

Town of Hanover Sustainability Initiatives

Community Outreach and Partnership Opportunities

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EXECUTIVE SUMMARY

This report discusses the potential to create partnerships in sustainability with surrounding local businesses and academic communities. While the Town of Hanover can set an example by instituting sustainable public policies and practices, it will ultimately have to rely upon local businesses and campus communities in order to achieve meaningful and transformative community sustainability. By creating partnerships with these existing institutions, the Town of Hanover will be able to extend and support existing local sustainability efforts and discover new avenues for creating and funding future initiatives.

1. LOCAL BUSINESS PARTNERSHIP OPPORTUNITIES

Partnering with local businesses such as shopping centers, community markets, and restaurants can provide Hanover with several forms of support for its sustainability initiatives, including visibility, advocacy, funding, and volunteers. These local businesses, including Wal-Mart, CVS Pharmacy, and Murphy's Restaurant in Hanover, each possess different community resources and therefore offer differing potentials when organizing sustainability partnerships. At CVS, for instance, it is difficult for them to reduce their energy output because it is a 24-hour store. However, they have high efficiency controls in the stores and are looking to do some community coordination in the future. Wal-Mart works to offer recreational activities and community involvement opportunities for its employees and the community at large, while the chef for Murphy's Restaurant is a "localvore" who utilizes local produce. For more information regarding these potential business partnership contacts, please refer to the Contact Index at the end of the brief.

2. DARTMOUTH COLLEGE PARTNERSHIP OPPORTUNITIES

While a comparison of partnerships in several New Hampshire college communities provides several potential opportunities for cooperation between Dartmouth College and Hanover that involve financing and infrastructure commitments from both entities (i.e., past cooperation at the Dartmouth/Hanover Compost Facility (DHCF) from 1998 to 2004),¹ the college community offers a more "sustainable" resource in its engaged student body and faculty. Early this year, Dartmouth established a Council on Service to help integrate community service and civic engagement into the campus community and academic curriculum. This is best accomplished through service learning, or the integration of service opportunities within the community (Hanover) into course curriculum, fostering the creation of knowledge, civic responsibility, and servant leadership. Through co-curricular, extracurricular, and faculty service learning, students and faculty grow both as academic scholars and responsible members of the community. To facilitate communication and organization of these partnerships between the Town of Hanover and the courses/professors described in the brief, please contact Helen Damon-Moore at the Dartmouth Tucker Foundation by email (Helen.M.Damon-Moore@dartmouth.edu) or by phone (603-646-9610). The Tucker Foundation is the center for student community service and civic engagement opportunities at Dartmouth College.

2.1 Comparison of Sustainability Efforts in New Hampshire College Communities

In the chart below, relationships between other New Hampshire universities/colleges and their local communities were analyzed and categorized by a variety of sustainable practices and services.

Table 1. Sustainable Practices in New Hampshire College Communities

Institution	Contact Information	Sustainable Food Practices	Sustainable Transportation	Community Connections	Community Volunteer Opportunities
Dartmouth College ²	Kathy Lambert <i>Sustainability Manager</i> (603)-646-3532	Farm to Dartmouth Program Composting in Campus Dining	Dartmouth College helps finance local <i>Advance Transit</i> services in the Upper Valley	Dartmouth Employees serving on Sustainable Hanover Committee	See Sections 2.2 through 2.4
Plymouth State University ³	Corinna Grogan (603)-535-2260	Donates extra food from cafeteria to D’Acres Farm for pig food and composting ⁴	Aims to promote the use of public transportation by college students & PSU provides a campus shuttle	Town energy commission is supported by the college Facilitates conference entitled “Preserving Community Character: Our Biennial State Conference” ⁵	None
University of New Hampshire ⁶	Alanna Pritcher (603)-862-4088	Local procurement of food for dining halls Farm to School Initiative (similar to Farm to Dartmouth) ⁷	Expanded free transit services, increased on-campus housing, development of improved transit infrastructure, support of the Amtrak services ⁸	UNH hosts sustainability experts Participant in NH “Carbon Challenge” ⁹ Green Sweep: Promoting green cleaning products ¹⁰	Storm water management to help prevent potential contamination of storm water runoff. ¹¹
Keene State College ¹²	Mary Jensen <i>Sustainability Chair</i> (603)-352-1909	None	Green Bikes: 1. Rent them through the library 2. Fines assessed if not returned* <i>*This project was unsuccessful in Hanover due to lack of accountability</i>	Sustainability Committee that involves both town’s people and member of the Keene campus community. ¹³	Students and Community members strip abandoned houses for salvageable materials Rails & Trails: Transforming old rail tracks to bike trails

