Campus Sustainability & Muhlenberg College

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April 2013

Campus Sustainability Initiative

Alliance for Sustainable Communities *lehigh valley*

About the Alliance's Campus Sustainability Initiative

The campus sustainability initiative grew out of a 2006 climate action internship by Lehigh University student Viktorija Danta. That internship was designed to support and complement the U.S.Mayors Climate Protection Agreement, which Mayor Callahan had signed in July 2006. We recommendations for the City, created a Climate Protection Agreement for the counties (signed by Don Cunningham and John Stoffa in November 2006), and a commitment for schools (adopted by the Bethlehem Area School District in December 2006). As we started looking at what higher education could do, Viktorija visited a friend at Harvard and was amazed at all they were doing to be more sustainable, including high-performance buildings, energy efficiency, waste reduction, transportation, fair trade, and serving local & organic food. We decided to create a campus sustainability internship to directly engage students who wanted to learn about campus sustainability and make a difference on their campus. We considered creating a climate protection agreement for universities and colleges, but when American College & University Presidents Climate Commitment was announced, we decided it would be better to support that initiative.

Because colleges and universities generate thousands of tons of greenhouse gas emissions [GHG] and also serve as role models to the community at large, their active participation is extremely important. In addition, they help thousands of young men and women prepare for lives and careers that support—or undermine—efforts to make communities more sustainable. In 2000, Penn State's 'Green Destiny' report stated:

> "Currently, while universities teach their students that the vital signs of the Earth are in decline, graduates continue to leave college to begin lives that generally contribute to, rather than mitigate, the growing array of environmental and social problems now plaguing us…. the time has come for the concept of sustainability… to become a new central organizing idea for higher education." *—Penn State University Senate committee on university planning*

The Alliance's first campus sustainability intern was Moravian College student Elyse Jurgen, who also helped reach out to other campuses. In 2007, we had interns at all six local colleges and universities, and more than 25 Lehigh Valley students have now completed campus sustainability internships. In addition to working on their own campuses, those interns helped develop a comprehensive sustainability checklist and contributed ideas to the nationwide rating system now known as STARS, [Sustainability Tracking And Rating System] developed by AASHE, the Association for the Advancement of Sustainability in Higher Education. We thank them all for their valuable contributions to our understanding of campus sustainability and pathways to sustainability.

The colleges in the Lehigh Valley have developed a variety of sustainability initiatives, so we are now introducing Campus Sustainability 2.0, an internship designed to complement and support the colleges' own efforts and loosely guided by STARS 2.0 (still in draft form as of May 2013).

The works cited are a valuable library for thinking about campus sustainability. For more information about campus sustainability and the Alliance's internship programs visit our website.

Campus Sustainability | Sustainable Campus Dining | Internships with the Alliance

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Introduction

This report explores past achievements, current initiatives, and future goals regarding sustainability at Muhlenberg College. It is a result of the Alliance for Sustainable Communities' campus sustainability and media & communication initiatives. College and University campuses are some of the main consumers of resources, such as food and energy, in the country. Accordingly, it is important that college students, staff, and faculty understand the importance of sustainability and are aware of what's going on around them with regards to sustainability. This report looks at things such as:

- What is campus sustainability?
- Past/recent achievements
- Current initiatives and projects
- Future goals and plans
- Assess necessary changes

This report was made possible by information provided by Kalyna Procyk (Sustainability Coordinator at Muhlenberg College), Evan Rehrig (Dining Services Marketing Manager at Muhlenberg College), and Peter Stark (Dining Services Operations Manager at Muhlenberg College).

In order to understand campus sustainability, the greater idea of sustainability must first be defined. Sustainability covers a broad spectrum of ideas, but it generally means acting in a way that allows the present generation to meet their needs while leaving enough resources for future generations to meet their own needs. It also entails acting in a way that enables ecosystems to maintain ecological processes, functions, biodiversity and productivity into the future. Kates et al. (2001) defines sustainability as "Meeting fundamental human needs while preserving the life support systems of planet Earth." It's important to note that sustainability not only includes environmental preservation, but it also means preserving the social, economic and political conditions that allow for peace and harmony among mankind. If we only make sure to preserve resources and biodiversity but ignore things such as human rights, public health, education, diversity, etc., we are not acting sustainably.

