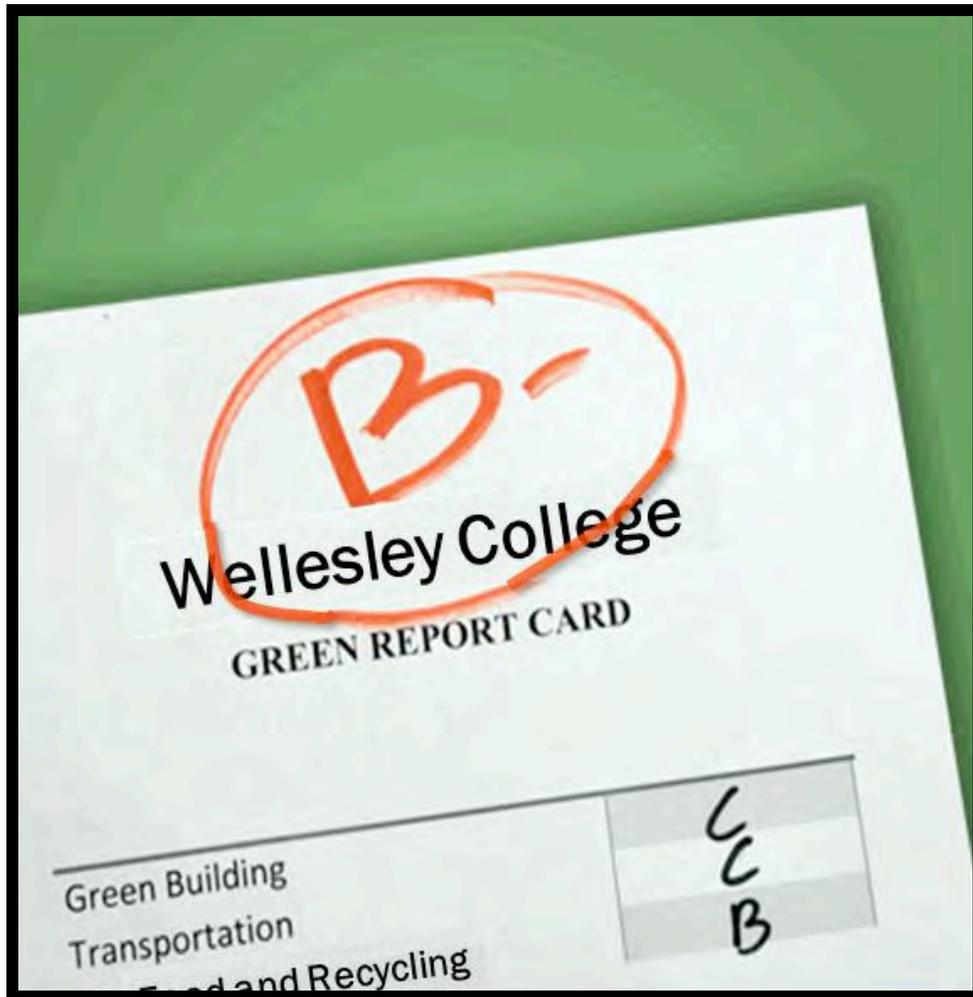


Making the Grade

An Analysis of Sustainability Ratings In Higher Education



Environmental Studies 300
Spring 2010

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Please think twice before printing this report

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Table of Contents

List of Tables and Figures	9
List of Abbreviations and Acronyms	12
Executive Summary	13
1.0 Introduction	15
1.1 Wellesley College and Sustainability	15
1.2 Rating and Ranking Systems of Higher Education	17
1.3 Environmental Rating and Ranking Systems	21
1.4 Green Report Card (GRC)	22
1.5 Wellesley and GRC	24
1.6 Sustainability Tracking, Assessment, and Rating System (STARS)	25
1.7 Wellesley and STARS	27
2.0 Methods	29
3.0 Buildings/Institutional Commitments	33
4.0 Energy and Greenhouse Gas Emissions	45
5.0 Food and Dining Services	67
6.0 Grounds	81
7.0 Purchasing	97
8.0 Transportation	115
9.0 Waste and Recycling	135
10.0 Water	147
11.0 Academics	163
12.0 Investment	185
13.0 Institutional Structures	203
14.0 Innovation	231
15.0 Conclusion	241
15.1 Wellesley's STARS Score	241
15.2 Analysis of GRC and STARS	245
15.3 Recommendation for STARS Participation	249
15.4 Recommendations for Garnering STARS Points	251
15.4.1 Policies	251
15.4.2 Practices	253
15.5 Recommendations for Wellesley	256
15.6 General Recommendations about Rating Systems	262
Appendices	267
Appendix A	267
Appendix B	268
Appendix C	271
Appendix D	274
Appendix E	276

Tables:

Table 1.1	Comparison of Environmental Rating and Ranking Systems	21
Table 1.2	Wellesley's Green Report Card Score	24
Table 1.3	STARS subcategories by impact on final score	26
Table 1.4	STARS Ratings by Score	27
Table 2.1	Weighted Campus Users	31
Table 2.2	Background Information on Wellesley College	32
Table 3.1	Wellesley's GRC performance in Green Buildings	39
Table 3.2	STARS Summary of Buildings Points Allocation	40
Table 3.3	Wellesley's STARS Performance in Buildings	41
Table 3.4	Reasons Wellesley Does Not Earn STARS Points in Buildings	42
Table 4.1	Wellesley's GRC performance in Climate Change and Energy	54
Table 4.2	STARS Summary of Climate Points Allocation ate Points Allocation	57
Table 4.3	Wellesley's STARS Performance in Climate	58
Table 4.4	STARS Summary of Energy Points Allocation	59
Table 4.5	Wellesley's STARS Performance in Energy	60
Table 4.6	Reasons Wellesley Does Not Earn Points in Climate	63
Table 4.7	Reasons Wellesley Does Not Earn Points in Energy	64
Table 5.1	Wellesley's GRC performance in Food	73
Table 5.2	STARS Summary of Dining Services Points Allocation	74
Table 5.3	Wellesley's STARS Performance in Dining Services	76
Table 5.4	Reasons Wellesley Does Not Earn STARS Points in Dining Services	78
Table 6.1	Wellesley's GRC performance in Grounds	90
Table 6.2	STARS Summary of Grounds Points Allocation	90
Table 6.3	Wellesley's STARS Performance in Grounds	92
Table 6.4	Reasons Wellesley Does Not Earn STARS Points in Grounds	94
Table 7.1	Wellesley's GRC performance in Purchasing	104
Table 7.2	STARS Summary of Purchasing Points Allocation	105
Table 7.3	Wellesley's STARS Performance in Purchasing	108
Table 7.4	Reasons Wellesley Does Not Earn STARS Points in Purchasing	111
Table 8.1	Wellesley's GRC performance in Transportation	123
Table 8.2	STARS Summary of Transportation Points Allocation	125
Table 8.3	Wellesley's STARS Performance in Transportation	127
Table 8.4	Reasons Wellesley Does Not Earn STARS Points in Transportation	131
Table 9.1	Wellesley's GRC Performance in Waste & Recycling	141
Table 9.2	STARS Summary of Waste Points Allocation	142
Table 9.3	Wellesley's STARS Performance in Waste	143
Table 9.4	Reasons Wellesley Does Not Earn STARS Points in Waste	145
Table 10.1	Wellesley's GRC performance in Water	155
Table 10.2	STARS Summary of Water Points Allocation	155
Table 10.3	Wellesley's STARS Performance in Water	157
Table 10.4	Reasons Wellesley Does Not Earn STARS Points in Water	160
Table 11.1	Wellesley's GRC performance in Student Involvement	168
Table 11.2	STARS Summary of Co-curricular Points Allocation	170
Table 11.3	STARS Summary of Curriculum Points Allocation	170
Table 11.4	STARS Summary of Research Points Allocation	170
Table 11.5	Wellesley's STARS Performance in Co-Curricular Education	174
Table 11.6	Wellesley's STARS Performance in Curricular Education	176
Table 11.7	Wellesley's STARS Performance in Research	178
Table 11.8	Reasons Wellesley Does Not Earn STARS Points in Co-Curricular Education	180