2.2 Co-Curricular Student Service Learning Opportunities

The first and arguably largest avenue for service learning partnerships in sustainability is through targeted projects organized as service opportunities within existing courses taught at Dartmouth. Potential courses for these service learning partnerships have been organized into two distinct categories determined both by curricular emphasis and tangible community impact. The first category lists courses whose faculty and students could provide a foundation for the Sustainable Hanover website as well as the growth of interactive “Web 2.0” online community practices. The second category lists courses with an emphasis in sustainable practices and reform, expertise and shared knowledge that could benefit the community and provide students with “hands-on” service learning

with the Town of Hanover. As stated earlier, to begin arranging partnerships with these courses at Dartmouth, please contact both the respective professor as well as Helen Damon-Moore at the Dartmouth Tucker Foundation (603-646-9610).¹⁴

2.2.1 Sustainable Hanover Website and Web 2.0 Community

Several courses this summer and fall, and their respective professors, involve the study of online communication, website production, digital design, and other aspects of computer science. Each could prove to be a strong partner in designing and maintaining the Sustainable Hanover website as well as an interactive online community for Hanover. Both the Computer Science and Engineering Departments offer courses that could provide student support to Hanover as well as logistical support to those chosen by the Town to maintain the website, but the Dartmouth EPICS program offers the best partnership opportunity.

The Dartmouth EPICS (Engineering Projects in Community Service) program seeks to partner students and community agencies in significant projects requiring computer science and software engineering skill. The Dartmouth EPICS program seeks to establish mutually beneficial partnerships between community agencies and Dartmouth students. Multi-term teams of upper-level students will partner with agencies to work on significant projects that require computer science and software engineering skill. Each EPICS project is a partnership between an agency and a team of students. A common theme is the need for custom software, and the potential for such software to significantly help the agency in its mission. A project is simultaneously an educational enterprise and an effort to produce an effective product. As such, the students and the organization engage each other throughout the process. Key aspects of a project include the following:

- *Analysis and Design*: determine the agency's needs and possible approaches to addressing them.
- *Implementation and Integration*: roll out software in stages, using feedback from the agency to guide subsequent stages.
- *Continuity*: carry information across terms in order to maintain, support, and expand the software.”¹⁵

If the Town of Hanover is interested in an EPICS partnership, please contact Christopher Bailey-Kellogg (see Contact Index) in the Dartmouth Computer Science Department as well as Helen-Damon Moore at the Dartmouth Tucker Foundation.

2.2.2 Sustainable Practices and Reform

The following courses and their respective professors all involve the study of sustainable practices and policy reforms. Included in this list is a “First Year Seminar,” Environmental Sciences 7, or a freshman-only course based solely on “Consumption and Sustainability.” More so than other service learning opportunities, this course would help familiarize freshmen with the community, and help make them active partners in sustainability throughout their four years at Dartmouth. The other courses cited in this section of the Contact Index could be valuable courses for Sustainable Hanover Committee Members who wish to gain knowledge of the

policy and science involved in crafting sound sustainable practices. As with the partnership opportunities regarding the expansion and maintenance of the Sustainable Hanover website, please contact both the respective professor listed in the Contact Index as well Helen-Damon Moore at the Tucker Foundation.

2.3 Extracurricular Student Service Learning Opportunities

Dartmouth is also home to several student-organized environmental and sustainability advocacy groups and communities. While these organizations are unable to provide sustained infrastructural support to the Town of Hanover, each has a committed base of membership that represents an ideal partnership opportunity with the community for planned community service projects or drives dedicated to sustainability. Each organization is listed in the Contact Index with respective contacts.¹⁶

2.4 Faculty and Research Partnership Service Learning Opportunities

The third and final avenue for service learning partnerships involves partnering with faculty currently conducting research in the fields of sustainable engineering and biology. Two examples are listed below, but there are likely many opportunities for sustainable research currently moving through several campus departments. In both cases, and in future partnerships the Town of Hanover could potentially serve as a “sustainability laboratory” to enhance both the viability of future research grants as well as a reputation for promoting sustainable development.

2.4.1 EPA Grant: Collaborative Science and Technology Network Sustainability

Dartmouth Engineering Professor Mark Borsuk will examine biological data, social indicators, and mercury management policies with the \$300,000 grant to determine how stakeholders could be motivated to promote sustainability. Borsuk argues that, “social and biological indicators of sustainability can be used to encourage individual and organizational stakeholders in a natural resource to act in ways that promote ecological, economic, and social health.”¹⁷ The Town of Hanover could serve as a test subject “stakeholders.”

2.4.2 Production of Energy from Cellulosic Biomass

Dartmouth Engineering Professor Lee Lynd is currently investigating the development of technologies for plant biomass—the only foreseeably sustainable source of organic fuels, chemicals, and materials. These technologies have outstanding potential to address pressing societal challenges.”¹⁸ Again, the Town of Hanover could serve a “lab” for such research.

