**Academics and Research**

GOAL: Develop and embed effective sustainability education, research and practice across the curriculum and involve staff and faculty experts in sustainability across campus to provide useful research, co-curricular and service learning experiences for our students, our campus and our community.

**Introduction**

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

This document provides a framework to guide department, college, and university-wide development of sustainability education and scholarship. NAU has a tradition of bottom-up development for sustainability academics and research and we are committed to continuing this approach. NAU also has a tradition of community engagement, so we want students embedded in sustainability project and operations.

A major driver for this commitment to sustainability education is the need to enhance climate literacy. NAU is committed to sustainable practices, not just through its American Colleges and University Presidents’ Climate Commitment but also through its strategic plan. Goal 6 of the plan is **Sustainability and Effectiveness:** *exemplify a sustainable, innovative, and effective university community* by modeling *environmentally responsible and sustainable operations and education*. Strategies specified in the plan include:

partner with individuals, institutions, and communities to advance renewable resources and sustainable practices across campus;

maintain and revise the Campus Sustainability Plan;

use the “campus as ecosystem” concept across the curriculum to educate faculty and students about the scientific, cultural, socioeconomic, and ethical dimensions of sustainability; and

implement issue-oriented education focusing on topics such as global climate change, resource depletion, water issues, and species loss.

**Academics**

In pursuing sustainability education across campus, our goals are:

enhance course and degree offerings in sustainability;

promote student involvement in co-curricular activities;

improve climate and environmental literacy; and

develop students’ knowledge and skills needed for lifelong engagement in civic

decisions related to sustainability.

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 and the Environmental Caucus, environmental and sustainability issues and concepts will be embedded across the curriculum, and learning opportunities for students will be promoted across the campus and community.

**Objective 1**: **Embed environmental sustainability issues across the curriculum.**

**Action 1.** Because this goal was in the original plan, we have retained it here to demonstrate our progress. We have established environmental sustainability as one of three university-level student learning outcomes. The Task Force on Global Education was created to address the university’s Strategic Plan, Goal 4 on global engagement. The Task Force has achieved this goal, through a Faculty Senate approved plan to incorporate the following student learning outcomes within every degree program:

**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; and

**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 these core university thematic student learning outcomes in January 2010 that apply to all undergraduate students in their majors, the Liberal Studies Program, and in co-curricular programming. The university provides 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.

Opportunities for programs to participate in this program are provided through the Center for International Education (CIE). The Provost’s office, Vice Provost for Academic Affairs, is charged to reach out to programs that haven’t completed their GLI plan. The Provost’s Academic Sustainability Programs steering committee will host a “town hall” discussion about the current state of assessment and feedback on existing GLI outcomes.

BASELINE: Prior to initiation of the GLI, only a handful of academic programs had learning outcomes relating to global engagement, diversity, and sustainability.

GOAL: Currently approximately 70% of undergraduate degree programs have developed them. Our goal is 95% academic program participation in the GLI, with learning outcomes and assessment plans submitted for each of them.

METRICS: Use green calendar postings at GreenNAU to track sustainability activities, including sustainability-related course offerings. Make this resource known to all academic units through the Academic Chairs Council. NAU CIE maintains an inventory of programs that have and have not yet adopted GLI learning outcomes in their degree programs. We will compile a list of the kinds of activities that departments are using to achieve sustainability outcomes.

**Action 2. Improve sustainability education through curriculum and co-curricular activities across the campus**

**2a.** Utilize the Environmental Caucus to improve sustainability academics

The Environmental Caucus (EC) is a group of NAU faculty, staff, students, and environmental partners of the university that has met monthly since 2002 to advance the university’s Strategic Plan, Goal 3: commitment to a vibrant sustainable community. The EC provides discussion and feedback from members to identify the integral connections between academic and operations 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 operates through consensus-based decision making. Self-organized action teams develop recommendations and oversee implementation of projects through combined staff, student, and faculty action.

The EC is a voluntary, informal group of over 1000 students, faculty and staff with no official status within the University. Concepts and recommendations generated by its members and action teams (energy, waste management, water, transportation) are forwarded to the university’s Coordinating Committee on Campus Sustainability, a presidential committee made up of university vice presidents and mid-level administrators tasked with sustainability implementation. EC executive committee members are elected by EC members and are volunteers. The EC is staffed by a graduate student assistant funded through the Office of Academic Affairs. Recent activities of the EC are listed at <http://nau.edu/Environmental-Caucus/Accomplishments/>

BASELINE: Current membership in the EC is approximately 400 faculty, staff and community members plus approximately 600 student members.

