Climate Action Planning at Southwestern College

Revision - January 15, 2012

Introduction

Southwestern College is proud to be a charter member of the American College and University Presidents' Climate Commitment. On October 16, 2009, the college's Board of Trustees approved a new mission statement which states that "Southwestern College strives to live by and teach a sustainable way of life."

This Climate Action Plan is submitted on behalf of the college by the ***Climate Action Plan Steering Committee,*** whose members include Dick Merriman, president; Richard Cowlishaw, Department of Biology; Steve Wilke, vice president for planning and new programs; Jason Speegle, director of the Green Team; and Jeff Gile, director of plant operations. The committee is chaired by the vice president for planning and new programs and is charged with maintaining the college in good standing with the Presidents' Climate Commitment and with implementation of the college's carbon footprint reduction plan.

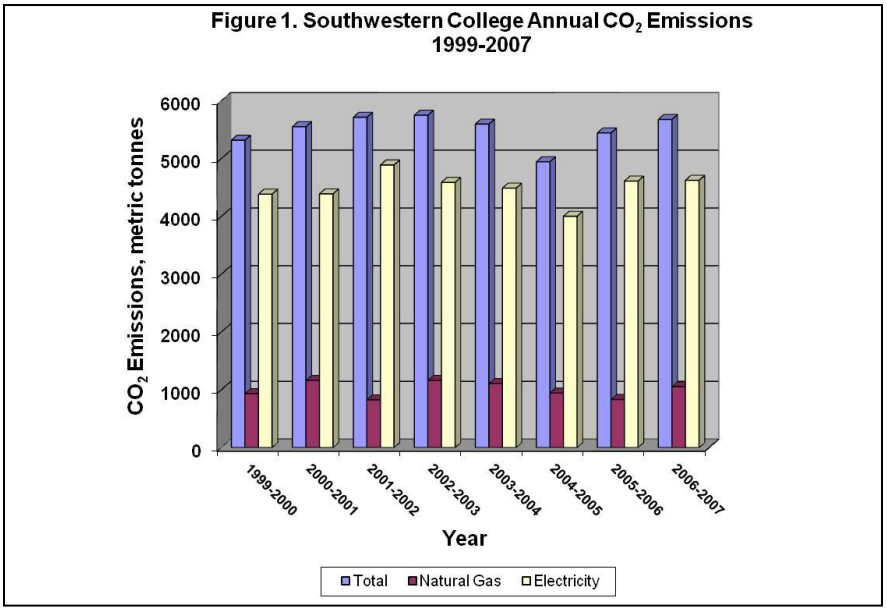
Institution-wide involvement in sustainability, both in living and learning, is fostered by the College Sustainability Council (CSC) which was formed in the fall of 2010. The CSC meets twice a semester and its membership includes faculty, administration, and students.

On November 29th, 2011 the College Sustainability Council approved a definition of sustainability for the college which reads: **At Southwestern College, sustainability is founded in the understanding that today's actions shape tomorrow's lifestyles. We realize that a sustainable future requires rethinking our relationship with the Earth—economically, ecologically, and spiritually. We believe that if persons are provided the knowledge and the means, they will choose to create and conserve rather than consume and waste, securing a sustainable environment for future generations.**

Historical Snapshot of Campus Emissions and Baseline Carbon Footprint

Under the guidance of Professor Cowlishaw, a team of Southwestern College students analyzed the main campus utility billings and calculated the consumption of natural gas and electricity for the years 1999-2007, beginning July 1 and ending June 30 for each year. The students then converted these values to metric tonnes of carbon dioxide emitted by the main campus each year. When plotted together (Figure 1) there is a relatively small year-to-year variation in our campus footprint (mean, 5137 metric tonnes; standard deviation, <5%). Assuming that the demand for natural gas is highest in the cool months of the year (mainly December, January