Scientific research supports the idea that an acceleration of sustainable actions is necessary in order to preserve our precious planet for its growing population. For example, research done by the IPCC (Intergovernmental Panel on Climate Change) indicated that if no specific actions were taken to reduce greenhouse gas emissions, global temperatures would be likely to rise between 1.4 and 5.8° C from 1990 to 2100 (McMichael et al., 2004). This would lead to a plethora of harmful effects, such as crop failure, drought, rising sea levels, flooding, extreme weather, increased spread of diseases…the list goes on and on.

If we restrict this idea to college campuses, we can see that there are a number of aspects of campus life that relate directly to sustainability. College and university campuses, depending on their size, are comparable to small cities; their large size, population, and various activities taking place can have some serious impacts on the environment, whether they are direct or indirect. Colleges and universities are some of the main consumers of resources, such as food and energy, in the country. If all colleges and universities in the country made more of an effort to integrate sustainability into their institution, it would make an enormous impact. Although many schools have taken small steps to protect the environment, a more systematic and sustainable approach to reducing the negative impacts of the numerous activities that occur on college campuses is generally lacking.

Although this report specifically analyzes Muhlenberg College, it should serve as a model for other colleges and universities across the country, regarding both its successes and failures. There is no doubt that Muhlenberg has been making an effort to become a more sustainable institution. However, there is always more

that can be done, and this report serves to explore both positive achievements and possible additional ideas to be considered.

Campus Sustainability

Campus sustainability means integrating sustainability into all aspects of college life. STARS (Sustainability Tracking, Assessment and Rating System™) (2012) describes the goals of campus sustainability and explores the various facets of campus sustainability that institutions should be concerned about. These goals are briefly described below.

Education & Research

Curriculum

Higher education institutions are positioned to prepare students to become future leaders, scholars, workers, and professionals. By offering education programs and/or courses in sustainability, they are training their students to lead society to a sustainable future.

Research

By conducting research related to sustainability, higher education institutions can stimulate the development of new technologies, strategies, and approaches to address sustainability issues.

Student Engagement

Engaging students in sustainability outside the formal curriculum is another way to integrate sustainability into the campus culture and initiate thought and action from students.

Operations

Air and Atmosphere

Another facet of campus sustainability involves measuring and reducing greenhouse gas and air pollutant emissions. This will reduce the impacts of global warming while positively impacting the health of the campus community as well as the health of the local community and region.

Buildings

Buildings are generally the largest user of energy, the largest source of greenhouse gas emissions on campuses, and they use a great amount of water. Institutions can reduce the negative impacts of buildings on the environment by designing, building, and maintaining buildings in ways that provide a healthy indoor environment while at the same time mitigating the impact on the outdoor environment.

Energy

For most institutions, energy consumption is the largest source of greenhouse gas emissions. Campuses can reduce their energy consumption through conservation and efficiency. By switching to cleaner and renewable sources of energy such as solar, wind, geothermal, and low-impact hydropower, institutions can reduce pollution and degradation of resources that would have been used for energy production. Not only will conservation measures help the environment, but these actions also save money and help to shape a market by demanding cleaner, renewable sources of energy.

Food

Negative environmental impacts of food production include contamination of water and soil by pesticides and fertilizers, harsh working conditions for farm workers, and greenhouse gas emissions from transporting food long distances. Institutions can change this by finding out where their food comes from, how it is produced, and how far it traveled. By supporting local economies, encouraging safe, environmentally-friendly farming methods, and working towards eliminating unsafe working conditions and alleviating

poverty for farmers, colleges can promote sustainability with regards to the environment as well as human health.

Grounds
In maintaining their grounds, campuses can be more sustainable by minimizing with the goal of eliminating the use of toxic chemicals, protecting wildlife habitat, and conserving resources.

Purchasing
Institutions can use their purchasing power to help build a sustainable economy by choosing environmentally and socially preferable products and services, and by supporting companies with strong commitments to sustainability.