GOAL: Increase faculty and staff participation to 50% of all faculty and staff.

METRICS: Track membership in the EC through the size of the list serve and attendance at EC events.

**2b. Ponderosa Group:** Continue todevelop curriculum through Ponderosa Project style activities including the Provost’s Academic Sustainability Steering Committee.

The Ponderosa 2.0 Action Team of the EC will build upon the original Ponderosa Project to continue “greening” the curriculum. 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 increase from the current 10 to 20 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.

The goals of a Ponderosa Project 2.0 include: gap analysis, perhaps starting with Academic Steering Committee, then invite targeted faculty and staff and their chairs. Inventory existing sustainability degree programs to see where our holes are. Consider how to create a mechanism where sustainability faculty can support requests beyond the scope of our individual departments. Emphasize sustainability across the campus rather than just strengthening individual silos. Determine how to increase the University-wide commitment to silo-bridging courses and activities, and how to increase incentives at departmental and college level. Identify possible incentives and metrics. The Academic Sustainability Steering Committee should take a lead role in these activities.

BASELINE. Number of courses identified as having an environmental awareness theme, generated by the Ponderosa Project process.

GOALS: 20 First year seminars with sustainability themes.

METRICS: Maintain an up-dated inventory of sustainability courses, as listed on the Green NAU page but supplemented by searches in the Faculty Activities and Achievement Reporting (FAAR) system through the Provost’s Office’ map courses by college and program and also by course purpose (e.g. contributing to a liberal studies requirement); examine enrollment histories to see which courses tend to be full or have unmet student demand, and which ones offered more frequently than needed or could accommodate more students. If gaps are identified (where courses do not exist in key areas of student interest or demand or appropriate disciplines, or where there is documented need for more frequent offerings), then work with appropriate deans and chairs to determine how to increase offerings.

Examine the number of current sustainability courses not offered: ones offered less than once a year and new ones we have identified but not yet implemented (food systems, renewable energy policy, etc.).

**Action 3.** Northern Arizona University will continue to promote campus-wide learning opportunities by incorporating sustainability themes into the Provost’s and President’s Lecture Series: institute, college lectures and film series; Hot Topics cafes; Building for Community series; Freeport MacMoRan lectures; Public Humanities Showcase; and other lectures and community engagement activities (e.g. Earth Week, National Lands Day).

BASELINE: Current levels of activities

GOAL: 5 film, lecture, discussions series or other activities related to sustainability involving more than one academic unit. Identify a specific coordinator to develop these activities and to coordinate them between academic units, perhaps through on-going student internships in the Office of Sustainability.

METRICS: Collate the number of activities developed and promoted by each College, schools, departments, or academic programs, institutes and centers, and the number of interdisciplinary activities shared between multiple units. Attempt to track attendance. Use STAR Report metrics on sustainability activities.

Responsible Party

Global Learning Committee, Academic Sustainability Steering Committee, Office of the Provost, Chair of the Environmental Caucus.

Measure of Success tbd

**Action 4.** Create programs to reward exceptional effort in teaching and mentoring sustainability by

developing a faculty fellows program (distinguished teaching fellows in sustainability),

encouraging individual units to develop distinct criteria in P&T documents to recognize efforts in sustainability. Examples of such criteria include credit for participation in Global Learning Initiative activities, credit for participation in sustainability activities, organizations, and co-curricular activities. The latest version of the Conditions of Faculty Service document calls for recognition of achievements in advancing university strategic priorities including sustainability.

increasing the visibility of faculty sustainability action by converting the Environmental Caucus’s Annual Sustainability Award to a Presidential Award, with the Academic Sustainability Steering Committee serving as the review committee for the award,

recognizing significant service though an additional 10% service allocation in annual statements of expectation. In programs like Sustainable Communities, Forestry and SESES, expectation for such engagement could strongly encouraged as a condition for promotion.

BASELINE: none of these activities exist.

GOAL: implement a program to develop and recognize sustainability teaching and mentoring.

RESPONSIBLE PARTIES: Academic Sustainability Steering Committee and office of the Provost.

**Action 5**. Create a university-wide sustainability citizenship program to formally recognize any student participating in an organized set of activities related to sustainability.