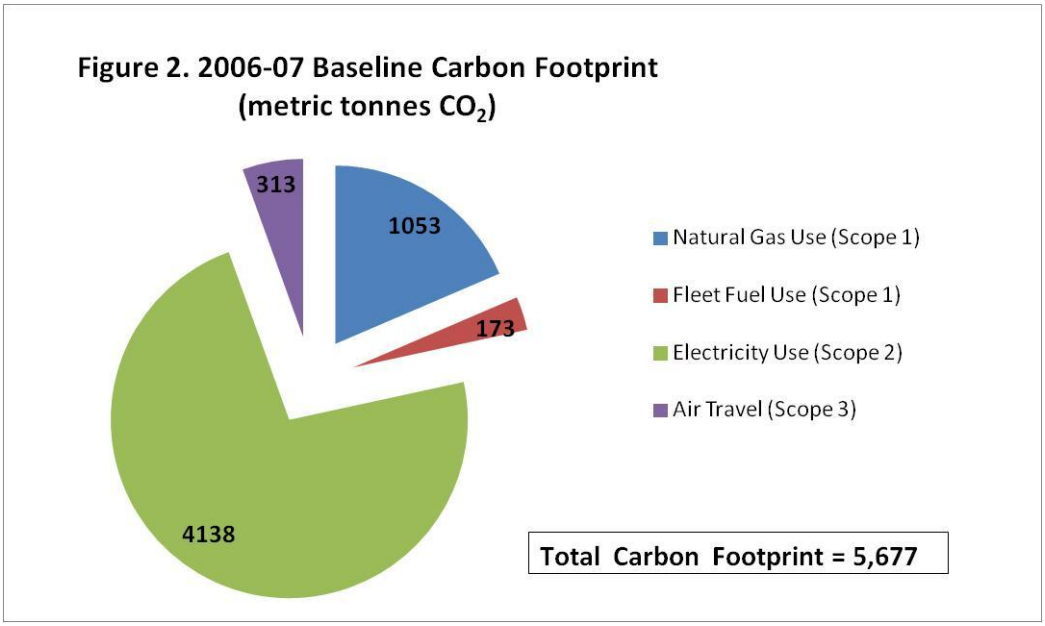
and February) and electricity demand is greater in the warmer months (primarily July, August and September), much of this variation can be explained by inter-annual variation of temperature for the coldest and warmest months of the year.



We have established the year 2006-2007 as our base year for measuring our progress in emissions reduction with the implementation of our climate action plan. Currently, our measurement of campus emissions captures the contributions of the following emission categories:

a) Natural gas combustion and fleet fuel use (Scope 1)
b) Electricity use (Scope 2)
c) Air travel (Scope 3)

Our baseline carbon footprint totals 5,677 metric tonnes of CO_2. This is lower than baseline total given in the previous climate action plan (6,163 metric tonnes) due to updated consumption data and carbon coefficients in our carbon emission calculator. Figure 2 illustrates how each emission category contributes to the baseline footprint.

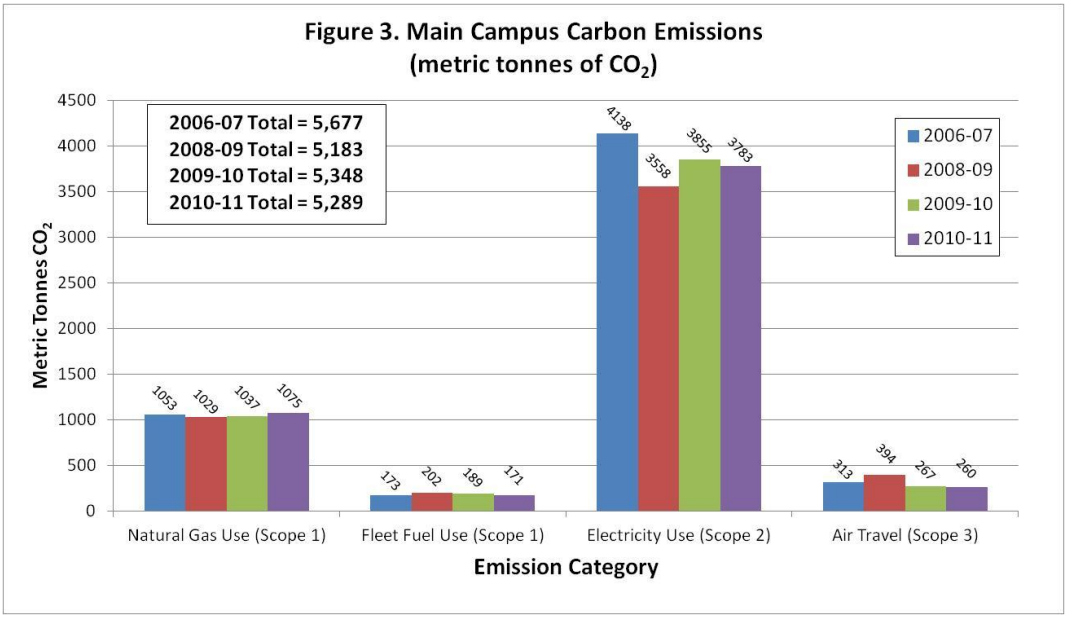


Greenhouse Gas (GHG) Inventory Update

The energy consumption data for main campus is being collected and quality-checked by the energy management firm ECOVA (formally Advantage IQ). Due to the lack of online access to historical consumption data through our city utility office, ECOVA relies on Southwestern College to send them invoices reflecting our historical and current consumption. Unfortunately, there are gaps in the data due to missing invoices. As they are recovered, they are sent to ECOVA and adjustments/corrections are made to the database. As a result, historical numbers fluctuate as adjustments are made, but arguably towards a more accurate accounting of our energy use. Better record keeping and monthly reporting of consumption data to ECOVA should minimize the occurrence of data gaps in the future. Likewise, our measures of both air travel and fleet use have improved over the past three years and continue to be analyzed for further improvement. In short, as time moves forward we will develop a more accurate picture of our emissions for both historic and current years.

