us with special opportunities to develop strong partnerships with federal and tribal agencies. These partnerships not only allow the university to use its expertise in outreach and public service, but also allow programs like Applied Indigenous Studies to draw upon traditional ecological knowledge in sustainable practices and seek partnerships with the tribal colleges.

University faculty, staff, and students provide a broad base of support for campus-wide and community sustainability initiatives such as the Global Learning Initiative and three university student learning outcomes on global engagement, diversity, and environmental sustainability.

■ The university purchases ten percent of its energy from the Arizona Public Service Green Choice Program—which taps renewable energy technologies such as wind and solar power.

Section 2

Energy and Climate Change

Introduction

Electricity consumption and natural gas combustion account for the largest portion of the university’s carbon footprint. Power is purchased from APS; 90 percent is generated with fossil fuels, and 10 percent is from renewable sources. Natural gas is purchased from Unisource Energy Services and used primarily to generate heat and produce hot water across campus.

Currently, the university produces steam at the north central plant using three natural gas fired water tube boilers. The steam is distributed through a tunnel system to 48 buildings across north campus, where it is used to produce heat and hot water. The southern portion of campus is supplied with high temperature hot water that is produced at the south central plant with three water tube natural gas fired boilers. It is distributed through tunnels to 15 buildings. The buildings that are not served by the central plants utilize stand alone boilers and wall heaters.

Chilled water is produced at both central plants using centrifugal chillers and cooling towers. It is distributed to academic and administrative buildings across campus via a direct buried distribution system.

By 2011, all Arizona state agencies must reduce energy consumption by 15 percent using 2002 as the baseline year. This reduction is based on the number of BTUs used per square foot of building area. Despite the fact that total consumption has gradually increased on the Northern Arizona University campus, BTU per square foot numbers have gradually declined. As of 2009, the university has decreased energy consumption per square foot of building area by 14.9 percent, using 2002 as the baseline year. This reduction is due to early actions that were taken to reduce energy consumption and increase energy efficiency. The following is a list of notable actions that have been taken to date.

2000: All light fixtures were converted to electronic ballasts and T-8 lamps. The campus installed LED lighting and motion sensors in new buildings to further reduce energy use. Incandescent lighting and T-12 lamps have been eliminated in all university buildings.

2005: Chillers were added to the south central plant creating 1,250 tons of cooling capacity. This allowed for the removal of stand-alone cooling equipment in academic buildings. Chilled water can be produced at the central plant for .6 to .7 kw per ton, including pump and tower load. (The stand-alone cooling equipment required 1.1 to 2.2 kw per ton.)

2006: Information Technology Services began to replace 500 traditional desktop computers with thin clients which draw 4-14 watts of power opposed to the 70-80 watts drawn by a traditional desktop computer. This has the potential to reduce the university’s carbon footprint by 100 metric tons.

2006: Information Technology Services began reducing the purchase of additional servers by using virtual machine (VM) technology to create “new” servers on existing ones. As of 2010, Information Technology Services has avoided the purchase of 95 physical servers. A savings of 157 metric tons of greenhouse gas emissions are realized each year.

2007: The cooling capacity at the north central plant was increased from 1,000 tons to 3,000 tons, allowing the Information Technology Services building, Cline Library, Old Main, and Ashhurt Auditorium to be connected to the central plant and stand-alone equipment to be removed.

2007: 2,500 CFL light bulbs were donated by Arizona Public Service (APS) and swapped for incandescent bulbs, and installed by campus residents.

2007: The installation of energy efficient windows began in residence halls. By summer 2010, all but one residence hall will have energy efficient windows.

2008: APS donated a 160 kw Photo Voltaic Array. It was installed on south campus.

2010: Two high efficiency boilers will be installed in the north central plant increasing plant efficiency from 68 percent to 84 percent.

It is the intent of the university to first implement conservation programs, then look for energy efficiency upgrades and retrofit opportunities, followed by onsite renewable and alternative energy production. If goals are not met after all the aforementioned strategies are exhausted, carbon offsets will be purchased.



Goal 1

Return to 2000 carbon levels by 2014.

- Action 1.** Complete the University Master Plan by 2011, including space optimization and strategies for building footprint efficiency.
- Action 2.** Develop conservation programs, using tactics such as residence hall energy competitions to encourage student engagement.
- Action 3.** Select an energy services company to perform an investment grade audit to identify energy efficiency retrofits and upgrades needed in existing buildings. Implement all suggested changes as funding becomes available.