Transportation
By moving toward sustainable transportation systems, campuses will not only reduce greenhouse gas emissions and other pollutants, but they will also benefit from it. Bicycling and walking are good for human health and lessen the need for large areas of paved surface, which can help campuses better manage storm water. This will also save money for institutions by reducing their dependency on petroleum-based fuels.

Waste
Institutions can start the move toward zero waste by reducing, reusing, recycling and composting. This will reduce the need to extract new materials from the earth, save energy and water by using recycled materials, and reduce the flow of waste to incinerators and landfills which produce greenhouse gases. This will also save institutions a good amount of money from landfill and hauling service fees.

Water
College campuses that wish to be more sustainable can do this by conserving water, making efforts to protect water quality, and treating water as a resource rather than a waste product. Pumping, delivering, and treating water requires great amounts of energy, so by doing this institutions will be reducing energy use and greenhouse gas emissions. Managing rainwater and wastewater also reduces the need for wastewater discharge into local water supplies, improving the health of local water systems.

Planning, Administration & Engagement

Coordination and Planning
College campuses can be more sustainable by dedicating resources to sustainability coordination, incorporating sustainability into their primary campus plans, and developing plans to move toward sustainability. Good planning is key to clarifying the vision of a sustainable future and achieving sustainability goals.

Human Resources
Sustainability in human resources involves strengthening its community by making fair and responsible investments in its human capital, including offering benefits, wages, and other assistance. This also involves equipping staff and faculty with the tools, knowledge, and motivation to adopt behavior changes that promote sustainability.

Investment
By making sustainable investment choices, institutions can encourage better corporate behavior, support innovation in sustainable products and services, support sustainability in their community, and help build a more just and sustainable financial system.

Public Engagement
Engaging with community members and organizations in the governmental, non-profit, and for-profit sectors is a way for institutions to help solve sustainability challenges.

Sustainability at Muhlenberg

Muhlenberg College has already implemented numerous sustainability initiatives. However when talking about campus sustainability, it is important to consider all aspects of campus life, and remember that there is always more that can be done. Going through campus sustainability achievements at Muhlenberg according to the main headlines of STARS curriculum will allow for an evaluation of what positive objectives have been attained as well as what else can be done to enhance campus sustainability at Muhlenberg.

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Education & Research

Academics

Muhlenberg has taken an important step towards the STARS recommendation of integrating sustainability in curriculum by creating a sustainability minor. This program highlights issues related to sustainability and explores how those issues impact and are addressed at local, national, and global levels. This interdisciplinary minor provides the background that is needed to understand many of the complex challenges of sustainability, and strives to equip students with the skills needed to develop solutions to these problems. An additional goal of the program is to build a community of faculty and students with a diversity of perspectives and areas of expertise committed to seeking creative solutions for sustainability. Muhlenberg has acknowledged in its values statement regarding sustainability, "We believe that integrating sustainability into the educational experience is vital to preparing students for lives of leadership and service as responsible global citizens." This is definitely a positive message, however, it is difficult to evaluate how much of this is actually being done outside of the sustainability minor.

EnAcT

Education and research also includes engaging students in sustainability outside the formal curriculum. EnAcT, Muhlenberg's Environmental Action Team, serves this purpose. It is a student organization that strives to educate the campus on sustainability and environmental issues and develops projects and programs to better the ecological impact of individuals. This organization is responsible for several sustainability initiatives that will be discussed later on.

Community Garden

In the spring of 2010, the Garden Committee (composed of faculty, staff, and students) received approval to develop a community garden. It is located behind 2208 & 2214 Chew Street. A garden is a good way to get the student body engaged in sustainability. However, many students do not know about this garden or where it is. The promotion of the garden would lead to increased awareness and student involvement.

Sustainability House

Also called the Tree House, the Sustainability House is an on-campus housing option for students who are committed to living an environmentally friendly, socially just, and sustainable lifestyle. The goal of this initiative is to create a sustainable lifestyle within this residency, but also to educate the Muhlenberg campus and Allentown community in how to be environmentally responsible. The residents of this house host activities at the house that promote self-sustaining food production and sustainable eating practices, energy conservation, and zero waste.

