University of Colorado at Colorado Springs

UCCS SUSTAINABILITY VISION:

To be a recognized leader in sustainability, integrating social, economic and ecological values into institutional policies, programs and practices.

UCCS SUSTAINABILITY MISSION:

UCCS seeks to foster a culture of sustainability throughout the university's extended community. We will be a campus:

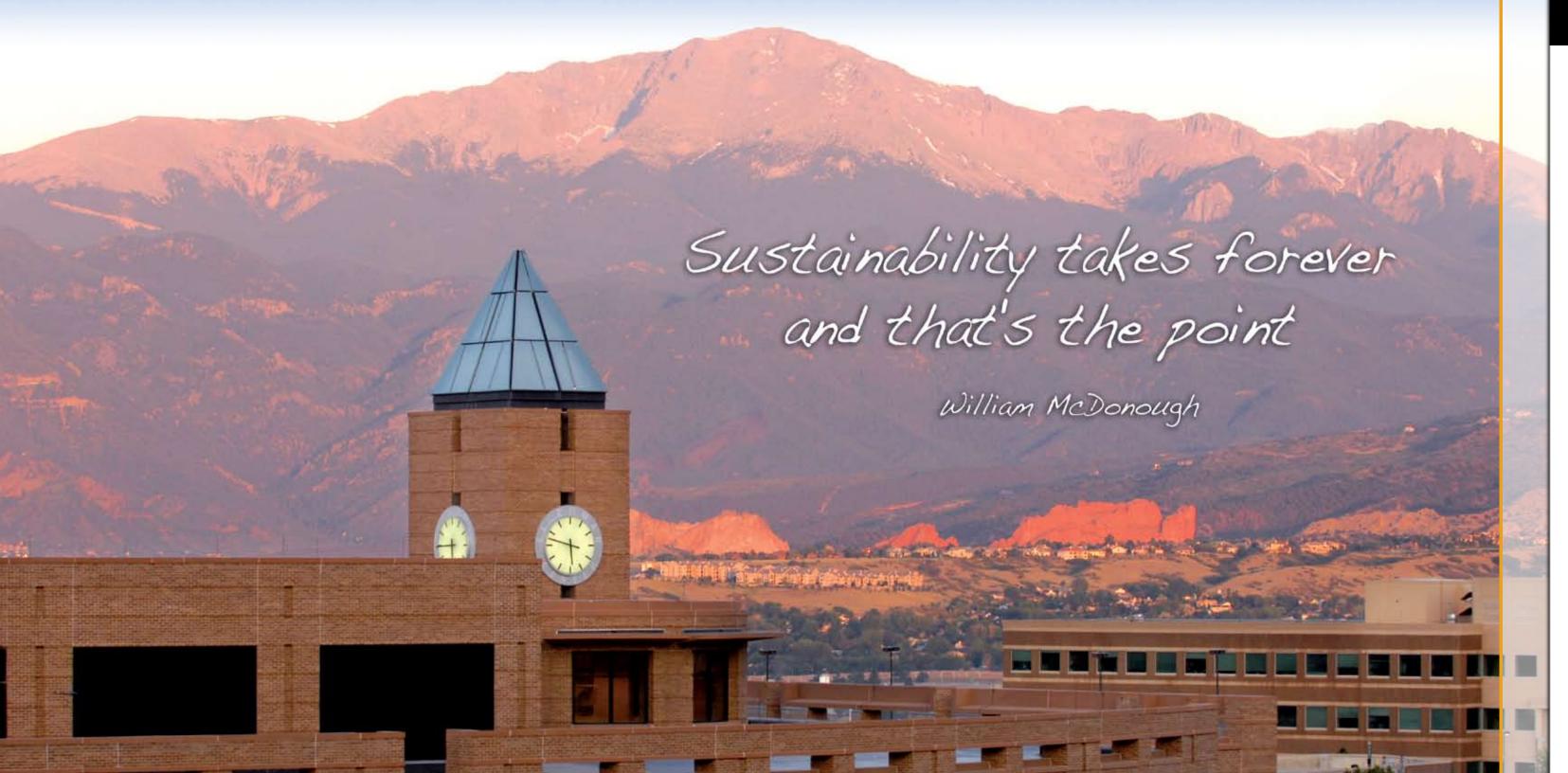
- Where committed administrators, in partnership with faculty, staff, and educated student body, provide leadership and contribute expertise to local, regional, and global environmental efforts, and foster links with other institutions;
- Where we recognize our obligation to educate the university community about the importance of individual and institutional environmental responsibility and prepare our students by integrating sustainability literacy into academic learning and research across the curriculum and between the colleges;
- Where sustainability is integrated into all aspects of university functions, including buildings, grounds, operations, planning, and purchasing, in such a way that we minimize the impact of our growing, dynamic campus upon the earth.