Responsible Party

The Office of Sustainability, the Utilities Department, and Residence Life will work together to develop conservation programs. The Utilities Department is currently working with Purchasing Services to select an energy services company.

Measure of Success

Greenhouse gas emissions reduced to 2000 levels by 2014. This will be measured on the annual emissions inventory, and progress will be noted at the end of each fiscal year.

Goal 2

Return to 1990 carbon levels by 2018.

Action

Develop renewable or alternative energy production on campus. A feasibility study will have to be completed to determine which renewable production source will be the most cost effective.

Responsible Party

The Utilities Department will work in collaboration with various campus research groups to perform the feasibility study and initiate a project.

Measure of Success

Greenhouse gas emissions reduced to 1990 levels by 2018. This will be measured on the annual emissions inventory and progress will be noted at the end of each fiscal year.

Goal 3

Achieve carbon neutrality by 2020.

Action

Continue to develop onsite renewable energy systems and look to purchasing carbon offsets if necessary.

Responsible Party

The Utilities Department will continue to lead this effort with the assistance of academic units performing research in this area.

Measure of Success

Carbon neutrality.

Benefits

All efforts to reduce energy consumption will have a direct effect on greenhouse gas emissions, pushing the university closer to the goal of carbon neutrality.

Timeline

The Utilities Department is currently working on the selection of an energy services company. All other actions will follow in sequence.

Challenges

The biggest challenges to achieving emissions reductions are financing and technology limitations. The university will have to look to public-private partnerships and utility rebates to fund the development of onsite renewable energy generation. Technologies are rapidly changing and the university will need to consider a variety of cutting-edge options in low carbon technologies.

Opportunities

There are endless opportunities for research in this area. The campus can be used as a living laboratory as students work with faculty and staff to develop new renewable and alternative energy technologies.



Section 3

Operations

Introduction

Campus operations staff plays a large part in the university's environmental impact. Operations include building construction, building maintenance, custodial services, the grounds department, and dining services. Solid waste, recycling, and composting also fall under operations, but they are included in Section 5.

Northern Arizona University has taken action in many areas of operations. All new buildings constructed on campus must be built to a minimum LEED Silver standard. There are currently seven facilities on campus that are certified, or are in the process of being certified.

- Applied Research and Development – Platinum
- Engineering and Technology – Gold
- The W. A. Franke College of Business – Gold
- Extended Campuses facility – Gold
- Health and Learning Center – on track for Gold certification
- South Campus Recreation Field – on track for Gold certification
- Residence Life warehouse – on track for Silver certification

■ The Applied Research and Development building was named the “greenest building in Higher Education” by the Chronicle of Higher Education, and earned a LEED Platinum rating from the U.S. Green Building Council. It is the third highest ranked building in the world and one of the university's four LEED certified projects on campus. Three additional projects are on track for LEED certification.

The Planning and Development Department is in the process of revising the university technical standards to include a requirement of maximum points achieved in the LEED energy efficiency category.

Maintenance staff spends time performing preventative maintenance tasks to ensure that equipment is running in an efficient manner, and catching leaky faucets before large amounts of water are wasted.

Custodial services has transitioned to Green Seal Certified cleaning products, recycled trash bags, and recycled toilet paper and paper towels.

In the spring of 2008, the grounds department developed test-plots to research the effectiveness of various non-toxic grounds maintenance methods in an attempt to eliminate the use of herbicides on campus.

Campus Dining is a cooperative partnership between the university and Sodexo International. There have been many action steps taken by Sodexo. They use recycled content napkins and biodegradable to-go containers and utensils. They have eliminated the use of trays in an effort to save water and energy—an estimated 200 gallons of water per 1,000 meals served, and 522 kwh of power each day. Campus Dining purchases local, organic, and fair trade products when they are available. In 2010, they hired a full-time sustainability specialist to perform a variety of duties pertaining to sustainability and social responsibility.

Many of these efforts may not have a direct effect on the university's emissions inventory, but they are all part of creating a culture of sustainability.

Goal 1

Implement and maintain university technical standards so all new construction is built to strict energy standards.

Action

To ensure that the technical standards are holding design professionals and contractors to the highest possible standards, the university shall research new standards such as ASHRAE 189.1 which clearly outlines methods for constructing a LEED Silver building while placing emphasis on the energy efficiency category.

Responsible Party

The Planning and Development Department will perform this work.

Measure of Success

A final draft of the university technical standards will be completed.