Operations

Recycling & Waste Disposal

Muhlenberg has made a switch to Sustainable Waste Solutions (SWS), a recycling plant that mechanically sorts recyclables into separate paper, plastic, metal, and glass groups. This allows the college to have

single-stream recycling, which encourages students to recycle by making it more convenient for them. The recycling/trash bins on campus have lists of what can be recycled and what needs to be thrown away, making it easier for students to know what to recycle and what to throw in the trash. Guidelines for this are also available on the Muhlenberg Website. SWS also has a waste-to-energy facility, which produces less CO_2 per ton of garbage than a landfill and is designated as renewable energy generators by the USEPA. Muhlenberg sends all of its trash to this facility, making the campus landfill-free.

Green Team

The Green Team is a group of EnAcT members that helps out during move-in day by collecting cardboard and recycling from the freshmen dorms and, accordingly, educating the freshmen regarding recycling on campus. Many of the items the Green Team collects would been thrown out if it weren't for their efforts.

Just Tap It

Just Tap It was developed by EnAcT with the assistance of the Greening Committee and the support of Student Government and is an initiative to reduce the amount of bottled water consumed on campus. This policy included the installation of filtered water fountains with spouts that allow easy filling and can accommodate large water bottles. These fountains can be found in dormitories, Seeger's Union, and the Life Sports Center, as well as every academic building on campus. Water bottles have been excluded from the student meal plan, although they can still be purchased for cash or flex dollars in selected locations. In support of this initiative, President Helm, along with other departments funded the purchase of reusable aluminum water bottles for the freshman class. As a result of this initiative, bottled water purchases on campus dropped by 92%.

Energy

Electrical meters have been installed in 26 of Muhlenberg's largest buildings to monitor, benchmark, and reduce electricity use. Natural gas, oil and steam meters have been installed as well. Unnecessary lighting has been reduced through the installation of occupancy sensors in some rooms of various campus buildings, and more will be installed in the future. Reducing energy use not only benefits the environment by reducing the use of natural resources for energy, but it also benefits the college because it lowers costs.

Watts Your Bergtricity?

This is an energy reduction competition between the fifteen major campus dormitories that is hosted by EnAcT. Over the course of two weeks, the dorms compete to decrease their energy use and the winning dorm receives a pizza party. The goal of this initiative is to reduce energy use, spark dialogue among the campus community, and integrate sustainable behaviors into daily life. The first Watts Your Bergtricity took place in 2009, and its success led EnAcT to repeat the competition each spring (most of the campus dorms substantially decreased their energy use over two weeks). This is a good start to energy reduction, but perhaps if EnAcT considered a more comprehensive plan that was implemented year-round as opposed to only two weeks out of the year, it would lead to more and longer-lasting energy reduction, as well as establishing a more sustainable lifestyle in the residents of these dorms.

Green Building

Muhlenberg has made some renovations to its buildings in order to maintain and improve upon building efficiency and sustainability. The New Science Building, which houses the life science program, was designed with several sustainable features, including:

- Waterless urinals
- Low-flow toilets and faucets
- Energy enthalpy wheels in the heating, ventilating and air conditioning systems
- Low emissivity windows (improves insulation)
- Wood products by the Forest Stewardship Council (FSC)
- Lab casework composed of agriboard
- Paints, adhesives and sealants that contain low levels of volatile organic compounds
- A green house keeping program

It also has an educational outreach program which strives to educate visitors about the building's sustainable features through the use of television monitors in the building. The building was awarded a Leadership In Energy and Environmental (LEED) Silver rating in 2007 as a result of these efforts.

Seegers Union has also undergone some construction to make the building more sustainable. Part of this renovation was the addition of a waste compactor and pulper to reduce waste (discussed in the Dining Services section). FSC certified wood was used for concrete form work. Exterior spray foam insulation has been used to reduce air leakage and improve energy efficiency. Low-flow fixtures have been installed in order to reduced water usage. These small steps are significant because with a lot of small changes you can make a big impact. However, bigger changes are even better, and it doesn't seem as if many big changes have been applied to Seegers Union.