Figure 3 presents how the main campus emissions have changed over four of the five past years in comparison with our baseline emissions (2006-07). In our first climate action plan update in 2010, we reported that the total emissions for 2008-09 were 2% less than the baseline emissions. Due to adjustments as described above, the reduction in 2008-09 was estimated to be at 8.7%, with reductions in electricity use being the main driver of that decrease. Our campus emissions for 2009-10 were 5.8% lower than our baseline year, with reductions in electricity consumption again being the main driver. This is unexpected given that we experienced the lowest average high temperature for July, August and September of that year (84.5°F) compared to other years in the past decade (range, 85.3-93.5°F). Given that these are

the largest consumption months for electricity, one would predict that the cooler temperatures should have resulted in relatively lower Scope 2 footprint than in 2008 when the average high temperature for July, August and September was 86.1°F. It is possible that missing invoices for 2008 could explain this apparent discrepancy. We are currently working with ECOVA to see if this is the case.



Campus emissions for 2010-11 were 6.8% lower than our baseline year. These reductions were achieved even when the average high temperature for July, August and September in 2010 was six degrees warmer (90.5°F) than was calculated for 2009. Sodexo, the college's facilities and maintenance services contractor, purchased 103,000 kWh renewable energy offsets in May 2011, further reducing our campus footprint to 5,205 metric tonnes CO_2, or 8.3% lower than our baseline year.

Mitigation

Our *goal* is to stop any increase in carbon emissions by 2010, and achieve a 20% reduction by 2015. Yearly reductions will be realized as a result of funding and the overall success of our plans. Our climate action plan will include the following mitigation components:

- conservation of energy,
- use of renewable energy sources,
- purchase of energy offsets.

Conservation

Equipment upgrades and other building renovations will be undertaken to improve the energy consumption of the college's buildings.

During the summer of 2009, the college, in conjunction with Sodexo Facilities Services, undertook an energy and water conservation audit. The audit team performed site interviews, inspections, billing data reviews, and utility program reviews to become familiar with the college's buildings, energy issues, and potential opportunities. Following the audit, Sodexo developed vendor quotes for building improvements.

The three largest energy conservation opportunities identified, in order of priority, are: recommission the building automation system after making mechanical improvements to all buildings, install lighting retrofits, and install residence hall temperature controllers. The auditors identified a number of additional measures – which are low- or no-cost items – to be undertaken. The total projected cost of these measures is $787,801, with a projected payback of 3.9 years, though the largest cost item, the building automation system, will have a slightly longer payback of 4.8 years.

The audit projects that, when completed, these projects will reduce the college's energy carbon footprint by 28.9%. At this time, the college is funding these measures out of its current operating budget, and the timeline for completion of these conservation measures could extend until 2020.

Completed Conservation Upgrades and Initiatives

The following is a summary of the conservation upgrades and retrofitting initiatives that Southwestern College has completed over the past three years. A list of prior upgrade and retrofit efforts can be found in Appendix A.

- Shriwise apartments heating and cooling systems replaced with higher efficiency units
- Planted 135 new trees on campus
- Donated a golf cart to Department of Security to reduce their fuel use
- Attended training, peer audited, managed, built and wrote Southwestern's EPA clean up and initial through final responses.
- Presented a water and energy conservation plan in August 2011
- Remodeled a downtown building for use as the college's Learning Center (reuse/repurpose)
- Replaced three boilers in Broadhurst residence hall with new 97% boilers
- Replaced one old steam boiler in Stewart Field House with two smaller steam boilers. We run both only on coldest days.

- Replaced all the fan/coil units in Reid apartments to more efficient newer units that also provide fresh air.
- Removed vegetative canopy to increase lighting on campus without having to add lights. Lights that have been added have been high efficiency.
- We have changed our mops for cleaning from the old style cotton mop and bucket to new micro fiber mops. This reduces chemical use and water use, while increasing the quantity of germs removed.
- Roof replacements with new insulation on Wroten Hall and Christy Administration Building.
- Remodeled 18 shower/bath units at Wallingford residence hall. Improved indoor air quality with less use of chemicals.
- In 2008, the college received a lighting audit. The lighting retrofit is approximately 60% completed.
    - Completed - Christy, Sutton, Reid, library main floor, Warren (18 of 20 apartments), Cole residence hall, Beech/Mossman academic building. Darbeth Fine Arts Center is about 90% current.
    - To be completed – Broadhurst residence hall, lower level Roy L. Smith Student Center, Wroten Hall, Stewart Field House, White pool and lockers area, Wallingford residence hall, library second floor, miscellaneous small areas (Dixon and others)
- Plan to install building automation in Broadhurst residence hall within the next six months, pending funding. Better control of heat and air conditioning will reduce energy use while improving living quality.

