STARS: Sustainability, Tracking, Assessment, & Rating System

Becca Krzmarzick

Sustainability Fellow 2008-2009

Pacific Lutheran University

Acknowledgements

I would like to thank the following people and organizations. Without their help, this project would not have been possible.

Barbara McConathy, Environmental Services Coordinator
Dave Kohler, Director of Facilities Management
Debbie Jenkins, Director of Printing
Doreen Knapp, University Communications
Erika Dornfeld, PLU Student
Eric Pfaff, PLU Student
Facilities Management
Gretchen Howell, Human Resources
Jill Whitman, Professor of Geoscienes
Joe Bell, Environmental Health and Safety Manager
John Pumilio, Director of Sustainability, Evergreen State College
Leona Green, Cleaning Services Manager
Love Funkhouser, Facilities Management
Margaret Crayton, Information & Technology Services
Megan Anderson, Assistant to the Director of Content Development
Mithun
Mischell Devine-Nunner, Construction Management
Parkland Light & Water
Patricia O'Donnell, Director of Financial Services
Puget Sound Energy
Randolph College, Lynchburg, Virginia
Rose McKenney, Associate Professor of Geosciences
and Environmental Studies
Sara Paz, Grounds Maintenance Manager
Sheri Tonn, Vice President for Finance and Operations
Steve Skramstad, University Printing
Susan Harmon, Associate Professor of Business
Sustainability Committee
Wendy Robins, Dining Services

To each and every one of you who helped me along the way: thank you. I thoroughly enjoyed working with you this year and hope to continue in the future.

ABSTRACT

In an effort to combine all elements of sustainability in one report, AASHE developed the STARS program. Institutions of higher education are scored based upon the number of points they get per credit. In the first phase of the pilot, there are 39 credits total. Another great outcome of STARS is that after completing it, institutions not only receive a rating, but also have all the information related to sustainability in one place. After finding the data for STARS, this research document was compiled for the PLU community as well as those at other institutions. Each year, STARS will improve with constant feedback and updates. The official system should be available in 2009.

Phase One of the pilot project contains sections two ("Operations") and three ("Administration and Finance"). The omitted section is titled "Education and Research" and is scheduled to be released in the fall of 2008. Each section is further broken down in to categories and then by credit. For example, in the "Operations" section under the "Buildings" category is a credit called "New Construction, Renovation, and Commercial Interiors". This report is modeled after the same structure.

Table of Contents

INTRODUCTION

Sustainability Tracking, Assessment and Rating System (STARS) is a project through the Association for the Advancement of Sustainability in Higher Education (AASHE). This is the pilot-phase of a sustainability practices rating system that will hopefully continue in the future. Colleges and universities across the United States and Canada are involved in this first step. Each institution gathered, compiled and submitted its own data. Pacific Lutheran University was paired with Randolph College in Lynchburg, Virginia. By having a "buddy school" we were able to gain a better understanding about unclear credits. An online pilot forum was established for similar reasons. Both of these resources were essential to completing the project. A 12-month consecutive period must be chosen for this rating system. Not all participating schools must adhere to the same 12-month. We chose the fiscal year of June 2066 through May 2007.

A Brief History of AASHE

> *"AASHE is an association of colleges and universities in the U.S. and Canada working to create a sustainable future. It was founded in 2006 with a mission to promote sustainability in all sectors of higher education – from governance and operations to curriculum and outreach – through education, communication, research and professional development. AASHE defines sustainability in an inclusive way, encompassing human and ecological health, social justice, secure livelihoods, and a better world for all generations."* (AASHE, 2008).

AASHE makes a great effort to accomplish goals set by all members. They hold conferences and events across the nation. To incorporate different aspects of institutions, AASHE connects with individuals, schools, governments at varying levels, and external entities. Weekly newsletters are sent out via email highlighting specific sustainability efforts at institutions across the nation. This aids schools in implementing new ideas on their campus, gaining connections, and collaborating on efforts for change.

The Creation of STARS

Currently in the pilot phase, over 90 institutions are using this self-reporting system to provide substantial data on sustainability practices at their campuses. It is difficult to know all the data and efforts revolving around sustainability for every department. AASHE wanted to create a standardized system so that everyone (in and out of the educational community) could view information regarding sustainable practices. Similar to this fellowship, other schools are hiring students to work on this pilot project during the summer with the help of faculty and staff. Establishments may submit a report up to once a year. Each rating is valid for three years.

Why STARS?

Many schools are incorporating sustainability in their everyday activities, yet it is rarely tracked. If it is tracked, the entire university or college may not have access to that information. There are other rating systems, but STARS is different because requirements are clear (and will become clearer after the pilot phase) and all educational institutions are welcome to participate. Also, information will be available to other schools to

increase cooperation toward common goals. This system encompasses more than just environmental aspects, unlike the alternatives. STARS encourages a three part balance between environmental, social, and economic practices.

The Future of STARS

The most significant role of STARS is that with every passing year, and more data, institutions can gauge progress. The pilot phase data it is confidential, but in 2009 the data will be publicly available. Learning what does and does not work for fellow schools, individual colleges and universities can improve areas in which they are lacking. Areas of improvement that may have been deemed unimportant in the past will be given new consideration after seeing that other schools view them as vital to their sustainable success. Incentives will be granted for enrichment of campus sustainability.

Purpose

This document serves as the research component for the Mithun Sustainability Fellowship and is intended for the PLU community, Mithun, other universities. STARS was chosen as a Sustainability Fellowship because it involves the built environment, which was a requirement set by Mithun. It is important for the PLU community to see what was accomplished through the Fellowship and how PLU did on the ranking system. It provides analysis on our current sustainability practices and shows where the University could improve. Mithun needs to know what was accomplished by funding a student research project. Other universities can compare their scores and practices to ours, as well as gain new ideas to implement on their campuses.

