Climate Action Plan

2009 ACUPCC Implementation Outline

CSB College Sustainability Council

9/15/2009
Climate Action Plan
The College of St. Benedict
September 15, 2009

CAP introduction

As a Catholic, Benedictine institution sustainability is central to our institutional values and mission. Sustainability has indeed been an overt concern at The College of Saint Benedict for decades and formally supported by each president since an “environmental statement” was first issued in 1992. After President MaryAnn Baenninger signed the ACUPCC in 2007 the college established a formal structure to coordinate existing sustainability efforts and develop a comprehensive plan leading to climate neutrality. The resulting College Sustainability Council is responsible for guiding this process and represents all campus/community stakeholders. Its membership includes administrators at the head of each administrative area, faculty, students, and representatives of the Board of Trustees, St. Benedict’s Monastery and surrounding community.

Under the direction of the Sustainability Council an initial greenhouse gas (GHG) audit was completed in summer 2008. This represented the first effort to formally collect GHG data on campus and consequently suffers from significant data holes; in some areas—such as transportation—there are simply no records at all so the results include some good-faith estimates that will be adjusted as future data become available. We anticipate future GHG audits to be more accurate and to reflect more complete data than the first and have established new record-keeping procedures to address many of these shortcomings.
In 2008-2009 the Council commissioned an external audit of the campus recycling system, participated in the STARS pilot project, established ACUPCC implementation goals that will lead to climate neutrality by 2035, established a post-graduate fellowship to support campus sustainability work, and contributed to ongoing campus projects including planning for our first LEED-certified building.

The most challenging task before the Council was to set appropriate targets GHG reductions and place us on a realistic path toward the final ACUPCC goal of climate neutrality. By setting a final goal of 2035 we believe we are being as aggressive as possible given the many unknown factors involved; the interim targets for 2015, 2025, and 2030 are intended to create momentum and accountability in the early stages of the process.
Emissions Summary

Accuracy in reporting GHG’s is improving and will continue to improve as we collect more data and establish new reporting procedures. Prior to 2008, results are based upon limited available data and estimations in some areas (such as air travel). With this in mind, the College of St. Benedict emitted an estimated 21,800 metric tons of GHG’s in carbon dioxide equivalence in 2008, higher than the reported 10 year average of 15,200 metric tons due to the increased accuracy of the more recent data. The increase is largely attributable to better reporting of scope 3 emissions and facility expansion, including the addition of a new dining and conference center. Purchased electricity (Scope 2 Emissions) made up the largest portion of emissions with 40%, followed by transportation with 30%, stationary sources with 23%, and solid waste with 7%.

Energy-related emissions account for the majority of CSB’s GHG production. These are divided into on-campus stationary sources for heat, using oil and natural gas, and off-campus emissions related to power purchased from Xcel Energy. Just over four metric tons of carbon is released per student from purchased electricity annually, the largest single factor in our emissions profile.

Transportation emissions come from the Link bus service connecting the college with its brother institution, St. John’s University, the campus motor pool, employee air travel, and daily commutes by students, staff, and faculty. The transportation-related emission reporting in our audit is the least accurate, due largely to the absence of records for air travel and lack of any scientific study of commuter habits.
Landscaping and grounds-related emissions come mainly from fertilizer application, which accounts for most of our nitrous oxide emissions. Solid waste is removed by a commercial hauler and sent to a non-methane recovery landfill. In 2008 we sent an estimated 1529 tons of solid waste emitting 68,000 kg of methane. Food waste, however, is diverted to a hog farm and reused as animal feed, significantly reducing our landfill disposal. The amount of refrigerants used is very small and therefore we do not currently keep a record of refrigerants. No leaks major leaks have been reported and no other industrial processes that might release GHGs occur on campus.

**Mitigation strategy**

We anticipate updating our Climate Action Plan regularly as this structure is developed and a more accurate picture of our needs and opportunities emerges. The mitigation strategy section in particular should shift from the process oriented approach below to a more directly action oriented plan as data, financing, and institutional structures come together.