Behavioral changes by students, faculty and staff will be encouraged with a variety of programs and incentives.

In 2008, Southwestern College created a student organization called the Green Team. The director of the Green Team is a salaried employee of the college. Details regarding the Green Team and its activities including its plans to affect the behavior of the students, faculty, and staff of the college are explained in more detail in the Green Team Southwestern document located in Appendix B.

Educational programs assisting faculty and staff in support of sustainable related investments will be offered. The college is just beginning to give attention to this issue. We expect a variety of curricular and co-curricular efforts in the future.

Renewable Energy

Solar, wind, and other forms of renewable energy will be introduced to the college as funding permits.

In 2009, the college dedicated the Norman E. Hege Education Center at its Moore Biological Field Station north of the college's campus. Although the Hege Center is a modest structure, the college took the significant step of investing in a hybrid wind-solar power generation system so that the addition of this modest facility square footage would not increase the college's emission footprint. The college also gained valuable experience working with vendors of these power systems.

The college has completed a preliminary study of the potential for generation of wind power on a "small wind" scale using turbines installed on the east edge of the Southwestern campus. The installation of these turbines is technically feasible, though the impact on the college's energy carbon footprint would be rather modest. The college is currently seeking a private investment partner who might wish to capitalize on available investment tax or production tax credits by making a more substantial investment in wind or solar generation.

In August of 2011, Southwestern completed the installation of the first wind turbine on campus. Southwestern applied for and was awarded the Wind for Schools Grant from Southwest Wind Power. The grant provided a Skystream 3.7 wind turbine which was installed on the SC campus in July of 2011. Cates Supply of Winfield donated the installation as a part of the grant. The Skystream 3.7 is rated at 2.4 kW and can generate up to 400 kWh per month.

Purchasing of energy offsets

Where our efforts to meet our target reductions in GHG emissions falls short by way of conservation and renewable energy installations, energy offset purchases will be considered as needed, and as finances allow.

Sodexo, the college's facilities and maintenance services contractor, purchased 103,000 kWh renewable energy offsets in May 2011, further reducing our campus footprint by 103 metric tonnes of CO_2 to 6,003 metric tonnes CO_2.

Educational, Research, Community Outreach Efforts

Curricular changes have been made to provide instruction on sustainability in the general education program as well as in some majors. The biggest curricular change, however, is the launch of a new minor called Sustainability and Environmental Studies.

We currently offer two courses in our General Education curriculum: *Science, Society and the Environment* and *Environmental Issues*. Both of these courses provide students with a focus on the root causes of environmental problems, how our understanding of them provides opportunities to develop new ways of living that respect the limits of the Earth system, and

how scientific knowledge of the natural world around us is essential to knowing how we can move away from a growth economy model and devise a more sustainable one for the future.

Minor in Sustainability and Environmental Studies: In the spring of 2011, Southwestern College faculty gave approval for a new minor in Sustainability and Environmental Studies (SES). The SES minor is a modification of the Environmental Studies minor which had been offered at SC for nearly 20 years. Because of prerequisites for an ecology course required by this minor, it was effectively a minor for biology majors only. Changes were made for the new SES minor so that it is available to any student regardless of major. The minor draws on existing courses from four different departments (Biology, Business, Political Science, and English) and incorporates three new courses in Sustainability: Introduction to Sustainability 1 & 2 and Practicum in Sustainability. Below are descriptions for the new SES courses as listed in the 2011-12 college catalog:

101 Introduction to Sustainability 1. *This course will provide meaning to the term "sustainability" and provide a broad overview of challenges posed by environmental degradation, resource depletion, overpopulation, energy consumption. It will focus on potential ways that societies can respond to ensure that these problems are not left for future generations to solve. It will provide an introduction to the environmental, economic, and social dimensions of sustainable development by looking into relevant local, regional, and global environmental issues. Credit 1 hour.*

102 Introduction to Sustainability 2. *This course will focus on potential solutions to the environmental challenges addressed in SES 101. Students will be required to investigate and present proposals for implementing sustainability projects that will positively impact Southwestern College and/or the community. Prerequisite: SES 101 or consent of instructor. Credit 1 hour.*

359 Practicum in Sustainability. *The goal of the sustainability practicum is to immerse students in real sustainability problems and projects and facilitate their development of creative interdisciplinary solutions. Students will envision, design, implement, and evaluate a project in the realm of sustainability as the project leader, in consultation with peers and faculty. Prerequisites: SES 101 and 102, or consent of instructor. Credit 3 hours.*

Because the minor is not housed in a particular department and involves the faculty in multiple disciplines, it provides opportunities to not only formally integrate sustainability into the college curriculum but will also to be authentic to the college's mission statement that it strives to live by and teach a sustainable way of life.