Table 11.9	Reasons Wellesley Does Not Earn STARS Points in Curriculum	181
Table 11.10	Reasons Wellesley Does Not Earn STARS Points in Research	181
Table 12.1	Wellesley's GRC performance in Shareholder Engagement	194
Table 12.2	Wellesley's GRC performance in Investment	195
Table 12.3	Wellesley's GRC performance in Endowment Transparency	196
Table 12.4	STARS summary of Investment Points Allocation	196
Table 12.5	Wellesley's STARS Performance in Investment	198
Table 12.6	Reasons Wellesley Does Not Earn STARS Points in Investment	201
Table 13.1	Wellesley's GRC performance in Administration	211
Table 13.2	STARS Summary of Coordination and Planning Points Allocation	213
Table 13.3	STARS Summary of Diversity and Affordability Points Allocation	213
Table 13.4	STARS Summary of Human Resources Points Allocation	213
Table 13.5	STARS Summary of Public Engagement Points Allocation	214
Table 13.6	Wellesley's STARS Performance in Coordination and Planning	219
Table 13.7	Wellesley's STARS Performance in Diversity and Affordability	220
Table 13.8	Wellesley's STARS Performance in Human Resources	221
Table 13.9	Wellesley's STARS Performance in Public Engagement	222
Table 13.10	Reasons Wellesley Does Not Earn STARS Points in Coordination and Planning	225
Table 13.11	Reasons Wellesley Does Not Earn STARS Points in Diversity and Affordability	226
Table 13.12	Reasons Wellesley Does Not Earn STARS Points in Human Resources	227
Table 13.13	Reasons Wellesley Does Not Earn STARS Points in Public Engagement	228
Table 14.1	STARS summary of Innovation point allocation	236
Table 15.1	Summary of Wellesley's STARS Score	241
Table 15.2	Summary of Wellesley's Performance in Education & Research (ER)	242
Table 15.3	Summary of Wellesley's performance in Operations (OP)	243
Table 15.4	Summary of Wellesley's performance in Planning, Admin. & Engagement (PAE)	244
Table 15.5	Available points through policy change in STARS	253
Table 15.6	Additional available points under STARS	255
Table 15.7	Suggested small scale changes to help move Wellesley toward Sustainability	262

Figures

Figure 1	Wellesley Campus Photo courtesy of Wellesley College	15
Figure 2.	Excerpt of the Excel template from the Waste section	30
Figure 3	Lulu Chow Wang Campus Center	33
Figure 4	Renovated Diana Chapman Walsh Alumnae Hall	35
Figure 5	Wellesley's Co-generation Power Plant	45
Figure 6	Wellesley College Decreasing Electricity Consumption 2003-2007	47
Figure 7	Wellesley Trayless Sign	67
Figure 8	Vegan Dining Option Sign	69
Figure 9	Alumnae Valley Restoration	81
Figure 10	Chemical Use Graph for Wellesley Botanic Gardens	85
Figure 11	100% Post Consumer Recycled Paper in Wellesley Copy Center	97
Figure 12	Wellesley's GeenSeal Cleaning Products used in Wang Campus Center	100
Figure 13	One of Wellesley's cars in Zipcar, the car sharing program	115
Figure 14	One of Wellesley's five electric bicycles used by Campus Police and Facilities	118
Figure 15	On campus BigBelly Solar Compactor for Recycling and Waste	135
Figure 16	Wellesley College Recycling Receptacle	138
Figure 17	Wellesley's Lake Waban	147
Figure 18	Dual Flush Toilet installed in Chapel renovation	150
Figure 19	Wellesley Students completing Research on Lake Waban	163
Figure 20	Wellesley's Sustainable Living Cooperative	165
Figure 21	Wellesley Tower Court Residence Hall Complex Courtesy of Wellesley College	185
Figure 22	Wellesley College Endowment 2001-2009	188
Figure 23	Wellesley' Sustainability Logo	203
Figure 24	Wellesley's 2010 Sustainable Move-Out Bins	207
Figure 25	Green Roof in Wang Campus Center	231
Figure 26	Wellesley College Greenhouses	233

Abbreviations and Acronyms

AASHE- Association for the Advancement of Sustainability in Higher Education
ACUPCC- American College and University Presidents' Climate Commitment
ASU- Arizona State University
BTU-British thermal unit
CFL-Compact fluorescent light
CIO- Chief Investment Officer
CH₄- Methane
CO₂- Carbon dioxide
CWDI- Campus Wide Diversity Initiative
CWS- Center for Work and Service
DEP- Department of Environmental Protection
EPA- Environmental Protection Agency
EPEAT- Electronic Product Environmental Assessment Tool
FY - Fiscal Year
GPA- Grade Point Average
GRC- Green Report Card
GHG- Greenhouse gases
HVAC - Heating, Ventilating, and Air Conditioning
HUB- Historically Underutilized Business
IAQ - Indoor Air Quality
IPM- Integrated Pest Management
kWh- Kilowatt hours
LED- Light-emitting diode
LEED- Leadership in Energy and Environmental Design
LEED-EB - Leadership in Energy and Environmental Design for Existing Buildings
LEED-O&M – Leadership in Energy and Environmental Design for Operations and Maintenance
LEED-NC – Leadership in Energy and Environmental Design for New Construction
MBTA-Massachusetts Bay Transportation Authority
NAEP - National Association of Educational Procurement
NGOs - Non-Governmental Organizations
NWF- National Wildlife Foundation
NYU- New York University
O₃- Ozone
SAC- Sustainability Advisory Committee
SCOOP- Sustainability Co-op
SEI- Sustainable Endowments Fund
SITES - Sustainable Sites Initiative
STARS- Sustainability Tracking, Assessment, and Rating System
SRI - Socially Responsible Investment
UCSB- University of California Santa Barbara
USGBC- United States Green Building Council
WEED-Wellesley Energy and Environmental Defense
WCBG- Wellesley College Botanic Garden

Executive Summary

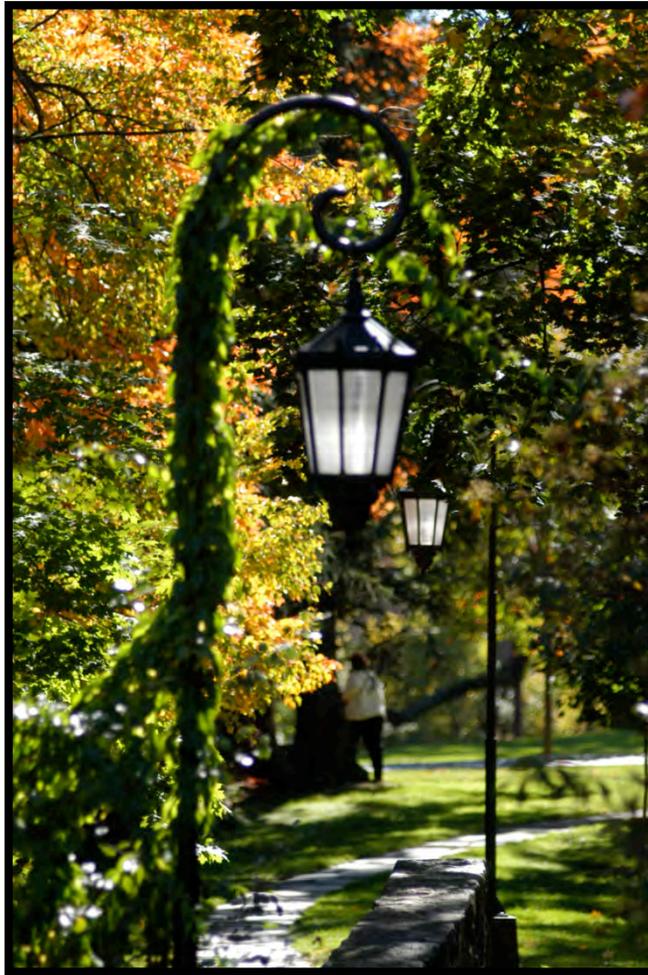
Each Spring, students in ES 300: Environmental Decisionmaking, the capstone course for the Environmental Studies major at Wellesley College, undertake a collaborative analysis of an environmental issue of relevance to the College. This semester, Wellesley's Director of Sustainability, Patrick Willoughby, charged the class with the task of investigating the Sustainability Tracking Assessment & Rating System (STARS), a new evaluation of campus sustainability, and providing a final recommendation on whether Wellesley should participate.