Dining Services

The Muhlenberg Dining Services has also joined in the effort to make Muhlenberg a more sustainable institution. All paper products at all campus restaurants are compostable and recyclable, and there are many recycling bins conveniently located throughout campus. The Dining Services use all eco-friendly, phosphate-free soaps and sanitizers. The dish machine that is used in the Wood Dining Commons has sensors on it so it only runs when there's product being run through the machine, and it uses a backwards water recycling system in order to reduce water usage. All post-consumer food waste is sorted by workers, goes into an extractor and is turned into a pulp in order to reduce the volume of trash. All water is recycled, both in the pulper and the dish machine, again preserving water. The Dining Services also partners with minority-owned businesses, which is a step toward sustainability, however without more detail it is difficult to evaluate how important this is. The Dining Services have also implemented a few initiatives, which are listed below.

Think Before You Tray

This program was introduced in the Wood Dining Commons in the Fall of 2010. The Wood Dining Commons went from more than 1500 trays to just about 350 trays as a result of this program. However, trays have not been completely eliminated from the WDC.

Weigh the Waste

This is another initiative that was first started in November 2012; the Dining Services had a screen running in the Wood Dining Commons showing the total waste produced in the dining hall each day for four days. By the end of the program, waste levels had dropped from 1.5 ounces/person to 1.3 ounces/person. This program is typically run twice a year.

Berg To-Go

The main focus of the dining services right now is the reusable to-go program. Currently students have an option of a cardboard recyclable to-go container or a plastic reusable container. The Dining Services is looking to fully implement the reusable to-go program in the Fall of 2013 so that only reusable to-go containers will be available, except at the kosher stations for dietary restriction reasons.

The Muhlenberg Dining Services have undeniably been making an effort to integrate sustainability into their practices. The next step is to ensure that these efforts produce results that continue into the foreseeable future. For example, making "Weigh the Waste" something that appears on the screen every day of the semester as opposed to just once a semester. This implies to students that they should be concerned with how much food they are disposing of on a regular basis, not just during a period of four days.

Technology

The Office of Information Technology has also joined in the effort towards sustainability at Muhlenberg. The cold aisle concept has been implemented in the server room, which has successfully reduced the overall facility temperature by 3 degrees and has eliminated hot spots. Duplex printing is now available (as default) on at least 90% of public printing stations. The EnergyStar standard has been in place for more than 10

years for equipment purchases. There is a certified deconstruction/recycling program with AERC for technological equipment. In addition, OIT makes sure to recycle all recyclable packaging materials.

Green Purchasing Policy

Muhlenberg has stated its recognition of the fact that the purchase, use, and disposal of products impacts the environment and public health through its green purchasing policy. This intends to integrate economic, ethical, environmental, and social considerations into all purchasing decisions, while maintaining standards of cost and value. The plan includes a definition of "environmentally preferable products and services," and specific goals and recommendations to reduce waste, improve public health and safety, reduce pollution, and conserve natural resources through purchasing decisions. This plan is available on the Muhlenberg College website.

Planning, Administration & Engagement

Greening Committee

The Greening Committee was established in 2003 by President Randy Helm to examine, propose, and monitor sustainability efforts, reduce resource use and promote dialogue on and off campus. The Greening Committee is composed of faculty, staff, and student representatives who work on and plan individual sustainability projects and then come together to discuss progress and changes that need to be made. This group addresses three main categories of sustainability:

- Education, in order to integrate sustainability into academics, classes, and extracurricular activities.
- Plant operations, because things like energy usage, lighting, grounds management, etc., are extremely important assets of sustainability.
- Student life—that is—what programs are available for students to participate in that relate to or promote sustainability.

Although the creation of this committee has led to a good amount of progress toward campus sustainability, it is unclear how the student body can get involved, or if they are open to the idea of student involvement. By opening their meetings to students, they would be creating a more integrative approach to sustainability as well as raising awareness of sustainability among the student body.

