# Green ROUTES:
# Redirecting Our campUs Toward Environmental Sustainability
# Project Report

**Compiled by the Green ROUTES Team as part of CES 301/302: Community-Based Project I & II**


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**Fall 2006/Spring 2007**


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# Executive Summary

Climate change, rising energy prices, and resource management are things that affect not only individuals, but also institutions such as colleges and universities. Many colleges and universities over the past few years have looked at these issues by conducting a campus sustainability assessment (CSA). Today, many institutional stakeholders such as current and prospective students, donors, faculty, staff and trustees are looking for strong sustainability programs on campus in order to find ways to be better environmental stewards and to save money.

Project Green ROUTES (Redirecting Our CampUs Towards Environmental Sustainability) has completed the first CSA for Colby-Sawyer College. This work has been conducted as part of CES 301/302: Community-Based Research Project I & II. The goal of Project Green ROUTES, through the CSA, has been to raise awareness of environmental issues on campus and create a plan to ensure greater sustainability for years to come. Project Green ROUTES has been working for the past year on specific items that are intended to reduce Colby-Sawyer's environmental footprint, minimize waste, reduce the consumption of fuel, electricity, paper, and food and improve the quality and efficiency of buildings on campus. There are two definitions of sustainability that Project Green ROUTES has been working with this year.

- **Living within nature's limits**[1]
- **Decision making that integrates environmental, social, and economic opportunities across campus and within the broader community** [2]

While measuring sustainability is not easy, a growing number of institutions are attempting to quantify the added value of their initiatives using a CSA to develop benchmarks and chart progress across time. According to the National Association of College and University Business Officers as many as 250 new CSAs of widely varying depth and focus are being produced each year by North American colleges and universities.[3]

This portfolio is a collection of information and analysis that was completed through Project Green ROUTES. The purpose of compiling this information is to provide Colby-Sawyer College with useful information to be referenced for the creation of future campus sustainability action plans. These results are based on extensive work done at Colby-Sawyer including multiple conversations with a wide range of campus constituencies, detailed analyses of CSAs at other colleges and universities, and a thorough review of existing literature on campus sustainability initiatives

The first section (Chapter 1) contains the results of the CSA. It includes a *Priority Level List* of more that thirty recommendations of specific actions Colby-Sawyer College can take over the next few years to improve the sustainability of campus operations. These recommendations were prioritized based on their importance, and the

[1] International Union for the Conservation of Nature. (1991). "Caring for the Earth."
[2] National Association of College and University Business Officers. (2005). "The Payoffs of Planet-Friendly Initiatives." http://www.nacubo.org/x6330.xml
[3] Ibid.

amount of time and money the Green ROUTES team estimated would be required for implementation. The priorities levels are as follows:

- Level I: changes which could be implemented within one year
- Level II: changes which will require one to three years
- Level III: changes which will require more than three years

**Level I**:

- Focus the Nation
- Grounds
- Invasive Species
- Investments
- Labs
- Light Bulbs
- Orientation
- Refrigerators
- Sustainability Coordinator
- Sustainability Day
- Tree Inventory
- Vending
- Windows
- Zip Car

**Level II**:

- Green Building Design
- Green Fund
- Insulation
- Motion Sensors
- Paper: 100 % recycled
- Pool Cover
- Printers: Double-Sided
- Printers: Energy Star
- Recycling
- Water

**Level III**:

- Carbon Footprint
- Composting
- Dining Services
- Double Doors
- Impervious Surfaces
- Solar Energy
- Wind Energy

**Key Findings from the CSA:**

1. Green ROUTES used Clean Air Cool Planet's Carbon Calculator to determine how much $CO_2$ Colby-Sawyer College emits each year.[4]

| **Year** | **Net Emissions** (Metric Tons $CO_2$ ) |
|---|---|
| 2003 | 5,142 |
| 2004 | 5,713 |
| 2005 | 6,671 |
| 2006 | 6,887 |

Net $CO_2$ emissions have gone up every year. The significant jump from 2004-2005 can probably be explained by the opening of the Curtis L. Ivey Science Center. The most significant components of our carbon emissions are:

[4] http://www.cleanair-coolplanet.org/toolkit/content/view/43/124/

- Heat
- Electricity
- Gasoline
- Student Air Travel
- Waste Disposal

In comparison Middlebury College's $CO_2$ emissions in 2000 were 35,000 metric tons.[5]

2. Estimated financial benefits per year from Green ROUTES recommendations:

| | |
|---|---|
| Green Investments: | $200,000 |
| Water Conservation: | $21,000 |
| Compact Fluorescent Light Bulbs: | $10,000 |
| Energy Star Appliances: | $10,000 |
| Light Motion Sensors: | $3,000 |
| Pool Cover: | $3,000 |
| **Total:** | **$247,000** |

The next section of the portfolio includes the results from a campus environmental survey (Chapter 2). The results of the survey have been incorporated into the CSA and serve as a baseline data for campus environmental awareness. Another section (Chapter 3) provides information on a wide range of state and federal policy issues that are related to campus sustainability. The final section of the portfolio (Chapter 4) contains communication resources that were developed for this project such as presentations, posters, flyers, and fact sheets.

Institutions of a privileged learning environment should demonstrate their commitment to make society more sustainable through including sustainability considerations directly into teaching, research, operations, facilities management, purchasing, and their relations with local and regional communities. Green ROUTES has made it possible for Colby-Sawyer College to act now and in the future regarding sustainability. Exciting developments for the near future include incorporating an environmental theme into orientation and the spring semester science seminar, advising the reengineering task force, and possibly implementing the priorities noted above.

Finally, in order to clearly demonstrate institutional commitment to sustainability, Project Green ROUTES recommends the following addition to the Colby-Sawyer College mission statement:

- **Is committed to sustainability with campus operations and in the curriculum**

[5]"Middlebury College Emissions of Carbon Dioxide by Source." Middlebury College Carbon Neutrality. Date Retrieved: May 2, 2007. http://community.middlebury.edu/~cneutral/es010_report.pdf

**Acknowledgements**

At this time we would like to thank all the individuals and organizations that made the compilation of this portfolio. Apologies to anyone we have omitted. Special appreciation goes to: Doug Atkins, Vice President of Administration; Loretta Barnett, Professor/Chair, Fine and Performing Arts; Linda Bitzer, Purchasing Coordinator; Tom Galligan, President; Jean Goldsborough, Information Resources Technology Specialist; Mike Heffernan Dining Services Manager; Allan Lemire, Maintenance/ Grounds Manager; Mary McLaughlin-Terry, Director of Residential Education; Bob Morse, Facilities Director; Dave Sauerwein, Vice President and Dean of Students; Janet St. Laurent, Adventures in Learning Program Assistant and Recycling Program Coordinator. Also, we would like to recognize John Callewaert, Laura Alexander, Ben Steele, and Leon-C. Malan who each provided excellent instruction and assistance throughout this year.

**Community and Environmental Studies Program Overview**

The Community & Environmental Studies (CES) program at Colby-Sawyer College provides students with the opportunity to understand, integrate, and apply multiple disciplines and different ways of thinking with a high level of concern for the preservation and sustainability of the Earth and its resources. Our graduates are prepared and encouraged to act on their informed environmental concerns in their homes, places of work, and communities.

The CES program boasts several essential features that provide students with a unique and exciting learning experience. First, the program is pre-professional and designed to provide students with the necessary "hands-on" skills one needs to step from college directly into the work force. The program is also designed to prepare students for graduate training in a number of fields. Second, many CES projects are linked very closely with the local community. Students interact directly with individuals and businesses in the local area and develop an important sense of community for themselves and their college. Third, many experiences in the program are student driven. Students play a key role in determining which questions and issues are important as well as the proper methods for addressing those issues.

The third year is the defining characteristic of the Community and Environmental Studies program. Rather than choosing from a series of 300-level course options, all students majoring in Community and Environmental Studies take CES 301/302 for 15 total credit hours during the third year. In addition to traditional classroom and laboratory exercises, students are immersed in an in-depth, yearlong analysis of a local environmental problem or issue with detailed fieldwork and extended site visits. This structure allows students to work at length on a complex problem while developing important skills in group-oriented tasks to a degree that is not obtainable in traditional courses.