Every year, Wellesley is asked to partake in many environmentally-focused rating and ranking systems, which a number of organizations have begun to offer in order to cater to stakeholders with an interest in sustainability. The College currently participates in several, including the Green Report Card (GRC), one of the foremost evaluations of college sustainability, which is published by the Sustainable Endowments Institute. In response to this growing trend, the Association for the Advancement of Sustainable Education (AASHE) recently published STARS, a brand new, comprehensive rating system that aims to evaluate all components of campus sustainability and thus eliminate the need for other assessments.

As Wellesley continues to integrate sustainable practices into its core mission, the College is contemplating participating in STARS. STARS, as a comprehensive and transparent rating system, could potentially provide a thorough analysis of Wellesley's sustainability efforts, reduce the need for numerous sustainability surveys, and help alleviate survey fatigue. Furthermore, STARS could also provide a framework in which Wellesley could define and take action on sustainability. Our analysis aims to determine whether Wellesley should participate in STARS by estimating Wellesley's potential performance under this particular rating system, and exploring the values of this system by using GRC as a point of comparison. The analysis is divided into 12 topic-based sectors: Investment, Academics, Buildings/Institutional Commitments, Energy and GHG Emissions, Transportation, Purchasing, Dining Services/Food, Waste and Recycling, Water, Grounds, Institutional Structures, and Innovation. Within each sector we discuss the role of the topic on college campuses, how Wellesley approaches the topic, and how GRC and STARS each conceptualizes the topic.

GRC and STARS offer distinct perspectives of campus sustainability; GRC focuses on endowments while STARS includes a vast array of indicators, including academics, diversity, and affordability. We estimate that Wellesley would earn 38 percent of applicable STARS points without further action, earning the College a bronze rating. Ultimately STARS's comprehensiveness, incremental and positive distribution of points, and ability to serve as a roadmap of ways to improve campus sustainability make it an advantageous program in which to participate.

We recommend that Wellesley participate in STARS as a charter participant during its inaugural year, before the August 2010 deadline. This distinct role will strengthen the College's commitment to campus sustainability. This report also provides specific recommendations for how the College can garner more points under STARS and how it can improve its sustainability in general. These recommendations vary in cost, time, environmental impact, and feasibility. Together, they serve as a comprehensive guide of concrete steps the College can take to improve its sustainability.



1.0 INTRODUCTION

1.1 Wellesley College and Sustainability

Wellesley College, an undergraduate institution founded in 1875 on the principle of providing an excellent liberal arts education for its students, values diversity, collaboration, and interdisciplinary learning, many of the core components required to tackle complex issues of sustainability. Recently the College has made great strides to prioritize sustainable initiatives on campus through administrative, academic, and operational changes. In 2007, Wellesley adopted a policy stating that “the College will consider sustainability as a factor in all institutional decisions” and “members of the Wellesley community have individual and collective responsibility for environmental

stewardship.”¹ While Wellesley still has a long way to go to achieve greater sustainability on campus, these central principles continue to drive the College’s sustainability efforts and serve as a constant reminder of the environmental, social, and economic importance of higher education institutions as models for sustainability.

The commitment of colleges and universities to education and research make them the site of intellectual and creative innovation, a place where sustainability ideas can be conceived and carried-out to test their applicability elsewhere. In academic institutions, sustainability can also be the focus of coursework and integrated into curriculum in order to provide students with the tools and critical thinking necessary to approach sustainability on their college campus and beyond. Sustainable actions now and in the future will require the cultivation of bright minds and dedication of invested individuals, making colleges and universities hotspots of sustainable action. Not all colleges and universities, however, approach sustainability in the same way or to the same extent. Currently, higher education green rating systems are being used to evaluate colleges’ and universities’ commitments to sustainability. These systems give incentives for sustainable action while promoting collaboration between schools and rewarding successful institutions.

Driven by its core mission, Wellesley fosters an environment where students can take on the real-world challenges of sustainability, including how to effectively evaluate and rate sustainable initiatives. Each spring, the students in Environmental Decisionmaking, the capstone course for the Environmental Studies (ES) major at Wellesley, act as environmental consultants to the College. Through this course, junior and senior ES majors conduct a collaborative, interdisciplinary analysis on a question of relevance to the Wellesley campus. This year, due to the recent proliferation of higher education green rating systems, we were asked by Wellesley’s Facilities Department to provide a recommendation on whether Wellesley should participate in the new Sustainability Tracking Assessment and Rating System (STARS) produced by the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS, as a comprehensive and fully transparent rating system, could potentially provide a thorough analysis of Wellesley’s sustainability efforts, reduce the need for numerous sustainability surveys, and help alleviate survey fatigue. Furthermore, STARS could also provide a framework in which Wellesley could conceptualize and take action on sustainability.

¹ “Wellesley College: Sustainability,” *Wellesley College*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/committee.html> (accessed: April 12, 2010).

In this report we examine the ability of rating systems to fairly evaluate campus sustainability, discuss the degree to which rating systems should guide Wellesley's future environmental decisions, and postulate what kind of definition of sustainability we want to have for Wellesley. Finally, we provide a recommendation on whether Wellesley should participate in the STARS rating system and outline other recommendations to help the College expand its sustainable activities.

1.2 Rating and Ranking Systems of Higher Education

Wellesley College has performed strongly in mainstream higher education rankings due to its small faculty to student ratio, generous financial aid and need-blind admissions policy, and strong alumna network, ranking fourth in *U.S. News and World Report's* liberal arts college list for the past several years. Its high position on this list is lauded by admissions literature and Wellesley students. While controversy over the years has led *U.S. News and World Report* to change the weights of the different factors it considers, this ranking system has been the most widely-sold set of college guides since its inception in 1983.²

While *U.S. News* is considered the most influential general college ranking system in the United States, it focuses primarily on academics and other traditional college characteristics. Recently, college rating and ranking systems are finding that more and more college applicants consider a college's commitment to the environment in their college selection decisions. According to a *Princeton Review* survey, 63 percent of 10,300 college applicants said that they would value information about a college's commitment to the environment.³ Colleges and Universities are responding to this new interest by highlighting sustainability initiatives on campus tours, providing literature on their green accomplishments and increasing sustainability initiatives on campus. Wellesley too has begun trying to incorporate sustainability highlights in campus tours for prospective students.

In the past several years, Wellesley has greatly increased its sustainability efforts, establishing a Director of Sustainability, decreasing its water and energy use, and pursuing renovations in its buildings and grounds. In the context of the sustainability movement in higher education as well as its own accomplishments, Wellesley is interested in exploring ranking and rating systems that focus

² Nicholas Thomson, "The Best, The Top, The Most," *New York Times*, August 3, 2003, <http://www.nytimes.com/2003/08/03/education/the-best-the-top-the-most.html> (accessed: April 12, 2003).

³ Tom Robinson, "Green Apples and Green Oranges," *The Greentree Gazette*, November 2008.

on sustainability. Schools such as Middlebury College, Oberlin College, Arizona State University-Tempe, and Harvard University have had a long reputation as leaders in higher education sustainability, conveyed through their high marks on the current green rating and ranking systems.

In the realms of information-sharing and advertising, sustainability claims can be hard to evaluate. Rating and ranking systems can be ways to consider the attributes of a “product,” which could be a light bulb, a computer, a dishwashing liquid, or a school, using relatively standardized metrics and common points of comparison, yielding simplified results that can be synthesized and understood quickly for consumers.