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2008 CAMPUS SUSTAINABILITY REPORT EMBRACING THE FUTURE. INVENTING OUR LEGACY.



this report

UCCS is emerging as a leader in campus sustainability.

This document highlights some of the milestones we have achieved. A detailed assessment of our sustainability progress is available at www.uccs.edu/sustain

This report is organized under the topics of Leadership, Education, and Operations – as in the 2007 UCCS Sustainability Strategic Plan. We recognize there is still a long way to go toward institutionalizing sustainability at UCCS, nevertheless we are excited by and look forward to building upon our initial successes.

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message from the chancellor



sustainability director's introduction



We are in an era requiring leadership and innovative approaches to prepare our graduates for a rapidly changing global environment. UCCS seeks to play a pivotal

role in creating a culture of sustainability, providing both knowledge and practices students can carry with them into their lives after college.

Sustainability at UCCS started as a grass roots effort by a group of dedicated and passionate students, faculty, and staff. These individuals advocated for the university to provide leadership, academic instruction, and an environment to prepare our future leaders to approach the sustainability challenges the world currently faces.

The creation of the 2007 Sustainability Strategic Plan was the first step in our commitment to campus-wide sustainability. This plan laid out 5-year goals and actions for the campus in the areas of leadership, education, and operations. Sustainability was subsequently adopted as a formal goal for the university.

To highlight a few sustainability successes to date:

- Faculty created an innovative minor in Sustainable Development that includes coursework in multiple departments and across colleges.
- UCCS became the leading institution in sustainable building in the region with four Leadership in Energy and Environmental Design (LEED) projects completed or in progress.
- The new Recreation Center includes a solar thermal system for the swimming pool.
- Students embraced sustainable energy by overwhelmingly supporting a fee for the installation of photovoltaic panels on campus buildings.
- UCCS implemented a comprehensive recycling program. In 2008, UCCS achieved a 26% recycling rate in its first-time participation in RecycleMania, a nationwide competition.

I signed the American College and University

Presidents Climate Commitment on behalf of the faculty, staff, students. At UCCS we are working to reduce our carbon emissions and incorporating sustainability into the curriculum to increase the ecological literacy of our graduates.

We are committed to a sustainability vision that builds on our early successes and utilizes all of our talents to create a legacy for future generations.

Pam Shockley-Zalabak
UCCS Chancellor

NEXT STEPS: CREATING A CULTURE OF SUSTAINABILITY



What does it mean to institutionalize sustainability at UCCS? I've often said if UCCS is fully successful, the sustainability office will no longer be necessary.

Sustainability will be integrated in programs, policies, and practices across the campus. Institutionalizing sustainability indicates that each individual recognizes and exercises his/her role to both lighten and improve our impact and create the legacy for which higher education strives. Success will be evidenced when a sense of place and stewardship is communicated within the campus culture and classrooms and exemplified in the built environment. In a few short years, UCCS has established a strong foundation for greater sustainability through strategic plans, public commitments, and the creation of a sustainability program. The more difficult, yet exciting part of our journey starts now as we strive to transform our plans into measurable actions, incorporate sustainability consistently in our decision-making processes, and extend the reach of ecological literacy to all students.



leadership



leadership









"A community is like a ship; everyone ought to be prepared to take the helm." — Henrik Ibsen

INSTITUTIONALIZING SUSTAINABILITY

Social, economic, and ecological values must be integrated into policies, programs, and practices. Strategic planning, assessment, and sustainability focused campus organizations help UCCS to achieve this integration toward creating a culture of sustainability.

- UCCS Sustainability Strategic Plan.*

 Goals and action plans were established in the areas of leadership, education, and operations. In 2008, UCCS initiated a comprehensive assessment to measure progress toward these sustainability goals.
- UCCS Strategic Plan.* UCCS adopted sustainability as a strategic goal for the

university. Key strategies include being a sustainability leader in the Pikes Peak Region, stewardship of the natural environment, a commitment to high performance buildings, decreased resource usage and greenhouse gas emissions, and an increase in local and organic foods on campus.