3. K-12 SCHOOLS PARTNERSHIP OPPORTUNITIES

One effective way to get the community involved in sustainability is through the schools. Schools interact with the community in numerous ways including Parent-Teacher Organizations, science fairs, athletics, fundraising, community service, art shows, fairs, field trips, and countless other ways. There are several national examples of such efforts at K-12 schools, as well as many existing opportunities within the immediate Hanover community. The Town of Hanover could work with these academic institutions towards strengthening their existing efforts and expanding the opportunity to other areas of the local community.

3.1 International and National Examples of K-12 Sustainability Efforts

Several international and US schools incorporate sustainability in their campus community. These schools have sponsored innovative projects to promote sustainability on campus and in the community.

Table 2. International and National K-12 Sustainability Efforts

Activity	School Name	Website
Old cell phone and toner cartridge collection and recycling	River Crossing School, Portage, WI	http://www.portage.k12.wi.us/rc/ http://www.ecophones.com/Schools.aspx
Solar Panels on school roof fundraised by students	Cochrane High School, Alberta, Canada	www.sustainabledevelopment.ca
Extensive, school-wide composting effort	Cochrane High School, Alberta, Canada	http://sustainabledevelopment.ca/images/stories/website/2009/School%20Composting%20Manual%20for%20CHS.pdf
Sustainability festival including “trashion show” green art, renewable energy demonstrations, local food	River School, Reno, NV	http://www.riverschool.info/River_School/Sustainability_Fest.html
Students visit local farms as part of their curriculum.	New Roots School, Ithaca, NY	http://www.newrootsschool.org/content/view/community-learning.html
CFL’s sold as school fundraiser	Various schools	http://www.myschoollights.com/t-how.aspx
School vegetable garden	Various schools	http://assoc.garden.org/ag/asg/
Sustainability in curriculum	Burlington, VT	http://www.sustainable-schools-project.org/

3.2 Local K-12 Sustainability Efforts

Local schools in and around Hanover also have sustainability measures of their own. All of them have sustainability on their radar and take some measures to incorporate sustainability into their curriculum. There are, however, more projects that can be undertaken and ideas listed below are just a small sampling of the sustainability projects out there.

Table 3. Local K-12 Sustainability Efforts

School Name	Sustainability Activities	Sustainability Goals
The Ray School	Transportation Study, Earth Week, Walk to School Event, Green Bags, 4 th Grade Recycling Program, trash can reduction (1/2 of cans campus), computers with automatic shutoffs, PTO Sustainability Committee, conducted an Energy Audit ¹⁹	Gardening Project
Richmond Middle School	School-wide Recycling Program, Sustainability Committee, Earth Day Festival, staff members on Hanover Sustainability Committee, Safe Routes to School Program, have money to hire “sustainability intern” ²⁰	Dishwasher and dishes instead of disposable items, permanent staff position for “sustainability coordinator”, alternative energy generators
Hanover High School	Environmental Club, Student-Run Recycling Program, Trash on the Lawn Day, Earth Day, Organic Agriculture Beds, Gardening Club, CFL sale, Source to the Sea Cleanup, Green Student of the Month, Green Team T-shirts, recycling education for rising Freshman ²¹	Plastic bag-free (With Co-Op)
Marion Cross Elementary School (Norwich)	Solar panels and tracking website ²²	None

CONTACT INDEX

1. Local Business Contact Information

Wal-Mart

Sharon – (603) 298-5014
Community Coordination

CVS 24-Hour Pharmacy

Customer Service Representative – (800) 643-4075
CVS Customer Service (8am – 8pm)

Murphy's Restaurant

Tom – (603) 643-4075
Restaurant Owner

2. Dartmouth College Service Learning Partnership Contact Information

Tucker Foundation – Service Learning Partnerships

Helen-Damon Moore – (603) 646-9610
Helen.M.Damon-Moore@dartmouth.edu

2.2 Sustainable Hanover Website & Web 2.0 Community

Dartmouth Engineering Projects in Community Service (EPICS)

Professor Christopher Bailey-Kellogg – (603) 646-3385
cbk@cs.dartmouth.edu

Summer 2009 Courses

Computer Science 4 (COSC 004): Concepts in Computing

Professor: Christopher Bailey-Kellogg – (603) 646-3385
cbk@cs.dartmouth.edu

Fall 2009 Courses

Engineering Sciences 20 (ENGS 020): Introduction to Scientific Computing

Professor: Simon Shepherd – (603) 646-0096
Simon.G.Shepherd@dartmouth.edu

Computer Science 5 (COSC 005): Introduction to Computer Science

Professor: Thomas Cormen – (603) 646-2417
Thomas.H.Cormen@dartmouth.edu

Computer Science 22 (COSC 022): 3D Digital Modeling

Professor: Lorie Loeb – (603) 646-8726
Lorie.Loeb@dartmouth.edu

Computer Science 52 (COSC 052): Computer Graphics

Professor: Fabio Pellacini – (603) 646-8710

Fabio.Pellacini@dartmouth.edu

Computer Science 98 (COSC 098): Community Service Projects – Dartmouth EPICS

Professor: David Kotz – (603) 646-1439 / Christopher Bailey-Kellogg – (603) 646-3385