Ranking systems compare “products” in relation to each other, putting in order those with the best to worst attributes in consideration. The existence of an order, in which a product is explicitly in relation to others, fosters dynamic competition and innovation, as a product will not be able to simply rest on its laurels year after year and still maintain its perceived excellence. It also aids in the decision-making process of that product by comparing it to other options. At the same time, ranking may engender perceptions that certain products differ greatly in quality, while the fact that there had to be a first, second, and last place may have forced miniscule unclear distinctions by the administrators among products that may only differ slightly. Rankings are unable to give a clear sense of the distance between two adjacent evaluated items; items separated by .01 or by 1000 are all presented same way. Often with ranking systems, the metric used to determine order is as not highly publicized as the actual rankings are, and consumers in a market with two exemplary leaders do not see that the distance from first to second place is tiny compared to the distance from third to fourth, for example. At the same time, the focus on reputation may shift the priorities of producers in ways that benefit neither themselves nor the consumer. Products may change in “gimmicky” ways in order to compete with or become more similar to the highest rated products, while compromising the inherent value of that product itself. In 1995, Reed College became the first school to stop sending voluntary information to *U.S. News and World Report*, citing its lack of faith in the methodology and usefulness of college rankings. Nevertheless, Reed tacitly acknowledged the wide reach of such systems by participating in 2005 and afterwards in the Princeton Review’s hybrid college rating and ranking system.

Rating systems usually provide an actual number or score for the rated product rather than provide an ordered list of products. The rating scale, in which the actual grading scale has meaning, can foster collaboration, as it is technically possible for all products to receive high scores if their products are of similarly high quality. In many (though not all) rating systems, a pre-established

metric may be publicized in advance, allowing both producers and consumers to know exactly by what standards they are being judged. The scale can be meaningful, with the number or score implying a firmly established level of quality or achievement. This framework is less discouraging and can allow an institution to compete with itself rather than with others. There is the chance that once an institution reaches the top of the scale, it ceases to feel pressure to continue to innovate and improve. Some rating systems, however, regularly update their criteria, providing higher standards that push institutions to continue to progress and innovate.

Some systems have attributes of both rating and ranking systems. If the results of a ratings system are publicized, consumers or other parties can independently compile a “best and worst” list, similar to a ranking system. In other cases, some rating systems may reward high performers with distinctions such as gold stars, being placed in a high tier, or being singled out as an exceptional performer in certain categories.

In the context of higher education institutions, public distribution of rating and ranking results give colleges and universities the impetus to do well on them. Positive ratings and high performance can be used to attract prospective students, result in increased giving from alumni and other donors, and incur goodwill with graduate schools and employers. Negative ratings and worsening performance, on the other hand, may cause backlash not just from prospective students, donors, and employers, but also current campus members with a stake in their community. Independent reports of negative performance in specific areas can incite even further negative publicity and protest from third-party organizations and non-profits.

Some of the most high-profile ratings and rankings for colleges include the Princeton Review, *US News and the World Report*. These rankings focus on traditionally-considered aspects of colleges, such as student-faculty ratio, financial aid, and alumni giving. For prospective students demystifying the college admissions process, these guides have been a go-to source for quick and easy information and comparative statistics, and colleges and universities tout their rankings.

More recently a number of organizations have begun to offer environmentally-focused college ratings, rankings, and assessments to cater to stakeholders with an interest in sustainability. In 2009, The Princeton Review added an environmental sub-rating that assigns scores for environmental performance. *Grist* magazine has published “top 10” lists of environmentally-friendly colleges and universities for its readers since 2007 and the Sierra Club’s *Sierra* magazine ranks nearly 200 schools. The National Wildlife Federation’s Campus Sustainability Report Card evaluates higher education sustainability collectively and looks at trends in sustainability initiatives at colleges and

universities across the entire country. Perhaps the sustainability ranking with the most clout in higher education is the Sustainable Endowment Institute's Green Report Card (GRC), which analyzes hundreds of schools with the largest endowments. In January 2010, the Association for the Advancement of Sustainability in Higher Education launched the Sustainability Tracking, Assessment, and Rating System (STARS), promising a more holistic sustainability ratings index that would take into account social as well as traditionally environmental metrics.

1.3 Environmental Rating and Ranking Systems

In compiling this report, we briefly examined eight different popular green rating and ranking systems. Table 1.1 provides a snapshot of these ratings and ranking systems explains the type and purpose of each system.

System	Rate/ Rank	Target Audience	Advantages	Disadvantages
National Wildlife Association State of the Campus Environment Report⁴	N/A	NGOs/members of environmental community wanting to increase sustainability initiatives in higher education.	Takes a meta approach by assessing schools on a national level.	Not based on individual school performance; Vague methodology; No accountability.
Princeton Review⁵	Rank	Prospective Students	Lots of Publicity for schools that make the final list.	Ranking methodology not transparent.
Sierra Club⁶	Rank	Prospective Students	Well-read source in specific environmental demographic.	Ranking methodology not transparent; Directed towards already environmentally aware students.
Kaplan	Rank	Prospective Students	--	Ranking methodology not transparent; Not highly consulted; Not available online.
Greenopia⁷	Rate	Prospective Students	System is easy to navigate and straightforward, providing interested parties with a snapshot of 100 schools working towards sustainability.	Rating methodology only somewhat transparent – very vague, and weight of each category/points assigned not available.

⁴ “State of the Campus Environment Report,” *National Wildlife Foundation Reports*, <http://www.nwf.org/Global-Warming/Campus-Solutions/Resources/Reports/State-of-the-Campus-Environment-Report.aspx> (accessed: April 13, 2010).

⁵ Gorman, Vivi “Princeton Review Names 15 Top Green Colleges For 2010,” *Green and Save News*, August 14, 2009, http://www.greenandsave.com/green_news/green_education/princeton_review_names_15_top_green_colleges_for_2010 (accessed: April 13, 2010).

⁶ “Cool Schools: The Third Annual List,” 2009 *Sierra Magazine*, http://www.sierraclub.org/sierra/200909/cool_schools/allrankings.aspx (accessed: April 13, 2010).

⁷ “Eco-friendly College and University Guide,” *Greenopia*, http://www.greenopia.com/LA/colleges_search.aspx?category=Colleges&Listpage=0&input=Name%20or%20product&subcategory=None&sort=ratingdesc%29 (accessed: April 13, 2010).

Table 1.1 (continued from previous page)

System	Rate/ Rank	Target Audience	Advantages	Disadvantages
Grist ⁸	Rank	Prospective Students	Provides snapshot of schools working towards sustainability	Ranking methodology not transparent, only addresses the efforts of 20 schools.
Sustainability Tracking, Assessment, and Rating System (STARS)	Rate	Administration, Alumni, Donors, Investors, Prospective Students	Highly transparent; New approach that hopes to be as comprehensive as possible	New; unclear how popular it will become
Green Report Card (GRC)	Rate	Prospective Students, School Administration, Alumni, Donors, Investors	Relatively Transparent; Well-known; Considers many different aspects.	Actual point assignment unknown, though how criteria weighted is indicative.

We chose to focus this report primarily on STARS and GRC. We choose STARS because it is a new, voluntary system and Wellesley must decide whether or not it would like to participate. Wellesley already participates in GRC, and so it is useful to use this system as a point of comparison.

1.4 Green Report Card (GRC)

GRC is a rating system for sustainability in higher education. GRC is published annually by the Sustainable Endowments Institute. The Institute is a special project of Rockefeller Philanthropy Advisors, a non-profit that advises donors in their philanthropic endeavors.⁹ GRC focuses on analyzing 300 colleges and universities with the largest endowments in the United States and Canada. Together, these institutions account for over 95 percent of all university endowments.¹⁰ SEI's intention in creating GRC is "to encourage sustainability as a priority in college operations and endowment investment practices by offering independent yearly assessments of progress." It does so in nine categories: Administration, Climate change & Energy, Food & Recycling, Green Building, Student Involvement, Transportation, Endowment Transparency, Investment Practices, and Shareholder Engagement.¹¹

⁸ "15 Green Colleges and Universities," *Grist*, <http://www.grist.org/article/colleges1/>, (accessed: April 13, 2010).