Because no GHG inventory exists prior to 2008 (and data on many areas goes back only 2-3 years) we are still in the early stages of determining where our liabilities and opportunities for improvement lie. Consequently our mitigation strategy at this point is to create a process for identifying those areas, rather than produce a list of specific targets or actions we will pursue in the short term. During 2009-2010 the College Sustainability Council will request each operating area produce a list of liabilities and opportunities along with a variety of options for action that note costs, barriers, and potential results in GHG reduction and other sustainability improvements. The recommendations from each area will be delivered to the Council in spring
2010, which will then prioritize a list for implementation and begin work on identifying funding to support that work.

The best example of this process is our ongoing study of the central power plant, the primary source of GHG emissions on campus. In fall 2009 the college engaged an external engineering firm to conduct a capacity study and plant review to help guide future investment in this critical infrastructure. From that report and with the input of the power plant staff the institution will determine whether or not to upgrade/expand the plant by adding more boilers, to move to a more distributed heating system, to invest in geothermal or solar thermal technology for planned new construction, and to consider other options. Similar processes will be undertaken in other areas of operation, with the goal of using 2009-2010 to collect and analyze data that will allow us to make informed decisions to reduce GHG emissions and improve sustainability holistically rather than in piecemeal fashion. Some of the resulting actions may take years to implement, may be linked to planned future construction, or may depend on available financing. Other steps may be taken in the short term, such as improving community education to improve efficiency and conservation measures.

To facilitate this process the college established a new, full-time position of Sustainability Fellow for 2009-2010. The fellow will meet with staff in each operational area, assist in the process of identifying possible actions, and provide resources and support as necessary. The Council has further recommended that a permanent, professional staff position of Sustainability Director be established in 2010-2011 as the first step in creating an Office of Sustainability to coordinate all sustainability-related work. The director would take over responsibility for
implementing the ACUPCC and all other sustainability efforts from the faculty who currently conduct this work on an overload/volunteer basis. Over time the director would also determine the staffing and resources needed to fully implement all of our sustainability goals, and then work with the Sustainability Council, President, and Board of Trustees to determine how best to meet those needs.

From the vantage point of an initial GHG audit and working with the data and resources currently on hand, it is the best judgment of the Council that potential reductions in GHG emissions will break down along the lines displayed in the accompanying chart. The process outlined in this plan will help identify the areas of opportunity for the ~50% of emissions we believe may actually be eliminated and establish a process by which funding for any remaining unavoidable offsets can be identified and planned into budgets for the out years of 2030 and beyond. It was the Council’s intention in setting a preliminary goal of 10% reduction by 2015 to encourage immediate action in areas where obvious opportunities for savings exist, such as conservation and demand management. Over time the estimates attached to each segment of the chart below will be refined, costs attached, and projects initiated; at the same time the Council will have to develop a policy for identifying and funding appropriate offsets for those emissions deemed unavoidable in the out years of the plan.
Education, research, and outreach

Currently students are most directly engaged in learning about sustainability though the environmental studies major and minor. For 2010-2011 a faculty-led effort to more fully incorporate sustainability into the curriculum is being developed to attract faculty outside the environmental studies department. As part of this initiative we hope to create an academic focus on sustainability throughout the year, starting with the annual Fall Faculty Workshop, incorporating several endowed lectureships, and culminating in a faculty development project based on the well-known Piedmont/Ponderosa model which Derek Larson, chair of the Environmental Studies Department, will facilitate in May 2011. It is the conclusion of the faculty members of the College Sustainability Council that their colleagues would not support a
campus-wide academic requirement in sustainability at this time, so the strategy of building sustainability concepts into as many courses as possible will be applied instead.