Goal 2

Reduce the impact of chemicals used on campus.

Action

Continue to use Green Seal Certified cleaning products. Continue test-plot research on non-toxic grounds maintenance methods until a successful method is discovered and herbicide use on campus can be reduced.

Responsible Party

The Director of Operations will oversee these efforts.

Measure of Success

The reduction of chemicals used on campus.

Goal 3

Increase the use of local, organic, and fair-trade food in dining halls as local food production increases.

Action

Research local, organic, and fair-trade food providers and assist them in gaining the proper certification so the food can be served in the campus dining facilities.

Responsible Party

Campus Dining will be responsible for taking action.

Measure of Success

The increase of local, organic, and fair-trade food offerings in all dining locations across campus.

Benefits

As previously stated, the efforts listed in the Operations section may not have a notable direct effect on the emissions inventory, but play a large part in creating a culture of sustainability.

Timeline

All actions are currently underway and will continue until completion.

Challenges

Green building materials and methods, green cleaning products, non-toxic grounds maintenance methods, and local foods all come at a premium. In a time of tight budgets, it is difficult to justify purchasing the more expensive product. It is important that the campus community be educated about the benefits of these products and methods so that sustainability initiatives and campaigns will be supported.

Opportunities

The university has an opportunity to support local food suppliers. There is currently significant student involvement in operations activities. Building maintenance, grounds maintenance, custodial services, and Campus Dining all employ student workers. The Planning and Development Department also provides internship opportunities.

Section 4

Procurement



Introduction

Environmentally Preferable Purchasing (EPP) or “green purchasing” is the intentional and deliberate procurement of products or services that reduce environmental and social impact over the lifecycle of the product. Preferable products include those that conserve resources, minimize waste, minimize or eliminate pollution, include recycled materials, are upgradeable or recyclable, are produced using renewable energy, are transported using alternative fuel vehicles, or avoid using harmful chemicals that may be hazardous to human and non-human health. Northern Arizona University’s current purchasing policy can be found at nau.edu/purchasing. Partnerships with vendors are important to the university and central to the implementation of Environmentally Preferable Purchasing. Here is a list of current partnerships that support EPP practices:

- Arizona Public Service (APS)
- Dell Greener Products
- Diversified Flooring
- EcoLab
- Hellas Construction
- Hillyard Floor Care
- Interface Global
- Konica Minolta
- Target Commercial Interiors
- Unisource
- Voss Lighting
- Waxie Janitor Supply
- Quality Connections/QC Toner

Goal 1

Improve Environmentally Preferable Purchasing (EPP) on campus through enhanced cooperation between the Purchasing Department and the Office of Sustainability, with the ultimate goal being a formalized EPP policy.

- Action 1. Immediately begin to create a list of all environmentally and socially responsible vendors with which the university can currently do business. Publish the list, making it available to all business managers on campus. Update the list annually.
- Action 2. Assess and improve the availability of environmentally preferable products available through Campus Supply. Create a tab on the Campus Supply website that would allow direct access to all products that meet the criteria of being “environmentally preferable.”

- Action 3. Promote, provide incentives for, and encourage the use of the green vendor list through outreach and communication efforts such as presentations and information sessions.
- Responsible Party
- The Purchasing Department, the Office of Sustainability, and Campus Supply will work together to ensure all actions are taken.

Measure of Success

These actions can be measured in two ways. First, the creation of a green vendor list, a formalized policy, and increases in green product offerings through campus supply will be self evident and reported in updates of this report. Second, the change to EPP among buyers will be measured using annual purchasing records. These records will indicate whether there is an increase in the use of “green” vendors among faculty and staff.



Benefits

As the number of green purchases increases, the amount of waste that the university generates will decrease, which will aid in meeting the goal of creating a zero waste campus, discussed in Section 5.

Timeline

The development of a formalized EPP policy will begin immediately and the campaign to increase the number of green purchases will be ongoing.

Challenges

Educating the entire target audience on EPP will be difficult due to varying schedules and turnover of personnel responsible for making purchases. It may also be a challenge to create a policy that is reasonable from a cost standpoint while maintaining the intended purpose.

Opportunities

The university will develop relationships with green vendors through the use of EPP. The vendors will supply information to the university about new technology and new products allowing the university to stay at the forefront of the green movement.

Additionally, the creation of an EPP policy will provide an opportunity for student internships. Student interns would be responsible for compiling and presenting the green vendor list to departments across campus. They would also act as liaisons between the Purchasing Department and Campus Supply to ensure that green products were added to the Campus Supply stock.