⁹ "Special Projects," Rockefeller Philanthropy Advisors, <http://rockpa.org/> (accessed: April 12, 2010).

¹⁰ "Executive Summary: About the Schools – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/executive-summary/about-the-schools> (accessed: April 12, 2010).

¹¹ "Executive Summary: About the Schools – Green Report Card 2010," *The College Sustainability Report Card*

Each year GRC sends out four separate surveys to schools intended to gather information about sustainability in campus operations, dining services, endowment investment practices, and student activities. Each of the evaluated schools is asked to complete these surveys, and each school's responses are available online as of the 2010 report. In addition to survey responses, GRC uses publicly available information from the Environmental Protection Agency (EPA), the United States Green Building Council (USGBC), school websites, media coverage, and the Association for the Advancement of Sustainability in Higher Education (AASHE). GRC uses the survey responses as its primary source of information. The final score is then calculated by GRC using a partially transparent formula. GRC is not an opt-in system. For the schools with the 300 largest endowments, GRC assigns a grade whether the schools complete the survey or not, using publicly available data to fill in the gaps.¹² In addition to the 300 non-voluntary participants, other schools can pay a \$700 fee and apply for inclusion. In 2010, 32 of these additional schools applied for and received GRC grades.¹³

To calculate the final grade, GRC first gives each school grades in each of the nine categories described above. Each of these categories is broken up into specific actions known as indicators. Indicators include things like having a student environmental club on campus or composting food in the dining halls. GRC publishes information about the weight that is given to each indicator, but keeps confidential the specific details of how survey information translates into points allocated. Each of the nine categories is associated with indicators whose collective weight adds up to 100 percent. For each of these categories, the schools are granted a letter grade based on the following scale:¹⁴

A = at least 70 percent of total points for the indicators in that category

B = at least 50 percent of total points for the indicators in that category

C=at least 30 percent of total points for the indicators in that category

D = at least 10 percent of total points for the indicators in that category

F = less than 10 percent of total points for the indicators in that category

GRC uses a four-point scale (A = 4, B=3, C=2, D=1, F=0) to establish a Grade Point Average (GPA) for each school based on an average of the grades in all nine categories, with each

¹² "Methodology – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/methodology> (accessed: April 12, 2010).

¹³ "Executive Summary: About the Schools – Green Report Card 2010", *The College Sustainability Report Card*.

¹⁴ "Methodology – Green Report Card 2010", *The College Sustainability Report Card*.

category weighted equally. The final GPA determines the ultimate grade a school receives.¹⁵ Schools with an overall average of A- are recognized as overall college sustainability leaders. There are currently 26 institutions with this distinction.¹⁶

1.5 Wellesley and GRC

Wellesley’s current grade averages to a B-, a large improvement from the “C” received in 2007. Table 2 shows the Colleges’ category-based scores for each of the four editions of GRC. Note that the categories “Transportation” and “Student Involvement” were added in 2008 and 2009, respectively.

	2007	2008	2009	2010
Administration	C	B	C	B
Climate Change & Energy	D	C	C	C
Food & Recycling	B	B	A	B
Green Building	C	C	C	C
Student Involvement	n/a	n/a	A	A
Transportation	n/a	B	C	C
Endowment Transparency	F	F	F	D
Investment Priorities	B	C	B	A
Shareholder Engagement	A	A	A	A
Overall score	C	C+	B-	B-

¹⁵ “Methodology – Green Report Card 2010”, *The College Sustainability Report Card*.

¹⁶ “Awards – Green Report Card 2010,” *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/awards> (accessed: April 12, 2010).

¹⁷ “Wellesley College – Green Report Card 2010,” *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/wellesley-college> (accessed: April 12, 2010).

1.6 Sustainability Tracking, Assessment, and Rating System (STARS)

STARS is a new rating system beginning its premier year of reporting in 2010. The Association for the Advancement of Sustainability in Higher Education (AASHE) designed the STARS system with input from over 70 institutions of higher learning during a pilot program in 2007 and 2008.¹⁸ AASHE is an organization composed of colleges and universities that considers sustainability to be a priority in higher education. Any college or university can join and Wellesley is currently a member of this organization. AASHE's goal is for STARS to be a comprehensive tool for all institutions of higher education to assess their current level of sustainability and provide a road map for schools of how to increase sustainability in the future.¹⁹ STARS has the potential to become a prestigious standard by which sustainability is rated and measured.. AASHE hopes that STARS will aid strategic planning, foster dialogue about sustainability on campus, and stimulate conversations and learning between institutions.²⁰

STARS prides itself in being transparent even in the development process, with all pilot results available for public download on the AASHE website. Schools must pay to get access to the STARS “reporting tool,” which allows schools to easily input data and calculate their score. Without paying, schools may access the technical manual containing detailed information for collection of all necessary information and calculation of a proximate score. Schools are responsible for self-reporting and for calculating their own scores using the online reporting tool and the technical manual.

STARS looks at three major categories: Education & Research, Operations, and Planning, Administration & Engagement. Within each of these categories are 19 subcategories that address more specific topics such as Co-Curricular Education or Waste. Table 3 lists each of the 19 available subcategories, ranked in order of total available points and the weight given to that subcategory by STARS. Within the subcategories are credits, which are similar to GRC indicators. Each credit corresponds to a particular kind of activity, policy, or fact, like inclusion of sustainability outreach in new student orientation or providing subsidies or discounts for public transportation. Each credit is worth a number of points ranging from 0.25 to 14, ultimately adding up to 100 total points for each of the three big categories. Credits worth 0.25 points are considered “Tier 2” credits and include

¹⁸ “Introduction,” *STARS 1.0 Technical Manual*, 2010, http://www.aashe.org/files/documents/STARS/STARS_1.0_Technical_Manual.pdf (accessed April 12, 2010).

¹⁹ “Welcome Letter,” *STARS 1.0 Technical Manual*, 2010, http://www.aashe.org/files/documents/STARS/STARS_1.0_Technical_Manual.pdf (accessed April 12, 2010).

²⁰ “Welcome Letter,” *STARS 1.0 Technical Manual*.

policies, new technologies or small actions with smaller impacts than Tier 1 credits. Tier 2 credits often promote strategies already partly covered by a Tier 1 credit.²¹ An example of a Tier 2 credit is one related to the existence of a bicycle sharing program. Having a bike sharing program would also aid schools in gaining points on the Tier 1 credit that evaluates the way students commute to campus.

Table 1.3 STARS subcategories by impact on final score		
Subcategory	Category	Points
Curriculum	Education & Research	55
Public Engagement	Planning, Admin. & Engagement	31.75
Research	Education & Research	27
Human Resources	Planning, Admin. & Engagement	19.75
Co-Curricular Education	Education & Research	18
Coordination and Planning	Planning, Admin. & Engagement	18
Investment	Planning, Admin. & Engagement	16.75
Climate	Operations	16.5
Energy	Operations	16.5
Diversity and Affordability	Planning, Admin. & Engagement	13.75
Buildings	Operations	13
Waste	Operations	12.5
Transportation	Operations	12
Water	Operations	10.25
Dining Services	Operations	8.5
Purchasing	Operations	7.5
Grounds	Operations	3.25

²¹ "Introduction," *STARS 1.0 Technical Manual*.

STARS recognizes that not every school can earn all available points. These inapplicable points do not work against the institution in the final score calculation. Final overall scores are calculated based on an average of the percentages of applicable points earned in each of the three big categories, plus up to four additional innovation extra-credits. If a college earned 50 percent in Operation, 45 percent in Education & Research and 40 percent in Planning, Administration and Engagement, it would earn a final score of 45. Ratings of Bronze, Silver, Gold, and Platinum are awarded based on final scores, as described in Table 4. Schools that submit data publicly but do not pursue or qualify for a specific rating receive the STARS Reporter designation, which has no minimum score.

Rating Level	Minimum Score Required
STARS Bronze	25
STARS Silver	45
STARS Gold	65
STARS Platinum	85
STARS Reporter	For institutions that wish to use STARS and submit data publicly but are not pursuing a rating.