These activities can include lectures, films, action research, EC or GreenJacks teams, Earth Week activities, undergraduate research symposia, and others. A Sustainability Student Fellows program could be formalized requiring participants to demonstrate acquisition of knowledge as well as application of sustainability concepts in formal sustainability activities. We could recognize them at commencement ceremonies (a green leaf program).

BASELINE: no specific recognition for achievement in sustainability education and outreach.

GOALS: establish specific mechanisms to recognize such achievement.

METRICS: establishment and participation students in campus in sustainability activities.

RESPONSIBLE PARTY: University College and ARTs. Efforts will focus on engagement in civil society (e.g., working on and off campus with managers, government, and NGO to help implement sustainability programs and ensure the best use of science in such efforts).

**Action 6**. Encourage units across campus to involve students and faculty in improving sustainable operations.

We need to generate a mechanism to allow any unit around campus to solicit student or faculty involvement to develop a specific sustainability-related activity or change in operations.

BASELINE: no formal mechanism for internship coordination between academic and other units on campus.

GOALS: Utilize the new internship coordinator within University College and the Coordinating Council for Campus Sustainability (CoCoSus) to set up a communications network between interested students and opportunities in Facilities Services, Enrollment Management and Student Affairs, Food Services, and other units on campus.

METRICS: Number of internships in these areas.

RESPONSIBLE PARTIES: CoCoSus and university internship coordinator.

**Action 7.** Explore the possibility of assessing incoming students’ environmental and sustainability knowledge (including climate literacy).

With EMSA and University College add questions for an incoming student assessment that would then be followed up with the existing senior survey (with a question added about how the educational experience at NAU increased the student’s level of awareness of environmental sustainability). There are existing sophomore and senior surveys conducted by PAIR. Multiple organizations have these tests at various levels so the tools are available.

**Action 8.** Move beyond the scope of the current GLI. Set an agenda for educating global citizens, recognition of responsibility of higher education, do we need additional class or co-curricular opportunities to consider ethical responsibility for sustainable action, and to consider scope of challenges. Go beyond outcomes in individual majors to develop a course or suite of courses by college for every student. Open discussions with the Liberal Studies committee to consider such an outcome.

**Action 9.** Increase the percentage of students taking at least one sustainability-focused course.

BASELINE: Current enrollments in existing sustainability-focused courses.

GOAL: 30% of the student body.

METRICS: 30% of the student body

Responsible Party: The Office of Academic Affairs, no resources currently identified to track student enrollment patterns.

**Objective 2: Prepare students to compete in and be agents of change for a more sustainability society and economy. Maintain and develop disciplinary and interdisciplinary programs in sustainability.**

**Action 1:** Support existing and develop new degree programs focused on sustainability.

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, forestry, ecology, politics, and climate science and solutions.

Develop specific technologies within entrepreneurial business and 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.

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.

**Action 2.** Develop a Sustainability Graduate Fellowship program to recruit highly sought after students for any Masters Program at NAU.

Responsible Party

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

**Action 3.** Document the progress NAU is making in training sustainabilityprofessionals.

Inventory existing programs and track enrollments. Charge the Academic Sustainability Steering Committee or other groups to identify any opportunity to add a degree program in a new area appropriate to NAU and of sufficient potential student interest to be worthwhile.

BASELINES: Current programs and enrollments

GOALS: Stable enrollment in existing programs, identify funding sources and other opportunities for new programs.

METRICS: Evidence of program level success are outlined in the assessment plan for each academic program. Campus-wide measures of success include the list of degree programs, the numbers of students enrolled (degree seeking), and the numbers of degrees earned each year.  These measures can be linked to the 2020 degree targets established by ABOR – important contributions to the university’s overall mission.

**Objective 3: Partner with the community to provide opportunities for students in the green economy (in concert with Research Objective 5).**

Partner with the community to provide students with a civic engaged experience to open up opportunities for the student in the green economy (enhance retention of students through engagement in the community).

On-campus:

 promote interactions with International Pavilion: Lab and lecture space, gallery in

 a Pt LEEDS facility;

work with the Office of Undergraduate Research and also with the new

 internship coordination effort, both located in University College;

 recognize, assess, and award prizes foractivities related to sustainability at the

Undergraduate Research symposium, which occurs after the EC sustainability awards;

Off-campus:

 Work with Northern Arizona Center for Entrepreneurship and Technology (NACET) through its annual Startup Weekend for student teams to encourage sustainability projects.   Encourage the NAU Green Fund to make connection external to the campus for some joint opportunities?