Section 5

Recycling and Waste Minimization

Introduction

Recycling at Northern Arizona University has been common practice since 1991. The effort began modestly, with just over 100 tons in the first year. By 1996, it increased to nearly 1,200 tons per year, with an average annual tonnage of 1,124 between 1994 and 2004. A composting component was added in 2000, and food waste from campus dining halls was collected and composted.

In the summer of 2005 the university entered into a contract with the City of Flagstaff for recycling and trash collection. The program enables the university to capture recyclable materials while making it easy for faculty, staff, and students to participate.

In 2009 Northern Arizona University's Merriam-Powell Center for Environmental Research joined forces with the Arizona Department of Environmental Quality (ADEQ), Coconino County, the City of Flagstaff, and Willow Bend Environmental Education Center to form the Partners in Recycling Education (PRE). The program is supported by a one-year grant from ADEQ. The partnership coordinates regional recycling education and outreach to students, residents, and businesses in northern Arizona. PRE works to increase recycling education and awareness through a range of advertising, promotion, and community outreach events.

Composting and biodiesel production are currently part of the campus waste reduction strategy. Biodiesel is produced using grease from university dining halls and used in campus buses. In addition, the South Campus dining hall located in the du Bois Center, collaborates with the student group Students for Sustainable Living and Urban Gardening (SSLUG) to compost about 200 pounds of organic material each week. Campus Dining also recycles all cardboard, has eliminated trays from the dining halls, and is incrementally removing plastic water bottles from dining and retail locations.

Goal 1

Create a zero waste campus.

Action 1. Improve and increase recycling visibility on campus so that faculty, staff, students, and visitors clearly understand how and where to recycle. Create labels in administrative and classroom buildings to clearly mark recycling and landfill waste bins. Implement an outdoor recycling system consistent with the interior system.

Action 2. Identify alternatives to Styrofoam on campus.

Action 3. Increase the scope of the composting program on campus by including the North Campus dining hall and gradually incorporating faculty lounges, building kitchens, and retail locations across campus.

Responsible Party

The Office of Sustainability in cooperation with Merriam Powell Center for Environmental Research and Custodial Services will propel the recycling visibility initiatives on campus. Campus Dining will continue to work toward finding alternatives to Styrofoam as it is currently the largest unit using Styrofoam materials. Students for Sustainable Living and Urban Gardening will be responsible for the composting program.

Measure of Success

Recycling tonnage is a measurable benchmark that will be assessed through annual audits done by the City of Flagstaff. Success will be measured through increases in tonnage each year. The expansion of the compost program will be measured by increases in the number of pounds per week being composted. Becoming a Styrofoam free campus will be the measure of success.

Goal 2

Improve the utilization of Property Surplus Services on campus, encouraging reuse across campus.

Action

Internally market Property Surplus Services as a means to reduce waste.

Responsible Party

The Office of Sustainability and Purchasing Services will be responsible for the development of an internal marketing campaign.

Measure of Success

An increase in supply and demand of surplus property.

Goal 3

Promote the “move-out” donation program in the residence halls.

Action

Train student groups such as Greek Life to conduct end of school year presentations in the residence halls in order to educate residents about the importance of donating gently used items and canned food to local charities.

Responsible Party

The Office of Sustainability will initiate the campaign in cooperation with Residence Life and Greek Life.

Measure of Success

The increase of charitable donations made at the end of each semester.

Goal 4

Create a graduate assistant position that would be responsible for recycling and waste minimization initiatives.

Action

Identify grant, state, or local funds that can be allocated toward the development of a graduate assistantship that would be responsible for implementing recycling and waste reduction initiatives, creating continuity in the waste reduction efforts of the institution.

Responsible Party

The graduate assistant will be managed through the Office of Sustainability and Custodial Services.

Measure of Success

The identification of funds to establish the graduate sssistant position.

Benefits

Waste minimization is important from a cultural standpoint. Campus community members often identify sustainability and carbon reduction with waste diversion actions like recycling and composting. As such, the actions in this section will help to encourage the campus community to engage with the goals of the climate action plan. The reduced emissions from less extracting, processing, transporting, and disposing of materials will contribute to Northern Arizona University’s carbon neutrality.