Co-curricular programs such as the Green Team and integration of energy reduction activities into other student groups will be pursued.

While it is true that organizational changes made by an institution of higher education such as Southwestern College are important to the cause of creating a sustainable world, the most important impact that any institution of higher learning can have is the lasting impact that it has on its students. As a part of Southwestern College's green initiative and climate action plan, many steps will be taken to educate students, faculty and staff in the areas and good practices of environmental sustainability with the hope that behavioral changes toward more sustainable living will be made by all who interact with our institution.

One of the first steps that Southwestern College has taken in response to committing to become a sustainable institution is to form a Green Team. The Green Team is a service learning program with a vision to "change the culture of Southwestern College toward one of more responsible citizenship in the area of environmental sustainability." The Green Team is a campus organization for students interested in learning about and implementing sustainability on the Southwestern College campus, in their personal lives, in the Winfield community, and beyond. The Green Team is led by the Green Team director, a salaried staff position in the institution.

The Green Team will largely be responsible for encouraging behavioral changes by students, faculty, staff, and by the Winfield and Kansas communities through a variety of programs, projects, and incentives. Details regarding the Green Team, its mission, vision, and its activities, including its plans to affect the behavior of the students, faculty and staff of the college are explained in more detail in the Green Team Southwestern document located in Appendix B.

Financing

The college plans to finance its sustainability programs through a combination of: 1) direct allocation of institutional funds through the annual budgeting process, 2) performance contracting (or some variant of the performance contracting model) in which improvements are funded by an external source that is repaid through reduced energy usage and related costs, 3) solicitation of gifts and grants, and, 4) through bonding for capital projects through the Kansas Independent College Finance Authority. At present, we have financed our projects with the institution's budget and gifts and grants.

Conclusion

Southwestern College is excited to be elevating, as an institutional priority, our efforts to *live by and teach a sustainable way of life*. We believe we are making good progress in our culture and in the structures and systems needed to reach our goals. The majority of our limits are financial. With time and effort, we see a promising future and anticipate that our college-wide effort in this area will positively change our institution, our community, and the lives of all who study and interact with Southwestern College in the years ahead.

Appendix A – Conservation Upgrades and Retrofitting Initiatives

The following is a summary of the conservation upgrades and retrofitting initiatives that have been completed on the campus of Southwestern College.

- May 2006 – installed low flow shower heads across campus
- June 2006 – upgraded HVAC for residence hall rooms in the lower floors of Sutton Hall, upgraded to high efficiency heat pumps
- July 2006 - upgraded existing building automation
- August 2006 - selected campus-wide temperatures in order to eliminate variations
- October 2006 - upgraded HVAC for offices in Sutton Hall
- October 2006 - replaced diesel generator at the campus greenhouse with natural gas-fired unit
- November 2006 - began project to replace top floor HVACs in Sutton Hall
- December 2006 - added a timer to reduce "on" time in Mossman and Beech Science Center hall lights.
- December 2006 - ordered trees for growing at field station. Trees to be planted on campus when grown.
- December 2006 - established set temperatures for campus, moving to unify all set points.
- January 2007 - delivered lighting upgrade proposal and began Christy Administration Building upgrade
- March 2007 - upgraded lights at White Physical Education building
- June 2007 - installed Low-E insulated windows in all of library, upgraded all lights.
- June 2007 - replaced older 60% boiler with new 90% boiler in the south side of Christy Administration Building
- June 2007 - replaced two old 60% boilers with two new 90% boilers in the Library
- June 2007 - began data delivery to Loyalton Group for utilities audit
- July 2007 - replaced shower faucets and shower heads at White Physical Education building for reduced usage
- August 2007 - implemented Sodexo sustainable operations system, including green cleaning initiative
- October 2007 - upgraded lighting at Sutton Hall from T12 to T8
- December 2007 - began HVAC upgrade at Wallingford Hall. Installed 72 energy star heat pumps and two common space heat pumps. Replaced old 60% boiler. Project completed in summer of 2008
- January 2008 - Received four golf carts from Sodexo to be used on campus to save fuel, reducing usage of full size trucks

- June 2008 - Upgraded insulation on five roofs being replaced for better efficiency
- September 2008 - began recycling of cafeteria cardboard, plastic, and steel containers
- November 2008 - replaced half of the windows at White Physical Education building with better insulated, sealed units
- June 2009 - replaced old boiler in Shriwise Apartments with new 97% boiler for better efficiency
- June 2009 - began work to prepare an Energy Saving Project for the college

Appendix B – Information and Initiatives of Green Team Southwestern

Executive Summary

The Southwestern College Green Team began in 2008. President Richard Merriman took the initiative to add Southwestern College as a charter signatory to the American College and University Presidents Climate Commitment (ACUPCC). Merriman then commissioned Professor Richard Cowlishaw to engage a greenhouse gas emission inventory on behalf of the college. That inventory now serves as a baseline for tracking the institution's energy consumption. In August 2008, Jason Speegle was hired as the director of Green Team Southwestern and tasked with formally launching a program that would transform Southwestern into a sustainable institution.