METHODS

STARS is built upon categories that are divided into credits. Each credit has specific requirements that must be met to earn points. Up to five possible points may be awarded per credit; however the majority of credits are worth a maximum of one point. A high total of points mean a high sustainability rating. Those completing the rating system are required to evaluate data for their school, assign a point value, and obtain documentation supporting the number of points received. See Appendix B for the STARS Scorecard showing all the credits available and their corresponding point values.

RESULTS: OPERATIONS CREDITS

In this section all the credits are related to the operations at PLU. It is divided by category and then further by credit. Each individual credit will be explained in greater detail, outlining some of the factors required to earn points.

Prerequisite

To receive credit for any of the operations credits, a recycling program must be in place (AASHE, 2008, p.11). Pacific Lutheran University has had an excellent program for several years that is dedicated to encouraging people in our community to reduce, reuse, recycle and compost. This is a foundational aspect of building sustainability in any establishment.

Buildings

Four credits make up the building section. The first one is titled “New Construction, Renovations, and Commercial Interiors” (OP Credit 1). If a building was

completed within the last three years, it is considered ‘new’. The Morken Center for Learning and Technology and the University Center both qualified for this credit. Morken became LEED Gold Certified in 2006. The University Center became LEED Silver Certified in 2008. PLU earned two out of four credits in this category (Appendix C).

The second credit is titled “Building Operations and Maintenance” (OP Credit 2). It focuses on LEED for Existing Buildings (LEED-EB) which PLU does not have at this time.

“Potable Non-Irrigation Water Consumption Trend” (OP Credit 3) is the title of the third credit. Using a baseline annual year of 2000-2001, reductions can be measured. In this case, the reduction was 22,380,160 gallons per year from the fiscal years 2000-2001 to 2007-2008. This data was found in reports compiled by Facilities Management and Parkland Light and Water. There was also a slight increase in student, faculty, and administration population from 2000 to 2008.

Finally, “Green Cleaning Service” (OP Credit 4) completes the building section. Our Cleaning Services department became Green Seal Certified in November 2005. The daily products used are formulated to minimize the impact to the environment. The products are non-toxic, phosphate free, biodegradable, non-flammable, and do not contain any dyes or fragrances. Paper towels are a minimum of 40% post consumer waste. None of these supplies were manufactured through a bleaching process or de-inked. The toilet tissue is 100% recycled with a minimum of 20% post consumer waste.

Dining Services

"Local Food" (OP Credit 5), "Food Alliance and Organic Certified Food" (OP Credit 6), and "Fair Trade Coffee" (OP Credit 7) are the credit categories for Dining Services. PLU earned one, one, and zero points, respectively, for OP 5, OP 6, and OP 7. PLU's self-operated Dining and Culinary Services strives "to build community relationships to sustain the local economy and to decrease our carbon footprint" (Robins, 2008). In 2006-2007, over 6% of food for PLU was local and over 6% was organic. Some products are in both categories. Dining and Culinary Services seeks to do business with suppliers that care for people and the earth, which parallels the PLU mission statement. Increased purchasing of organic foods that are in season add to the healthy menu options offered.

Energy and Climate

These credits focus around the energy and electricity used at PLU. Unfortunately, PLU did not qualify for "Energy Intensity Trend" (OP Credit 8). The KWh we used in the past three years has increased slightly. From 2006-2007 to 2007-2008 we increased by about 190,000 KWh. Student, faculty, and staff populations all rose in 2007, which may account for some of the energy consumed. The trend in BTUs used for temperature is not decreasing either. In 2005-2006, 72 billion BTUs were consumed; 68 billion in 2006-2007, and 74 billion in 2007-2008. This data was found in reports compiled by Facilities Management and Parkland Light and Water.

Operations Credit 9, "Renewable Electricity" asks for details on whether the institution generates its own renewable energy, catalyzes its own electricity, and purchases Green-e certified (or the equivalent) electricity. PLU does not generate or

catalyze energy on campus. However, we do purchase renewable energy credits. In 2006-2007, 900,000 KWh were purchased and in 2007-2008, 3,444,000 KWh were purchased. This increase was due entirely to the renovation of the University Center. PLU buys renewable energy credits for the Morken Center for Learning and Technology and for the University Center. Five wind sources contribute to PLU's off-site renewable energy: Stateline Wind Project, Klondike Wind Project, Condon Wind Project, and two Foote Creek Wind Projects.

Since PLU does not have on-site renewable fuel, the University did not qualify for Operations Credit number ten: "On-Site Combustion with Renewable Fuel" (OP Credit 11). The last credit for the Energy and Climate section is called, "Greenhouse Gas Emissions Reduction". The data for this credit was from yearly reports done by Sightlines to measure our carbon footprint. We did not receive credit because our emissions were not reduced in this time frame. In 2007, President Anderson signed on to the President's Climate Commitment. To minimize greenhouse gas emissions, PLU chose the following actions in the commitment:

- Develop an Energy Star purchasing, leasing, and contracting policy
- Offer a bus pass program for faculty and staff
- Create a bus pass program for students and a bicycle co-op
- Buy green power credits for two buildings (about 16% power consumption)
- Utilize student initiative to switch entire power purchase to green power
- Encourage voluntary support from staff and faculty through contributions
- Continue composting
- Increase waste diversion rate from 60-65% to 80%

Grounds

The Grounds section is comprised of two credits: "Organic Campus" (OP Credit 12) and "Irrigation Water Consumption" (OP Credit 13). Technically, we are not considered an organic campus, but PLU does integrate organic practices into landscape care and pest management. Integrated Pest Management (IPM) is a strategy where PLU incorporates natural enemies and weather to control pests instead of using chemicals to completely eradicate them (Facilities Management, 2007). By keeping the population of pests low, but not to zero, plants and people are safe and healthy. For landscaping, similar tactics are used.