Sustainability Coordinator

Kalyna Procyk is the Sustainability Coordinator at Muhlenberg. Before coming to Muhlenberg last fall, Kalyna worked as an environmental and energy attorney in Chicago. She has experience in sustainability and Brownfield site redevelopment, environmental compliance, conservation banking, and energy litigation and policy. She received her J.D. from Chicago-Kent College of Law, has a certificate in Environmental Policy from Loyola University, and obtained a B.A. from Wesleyan University. She is an important member of the Greening Committee and works to promote and carry out campus sustainability initiatives.

Office of Community Service & Civic Engagement

This group promotes partnerships with organizations in the Lehigh Valley and supports environmental and social sustainability through volunteerism, service-learning, and civic engagement. The Office provides opportunities to participate in community-based projects, work-study, and course-related community engagement.

Recommendations

STARS

Although it has been said that Muhlenberg is looking at exploring the STARS system, the sooner this happens, the more beneficial it would be for Muhlenberg's campus environment as well as that of the

surrounding community. Adopting this system would encourage Muhlenberg to become more comprehensive in its sustainability efforts and it would cause more things to happen faster.

Green Revolving Fund

Undoubtedly, a main concern of many colleges and universities regarding sustainability initiatives is money. The idea of a "Green Revolving Fund" entails a fund that is devoted to sustainability investment. These investments would ideally enhance energy efficiency and decrease resource use, thereby reducing operation expenses and greenhouse gas emissions. This would produce cost savings, therefore replenishing the fund for more green investment (Sustainable Endowments Institute, 2011). If institutions adopted this idea, they would be more likely to spend on sustainability initiatives because of the knowledge that these initiatives would save them money in the long run.

Academics

Muhlenberg's sustainability mission statement includes its goal, as recommended by STARS, to integrate sustainability into its curriculum. However, other than the sustainability minor, it's unclear how this is being done. A more comprehensive explanation of how Muhlenberg is integrating sustainability into all of its curriculum would aid in the evaluation of whether or not the college is doing enough in this area. In the case that Muhlenberg is not doing enough, a re-evaluation of its sustainability mission statement would be in order.

Awareness

One of the most important factors that contribute to a sustainable campus environment is awareness of the students, faculty, and staff about these issues and initiatives, which requires transparency by the institution implementing them. Although Muhlenberg has been making an effort to track energy, natural gas, oil, and steam usage in campus buildings, this information has not been made public to the college population. If Muhlenberg published an annual greenhouse gas inventory that illustrated the amount of greenhouse gases emitted and how much it was reduced from the year before, students, faculty and staff would be much more aware of their actions while going through their daily routine on campus. Although sustainability initiatives are in place and it's being talked about by certain groups of people, an in-depth discussion involving the entire student body would really propel the discussion and implementation of sustainability initiatives on campus.

Food

Muhlenberg has taken some steps toward sustainable food production; the Dining Services have taken steps to reduce waste and water usage, and they do some partnering with local food companies, which reduces travel exhaust. However, there is much more that can be done in the area of sustainable food production. If the Dining Services made a commitment to only purchase food that was sustainably grown, this would make a big impact.

Fair Trade

When institutions purchase products that are Fair Trade Certified, they ensure a better life for growers, workers, and their families through better education, health care, housing, and worker organization and training. Fair Trade products can also help to preserve the environment. For example, most Fair Trade coffee is organic, shade-grown coffee, so it helps to protect forests and eliminate the fertilizers, pesticides, and herbicides that are destroying the Earth and contributing to the extinction of as many as 50,000 living species each year. Muhlenberg does have Fair Trade coffee on campus, however there is only one coffee offered at each dining facility that is Fair Trade certified. By purchasing more Fair Trade products, Muhlenberg would be ensuring the health and well-being of workers as well as protecting the environment.

Conclusion

The goal of campus sustainability is to make institutions safer, healthier, more sustainable places, not only for students, but for the greater community and for the environment. There is no doubt that Muhlenberg has

been making an effort to become a more sustainable institution. However, this is a long, slow process that requires careful evaluation to ensure that Muhlenberg is integrating sustainability into all aspects of campus life. There is always more that can be done, and hopefully this report helps to shed light on those aspects of campus sustainability that Muhlenberg has succeeded in as well as those that need more work.

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