1.7 Wellesley and STARS

STARS is currently seeking participants for its inaugural year. To participate in STARS and receive an official rating, colleges and universities must pay \$900 if they are currently AASHE members and \$1,400 if they were not. Since Wellesley is an AASHE member, the College would qualify for the reduced fee which would last for three years. If Wellesley wishes to be considered one of the “STARS Charter Participants” and receive associated publicity benefits, it must sign up before August 15, 2010.²² Once a school is signed up, it has one year to complete the self-assessment. As of April 2010, over 100 colleges and universities have signed up as Charter

²² “Get Involved: Registration” *Sustainability Tracking, Assessment, and Rating System*, <http://stars.aashe.org/pages/get-involved/4269/> (accessed: April 12, 2010).

Participants, including Middlebury College, Babson College, and Tufts University.²³ STARS scores will be valid for three years and schools are required to pay the STARS fee every time they resubmit their score.

²³ “STARS Institutions,” *Sustainability Tracking, Assessment, and Rating System*, <http://stars.aashe.org/institutions/> (accessed: April 12, 2010).

2.0 METHODS

Because STARS and GRC incorporate different categories into their respective rating systems, we divide our analysis into twelve conceptual and topic-based sectors. We then distribute the seventeen categories that STARS uses and the nine categories that GRC uses among those distinct sectors. We organize our analysis into these sectors to facilitate data collection, structure our analysis of how rating systems conceptualize and value institutional sustainability, and to analyze conceptually similar topics together. As a consequence, the sectors vary in size and the number of components they encompass. Some of our categories, like Grounds or Purchasing, are small, while some sector groupings are larger. For example, we examine sections that STARS calls Curriculum, Research, and Co-curricular Education together as parts of a broader category of Academics.

When determining our STARS score we use a combination of the detailed STARS Technical Manual, a comprehensive resource that is available to the public, and our own spreadsheets to perform calculations. The Technical Manual is intended to serve as a “how to” guide for institutions that are interested in participating in the rating program, and contains all the information necessary to understand STARS’s scoring system. The STARS manual does not, however, include a way for

institutions to easily estimate their performance in STARS. While some credits within STARS are granted on the basis of meeting a specific requirement, many involve partial credit and must be calculated. Using the Technical Manual as a guide, we custom made Excel 2007 templates for each sector in order to make as accurate an assessment of Wellesley's STARS score as possible. These templates include formulas for credits calculated based on multiple inputs (Figure 1). Moreover, this format allows us to easily calculate Wellesley's STARS score under different performance scenarios.

Waste Reduction (5 points possible)

Total waste generation (Garbage + recycling + compost) in the 2005 baseline year	Weighted campus users in the 2005 baseline year	Total waste generation (garbage + recycling + compost) in the performance year (most recent year for which data are available)	Weighted campus users in the performance year (most recent year for which data are available)	Total Points
				0

Total Points = 10 x (total waste generated 2005 / Weighed campus users 2005) - ((total waste generated 2008 / weighed campus users 2008) / (total waste generated 2005 / weighed campus users 2005))

Waste Diversion (3 points possible)

Materials Recycled, donated, or otherwise recovered	Total amount of waste generated (Recycled + Disposed)	Total Points
		0

Total Points = 3 x (Materials Recycled (lbs) / Total amount of waste generated)

Figure 2. Excerpt of the Excel template from the Waste section showing how STARS scores were estimated.

Our estimation of Wellesley's performance on GRC is more difficult to measure. We cannot make a similar template to understand the breakdown of Wellesley's score on GRC because GRC does not make its formulae for calculating scores public. Rather, we estimate how Wellesley's performance on specific credits contributed to Wellesley's final grade, including what aspects of Wellesley's performance fell short of earning Wellesley full credit. We look at Wellesley's written answers to the GRC questionnaire, examine each category and the grade Wellesley received in each category, and try to determine how Wellesley's behavior translated to that score. While this system of analysis has its limitations, it does allow us to examine the relationship between what the category asked for and what Wellesley did. This approach is necessary because of GRC's overall lack of transparency.

In addition to calculating Wellesley's performance on each sector, we analyze various facets of each one. First, we frame the sector by contextualizing the topic with respect to its environmental impact and role in campus sustainability. Next, we examine how Wellesley approaches the sector, along with its priorities and the challenges it faces within the sector. Then we analyze how GRC and STARS conceptualize the sector, including what each awards points for and what each values. We

compare how each rating system grants credit and evaluate Wellesley’s performance within each system. We end each sector with our recommendations for changes Wellesley could make. We make recommendations both based on what modifications would garner points on STARS or GRC, and based on what would be beneficial for the sustainability of the college, regardless of the effect on Wellesley’s scoring.

In estimating Wellesley’s STARS score, we also needed to calculate the number of weighted campus users at the College. This figure is used across sectors to represent the total number of students, faculty, and staff, weighted for their overall use of the campus. Users are weighted differently depending on the time they spend residing or working on campus. The number of campus users was calculated for the 2009-2010 academic year and for the 2005-2006 academic year for use as a baseline. The number of weighted campus users is used in per capita calculations that use a per capita standard to account for differences in sizes among colleges and universities. For example, an institution’s GHG emissions reductions are calculated per weighted campus user compared to a 2005 baseline. The data for total weighted campus users is included in Table 5.

Table 2.1 Weighted Campus Users		
	Academic Year	
	2005 - 2006	2009 - 2010
Number of on campus residents	2038	2138
Number of non-residential full time students, faculty, and staff	897	1069
Number of non-residential part time students, faculty, and staff	405	468
Weighted campus users:	2913	3174

We also gathered background data on the College, which was factored into many of the STARS calculations. This information was essential for completing calculations in several sectors where the size of Wellesley’s endowment, the size of the student body, percentage of undergraduates, and percentage of residential students were involved. This data was especially important for calculations that were dependent on the applicability of a credit. For example, the

credit pertaining to the existence of a socially responsible investment fund is only applicable to schools with an endowment above \$1 million. This background data is included in Table 6.

Wellesley's Endowment	\$1.3 billion
Size of Student Population	2324
Percentage of Undergraduates	100%
Percentage of Residential Students	92%

In our evaluation of STARS, we want to assess the effort and cost needed to increase Wellesley's score over time. To do this, we create categories of small, short term changes and big, long term changes Wellesley could realistically make. When classifying initiatives as either small changes or big changes we consider the relative ease and monetary cost of each action. It is our hope that Wellesley can use this information to guide its future progress toward sustainability in the most environmentally responsible and economically feasible direction.

The "small changes" category considers relatively minimal effort improvements that could be done within about a year. It is based on a continuation of past trends and would not require changes in infrastructure. For example, all of the computers the College currently purchases have an EPEAT Gold rating. One part of a green purchasing policy would be to simply formalize this action administratively. The "big changes" category considers larger scale improvements that require not only a change in practices, but also shifts in attitudes to prioritize sustainability in decision-making. Incorporating sustainability themes into more courses and departments would be a larger-impact change and would require time and resources for development and implementation.



Figure 3. Lulu Chow Wang Campus Center applying for LEED Existing Building Certification²⁴

3.0 BUILDINGS

3.1 Introduction

College Campuses

Institutions of higher education often have vast networks of buildings that are used for a variety of purposes. An institution's built environment can accrue significant economic and environmental costs; consequently, it is in the best interest of schools to invest in buildings that minimize these costs. In general, sustainable construction or renovations use environmentally-friendly or recycled building materials, conserve energy and water, improve indoor air quality, and minimize waste. Through these improvements, green buildings lower operational costs, provide healthier environments for occupants, reduce greenhouse gas emissions, and demonstrate a college's

²⁴ "Wang Campus Center Photo," *Land Living*, http://www.landliving.com/image/wang_1.jpg (accessed: May 10, 2010).

commitment to social and environmental responsibility.²⁵ In recent years, the significance of green buildings has gained special attention with the emergence of the Leadership in Energy and Environmental Design (LEED) certification process. LEED, developed by the United States Green Building Council (USGBC), is a green building certification system that provides third-party verification that a building was constructed using sustainable principles.²⁶ LEED, though not the only certification process of its kind, has become a popular tool of sustainability since its inception. LEED's success highlights the importance of examining buildings and their environmental and economic effects. Whether colleges pursue LEED certification or incorporate sustainable building standards in other ways, greening the built environment plays a large role in a school's overall environmental footprint.