PLU's Grounds Department implements many practices to eradicate invasive, nonnative species and retain native plants. Plants native to the Pacific Northwest are chosen when PLU expands its landscaping. This ensures less care and more disease/pest resistance. It is easier to nurture an additional plant on campus if it is native to Northwest conditions. When nonnative species at PLU have been here for a long time become unhealthy, they are removed and replaced with a more appropriate alternative. In the area of weed control, typically hand-weeding is done, and then they are burned or tilled up. The last step is to cover that place with either recycled wood mulch or nontoxic wood-debris mulch. The latter form is made from tree and shrub debris that was chipped right here on campus or from tree companies. Instead of using chemicals to control weeds that are difficult to remove, beds are converted to grass lawn. At our newest building, the Morken Center for Learning and Technology, PLU chose to integrate plants and grasses that are native to the South Sound instead of a care-intensive grass lawn. Named after landscape that once inhabited the campus, this area is sometimes referred to as the "Oak Savanna".

At this time, there is no metering system set up to track the amount of non-potable water used for irrigation. New irrigation systems installed have smart heads that are designed to use less water and only spray areas that need water. This way, there is no overspray. Water audits are conducted by students in PLU's Conservation of Natural Resources class to determine run times at each station and rain delay sensors prevent watering during a rainy day. Retrofitting of all irrigation controls to digital sensors is now finished around the campus. Irrigation occurs at times during the day with the least evaporation rate. In the summertime, lawns are cut at longer lengths so less water is used. Moisture is kept around shrubs by mulching.

Materials, Recycling, and Waste Minimization

In this section the focus is aimed at institutions that are making a conscious effort to reduce waste significantly by a reduction in consumption and diversion. Aptly named, the 14th credit is titled "Waste Minimization". The university or college must have a three-year downward trend in waste generation to qualify for this credit. PLU's remained fairly steady, but was not decreasing. Although in 2005-2006 there was an increase in the amount of waste diverted, there was also an overall increase in waste generated. The amount of waste a person generates can be difficult to regulate. PLU's Environmental Services Department tracks waste through monthly LeMay bills.

The second section (OP Credit 15) deals with waste diversion for the 12-month period chosen by the school. The waste diversion rate was about 60% in 2005-2006, and 61% in 2006-2007, and 70% in 2007-2008. These rates do not include items that were sold or reused through the surplus program. Presently, PLU does not have a tracking system for the weight of items that are put in surplus.

For PLU, Operations Credit 16, "Construction and Demolition Waste Diversion" is highlighted by the renovation of the University Center and Tingelstad Hall. The requirement for this credit is that at least 75% of non-hazardous construction and demolition waste be diverted. The construction management team worked hard to divert about 98% of waste from the University Center renovation and about 91% from Tingelstad Hall.

Another key element to recycling within an establishment these days is electronics, which is tracked in OP Credit 17, Electronic Waste Recycling Program. PLU recycled 323 machines[1] in the 2005-2006 year using the companies SM Metals and PC Recycling. Dell, PLU's computer vendor has a program that takes back as many reusable parts from non-working computers as possible. A small refund check is sent to the school in exchange for the parts. Typically, computers are on campus for 4-5 years.

The last component to waste minimization for STARS is hazardous waste (OP Credit 18). PLU's Environmental Health and Safety Manager oversees of the amount and disposal practices of this waste. PLU was audited 5 times but did not receive any violations from the state nor county.

Purchasing

Presently, a draft version of an Energy Star Purchasing Policy (Appendix D) is in consideration. OP Credit 19 requests information about what equipment was purchased and how much it cost. PLU has not had a central mechanism for tracking this information. For the future, departments will record Energy Star purchases. These

[1] For our purposes, a "machine" is usually defined as the computer hard drive, monitor, keyboard and mouse.

departments are Facilities Management, Dining and Culinary Services, Residential Life, and Computing and Telecommunications Services.

Fairly new to universities is a program called Electronic Product Environmental Assessment Tool (EPEAT), which is OP Credit 20. Currently, PLU buys electronic equipment with Energy Star ratings, but not EPEAT ratings. Since all EPEAT equipment is also Energy Star certified some of our purchases have met EPEAT standards as well. PLU is trying to blend the requirements of both rating systems with the needs of the institution. Similar to Energy Star, purchase tracking will be done in the future.

"Purchasing Green Cleaning Products" (OP Credit 21) is the second credit aimed at this department. Although there was no formal Request for Proposals, the Cleaning Services department did a trial run of different companies to see which had the best product considering ease of use and green requirements among other criteria. PLU contracts cleaning products through Walter E. Nelson, a company that sells certified Green Seal products. The cleaners, paper towels, and toilet tissue used on campus are bought through this vendor. Green Seal is always purchased over non-certified products. All of our products are purchased Green Seal when available, which equates to about 100% of expenditures. Disinfectants cannot be Green Seal because they always include chemicals.

Next in the Purchasing section is "Environmentally Preferable Paper Purchasing" (OP Credit 22). PLU uses paper (including envelopes and letterhead) made from 10% - 30% post-consumer waste, 100% recycled paper for the Admission Viewbook, FSC certified paper and vendors, energy-saving copiers, and duplex printing. Cleaning services purchases toilet tissue that is 100% recycled with a minimum of 20% post-consumer waste and paper towels made from a minimum of 40% post-consumer waste.