• The UCCS Facilities Strategic Plan Update* features sustainable design principles including pedestrian scaled development, mixed use planning, dedication of abundant open and recreational space, and energy efficient building orientation. Given the prominent position of the campus on a bluff overlooking the city, it is imperative

UCCS is a leader in environmentally sensitive land use decisions.

- The Diversity Strategic Plan* addresses diversifying the campus community, fostering an inclusive campus climate, and providing effective student support.
- Sustainability Tracking Assessment and Rating System (STARS). UCCS is one of only 90 pilot participants in this national program, developed by the Association for the Advancement of Sustainability in Higher Education, to identify sustainable practices and further the performance of schools.

*Please visit, www.uccs.edu/pages/plan.html to view the above plans

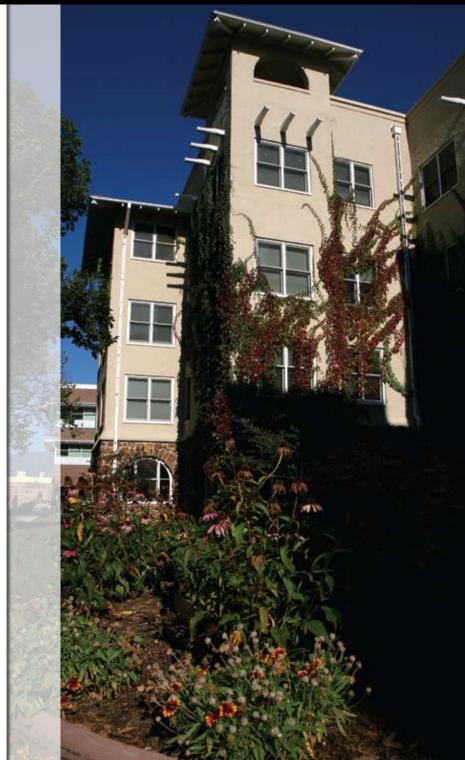
While many committees address sustainability issues, two focus explicitly on sustainability. The Sustainability Council develops assessment reports, organizes sustainability educational events, and serves in an advisory capacity on sustainability issues for the administration. The Sustainability Committee began as a grassroots effort in 2003 and became a committee of the Faculty Assembly in 2006. The committee advocates for sustainability in all sectors of the campus.

CLIMATE LEADERSHIP

In 2007, Chancellor Shockley-Zalabak became a charter signatory of the American College and University Presidents Climate Commitment. Along with more than 500 schools, UCCS will neutralize greenhouse gas emissions and accelerate its research and educational efforts to equip students to re-stabilize the earth's climate. The UCCS Climate Action Committee will complete a yearly greenhouse gas inventory, develop a long-term plan for carbon neutrality, and implement several short-term carbon reduction strategies.

Strategies already implemented include:

- A commitment to LEED silver certification or equivalent on all new buildings or major renovations
- An Energy Star appliance policy
- Participation in the waste minimization component of RecycleMania, a nationwide competition among higher education institutions to increase awareness and recycling rates



leadership education



COMMUNITY ENGAGEMENT

UCCS has a number of formal community engagement initiatives. But it is our students, 42% of which are first-generation college students, who have the biggest impact on our community. The university supports programs such as the Chancellor's Leadership Class and the Pre-Collegiate Program that prepare students to become valued leaders in the Pikes Peak Region and beyond. As a result of these programs, our students teach their friends, families and neighbors not just about topics such as nursing, communication and engineering, but also about minimizing waste, recycling materials, giving back to the planet and leading lives committed to sustainable practices.

Communities (SCSC). UCCS is part of a coalition of local governments, non-profits, military organizations and others to provide sustainability education and encourage action in southern Colorado. UCCS is organizing the academic track at the 2008 SCSC conference to highlight sustainability strategies and progress of schools in the region.

Fort Carson sustainability collaboration. In 2007, UCCS received the Community Partners Awards from Fort Carson. This award recognizes individuals and organizations in the Pikes Peak region that are leading the way in successfully implementing sustainability programs. UCCS and Fort Carson have a formal agreement to work together on implementing sustainable practices.

The UCCS Sustainability Office provides sustainability tours for the community.

Students from local high schools tour the UCCS campus specifically to learn about green buildings, the recycling program, and the organic garden. Teachers subsequently work with students to help green their schools.