Programming at the academic level officially began with a visit from Anthony Cortese, CEO of Second Nature and founder of ACUPCC. Cortese was in residence through the generous support of the Woodrow Wilson Visiting Scholars Program. During his week on campus he provided public lectures and oriented both the faculty and administration to new trends in sustainability. That same year, an activity award was established to encourage students to attend Southwestern with the expressed purpose of engaging issues of environmentally responsible learning and living. Although the project had a modest beginning in the student culture with the implementation of a campus-wide recycling project, the larger success is that the movement is taking root in the culture of the college and is reflected in a variety of ways including new courses such as Literature in the Environment and Environmental Policy; the construction of an 'off-grid' facility at the biology field station; and student activities such as the Kansas Envirothon.

Southwestern College: An Overview

Southwestern College is an intellectually rich community. It is consistently ranked nationally as one of the best colleges and is also cited as one of the top 20 institutions in the United States to deliver educational services to the U.S. Air Force. Students on campus enjoy direct interaction with faculty members in a safe residential campus that is enhanced by Dell mobile technology. The college also attracts notable speakers such as U.S. Senator Pat Roberts; U.S. Ambassador Kenneth Yalowitz; John Hofmeister, CEO of Shell Oil Corporation; Anthony Cortese, CEO of Second Nature; and award winning journalists Chuck Todd, Larry Sabato, and Eleanor Clift. Southwestern College is the home of Green Team Southwestern which, in addition to academic programming, provides television tips on Green Living for the Kansas CW, a CBS affiliate focused on Generation X viewers. Green Team Southwestern is affiliated with AASHE, ACUPCC, Kansas Green Schools Network, and KACEE. Other programs of note at Southwestern College include: the Center for Belarusian Studies, recognized by both the German Marshall Fund U.S. and the Orsa-Romano Foundation; Leadership Southwestern, named by Leadership Educators Association as the best leadership program in the nation and funded by both the Robert Wood Johnson Foundation and the Templeton Foundation. The college also excels in arts and athletics with 31 consecutive league championships for cross country (long distance running) and recognition by the Kennedy Center for the Performing Arts.

Founded in 1885, Southwestern College educates over 2,000 students both on ground and online.

Green Team Southwestern Vision

Recognizing that the majority of private colleges are located in rural areas and are the economic drivers of their communities, Green Team Southwestern serves to create a model of sustainable living that will transform both higher education and the people it serves.

Green Team Southwestern Mission

Green Team Southwestern is a service learning program dedicated to responsible citizenship and environmental sustainability.

Mission Interpreted: The Green Team is dedicated to:

- Creating a living laboratory of sustainable learning in which all members of the community develop healthy habits of environmental stewardship.
- Implementing organizational changes that result in carbon neutrality.
- Infusing the broader communities of Winfield, Cowley County, and beyond with the principles and practical applications of environmental sustainability.

Green Team Southwestern Advisory Board Members

Mr. Blaine Kohpay

E. Blaine Kohpay has over a decade of experience as a construction administrator, and has extensive experience in the LEED certification process. He is part of the team helping to rebuild Greensburg, Kansas, having provided construction administration services for the Greensburg Business Incubator (LEED-NC Platinum Certified), the Kiowa County Courthouse (seeking LEED-NC Gold Certification) and the Greensburg Public Works facility (seeking LEED-NC Gold Certification), as well as Kiowa County Commons (seeking LEED-NC Platinum Certification), currently under construction. In addition, Blaine is currently providing construction administration for the City of Wichita Transit Facility (seeking LEED-NC Silver Certification), upgrades for the Kansas Air National Guard at Smoky Hill in Salina (seeking LEED-NC Silver Certification) and the Army Reserve Center in Sinton, Texas (seeking LEED-NC Silver Certification).

Mr. Alex Gottlob – Proprietor of Gottlob Lawn and Landscape, LLC in Winfield, KS.

Mr. Kevin Neighbors – Sanitation Superintendent for the City of Winfield

Dr. Richard Cowlishaw – Assistant Professor of Biology at Southwestern College

Mr. Bob Solger – Proprietor of The Energy Saving Store in the Kansas City, MO and St. Louis, MO regions.