Timeline

The labeling and visibility effort as it relates to recycling is already underway and will continue indefinitely as labels need to be replaced. The campus will be Styrofoam free by 2015. The composting program has already begun and will continue to grow through 2020. The graduate assistant position will be filled as soon as funding is identified so all actions can be met by 2020.

Challenges

Recycling is dependent upon the participation of the entire campus community. Participation is best assured through consistent education, paying special attention to new students, faculty, and staff who come to the university each year. An education program of this magnitude will require a large amount of time and funding to be successful.

Opportunities

Students are critical of waste minimization goals. The university is dependent upon students to lead the composting as well as the labeling initiatives. In addition, there is an opportunity for students to engage in peer education in the residence halls and classrooms.

■ The Yellow Bike Program gives faculty, staff, and students year-round access to free bicycles, locks, and helmets, and earth-friendly transportation on campus.

Section 6 Transportation

Introduction

In 2006, transportation accounted for 29 percent of total greenhouse gas emissions in the United States. Campus commuting, the university fleet, and air travel, constitute a substantial source of greenhouse gas emissions. The university is working to reduce emissions and impacts from transportation through the implementation of various programs.

The campus offers a bus system that is free to all students, faculty, and staff. The majority of the university buses run on biodiesel. Alternative methods for commuting to campus such as: carpools, vanpools, bicycling, walking, and utilization of public transportation, are encouraged with incentives. The university has partnered with the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) to provide faculty and staff with an ecoPASS, which allows the use of the public transportation system free of charge. While on campus, a free bicycle share program is available for university faculty, staff, and students.

The campus motor pool includes of sixty vehicles that are available for department use. Hybrid vehicles comprise 22 percent (13 vehicles) of the pool.

Air travel is not currently tracked and travel booking is not centralized. This will be be addressed when the emissions inventory is updated in 2010.

Goal 1

Decrease greenhouse emissions from commuting each year.

Action 1. Advance carpool and vanpool programs from areas that do not have access to public transportation such as Kachina Village and Mountainaire by creating a web-based forum on the university website to connect people in the area.

Action 2. Improve bicycle access to campus and increase the scope of the Yellow Bike Program, Northern Arizona University's bicycle share program.

Action 3. Improve the public transportation infrastructure to allow better access to campus through the construction of the transportation spine. The spine will be a dedicated bus route through the center of campus. In addition, parking options will be moved to the periphery of campus.

Action 4. Increase on-campus housing capacity so commuting is not required. Work with the community to create housing options near campus.

Action 5. Create opportunities for staff telecommuting.

Responsible Party

The Office of Sustainability will continue to work with various campus organizations to coordinate the defined actions.

Measure of Success

A reduction in greenhouse gas emissions associated with commuting reported on the annual inventory.



Goal 2

Reduce campus fleet emissions each year.

Action 1. Continue to add hybrid vehicles to the motor pool and phase out all others.

Action 2. Promote the use of video conferencing to avoid travel to Phoenix and Tucson for meetings.

Responsible Party

The university administration will allocate funding for vehicle purchases as it becomes available. The Office of Sustainability will work with Information Technology Services to educate faculty and staff on video conferencing technologies available on campus and create an internal marketing campaign to encourage use.

Measure of Success

The campus fleet reports a reduction of greenhouse gas emissions in the annual inventory.

Goal 3

Develop a system to centrally track all air travel.

Action

Add a place in the Advantage System for departments and units to report air travel.

Responsible Party

The Comptroller’s Office will be responsible for crafting and implementing this change to the Advantage system.

Measure of Success

A successful program modification that will allow for accurate tracking of annual campus air travel.

Benefits

Transportation is responsible for 18 percent of the university’s carbon footprint. As a result, campus carbon neutrality depends upon a reduction of transportation emissions. Health benefits attributed to more walking and biking are a positive result of using alternative methods of travel.

Timeline

Campaigns to increase carpool and vanpool use are currently underway and will be enhanced as additional resources become available. Construction of the transportation spine is scheduled to begin in 2011. Marketing campaigns to promote on-campus living for students will continue as existing facilities are updated and new facilities are built. Efforts to create a virtual workplace will continue and be ongoing as technology improves.

Challenges

Issues concerning personal inconvenience are coupled with funding challenges. Individual commuting habits are hard to change. Any new programs and initiatives will need to assure flexibility. Additional video conferencing sites will be needed as well as telecommuting systems modifications. Hybrid cars are considerably more expensive than traditional vehicles and could result in fewer cars being replaced each year.

Opportunities

Students will have the opportunity to participate in the reduction of transportation emissions through possible internships.