In 2008 UCCS held its first **Sustainability Summit.** Designed to share sustainability progress with the campus and Colorado
Springs community, the summit also featured community directors and city officials involved in sustainability efforts, as well as educators in the fields of climate change, renewable energy, and corporate citizenship.

VISION: UCCS will be an educational environment where the emphasis on sustainability informs, enables, and engages on- and off-campus communities through knowledge, involvement opportunities, and outreach.

CURRICULUM

Minor in Sustainable Development. Initiated in 2006, this interdisciplinary minor offers more than 30 courses from numerous departments and emphasizes an experiential, project-based, and service learning curriculum. Students take courses from the core sustainability areas of environment, equity, and economics, then complete a capstone project.

Freshman Sustainability Modules. In 2008, UCCS introduced two sustainability modules for optional inclusion in freshman seminars. The modules focus on alternative transportation options and using Geographic Information Systems (GIS) to identify and map environmental and social issues.

In support of campus sustainability goals, the Kraemer Library has added 300 monographs addressing various aspects of sustainability. Many of the library's 25,000 online and print journals permit students and faculty to keep upto-date with the latest research on sustainability and also on sustainability programs at other institutions of higher education.

"Sustainable economic development means protecting future standards of living and addressing the lack of substitution possibilities for life-supporting aspects of the natural world including air, atmosphere, and waste absorption."

— Daphne Greenwood, UCCS Faculty member and co-author of upcoming book *Local Economic Development: Quality of Life and Sustainability.*

7 www.uccs.edu/sustain

education education

HIGHLIGHTS OF SUSTAINABILITY COURSES

Sustainability and Corporate Social Responsibility (CSR), in the Communication Department, focuses on global corporate citizenship, stakeholder management, and CSR/sustainability auditing and reporting. Students complete projects that identify challenges and opportunities organizations face in dealing with implementing CSR and sustainability. **Ecological Economics**, features a cross-disciplinary integration of economics with new knowledge in natural and physical science and provides some very different policy prescriptions for addressing our economic and ecological future. Communities in a Global Environment, in the Sociology department, examines the challenges in developing sustainable communities within a framework that is sensitive to both social and environmental justice. The course devotes special attention to the impact of globalization on community development and organization.

The Geography of Food, in the Geography and Environmental Studies department explores where our food comes from, how it is produced, the interaction between food production and the environment, cultural meanings of food production and consumption, and the relationship between foods and nutrition. Students are completing a *locavore* project, an interactive web-based map of local food producers, retailers, and restaurants for the community. The Geography of Panama provides a unique opportunity to see first-hand the challenges of implementing sustainable development in a developing country. Highlights include a reforestation project which has received awards for environmentally friendly practices, and "coffee forests" that employ, house and educate indigenous Ngobe-Bugle migrant workers utilizing sustainable agriculture techniques.



RESEARCH

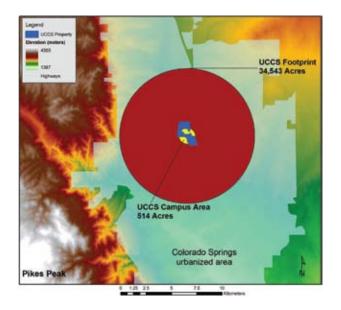
Faculty and students at UCCS are involved in a diverse variety of sustainability research. Recent published research includes:

- Greenwood, Daphne and Richard P. F.
 Holt. June 2008. "Institutional and Ecological
 Economics: Technology and Institutions in
 Economic Development," Journal of
 Economic Issues 42: 445-452.
- Doyle, Martin W., Emily H. Stanley,
 David G. Havlick, Mark J. Kaiser, George
 Steinbach, William L. Graf, Gerald E.
 Galloway, and J. Adam Riggsbee. 18 January
 2008. "Aging Infrastructure and Ecosystem
 Restoration," Science 319: 286-287.
- Havlick, David G. 2007. "Logics of Change for Military-to-Wildlife Conversions in the United States," GeoJournal 69: 151-164.
- Hill, Christopher V. 2008. South Asia: An Environmental History. ABC-CLIO: Santa Barbara and Oxford.
- Quinn, Laura & Dalton, M. 2009. "Leading for Sustainability: Implementing the Tasks of Leadership," Corporate Governance 9(1).