David.F.Kotz@dartmouth.edu

2.2 Sustainable Practices and Reform

Summer 2009 Courses

Environmental Studies 25 (ENVS 025): Ecological Agriculture

Professors: Sarah Smith & Jill Mikucki

Sarah.B.Smith@dartmouth.edu / Jill.A.Mikucki@dartmouth.edu

Fall 2009 Courses

Environmental Studies 7 (ENVS 007): First Year Seminar: Consumption & Sustainability

Professor: Douglas Bolger – (603) 646-1688

Douglas.T.Bolger@dartmouth.edu

Environmental Studies 53 (ENVS 053): Science for Sustainable Systems

Professor: David Peart – (603) 646-3272

David.R.Peart@dartmouth.edu

Environmental Studies 60 (ENVS 060): Environmental Law

Professor: Ross Jones – (603) 646-0261

Ross.T.Jones@dartmouth.edu

2.3 Student Organizations

Sustainable Living Center (Eco-friendly sustainable dormitory): slc@dartmouth.edu

Organic Farm (Campus-owned, student-run farm): thefarm@dartmouth.edu

Sustainable Move-Out (Sustainable sale of donated dorm supplies): sustain@dartmouth.edu

E.C.O (Environmental Conservation Organization for sustainability): eco@dartmouth.edu

2.4 Faculty Research

EPA Grant: Collaborative Science and Technology Network Sustainability

Investigator: Engineering Professor Mark Borsuk

Mark.Borsuk@dartmouth.edu

Production of Energy from Cellulosic Biomass

Investigator: Engineering Professor Lee R. Lynd

Lee.Lynd@Dartmouth.edu

REFERENCES

- ¹ VOX of Dartmouth, 5/3/2004: <http://www.dartmouth.edu/~vox/0304/0503/compost.html>
- ² Dartmouth College Sustainability Initiative: <http://www.dartmouth.edu/~sustain/>
- ³ Plymouth State University: Sustainability and Other Related Information:
<http://www.plymouth.edu/fsb/Sustainability/SustainabilityRelatedInfo.htm>
- ⁴ Plymouth State University Sustainability in Dining: <http://www.plymouth.edu/dining/sustainability.htm>
- ⁵ “Preserving Community Character: Our Biennial Statewide Conference”
Statewide conference: <http://www.nhpreservation.org/html/conference.htm>
- ⁶ “Preserving Community Character: Our Biennial Statewide Conference”
Statewide conference: <http://www.nhpreservation.org/html/conference.htm>
- ⁷ New Hampshire Farm to School Website: <http://www.nhfarmtoschool.org/>
- ⁸ University of New Hampshire Sustainable Transit Plan:
http://www.sustainableunh.unh.edu/climate_ed/transportation.html
- ⁹ New Hampshire Carbon Challenge: www.carbonchallenge.sr.unh.edu
- ¹⁰ University of New Hampshire Green Sweep: http://www.sustainableunh.unh.edu/biodiv_ed/projects.html#greencleaning
- ¹¹ University of New Hampshire Runoff Project: http://www.sustainableunh.unh.edu/biodiv_ed/projects.html#stormwater
- ¹² Keene State College Green Initiatives: <http://www.keene.edu/sustain/initiatives.cfm>
- ¹³ Keen State College President’s Council on Sustainability: <http://www.keene.edu/sustain/council.cfm>
- ¹⁴ Tucker Foundation at Dartmouth College: <http://www.dartmouth.edu/~tucker/staff/staff.html>
- ¹⁵ Dartmouth EPICS: <http://www.cs.dartmouth.edu/~epics/>
- ¹⁶ Dartmouth College Sustainability Initiative: <http://www.dartmouth.edu/~sustain/>
- ¹⁷ Professor Mark Borsuk, Thayer School of Engineering: http://engineering.dartmouth.edu/~mark_borsuk/
- ¹⁸ Thayer School of Engineering, Lee Rybeck Lynd: <http://engineering.dartmouth.edu/faculty/regular/leelynd.html>
- ¹⁹ Email from Sarah Curtis at Ray School. 7/09/09
- ²⁰ Email from Jim Nourse, Principal Richmond Middle School. 8/3/09
- ²¹ Email from Jeannie Kornfeld, Teacher at Hanover High School. 7/22/09
- ²² <http://view2.fatspaniel.net/ReKnew/marioncross/HostedAdminView.html?&eid=69927>