Mr. Larry Biles – State Forester for the Kansas Forest Service.

Mr. Allen Moore - Graduate of Missouri University of Science and Technology with a degree in mechanical engineering. Twenty-five years experience in manufacturing operations, maintenance and project development and installations, 16+ years with Frito-Lay with responsibility for site engineering functions including maintenance, projects, sanitation, safety and environmental compliance. Actively involved in the development of Green Team programs at sites across the company with specific emphasis on environmental compliance and the minimization of our impact on the community and surrounding area.
Currently technical manager at the Frito-Lay facility in Topeka, Kansas. Since 1999 have been a leader of efforts to develop sustainable programs and practices to dramatically reduce environmental footprint of company operations. Led significant reductions in fossil fuel, water and electrical consumption at Topeka through recycle, reduction, and efficiency improvement efforts. Site achieved LEED Gold EB in January 2010. Second existing manufacturing facility in the country to achieve this recognition milestone.

Mr. Alan Dykes – Energy Manager for Winfield, Arkansas City, and Wellington, Kansas.

Ms. Karen Klein – Karen earned her Bachelor of Architecture degree from Kansas State University in 2006. She worked at Amenta/Emma Architects in Connecticut for three years, where she advocated employee LEED accreditation and USGBC membership. She has been a LEED AP since 2007, and is currently employed at Gordon and Associates Architects in Winfield

Mr. David A. Carter – Pollution Prevention Institute, Kansas State University.
David Carter has served as a pollution prevention specialist with the Kansas State University Pollution Prevention Institute since June 2006. Prior to coming to K-State, Carter was in private consulting, assisting federal facilities and private organizations in environmental compliance and implementing the ISO 14001 Environmental Management System (EMS) standard. Carter is certified as an energy manager by the Association of Energy Engineers and is a RABQSA-certified ISO 14001 EMS auditor. Carter received his B.S. in Biology from Florida Tech and his M.S. in Toxicology from Kansas State University.

Current and Past Accomplishments and Upcoming Projects

Recognition by the Princeton Review as a Top Green College

In April of 2011, Southwestern College was recognized by the *Princeton Review* in the *Guide to 311 Green Colleges* 2011 edition, published in partnership with the U.S. Green Building Council (USGBC).

Award of Wind for Schools Grant

In April of 2011, Southwestern applied for and was awarded the Wind for Schools Grant from Southwest Wind Power. The grant provided a Skystream 3.7 wind turbine which was installed on the SC campus in July of 2011. Cates Supply of Winfield donated the installation as a part of the grant. The Skystream 3.7 is rated at 2.4 kW and can generate up to 400 kWh per month.

Minor in Sustainability and Environmental Studies

In the Spring of 2011, Southwestern introduced a new minor in Sustainability and Environmental Studies (SES). The SES minor is a modification of the Environmental Studies minor which had been offered at SC for nearly 20 years. The SES minor is available to any student regardless of major and will incorporate three new courses: Sustainability, Introduction to Sustainability 1 & 2 and Practicum in Sustainability.

Single-Stream Recycling Program

Beginning in August of 2011, Southwestern contracted with Recycle for Youth Sports (RFYS), a non-profit organization out of Wichita, Kansas. RFYS will collect and sort Southwestern's recycling on a bi-weekly basis, free of charge to the college. In addition, RFYS will donate 20% of its profits earned from the sale of the Southwestern recycling back to the Winfield community to fund youth sports programs.

Campus Recycling/Recyclemania

Southwestern has instituted a campus recycling system that involves the majority of the campus student groups. The Green Team oversees the operation of the recycling program and keeps the shed organized. Tri-Beta and the Green Team organized an annual recycling competition between the residence halls in order to encourage recycling. Prizes are awarded for the three residence halls that recycle the most during the spring semester.

- Southwestern College competed in Recyclemania for the first time in 2009. Over 24,000 pounds of waste was recycled during the 10-week competition in 2010. In the Per Capita Classic, which measures the weight of recycled material per student, Southwestern placed 61st out of 346 colleges and universities, just edging out the University of North Carolina, Notre Dame, and Brown University. Among Kansas institutions, Southwestern was the Grand Champion, the winner of the Per Capita Classic, and had the best results for several targeted recyclables: bottles and cans, paper, and corrugated cardboard. The other Kansas schools that participated (and trailed SC) are Kansas State University, the University of Kansas, and Johnson County Community College. Southwestern also competes in the Waste Minimization division of Recyclemania. Initiatives such as providing refillable water bottles for the students and encouraging students, faculty and staff to print less are examples of efforts to reduce the amount of waste generated by the college.

Green Presentations for Dormitory Residents

The Green Team has begun giving presentations on green topics in the campus residence halls. Educating students in the classroom and where they live on campus is very important in the attempt to helping them understand the importance of living a sustainable lifestyle and how to do so.