In addition, PLU buys environmentally preferable furniture (OP Credit 23). With the newly remodeled University Center, all lounge and office furniture met the "Greenguard" standard for LEED. All dining furniture met the recyclable criteria and approximately 25% of the furniture purchased was previously used. Major renovation of Tingelstad Hall and the University Center incorporate LEED criteria for certification purposes to follow the 2010 Campus Carbon Neutral Program. Although Tingelstad Hall did not receive LEED certification, elements of this certification were kept in mind for the renovation.

Operations Credit 24, "Vendor Code of Conduct", is not applicable to our school because we currently do not have a code. This code ensures that companies the University does business with companies and organizations that aim to be environmentally and socially responsible. At this time, a Vendor Code of Conduct is in the process of being drafted and approved.

Transportation

Proving to be one of the more difficult categories for most universities, transportation encompasses "Fleet Greenhouse Gas Emissions" (OP Credit 25), "Commute Modal Split" (OP Credit 26), "Commuter Options" (OP Credit 27), and "Air Travel" (OP Credit 28). This category deals with emissions, programs, incentives, and data about the University's population. We consulted our "buddy" school for advice on how to approach this broad topic.

The first criteria asked for in "Fleet Emissions" is the total number of passenger miles traveled. This is almost impossible because there are vans that can be checked out, Facilities Management vehicles, Office of Admissions vehicles, Campus Safety vehicles,

and a few others. A rough estimate of passengers can be calculated for the department vehicles, but rental vans are too difficult to track. Currently, when using a University van checked out through Campus Safety, the number of projected passengers is not requested.

A gas pump is located at Facilities Management for campus vehicles to use. To determine the amount of greenhouse gas emissions, the gallons of gasoline purchased was multiplied by 19.4 (the pounds of CO2 equivalent to 1 gallon of gasoline). Diesel is also purchased for a tractor and some lawn care equipment. The gallons of diesel were multiplied by 22.2 to convert it into pounds of CO2 (The Climate Trust, 2008). Electric golf carts are replacing gasoline ones in the Facilities Management department. Also large, older vans are being replaced by newer, more efficient ones. Two maintenance vans have been replaced by Toyota Scions. Campus Safety and the Office of Admission have purchased a couple Hybrid Prius cars for their fleet.

Secondly, "Commute Modal Split" can earn a university up to three points. This is an ambiguous credit because the only way to determine the modes of transportation is by asking people. PLU sells parking decals that allow the owner to park in designated parking lots. Parking decals can be owned by on-campus students, off-campus students, staff, and faculty. This does not tell us how many people commute by car. If one lives on campus, they will use their car to travel *off* campus. Some faculty or staff members may own a car and have a parking decal, but usually ride their bike or walk.

Every two years, the Human Resources department sends out a survey to faculty and staff to determine their mode of transportation. To include students, a survey (Appendix E) was sent out to department heads, Facebook members, the GREAN e-mail list, and other listservs. Recipients were asked to forward the survey to all persons within the PLU community. The bias was in favor of people with "green" tendencies given the

groups the survey was sent to. The surveys were anonymous, so it is unclear who the actual respondents were. Although not all were environmentally-minded, a good portion did think that way. This means that the actual number who used non-motorized means of transportation is probably lower than what was portrayed in the survey. Many students responded to this survey. Typically, students live on-campus, or close while faculty and staff may live farther away. With all factors considered, the two surveys (produced by Human Resources and Sustainability Fellows) were not entirely reliable, making it difficult to determine the number of points earned.

Credit 27 concentrates on commuter incentives, programs, and alternative methods. Commute Smart PLU is committed to helping PLU faculty and staff take steps to benefit their own health, the environment and the community. All of these areas are impacted by using Commute Smart options such as riding the bus, bicycling, walking, carpooling, vanpooling, working from home, or working a compressed work week.

To encourage the use of alternative transportation methods, Commute Smart offers a host of employee benefits including a transit pass subsidy, ridematching assistance, preferential parking for carpools, and an Emergency Ride Home program. Commute Smart also rewards employees who find alternative ways to get to work through the Relax Rewards program. Participants can earn LuteBucks and qualify for quarterly prize drawings. PLU also has bike racks, lockers, and showers available for those using preferable modes of transportation.

Air Travel was obscure for a couple reasons. This credit asks to determine greenhouse gas emissions from air travel. Many departments have people who fly places and they all use different methods of payment. The majority of people use their

university credit card, but some pay with personal funds and get reimbursed. Some flights may not have been counted.

To approximate the emissions from air travel, total expenditures were converted to emissions. The PLU Business Office keeps record of the total expenditures on air travel. This report does not have actual miles traveled, just the cost of each flight. The total expenditures on air travel were divided by the cost per seat mile ($0.133 as determined by the U.S. Department of Transportation, 2005). This division gives an approximation of passenger seat miles traveled. Then, passenger seat miles were multiplied by the total climate impact of one air-passenger mile (0.968 as determined by U.S. Department of Transportation, 2005). The total climate impact is pounds of CO_2 as well as other greenhouse gases.

RESULTS: ADMINISTRATION AND FINANCE CREDITS

Prerequisite

The foundation for the Administration and Finance credits is a required sustainability committee, which exists at Pacific Lutheran University. These entities must meet at least once a semester and be made up staff, faculty, students, or other people interested in the institution's policies and programs. The mission statement (available at http://www.plu.edu/~sustain/), membership, and schedule are asked for in this section.

The committee at PLU meets every other week. Approximately 20 people came to meetings throughout the year. Each meeting varied in attendance, but usually there was an equal amount of faculty and staff members and a couple students. The Sustainability Committee's mission is, "To inspire, promote, and celebrate sustainability

at Pacific Lutheran University." The first annual report was created this year which outlines the success of the mission statement.