Section 7

Water

Introduction

Northern Arizona University is located in a semi-arid environment. City water supplies are highly dependent on groundwater withdrawals and winter snowfall amounts. When adequate snowfall is not received, water for landscape purposes is limited in the summer months. Water conservation and efficiency are important topics in the City of Flagstaff.

In 2009, the university used 226,582,689 gallons of potable water. Consumption has remained under 250,000,000 gallons annually over the past decade despite the addition of nearly 1.5 million square feet of building space and an increased campus population. This is due to the ongoing water conservation efforts of the university.

Residence Life has installed low flow shower heads in all residence halls. Nearly the entire campus has been converted to waterless urinals, and all toilet flush valves have been adjusted to use the least amount of water possible.

The university began developing a reclaimed water infrastructure in 2002, allowing irrigation systems to be converted from potable water to reclaimed water. The system has continually been expanded, now reaching nearly 75 percent of landscaped areas. Reclaimed water is also being used to flush toilets in six buildings on campus. In 2009, more than 25,000,000 gallons of reclaimed water were used.

There is additional work that can be done to further reduce water consumption. Water usage is not tracked on a per building basis, so it is difficult to ascertain how water is used. Water meters need to be installed on as many buildings as possible. Water is also connected with energy consumption. Energy is used for pumping water and for devices that utilize water. Reducing water use thus reduces energy use.

Stormwater runoff is also an important factor in water conservation. The more water that can be retained on site, the less artificial irrigation is needed. The City of Flagstaff created an extensive Low Impact Development Plan that the university will adopt for all new construction projects.

Goal 1

Reduce the gallons of potable water per square foot of building space used annually by 20 percent by 2015 (using 2002 as the baseline year).

- Action 1.** Continue to expand the reclaimed water system to reach 100 percent of landscaped areas. Also use reclaimed water to flush toilets in all new buildings.
- Action 2.** Utilize Environmentally Preferable Purchasing discussed in Section 4 to purchase all water fixtures. Ensure that the Environmentally Preferable Purchasing Policy includes standards for water fixtures.
- Action 3.** Develop a water conservation educational outreach campaign that can be presented to all incoming students informing them of water consumption goal.

Responsible Party

The Utility Department will work with Planning and Development to ensure that reclaimed water infrastructure is included in all new development. The Office of Sustainability will work with Purchasing Services to incorporate water fixture standards in the Environmentally Preferable Purchasing policy. Various student groups will work in conjunction with the Office of Sustainability to develop educational outreach strategies for incoming students.

Measure of Success

A 20 percent reduction in water consumption per square foot by 2015 (using 2002 as a baseline year). This information can be found on the annual utility consumption report issued by the Utility Department.

Goal 2

Develop ways to make water consumption data available to users.

- Action 1.** Search for grants or other sources of funding that would make meter installation possible so building water use could be made available in real time to building occupants.
- Action 2.** Develop a system that could meter individual showers and report the shower duration, amount of water consumed, and amount of energy used to heat and distribute the water so the resident would be able to understand in real time the impact shower length has on the environment.

Responsible Party

The Utility Department would be responsible for locating funding and creating the project.

Measure of Success

A successful metering system that allows the campus community to follow real time consumption data.

Benefits

Water delivery requires the use of energy that creates greenhouse gas emissions. If the university is able to reduce water consumption, energy use will also be reduced.

Challenges

Reducing water use will be challenging considering planned campus growth. Other challenges include reaching the entire campus community with educational outreach programs.



Opportunities

Northern Arizona University has the opportunity to become a premier example of water conservation in action for the Flagstaff community.

Students will be responsible for the majority of the educational outreach and will have ample opportunities for involvement in water conservation efforts.

Climate Action Plan Committee

Jane Kuhn	Associate Vice President of Enrollment Management and Student Affairs
Rich Bowen	Associate Vice President of Economic Development
Laura Huenneke	Vice President for Research
Blasé Scarnati	Professor, School of Music
Rod Parnell	Professor, School of Earth Sciences and Environmental Sustainability
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Agnes Drogi	Manager of Construction, Capital Assets and Services
Lindsay Wagner	Manager of Utilities and Infrastructure, Capital Assets and Services

Contributing Organizations

- Environmental Caucus
- Ponderosa Group
- Purchasing Services
- Information Technology Services
- Campus Dining Services
- Office of Sustainability
- Capital Assets and Services
- University Marketing