Since The College of St. Benedict is a liberal arts college the general research requirement of the ACUPCC does not directly apply. Nonetheless we have taken significant steps to increase faculty and student research in sustainability areas and climate issues in particular. A new tenure-track faculty member specializing in climate research was hired in 2009 and began offering courses on climate science open to all students in the fall; he will build a research program on climate around the resources available in our bioregion that will inform his classes and provide opportunities for participation by students and collaboration with colleagues in other fields. Our longstanding emphasis on undergraduate research also provides opportunities for students to participate in sustainability research ranging from the senior thesis project required in the environmental studies major to faculty-led projects supported by several research endowments that enable students to conduct formal research full time during the summer months.

In addition to courses and other traditional academic opportunities offered through Academic Affairs, we are in the early stages of developing sustainability education and outreach programs in other areas—most notably Student Development, which is responsible primarily for our residential life programs. Educational outreach to reach all students will take place in many forms: campus-wide events, residence-based initiatives, community outreach, and focused campaigns. Annual events on campus, coordinated by the sustainability fellow in collaboration from student environmental groups, will include Recyclemania, the Campus Energy Competition, and an entire week of events devoted to the environment (Earth Week). The goal
of these events is to reach all students and shape lifestyle choices enduring long after graduation. Campaigns will focus on the impact of personal decisions, such as encouraging students to recycle, shop at the local farmers market, and question their role in consumer culture. These campaigns will be combined with educational opportunities like touring the St. Ben’s recycling center and learning more about the waste management. We will take full advantage of the educational potential of both the process and product of several new construction projects, all of which will meet a minimum LEED-silver standard. Campus orientation for new students and employees will also incorporate sustainability information intended to raise awareness of our community’s values and highlight opportunities to make positive impacts when one first arrives on campus.

**Financing**

The College of Saint Benedict is committed to a goal of carbon neutrality by 2035 and we anticipate using a variety of funding methods to achieve this goal. We recognize that some of our mitigation projects will be low/no cost but that significant resources will be needed to complete others. We also expect that some strategies will produce savings that can offset the initial cost and may result in long-term savings that can be reinvested in other projects. Each project will be analyzed individually as various funding sources may be applicable based on the scope of the project. These sources are internal and external, integral to and independent of the normal budgeting process. Some will be project specific while others may be linked to other strategic goals (such as new construction) as part of a package.
The central power plant is a good example of how we anticipate this working. A recently commissioned study of the plant will identify opportunities to become more energy efficient. With the results from this study, the college will be able to prioritize options on a cost/benefit basis and determine which to pursue. Smaller projects (such as controls or minor upgrades) are likely to be funded through the normal operating budget, while larger projects (such as a boiler retrofit or plant expansion) will have to be reviewed by the related campus departments, who will present their input along with the sustainability committee and facilities director, as part of the capital request process. Once a set of projects and costs is established, these funding avenues will be explored as part of the annual budgeting process and over the longer term should any major capital expenses be projected.

**Possible Funding Sources**

- **Annual budget allocations/institutional reserves**
- **Tax exempt borrowing**
- **Grants from foundations or government**
- **Energy efficiency and renewable energy incentives provided by government or utilities**
- **Fundraising**
  - **Self-financing performance contracts**
  - **Creation of revolving fund from savings generated**
  - **Endowment income from the nascent Green Fund dedicated to sustainability projects**
Tracking strategy

Responsibility for tracking progress on this Climate Action Plan will rest with a newly-created Office of Sustainability reporting to the College Sustainability Council and the President. Annual updates of the greenhouse gas audit will provide current and refined data on which to base this analysis. The proposed Sustainability Director (or Fellow) will establish a reporting system through which managers in each area can annually note progress toward goals in their departments; the resulting information will be compiled and tracked centrally as part of the implementation process. Assessment of specific programs—especially educational initiatives or outreach activities that cannot easily be quantified—may be incorporated into class projects or faculty research. A web-based public reporting system will offer access to summary data and real-time reporting from sources such as our planned new buildings, while an annual report to the community will summarize past efforts and lay out an agenda for the coming year.