Investment

The five credits that make up this portion do not apply to Pacific Lutheran University since we do not invest in sustainable companies or funds.

Planning

Administration and Finance Credit 6 calls for a Strategic Plan which is not in place at this time. However, PLU does have a Master Plan for credit seven. This document was published in October 2006 and is on PLU's website (Mithun). The Master Plan is comprised of elements for Strategic and Sustainability Plans.

Including goals for water and energy conservation, there are clear themes of sustainability in the PLU Master Plan (AF Credit 7). Among many renovations to come, the University Center, various residence halls, Olson Auditorium, and building the Morken Center for Learning and Technology and the Martin J. Neeb Center, PLU buildings will become more energy-efficient. All new projects will make our buildings increasingly eco-friendly. The original path of Clover Creek will be part of a campus storm system. The University emphasizes four important goals for student development in the mission statement: thoughtful inquiry, service, leadership, and care for individuals, community and the earth. The Campus Master Plan incorporates stewardship of the earth in all future plans. In addition, the plan outlines the following sustainable objectives:

- Reduce the impact of vehicles and improve pedestrian connections
- Create an environment that supports alternative modes of transportation
- Support sustainable practices with innovative materials and technology

- Ensure the protection and stewardship of the characteristic mature tree canopy
- Minimize the University's impact on the natural world while balancing the needs of students, faculty and staff
- Build, renovate, reuse, and reassign campus buildings to utilize them efficiently, effectively and economically
- Maximize operational and maintenance efficiencies

Sustainability Infrastructure

In conclusion, two credits compose the Sustainability Infrastructure section, which is the final piece of Administration and Finance. "Sustainability Officer" and "Sustainability Recognition Program" are the titles for credits AF 10 and AF 11, respectively. Creating a job description, budget, and finding the correct office for a sustainability coordinator is currently in the works. A draft version has been constructed, but there are details that need to still be attended to before it can be approved. On the student side of matter, the first-ever Sustainability Director for ASPLU was named in 2008. This person will collaborate with all entities on campus dedicated to making our University a better place through environmental and social efforts.

Although we did not receive points for credit 11 either, we want to establish a recognition program for people or groups committed to change. This is a brand new program for the University; many aspects must be sorted out before it can be put in place. Whether a banner, recycled trophy, or certificate, positive rewards should be available for those trying to make a difference.

RESULTS: CREDIT REVIEW

Excellent

The commitment to sustainability at Pacific Lutheran University is reflected in this rating system. Although there is always room for improvement, there have been many positive contributions to the sustainability effort. There were ten credits where the University received the maximum points possible (see Appendix C).

Potable, non-irrigation water consumption per square foot of building space has decreased by 50% giving us three points. This was determined comparing the baseline year of 2000-2001 with 2006-2007. The Cleaning Services department earned us the full point by using Green Seal certified practices that protect the environment and human health. This third-party certification provides an accurate, unbiased view of products and practices.

Environmental Services and Construction Management do an excellent job with waste management. Along with the help of students, faculty, and staff, our institution achieved a 70% waste diversion. This rate is off the charts for STARS. To earn the maximum three points, you must have a 50% diversion rate which we clearly surpass. Through two major renovations in 2006-2007, PLU managed to divert over 90% of waste in each project but only 75% was required to earn the point for credit 16. In addition, we received all possible points for the "Electronic Waste Recycling Program" and "Hazardous Waste Minimization" credits. When possible, all of our electronic waste (e-waste) is redirected from the landfill. The collective e-waste recycling program sends the machines off to outside vendors to be refurbished, recycled or donated. All hazardous waste is carefully tracked, documented, and disposed of properly.

Even with waste minimization efforts, some purchasing must be done: it is inescapable. Therefore, when is must be done PLU chooses to do so in an environmentally preferable way. Green Seal certified cleaning products are purchased through an accredited vendor. The paper used in 2006-2007 was made from 10-30% post-consumer waste and Forest Stewardship Council certified. Even our toilet tissue and paper towels are made from at least 40% post-consumer waste. As we have more options when it comes to being environmentally responsible, our environmentally preferable purchases will escalate. Already, we have made considerable improvements since 2007. With the cyclical renovations of residence halls each summer and the renovation of the University Center, new furniture is being purchased too. Whether furniture is reused, made with post-consumer waste or made with post-industrial waste, Construction Management and Residential Life strive to be accountable for their purchases.

Finally, in October 2006 we had a comprehensive Master Plan compiled by the design and architect firm, Mithun. This plan was meant to "encourage stewardship through healthy living, preservation of our history and promote sustainable practices that encourage efficiency in our use of resources" (Mithun, 2006). Not only does it focus on environmental preservation, but also safety, aesthetic appeal, and functionality. We received full points for having this document.

Needs Improvement

As expected, there are opportunities to improve our campus. The University began its involvement in LEED with the Morken Center in 2006. Along with new building and renovation, existing buildings can be LEED-EB certified (EB stands for

Existing Buildings). Currently, none of our buildings claim this achievement. With further research and action, we can earn this title for some buildings.

Similar to paper purchasing, options for local, organic, and Fair Trade food are expanding. There have already been beneficial strides in the Dining and Culinary Services department since the 2006-2007 fiscal year. Renovating the University Center created an environment tailored for the new direction in food procurement. It is estimated that the University could possibly earn three more points in the Dining Services section by purchasing more food and beverages that are local, organic, and/or Fair Trade.