Master's Theses

- Hotop, Cindy. 2007. The Family Farm
 as a Community Resource: A Case Study
 of the Venetucci Farm. Master's thesis, UCCS
 Geography and Environmental Studies,
 Colorado Springs, CO.
- Knapp, Kevin. 2007. A Web-Based GIS
 Application for Calculating Impacts of Land
 Use Change Using Sustainable Development
 Indicators in Guadalajaara, Mexico. Master's
 thesis, UCCS Geography and Environmental
 Studies, Colorado Springs, CO.
- Kogan, Linda. 2004. Measuring Institutional Sustainability: The Ecological Footprint of the University of Colorado at Colorado Springs. Master's thesis, UCCS Geography and Environmental Studies, Colorado Springs, CO.

This analysis measured the consumption and assimilated waste of the university and determined the specific biologically productive area – or "footprint" – necessary to sustain the energy, transportation, food, paper, water, and solid waste for UCCS. Recommendations to reduce the campus ecological footprint have been incorporated into campus sustainability strategies.



This ecological footprint indicates UCCS requires more than 34,000 acres, an area 67 times larger than the actual campus, to supply necessary resources and assimilate waste on an annual basis.

education operations



STUDENT LEADERSHIP AND ENGAGEMENT

and Sustainability (SEAS) formed in 2003 to create a more conscientious campus community with regard to conservation of resources as well as social equity issues. The group has pushed for LEED buildings on campus, conducted a "turn off the lights" campaign, advocated for a comprehensive recycling program, and advocated for more local and organic foods. In 2008 they held a successful Focus the Nation event, a national teach-in effort to create awareness on campuses regarding climate change.

A student-initiated solar energy referendum passed with overwhelming support at UCCS during April 2008 campus elections. Put forward by Student Government Association and SEAS, the referendum will provide a \$5 fee per semester

to install solar panels on university buildings.

This initiative is expected to generate more than

\$400,000 during its five-year duration.

Students prepare for careers. In 2008 the sustainability office expanded significantly and currently employs five students. Projects include research, the first UCCS Sustainability Assessment Report, the STARS Report, the first UCCS Sustainability Summit, behavioral campaigns in energy and water conservation and recycling, tracking utilities, and leading sustainability tours on the campus.

EQUITY AND DIVERSITY

UCCS recognizes that sustainable development is not only a matter of adopting appropriate technologies to steward resources, but also requires

consideration of how environmental resources and quality of life can benefit society in ways that break down divisions of race, gender, nationality, and social class. Sustainable development builds intergenerational equity by safeguarding the possibilities of future generations and advances intragenerational equity by challenging the way social inequalities are embedded in environmental disparities. Equity and diversity are linked to sustainability at UCCS through coursework, training programs for staff and faculty, and student recruitment and retention.

UCCS recently launched a new undergraduate degree program in Women's and Ethnic Studies (WEST), which focuses on intersections of race, gender, sexuality and other forms of inequality in society and draws from humanities and social sciences.

"UCCS students are concerned about the environment. Endorsing solar energy is an important way that we can contribute to a more sustainable future."

— Joe Lavorini, Co-executive of Students for Environmental Awareness and Sustainability, SEAS.

The Knapsack Institute is a nationally renowned workshop that helps scholars and teachers from the full range of academic disciplines to build diversity and inclusiveness into course content and teaching methods. The Knapsack Institute is a creation of UCCS's Matrix Center

HIGH PERFORMANCE BUILDINGS

High performance buildings reduce operating costs from energy and water efficiencies and provide for healthier work and study environments.

OCCS is a leading institution in the region on sustainable building with 4 LEED projects completed or in progress. Leadership in Energy and Environmental Design (LEED), a third–party verification program of the US Green Building Council, promotes a whole building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor air quality.

UCCS Recreation Center – target LEED Silver

High performance highlights:

- Insulated Concrete Form walls for higher insulation and energy efficiency
- Views toward the outdoors for 90% of spaces – increased daylighting
- Solar thermal system for swimming pool
- Designed to be 30% more energy efficient and 38% more water efficient than baseline building = \$25,000 savings per year

OPERATIONS VISION: UCCS will be a living laboratory where the infrastructure and operations exemplify sustainable practices and serve as teaching tools for the entire campus community.

www.uccs.edu/sustain

operations operations



Science Engineering Building (May 2009)– target LEED Silver

This building will provide infrastructure for interdisciplinary teaching and research and foster collaboration and innovation in K-12 education, national security, and biotechnology.