Exemplary Institutions

Many colleges and universities across the country have joined the LEED and green building movement as a means of decreasing their overall environmental impact. To date, institutions of higher education have collectively undertaken 3,790 LEED certified or registered projects.²⁷ These projects range from residence halls, like the three new dormitories at Pitzer College that were certified LEED Gold in 2007,²⁸ to academic buildings, such as Macalester College's Institute of Global Citizenship, which became the first college or university building to earn LEED Platinum certification in 2009.²⁹ Schools that have taken the initiative to engage in green building projects are reaping both environmental and economic rewards. Clark University's Lasry Center for Bioscience, which received LEED Gold for New Construction in 2007, uses 34 percent less energy and 31

²⁵ "USGBC: Project Certification," *U.S. Green Building Council*, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=64> (accessed: March 1, 2010).

²⁶ "Intro- What LEED Is," *U.S. Green Building Council*, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988> (accessed: May 9, 2010).

²⁷ "USGBC: Green Campus Campaign," *U.S. Green Building Council*, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1904> (accessed: March 1, 2010).

²⁸ "Residence Halls at Pitzer College Receive Gold LEED® Certification by the U.S. Green Building Council," *Pitzer College*, http://www.pitzer.edu/news_center/campus_news/07-08-academic_year/2008_05_27-leed-gold.asp (accessed: March 1, 2010).

²⁹ "Macalester College Receives LEED Platinum Certification for Markim Hall First college or university facility in state to achieve this status," *Macalester College*, <http://www.macalester.edu/whats happening/press/2010/September22LeedCertification.html> (accessed: March 1, 2010).

percent less water than a comparable conventional building, and 92 percent of the project's construction waste was diverted from landfills.³⁰

3.2 How Wellesley Approaches Green Buildings



Figure 4. Renovated Diana Chapman Walsh Alumnae Hall on track for LEED Silver Certification

Priorities

While Wellesley is renowned for its beautiful campus, many of its buildings are far from sustainable. In the past few years, Wellesley has taken significant steps to improve the efficiency of its buildings, realizing the importance of green buildings to overall college sustainability and aiming to capitalize on the potential cost savings of energy efficient buildings.

Wellesley recently initiated a sustainability review process for all construction and renovation projects on campus. Departing from the College's previous policy of utilizing LEED standards as a

³⁰ "Clark University Lasry Center for Bioscience, Worcester, Mass," *USGBC: Project Profiles*, <https://www.usgbc.org/ShowFile.aspx?DocumentID=4012> (accessed: March 1, 2010).

guideline without pursuing actual certification,³¹ Wellesley began to actively pursue LEED certification for buildings that are being renovated.³² Alumnae Hall, currently under major renovation, is the first building on campus for which the College is pursuing LEED certification, although the level of certification the buildings will receive is yet unknown. The College is also pursuing LEED certification for the Whittin Observatory, which will soon be renovated. Furthermore, Wellesley is also pursuing LEED Existing Building (LEED-EB) certification for the Wang Campus Center by gathering required energy data for a 12-month period.³³ These ambitious renovation projects reflect Wellesley's dedication to improving the efficiency of existing buildings and overall campus sustainability.

For smaller building renovations, Wellesley emphasizes researching and implementing energy-efficient window alternatives and installing building envelopes for better insulation and to limit air infiltration. For example, in Stone Davis residence hall and Pendleton, the College repaired building envelopes to limit outside air intrusion. The College also aims to replace antiquated and inefficient heating systems with more efficiently controlled systems that will reduce the amount of waste heat generated.³⁴ The College also converted Stone Davis residence hall and academic building Pendleton East's heat systems from antiquated steam to forced hot water allowing for a higher level of control and resulting in significant energy savings. Lake House, another residence hall, recently switched to a domestic hot water line heated by waste heat from the campus' cogeneration plant, and new energy-efficiency windows and better heating system were installed as well. The Wang Campus Center, Green Hall, and the swimming pool all have energy-efficient mechanisms within their overall operation systems. The Davis Museum and Houghton Memorial Chapel also went through renovations to upgrade formerly inefficient windows and heating systems. Additionally, the Science Center, which uses more energy than any other building on campus, recently installed new energy efficient windows.³⁵

Wellesley prioritizes other cost-saving, energy-efficient upgrades for building renovations. Recent upgrades include the replacement of all showerheads in 27 buildings to lower flow showerheads in the summer of 2008. Dual flush toilets were installed in the Chapel and will be

³¹ "Building/Mechanical," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/buildingmech.html> (accessed: March 1, 2010).

³² Patrick Willoughby, Director of Sustainability, Personal Communication, March 3, 2010.

³³ "Building/Mechanical," *Wellesley College Sustainability*.

³⁴ "Building/Mechanical," *Wellesley College Sustainability*.

³⁵ "Building/Mechanical," *Wellesley College Sustainability*.

installed in renovated buildings. In the spring of 2008, 191 lights were retrofitted from metal halide to dual lamp fluorescent lights, saving 204,126 kWh of electricity and \$26,000 annually and reducing the College's carbon footprint by 200,043 lbs annually.³⁶ Overall, Wellesley has ambitious plans to improve the efficiency of existing buildings on campus.

Challenges

The biggest challenge Wellesley faces by pursuing LEED certification for major renovations is the cost of certification, as LEED is frequently criticized for being overly expensive.³⁷ Along with the initial cost of signing on to participate in LEED, there are high upfront costs to actually constructing or changing a building to make it green. Also, the cost of hiring consultants to ensure that LEED guidelines are followed and that all paperwork is completed correctly is surprisingly high, usually adding 1-5% to the budget of the project.³⁸ In many cases this money could be used to make substantial energy-efficiency improvements to a building, but the LEED certification process instead cannibalizes these funds. Due to these challenges, there is a limit to the number of buildings that Wellesley can feasibly certify. However, the College can still continue to pursue other green building efforts to improve campus sustainability.

For smaller renovation projects, the main difficulty Wellesley faces may be getting the initial funding for a project, because upgrading older, inefficient systems often involves high upfront costs and long payoff periods. For example, replacing currently used, energy-inefficient steam heaters with forced-hot water systems would cost Wellesley \$300,000, and the energy savings would pay off in a few decades.³⁹ It will be necessary to communicate to those in charge of funding at Wellesley that these are benefits linked to the high upfront costs. Making the greener choice is cost effective because of long term monetary savings and reduced environmental impact. Fortunately, Wellesley has addressed this problem in the past and frequently renovates buildings on campus. Wellesley must continue to focus on long term benefits of large scale building improvements so that it can take significant steps toward sustainability.

³⁶ "Wellesley College: Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/wellesley-college/surveys/campus-survey> (accessed: March 2, 2010).

³⁷ Schneider A., and Udall, R. 2005. "LEED Is Broken: Let's Fix It" *Grist*, <http://www.grist.org/article/leed>.

³⁸ Schneider A., and Udall, R. 2005. "LEED Is Broken: Let's Fix It."

³⁹ *ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College*, Spring 2008, <http://www.wellesley.edu/EnvironmentalStudies/Research/pdf/ES300-2008-Wellesley-GHG-Audit.pdf> (accessed April 12, 2010).

3.3 How GRC Conceptualizes Green Buildings

For the Green Buildings credit, GRC prioritizes LEED certification and considers whether or not schools have a formal green building policy for construction and renovation. GRC also accepts other green building standards, such as ENERGY STAR. In addition to LEED certification for construction projects, GRC prioritizes LEED or ENERGY STAR certification for existing buildings. This priority is important because it recognizes that colleges can improve their sustainability through green buildings by thinking not only about creating new structures that have a lower environmental impact, but also by reducing the impact of preexisting buildings.