In a couple years, we will be eligible to get points for credit eight, "Reduction in Energy Intensity". There must be a "three-year downward trend in energy intensity" (AASHE, 2008, p. 20). So far, we have been on increasing energy-use path, which could be attributed to the slight increase in students, staff and faculty each year. The following credit, "Renewable Electricity" will gain another point in the 2008-2009 year. Thanks to a student-led initiative in 2007, 100% of electricity consumption on campus will be offset by renewable energy credits paid for through student tuition (GREAN, 2008). Twenty dollars of a student's annual tuition will go toward this fund.

Our Grounds department is so close to earning a point in each credit ("Organic Campus" and "Irrigation Water Consumption"). Environmentally safe strategies and products are integrated with some chemical use. Because of this chemical use we are not considered an organic campus, even though they are usually a last resort solution. Second, there is no meter system set up to track the amount of non-potable water used for irrigation. Once in place, we can receive one point by meeting 50% of our irrigation needs with non-potable water.

The only credit that needs improvement in the "Materials, Recycling, and Waste Minimization" section is the "Waste Minimization" credit. Once again, it is easy to minimize your personal waste, but to convince thousands of others to do the same is quite a task. In 2007-2008, the waste generated by the University was higher than the previous two years. Therefore, time must pass in order for us to be eligible for this credit again.

Subsequently, if three policies come in to effect, PLU will earn three more points. ENERGY STAR is a popular program for many items that use energy. These items are not only available in the office but at home as well. An official policy is already in draft form and in the process of being approved. The EPEAT policy will encourage departments to purchase environmentally preferable electronic equipment. A Vendor Code of Conduct is for any company or organization that performs business transactions with the University. This code will benefit workers, the environment, and purchasers of goods or services. Presently, both the EPEAT policy and Vendor Code are being drafted.

Lastly, "Commuter Options" has the potential to earn the full point. At the time of this pilot project, the on-campus CommuteSmart program was unaware of an outside program, Best Workplaces for Commuters. Businesses must apply to be part of this national program. The website has a list of workplaces where commuters might fit well. PLU fits the criteria and is looking at the application process.

CONCLUSION

Getting the quantitative and qualitative information about the sustainability practices at PLU for the STARS Pilot Phase One is the first step in tracking our efforts. Implementing the next phase will be much easier now that the baseline data is collected. From this baseline data, we can see our weaknesses and improve upon them. This also

gives us the opportunity to see the changes in sustainability practices throughout time. PLU earned 21 of 75 possible credits. Other universities' scores are not posted, so we cannot compare with our peers at this time. A benefit of this score is we can improve and know exactly what areas we should focus on.

This Fellowship has been a truly eye-opening experience in all aspects of sustainability at Pacific Lutheran University. The knowledge I have gained this summer is incredible. Not only do I have a huge knowledge base of PLU, but an in-depth perspective of balanced environmentalism as a whole. I say balanced because social and monetary aspects are always kept in mind at PLU. It has been thrilling to watch a boring, empty, black folder grow in to a full array of guides, notes, Post-its and raw data. This inconspicuous binder is packed with information needed to create change on a campus that is ready for the challenge.

It is encouraging to see all the wonderful directions PLU is already going to be a more sustainable place. I think I truly learned the definition of sustainability in my first year at college. It was plastered everywhere in messages about food, water, and waste. Although there will always be opportunities to amend our deficiencies, the University is working hard right now. As a whole, we are doing our part to create a better environment for living, learning, and working. We are not waiting around for someone else to step up. Several people around campus have been key instigators in initiatives and projects that will hopefully continue in the future.

APPENDIX A

Sources

"About AASHE." About AASHE: Our Vision and History. 2008. Retrieved June 30, 2008 from <http://www.aashe.org/about/about.php>.

Association for the Advancement of Sustainability in Higher Education. Sustainability Tracking, Assessment & Rating System (STARS) for Colleges and Universities: Guide to Pilot Phase One. Lexington, KY, 2008.

The Climate Trust. "Offset Your Emissions". 2008. Retrieved June 30, 2008 from http://www.carboncounter.org/offset-your-emissions/calculations-explained.aspx#_edn25

GREAN. "100% Renewable Energy at PLU". 2008. Retrieved July 23, 2008 from http://www.plu.edu/~grean/things-works/home.html.

Jenkins, Debbie. "Environmentally Preferable Paper Purchasing." Telephone interview. June 2, 2008. Interview conducted by the author.

Mithun. Campus Master Plan. Rep.No. 1. Finance and Operations, Pacific Lutheran University.

Office of Transportation and Air Quality. 2005. "Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel." Overview: Pollutants and Programs. Retrieved July 23, 2008 from <http://www.epa.gov/oms/climate/420f05001.htm>.

Facilities Management. 2007. "Pest Application and Stewardship." Retrieved July 23, 2008 from http://www.plu.edu/~fama/doc/pesticide-application.pdf.

Robins, Wendy. "Local, Organic, and Fair Trade Food." July 7, 2007. Interview conducted by the author.

Smallen, Dave. "First Quarter 2005 Airline Financial Data: Regional Passenger Airlines Report Domestic Profit; Network and Low-Cost Carriers Report Losses." Moving the American Economy. 2005. Retrieved Aug 7, 2008 from <http://www.dot.gov/affairs/briefing.htm>.

APPENDIX B

STARS Summary Scorecard

This scorecard lists the credits included in Phase One of the STARS Pilot. Institutions will not receive an overall sustainability rating during the Pilot Period.