High performance highlights:

- heat-recovery system to capture building exhaust air and reuse some of the energy to precondition the make up air supply
- ice storage system to shift electricity loads to off-peak hours reducing costs and demand for capacity at local coal plant
- designed energy savings of 31.5% more than baseline buildings

 designed water savings of 42% more than baseline buildings.

ENERGY USE

With a growing campus, reducing total energy consumption is a significant challenge. UCCS is reducing its Energy Use Intensity (EUI), the rate of energy used per square foot, by targeting energy efficiency in new buildings and conducting conservation campaigns and retrofit projects in existing buildings. Between 2005 and 2008, UCCS applied a \$1.3 million Energy Performance Bond toward energy and water efficiency projects. This program provides approximately \$75,000 in savings per year and more than \$76,000 in one-time rebates from Colorado Springs Utilities.

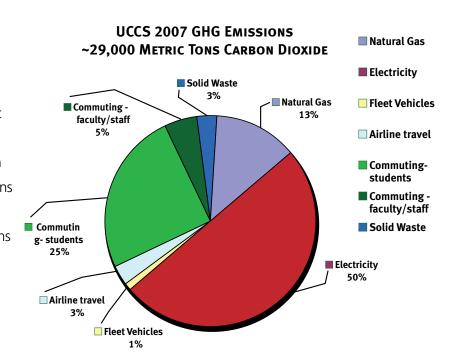
RENEWABLE ENERGY

UCCS is pursuing strategies to reduce greenhouse gas emissions, meet its climate commitment and decrease costs.

In fall 2008, UCCS installed its first solar thermal system for the Recreation Center swimming pool. Designed to provide over 60% of the heating for the pool, the university will save more than \$8000 in energy costs per year. The Colorado Governor's Energy Office provided a \$25,000 assistance grant.

UCCS is a partner in a Colorado Higher Education Wind Farm Feasibility Study to secure wind energy from northeastern Colorado for many of the state's higher education institutions. UCCS will also determine how to best use the 5-year student solar energy referendum funds approved in the 2008 student elections.

inventory. Measured emissions for the 2008 school year were approximately 29,000 metric tons of carbon dioxide equivalent (MteCO2). Some gasses are more potent than others with regard to global warming potential, so emissions are expressed in a common metric to compare their impacts. The inventory measured emissions from buildings, campus fleet, commuting, academic-related airline travel, and waste. Roughly 55% of our emissions are produced from the operations of our buildings, from electricity for lighting, computers, equipment, and cooling, and natural gas for heating.



2007 GREENING OF STATE GOVERNMENT EXECUTIVE ORDERS FOR STATE AGENCIES

By 2012:

- 20% reduction in energy use
- 20% reduction in paper use
- 10% reduction in water consumption
- 25% reduction in state vehicle petroleum consumption

Between 2005 and 2008 energy use intensity has decreased by 26%.

operations operations



WATER

Between 2005 and 2008, UCCS decreased both domestic and irrigation water consumption. Water efficiency is prioritized in all new buildings and major renovations. The Recreation Center is designed to be 38% more efficient than baseline buildings and the Science Engineering Building is designed to achieve 42% water savings. UCCS is also conducting retrofits in existing buildings to reduce water use.

Xeriscape and native landscape, selected for the Recreation Center, requires no permanent irrigation and is designed to reduce irrigation demand by 74%. The Science Engineering building will reduce potable water

consumption by more than 50% through the selection of low-water plants and high-efficiency irrigation.

Mountain Lion Stadium. In 2007 the university's first soccer field was added.

Constructed from recycled crumb rubber pellets, the university benefits from greatly reduced maintenance and watering needs and received a \$39,000 rebate for the use of recycled materials.

PAPER

Paper waste minimization. Among many efforts to reduce paper use, waste, and costs, UCCS recently implemented Paw Prints, a

pay-per-page system for printing in computer labs. This program is anticipated to reduce paper printing on campus by 50% and save the university \$40,000 per year.

Paperless billing was instituted in 2008 and is expected to save the university more than \$11,000 each year. The CU system instituted paperless pay advices, which is expected to save more than \$100,000 each year for the university system. Other initiatives include paperless annual budget reviews, a reduction in the numbers of hard copy booklets for marketing and course schedules, and a default setting of double-sided for printers in labs.

WASTE AND RECYCLING

In 2007 a comprehensive recycling program was implemented to capture all mixed paper, cardboard, glass, plastics, and aluminum cans. Less than a year later, UCCS participated in RecycleMania, a national college campus recycling competition. The university placed 17th among public schools meeting its goal of a 26% recycling rate. UCCS will soon transition to a "single stream" program where all recycling is collected in one container. Designed to make recycling easier, UCCS hopes to significantly increase its diversion rates.