Environmental Leaders as Guest Speakers

Southwestern College has brought multiple speakers to campus over the past two years whose message focuses on the importance of sustainability. These speakers have given formal and informal lectures to the students. Speakers include Dr. Anthony Cortese of Second Nature; John Hofmeister, former president of Shell Oil Company; Chris Ballard of Greensburg, Kansas, and David Carter of Kansas State University.

Kansas Envirothon

Southwestern College began hosting the Kansas Envirothon competition in 2009. The Kansas Envirothon is a state-wide competition for high school students and is a sub-competition of the national Canon Envirothon. The competition focuses on the students' knowledge of wildlife, forestry, aquatics, soils and a current issue that changes each year.

Creation Care Day

The Green Team hosted the first annual Creation Care Day for area church youth groups in the spring of 2010. Creation Care Day teaches students Biblical principles on environmental sustainability and how they can live more sustainably at home, school and church. The high school students interact with professors and students from Southwestern College and are challenged to implement changes in their personal lifestyle.

Earth Day Celebration Week

Each year during the week of April 22, Green Team Southwestern organizes various activities to commemorate Earth Day. Past activities have included Park-It-Week, Plant-a-Tree Day, a nature hike, various educational speakers, Sweep Winfield, and Creation Care Day.

Annual National or International Trip

In order to practice the art of service and experience different parts of our world and various cultures, Green Team Southwestern will take a national or international trip each year. Trips will alternate between regional, urban, and international locations. Projects undertaken will vary with each trip.

In May of 2011, eight students from Green Team Southwestern traveled to Chicago, Illinois, and worked for a week at Riverwoods Christian Center. Riverwoods is a camp and outreach ministry that seeks to improve the situations of the less fortunate in the Chicago area.

Energy Monitoring System

Southwestern College is in the midst of installing a SmartSynch metering system for all main campus buildings. Currently, most of the campus residential, administrative and educational buildings are not singly metered for electricity usage, thus it is difficult to determine the major energy consumers or evaluate the difference that energy efficient improvements actually make.

Green Team Southwestern plans to use this metering system to determine which residence halls consume the most energy per capita and attempt to conserve energy and improve students' energy habits through residence hall energy competitions.

Future Green Team Initiatives

Residence Hall Energy Competitions

Green Team Southwestern is installing a metering system for the campus residence halls and residential apartments. Currently, most of the residential buildings are not singly metered for electricity usage, thus it is difficult to determine the major energy consumers or evaluate the difference that energy efficient improvements actually make. The Green Team would like to install individual meters in each of the eight residence halls and apartment complexes on campus in order to determine which residence halls consume the most energy per capita and attempt to conserve energy and improve students' energy habits through dorm energy competitions.

Green Camp for High School Students

The Green Team is organizing the first annual Green Team Green Camp for high school students. During the camp, the participants will explore water quality and testing, renewable energy, LEED building, locally grown foods, recycling and the importance of their personal decisions. Participants will also tour a nearby wind farm, recycling center, and Greensburg, Kansas. The camp will be a mixture of learning, application, competition and fun.

Cafeteria Tray Elimination

In 2008, the Green Team performed an investigation into the environmental impact of the plastic tray use in the campus cafeteria. The results of the analysis determined that the college could conserve approximately 6,000 pounds of food waste and nearly 20,000 gallons of water by simply removing the trays and forcing students to carry their plates and cups separately. The Green Team is currently working with Sodexo and cafeteria management to determine the changes that need to take place in order to eliminate the trays.

Large-Scale Future Goals

Installation of Wind Turbine(s) on SC Campus

Campus Building(s) Powered by Solar Energy

Use of Biomass to Provide Heat and/or Electricity

Investigation of Geothermal Systems

Green Roofs on Multiple Campus Buildings

Sustainable Residence/Community On or Near Campus

Drastically Reduce the Use of Disposable Plastic Bottles on Campus

Eliminate the Use of Plastic Trays in the Cafeteria

Hybrid Fleet for Plant Operations, Athletics, Admissions, and Institutional Advancement

Funding for All Green Team Students to Travel to and Attend AASHE Conferences

Zero Waste Campus

Series of Green Internships Available for Green Team Students

Partner Institutions and Organizations

To date, the Green Team Southwestern is in active partnership with the following institutions and organizations.

Associations

Association for the Advancement of Sustainability in Higher Education

American College and University Presidents' Climate Commitment

Kansas Green Schools Network

Kansas Association of Conservation and Environmental Education

Partners

Cowley County Conservation District

Kansas Envirothon

SmartSynch

KSCW

The Energy Savings Store

Sodexo

Gottlob Lawn and Landscape

Green Team
SOUTHWESTERN

For more information please contact:

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