Section 1: Education and Research (ER)

Education and Research credits will be released in Phase Two of the Pilot Period

Section 2: Operations (OP)

Credit Number	Description	Possible Points	Yes	?	No
Prerequisite 1	Recycling Program	0			
Buildings					
OP Credit 1	New Construction, Renovations, and Commercial Interiors	4			
OP Credit 2	Building Operations and Maintenance	5			
OP Credit 3	Potable Non-Irrigation Water Consumption Trend	3			
OP Credit 4	Green Cleaning Service	1			
Dining Services					
OP Credit 5	Local Food	3			
OP Credit 6	Food Alliance and Organic Certified Food	3			
OP Credit 7	Fair Trade Coffee	1			
Energy and Climate					
OP Credit 8	Energy Intensity Trend	3			
OP Credit 9	Renewable Electricity	5			
OP Credit 10	On-Site Combustion with Renewable Fuel	3			
OP Credit 11	Greenhouse Gas Emissions Reductions	5			
Grounds					
OP Credit 12	Organic Campus	1			
OP Credit 13	Irrigation Water Consumption	2			
Materials, Recycling, and Waste Minimization					
OP Credit 14	Waste Minimization	1			
OP Credit 15	Waste Diversion	3			
OP Credit 16	Construction and Demolition Waste Diversion	1			
OP Credit 17	Electronic Waste Recycling Program	1			

OP Credit 18	Hazardous Waste Minimization	1			
Purchasing					
OP Credit 19	ENERGY STAR Purchasing	1			
OP Credit 20	EPEAT Purchasing	1			
OP Credit 21	Purchasing Green Cleaning Products	1			
OP Credit 22	Environmentally Preferable Paper Purchasing	1			
OP Credit 23	Environmentally Preferable Furniture Purchasing	1			
OP Credit 24	Vendor Code of Conduct	1			
Transportation					
OP Credit 25	Fleet Greenhouse Gas Emissions	2			
OP Credit 26	Commute Modal Split	3			
OP Credit 27	Commuter Options	1			
OP Credit 28	Air Travel	1			

Section 3: Administration and Finance

Credit Number	Credit	Possible Points	Yes	?	No
Prerequisite 1	Sustainability Committee	0			
Investment					
AF Credit 1	Investment Transparency	1			
AF Credit 2	Committee on Investor Responsibility	1			
AF Credit 3	Screening for Negative Investments	1			
AF Credit 4	Positive Sustainability Investments	4			
AF Credit 5	Shareholder Engagement	1			
Planning					
AF Credit 6	Strategic Plan	1			
AF Credit 7	Master Plan	1			
AF Credit 8	Sustainability Plan	1			
AF Credit 9	Climate Plan	1			
Sustainability Infrastructure					
AF Credit 10	Sustainability Officer	3			
AF Credit 11	Sustainability Recognition Program	1			
Additional credits will be added to the Administration and Finance section during Phase Two of the Pilot Period					

APPENDIX C

Operations Credit	Points PLU Earned	Maximum Points
Buildings		
OP1: New Construction, Renovations, Commercial Interiors	2	4
OP2: Building Operations and Maintenance	0	5
OP3: Potable Non-Irrigation Water Consumption Trend	3	3
OP4: Green Cleaning Service	1	1
Dining Services		
OP5: Local Food	1	3
OP6:Food Alliance and Organic Certified Food	1	3
OP7: Fair Trade Coffee	0	1
Energy & Climate		
OP8: Energy Intensity Trend	0	3
OP9: Renewable Electricity	1	5
OP10: On-Site Combustion with Renewable Fuel	0	3
OP11: Greenhose Gas Emissions Reductions	0	5
Grounds		
OP12: Organic Campus	0	1
OP13: Irrigation Water Consumption	0	2
Materials, Recycling, and Waste Minimization		
OP14: Waste Minimization	0	1
OP15: Waste Diversion	3	3
OP16: Construction & Demolition Waste Diversion	1	1
OP17: Electronic Waste Recycling Program	1	1
OP18: Hazardous Waste Minimization	1	1
Purchasing		
OP19: Energy Star Purchasing	0	1
OP20: EPEAT Purchasing	0	1
OP21: Purchasing Green Cleaning Products	1	1
OP22: Environmentally Preferable Paper Purchasing	1	1
OP23: Environmentally Preferable Furniture Purchasing	1	1
OP24: Vendor Code of Conduct	0	1
Transportation		
OP25: Fleet Greenhouse Gas Emissions	0	2
OP26: Commute Modal Split	1	3
OP27: Commuter Options	0	1
OP28: Air Travel	1	1

Administration and Finance Credit	Points PLU Earned	Maximum Points
Investment		
AF1: Investment Transparency	0	1
AF2: Committee on Investor Responsibility	0	1
AF3: Screening for Negative Investments	0	1
AF4: Positive Sustainability Investments	0	4
AF5: Shareholder Engagement	0	1
Planning		
AF6: Strategic Plan	0	1
AF7: Master Plan	1	1
AF8: Sustainability Plan	0	1
AF9: Climate Plan	0	1
Sustainability Infrastructure		
AF10: Sustainabiltiy Officer	0	3
AF11: Sustainability Recognition Program	0	1
Total	**21**	**75**

APPENDIX D

Energy Star Purchasing Policy

Below is a draft version of the policy as of October 2007:

The Sustainability Committee recommends that PLU purchase, lease, and enter contracts for ENERGY STAR© rated products using the following guidelines:

(a) PLU will focus its procurement efforts only on products with an ENERGY STAR© rating, for product categories that have ENERGY STAR© rated products available.

(b) PLU will focus on lease contracts that supply ENERGY STAR© rated appliances and equipment (for example: copiers, washers & driers, and refrigerators).

(c) PLU will require products supplied through contracts stipulate that the products will be ENERGY STAR© rated, for product categories that have ENERGY STAR© rated products available (for example: vending machines).

(d) Electronic equipment will be delivered to PLU with energy efficiency and conservation features enabled by suppliers.

(e) PLU will use strategic purchasing to negotiate better pricing for rated commodities.

(f) The PLU shall continually press the market for greater energy efficiency for the products and services regularly purchased by the University.