UCCS has a residential community of 900 students, which can have a significant impact on waste quantities at the beginning and end of the school year. In 2008 a Goodwill trailer was provided for the first time for move-out to direct usable materials from students to people in the community.

Construction waste recycling not only keeps materials out of local landfills, it helps to organize construction staging areas and reduces waste costs. The Recreation Center (2007) recycled 85% of its construction waste (by weight). The Science Engineering Building, is currently achieving a 95% recycling rate.



The Recreation Center recycled more than 85% of its construction weight. The Science Engineering Building is expected to achieve a 95% construction waste recycling rate.

operations operations



TRANSPORTATION

Situated on a hill, with limited bus service, and a large commuter population that work off campus, the university is challenged to change commuter habits to reduce its carbon footprint. As the campus grows we have opportunities to carefully plan roadways to reduce vehicle use and encourage safe pedestrian and bicycle use. Reduced parking infrastructure costs, and greater connectivity with the Colorado Springs community are all potential benefits of sustainable transportation strategies.

Strategic planning and education. In 2007, UCCS hosted a Transportation Demand Management workshop with Spenser Havlick, co-author of Transportation and Sustainable Campus Communities. Including members of the Colorado Springs planning

community, one result was the creation of a Sustainable Transportation Intern position in the Department of Public Safety (DPS) to provide alternative transportation education and coordinate programs to encourage multi-modal transportation.

Multi-modal transportation.

- Mass transit. Four city bus routes provide the campus with limited local and regional connectivity. UCCS is working with Mountain Metro to secure future discounted bus passes for students.
- **Bicycle** racks throughout campus are full and new racks are being added. Bike lockers at the Recreation Center provide higher security and weather protection and

- a bike center offers minor repairs and cycling workshops. A bike map directs off-campus commuters and all campus shuttles and city buses have bike transport racks.
- Carpooling options are offered on the UCCS website through a city-run carpool database and campus parking permits can be shared. Charter services can place student groups in vans or buses rather than single occupancy vehicles, and the university motor pool offers a hybrid vehicle for rent.
- **Pedestrian infrastructure.** The university's first pedestrian underpass is under construction to provide a safe entry to the western part of campus and designs for a pedestrian spine are being developed.

Alternative Work Site Pilot Program reduces trips to campus

Select classified staff work four ten-hour days and salaried employees work one day at home each week. In addition to reduced emissions, expected benefits of the program are reduced commuting costs for employees, higher productivity, expanded service hours, and an increase in employee satisfaction. If successful, UCCS will expand the program for the entire university.

Fleet Vehicles. Currently, the campus fleet includes electric, propane, hybrid, bio-diesel, and flex fuel vehicles and priority will be given to alternative fuel vehicles in all future vehicle purchases. DPS will purchase 2 hybrid patrol cars in 2008.

FOOD

When the average item of food travels over 1200 miles from farm to plate and modern farming practices often include numerous toxic fertilizers and pesticides, food is a critical aspect of increasing sustainability.

Sodexho, Inc., provides all food service for the university and is committed to increasing sustainable food practices on campus. Coffee in the Lodge is Fair Trade Certified and coffee at other vendors on campus is organic or Rainforest Alliance Certified. Sodexho works with distributors to obtain local foods and organic foods when available, but quantities provided to the campus community need to be increased. Composting, education, and

creating a large organic garden for the campus are all strategies that would make food more sustainable at UCCS.

Reducing food waste and costs. Sodexho has implemented a "trayless" system in the Lodge cafeteria. Studies show that going trayless can reduce food waste by 25-30 % as students are less likely to carry more than they can eat to their tables. A past study of food waste in the Lodge indicated that 30% of food by weight was wasted.

Organic garden. The UCCS Family
Development Center, which offers early
childhood programs, has created an
educational organic vegetable garden. Children
share in watering and caring for the garden
using the organic fertilizer made in their worm
composter. One favorite highlight in the fall
is cooking the squash in a solar oven. The
children learn about agriculture, weather, food,
and recycling in a hands-on, sensory-filled,
environment.



"The greatest gift of our garden is the opportunity for all of the children to dig in the dirt and get in touch with the outdoors, a lost art for many city children."

— Ida Bauer, Director FDC