Examine potential partnerships with NAU Furnace and NAU Innovations.

**Action 1.** Develop sustainability research and co-curricular activities through internal funding sources including 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. Northern Arizona University’s TRIF agenda focuses 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; and

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), the Coconino County Sustainable Economic Development Initiative (SEDI), and Arizona Forward.

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.

**Objective 1: Enhance and maintain the university’s emphasis on environmental and sustainability research and graduate education.**

This 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.

We will strive to remain a leading university for environmental and sustainability research and become more widely recognized for our roles. We will 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 guiding document is ABOR’s 2020 Vision. The objective is to remain at the top of our peer group and to double our research and development expenditures by 2020 and stay with 200 research universities in the country. 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.

Possible additional activities may involve working with provost, deans and department chairs when there are opportunities to define or obtain new faculty lines, to document the areas where new hires might favorably impact our capacity for research productivity in this arena; identifying significant funding opportunities and pulling together appropriate teams of faculty on campus to go after them; producing inventory of resources (existing instrumentation, skill sets, field sites, field stations, access to federal and state lands, etc.) that could be leveraged to gain additional research funding or to recruit more effectively when hiring.

BASELINES, GOALS, METRICS

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) determination 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.

**Objective 2: Increase the university’s impact on environmental and sustainability research through increased publication and outreach activity**.

The university is particularly interested in demonstrating how non-traditional interdisciplinary approaches can be used to improve sustainable practices.

**Action 1:** 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 Incites or other search tools. However, with our tenure density has gone down to about 46% research productivity is likely to decline.

**Action 2:** Actively promote the Research and Creative Activity awards for most outstanding publications; promote our faculty for appropriate recognitions such as Fellow status in AAAS or the Ecological Society of America.

**Action 3:** Use coursework or more formal mentoring programs to increase the rate at which student projects wind up as peer-reviewed publications.

BASELINES, GOALS, METRICS

Responsible Party

The Office of Vice President for Research is responsible for reporting measures of research performance to ABOR, including environmental and sustainability research. However, with expertise in the office of the Provost, they can easily do an annual review of publications, citations, multiple measures of impact and publication quality in particular disciplinary areas.

Measures of Success

Track number of papers and number of NAU student and faculty authors.

Consider a goal of 1 or more NAU faculty in National Academy of Sciences or Engineering by 2020.

**Objective 3**: **Promote the university as a responsible sustainable organization with experience in and commitment to sustainable practices.**

**Action:** NAU will continue to develop and promote the use of the Green NAU website to promote interdisciplinary initiatives and continue to build off the current sustainability 360 marketing initiative.

**Objective 4**: **Improve fundraising and sponsored projects activities related to sustainability.**

**Action:** The EC, Sustainable Academics Steering Committee and CoCoSus should work together on a vision of additional endowed chair or professorship or other sustainability program opportunities. 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.

BASELINES, GOALS, METRICS

Responsible Party

The Vice President for University Advancement will oversee targeted initiatives to promote the university’s work in environment and sustainability. Responsible parties for fundraising include deans and department chairs who are critical in defining the visions or activities that are worthy of private philanthropic support, and in partnering with Advancement to help raise those funds.

Measure of Success tbd

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.

**Objective 5**: **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.

**Action**: Build and support opportunities for faculty to work with undergraduates in research projects connected to sustainability. Work with the office of undergraduate research, and with the new internship clearinghouse program in University College.  Identify additional funding opportunities (through federal agencies, from corporate or private foundations, through private donors) to support student research.  Assist in developing well-defined learning outcomes for student research and assessment programs that can document whether students actually achieve those through participation in research and internships.

BASELINES, GOALS, METRICS

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.

**Objective 6: provide opportunities for improving green laboratory practices**

**Action:** Work with Office of Research Compliance, John MacGregor and Risk Management to develop educational materials to promote green practices in teaching and research labs. Teaching labs greater volume than research labs.

**Objective 7: Create a voluntary carbon offset tracking and payment system for faculty and student research travel**.

**Action**: Develop a voluntary carbon offset program; determine which federal agency support for c offset purchases; distribute c-tracking worksheet already in place: use as model and as basis for a carbon offset calculator

**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.

**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.