(g) For products and services requiring the use of water, the University will give preference to technologies that ensure the efficient use of water resources.

Implementation Procedures:

PLU is to purchase and lease ENERGY STAR© equipment whenever possible. Departments should analyze the short- and long-term savings of an ENERGY STAR© appliance over a less energy efficient model before every purchase. The ENERGY STAR© website has a calculator tool for most appliances that can be used to calculate the long-term energy savings from a particular ENERGY STAR© appliance:

http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing. The appliances listed on the website are abundant and diverse from computers and photocopiers to light bulbs, water heaters, and dishwashers.

Departments not purchasing ENERGY STAR© products should provide backup to these purchases indicating the circumstances for not following this policy. Such backup will be reviewed during random audits conducted in each area.

APPENDIX E

A. General

1. What is your primary method of transportation?

- Walk, bicycle, or other non-motorized option
- Van or car pooling (2 or more people)
- Campus shuttle
- Driving alone
- Public transportation
- Motorcycle or moped

2. If a student, how many summers have you spent living near, or commuting to campus?

- 1
- 2
- 3
- 4
- 5 or more

3. Where is your main residence during the academic school year?

- On campus
- Between 0-2 miles from campus
- Between 3-5 miles from campus
- Between 6-15 miles from campus
- Between 16-25 miles from campus
- Between 26-35 miles from campus
- More than 36 miles from campus

4. On average this semester, how many times a week did you travel from home?

B. Commuting Habits

5. Please indicate your most frequent method of transportation to PLU for each month. If you do not travel regularly to the University during a given month please leave the row blank

	Public Transit	Drive Alone	Carpool	Bicycle	Walk	Other
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

6. If you use public transit, how much do you pay for service each month?

7. Would you be more inclined to commute by bicycle if:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't Know
Bicycles were more secure and visible					
You had access to changing rooms and showers					
There were more bike racks					
There were short-term bike rentals available on campus					
There were more bicycle paths between your home and PLU					
There were more covered bike racks					
Bike racks were of better quality					
Bike racks were easier to access					

C. Personal Car

8. Do the weather and/or season influence whether or not you drive to PLU?

- Yes
- No

9. Would you be more inclined to leave your car at home if:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't Know
Public transit wait times decreased					
Public transit fares decreased					
Public transit service frequency increased					
Parking prices increased					
You had access to a car share service					

10. If you DRIVE ALONE to campus, check up to THREE reasons why you drive alone:

- ☐ Need car to travel between PLU and work
- ☐ Saves time
- ☐ Irregular school schedule or night classes
- ☐ I feel safer driving
- ☐ Want car for emergencies
- ☐ No one to carpool with
- ☐ Saves money
- ☐ Need to make special trips before or after school
- ☐ No bus where I live
- ☐ Buses don’t run frequently enough or during the hours I commute
- ☐ Not interested in carpooling
- ☐ Disabled/health reasons
- ☐ Bus takes too long
- ☐ Bus unpleasant to ride on
- ☐ Weather is unpleasant
- ☐ Need to haul heavy items
- ☐ Drive children to/from destinations
- ☐ Other

APPENDIX F

MEASURING PLU'S ENVIRONMENTAL FOOTPRINT

August 05, 2008

During fall semester of her freshman year, a religion course and an environmental science course sparked Becca Krzmarzick's interest in sustainability issues.

Before coming to PLU, the Hoquiam, Wash., native didn't even recycle, a fact she admits almost sheepishly. Now a junior, Krzmarzick is co-president of the student-run environmental club, Grass Roots Environmental Action Now (GREAN), sits on PLU's Sustainability Committee and is pursuing a minor in environmental sciences.

In May, she was one of three students awarded 2008-09 Sustainability Fellowships.

The Office of the Provost funds two of the fellows annually, and is supporting the projects of Lauren Buchholz and Eric Pfaff. Meanwhile, Krzmarzick's project is supported by Mithun, a Seattle design firm that renovated the University Center last summer.

This marks the first year Mithun has funded a student fellowship, and it did come with a catch: Krzmarzick's project has to relate to the built environment. Buchholz and Pfaff's project topics weren't restricted.

Krzmarzick is compiling data for the Sustainability Tracking, Assessment and Rating System – STARS for short. Developed by the Association for the Advancement of Sustainability in Higher Education, the system "is a voluntary, self-reporting framework for gauging relative progress toward sustainability for colleges and universities," according to the STARS Web site.

The reporting system aims to provide a guide to advance sustainability in higher education, establish common standards of measurement, create incentives for continued improvement and facilitate information sharing. PLU is one of 90 schools in the pilot program.

The data Krzmarzick's collecting falls into two categories, operations and administration/finance. The operations category includes information on energy use,

waste minimization streams, dining statistics and building features. The administration/finance category examines investments, the campus master planning documents and staff positions.

“It’s fun seeing how everything on campus meshes together,” Krzmarzick said.

It’s the first time data from across the university has been collected and compiled into one report. Krzmarzick said most of her information comes from Dining and Culinary Services, Facilities and Environmental Services. The STARS system has helped highlight what PLU is doing right and revealed where improvements are needed.

“We definitely have a lot of good things going for us,” Krzmarzick said. “With STARS, we can see where we’re lacking, see what we’re missing, and go from there.”

Krzmarzick said her fellowship experience will translate to her role as co-president of GREAN. This year, she’ll build on the relationships she’s developed with departments across campus, and she’s identified campus issues in which the club can take a leading role.

University Communications staff writer Megan (Haley) Anderson compiled this report. Comments, questions, ideas? Please contact her at ext. 8691 or at haleymk@plu.edu. Photo by University Photographer Jordan Hartman.