GRC recognizes the importance of improving an existing building's overall efficiency instead of only considering a building's efficiency, such as water efficiency or electricity use. Since a building's overall energy consumption has such a large impact on a school's entire environmental footprint, having completely energy efficient buildings in all aspects should be an important concern for institutions that want to improve their sustainability.

GRC rewards the use of energy efficient technologies, such as HVAC systems, motion sensors, ambient light sensors, LED lighting, and timers, in existing buildings. GRC values water-conservation systems, such as low-flow faucets, low-flow showerheads, dual-flush toilets, graywater systems, and high efficiency washing machines. Including energy efficient technologies in existing buildings as part of the Green Buildings credit acknowledges that, although new LEED certified buildings may be the most energy efficient option, fewer inputs are required to greatly improve the energy efficiency of an existing building than to construct a completely new one. Avoiding the use of new building materials represents mitigated environmental impact that is just as important as reducing energy use on campus.

GRC rewards the percentage of non-hazardous construction and demolition waste that schools divert from landfills. This concern emphasizes the importance of thinking about how the life-cycle of materials extends beyond choices made on campus.

Wellesley's Point Scenarios

Table 3.1 Wellesley's GRC Performance in Green Buildings					
Credit Title and Description	Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Green Building Policy Committing, through a formal policy, to the use of green building criteria in all construction and renovations	20%	10%	Committed to investigating LEED certification for all building undergoing extensive renovations and will not pursue LEED only when unfeasible.	There is no formal policy.	Create a formal policy and post it online.
Green Building Standards Seeking certification by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.	40%	20%	Wellesley is seeking certification for Alumnae Hall as a new construction.	School currently has no LEED certified new buildings.	Finish construction of LEED certified building.
Requiring all new buildings to be LEED certified.			Wellesley investigates LEED certification.	There is no requirement for new buildings to be LEED certified.	Require that all new buildings be LEED certified.
Incorporating LEED and Energy Star standards into new building projects			Wellesley is incorporating standards in Alumnae Hall gut renovation.	School currently has no LEED certified buildings and no completely new building projects.	Incorporate LEED and Energy Star standards into new building projects.
Renovation and Retrofits Renovating existing buildings in accordance with LEED-EB and Energy Star standards.	40%	32.5%	Wellesley is seeking certification for the Wang Campus Center as an existing building.	School currently has no LEED certified existing buildings.	Complete certification of campus center and make improvements to be able to certify other existing buildings.
Installing various energy efficiency and water conservation retrofits such as lighting motion sensors or low-flow plumbing equipment.			90% of all shower heads on campus are low-flow. All washing machines are high efficiency both in terms of water use and electrical consumption. 191 lights were retrofitted from metal halide to dual lamp fluorescent lights. Dual flush toilets have been installed in all of the bathrooms at the chapel and some dorms.	Not all buildings have all possible updated features.	Could expand changes to all buildings on campus.
Diverting non-hazardous construction and demolition waste from landfills.			84% of non-hazardous waste is diverted.	Not all non-hazardous construction and demolition waste is diverted from landfills.	Could divert a greater amount of waste (maybe 95%).

3.4 How STARS Conceptualizes Green Buildings

Credit Number	Credit Title	Possible Points
OP Credit 1	Building Operations and Maintenance	7
OP Credit 2	Building Design and Construction	4
OP Credit 3	Indoor Air Quality	2
Total		13

STARS places significant weight on LEED certification for both new projects and existing buildings. STARS also awards credit, although less credit than for certification, to institutions that have buildings that follow LEED or meet LEED guidelines but are not actually certified. STARS rewards schools that have buildings with sustainable and energy efficient operations and maintenance policies and receive high scores for LEED-EB certification. Prioritizing certification ensures that buildings meet clearly defined standards. But in valuing certification STARS fails to recognize that building certification can involve added cost and can limit innovation. It can be seen as unfair that STARS awards fewer points to schools that have green building policies but do not have certifications, and this may discourage some institutions from participating in STARS.

However, it is important to acknowledge that sometimes institutions that try to build to green standards without certification end up compromising the green features during the construction or budgeting process. Schools can benefit from taking advantage of LEED's organized framework to avoid unforeseen costs and consequences, such as a failed project or a building that is not as green as initially planned.

STARS also considers whether an institution has adopted an indoor air quality management policy and other practices that include regular auditing or monitoring of air quality. The interior environment of buildings affects human health and well-being and should be an important consideration.

STARS does value building energy efficiency, just as GRC does, but energy is discussed in the Energy and GHG Emissions section of this report.

Wellesley's Point Scenarios

Table 3.3 Wellesley's STARS Performance in Buildings

Credit Title and Description			Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
OP Credit 1	Building Operations and Maintenance Percentage of Total Eligible Building Space	Not certified but follows guidelines or policies	7	22%	30%	75%	0.58	0.93	2.11
		LEED for Existing Buildings: O&M Certified		0%	0%	0%			
		LEED for Existing Buildings: O&M Silver certified		0%	3.3%	3.3%			
		LEED for Existing Buildings: O&M Gold certified		0%	0%	0%			
		LEED for Existing Buildings: O&M Platinum certified		0%	0%	0%			
OP Credit 2	Building Design and Construction Percentage of Total Eligible Building Space	Not Certified but follows guidelines or policies	4	0%	0%	0%	0	0.04	0.04
		LEED certified		0%	0%	0%			
		LEED Silver certified		0%	1.6%	1.6%			
		LEED Gold certified		0%	0%	0%			
		LEED Platinum certified		0%	0%	0%			
OP Credit 3	Indoor Air Quality Percentage of Occupied Building Space Covered by an IAQ Plan	2	100%	100%	100%	0	2	2	
Total			13				0.58	2.97	4.15

3.5 Comparative Analysis of GRC and STARS

STARS and GRC both prioritize LEED certification in their consideration of green buildings. STARS and GRC both value green building practices and maintenance, encouraging schools to mitigate a building's impact on the outdoor environment and provide a healthy indoor environment. STARS requires that LEED certification be attained to achieve the maximum number

of points, while GRC only demands that LEED standards for certifications be met, without requiring the actual certification.

Both systems value LEED certification over non-certified green construction and renovation because they recognize the importance of having guidelines and a framework to successfully complete a green building. Actually completing green building projects on a college campus requires a large investment by the institution in both time and money. Having a certification to pursue keeps institutions on track and helps ensure that they consider both the big picture and the small details. It also helps confirm that schools do not skimp on green features at the end of the project to save money and complete the project on time or more quickly. Having certification helps colleges more effectively accomplish their green building goals.

Wellesley does not perform well in STARS's building category because the College does not have any LEED certified new or renovated buildings, as of yet, and because there is evidence that a quarter of the total building space on campus is operated and maintained using LEED-like guidelines. Also, even though the College has an indoor air quality policy for all campus buildings, there is no publicly available formal policy, something that could be easily remedied.

Wellesley scores better on GRC because the College has been trying to use more energy efficient technologies in its buildings, GRC includes energy efficient technologies in its green building evaluation. However, Wellesley does not receive a particularly high score because, again, the institution does not have any LEED certified buildings.

Table 3.4 Reasons Wellesley Does Not Earn STARS Points in Buildings

Credit Title	Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 1 Building Operations and Maintenance	7	No	No formal policy Only partially doing it	No formal policy, not all buildings operated and maintained under College guidelines
OP Credit 2 Building Design and Construction	4	No	Credit does not apply to Wellesley	No new building constructions
OP Credit 3 Indoor Air Quality	2	No	No documentation	Policy not documented

3.6 Initial Recommendations

Wellesley could improve its STARS and GRC ratings in many ways, the majority of which center around making commitment to a specific policy. For Wellesley to improve its ratings, the College needs to have, and make available, a more comprehensive and detailed green building policy that explains the motivation behind the improvements made in the Science Center, Lake House, Davis Museum, and other buildings. The College should provide a clear policy that goes beyond a plan to simply pursue LEED whenever possible, and instead commits to making all renovations and new construction projects LEED certified. After drafting and committing to a formal policy, Wellesley should document it by posting it online.

It is important to note that while Wellesley could receive points for buildings that are not LEED certified but follow similar guidelines, LEED certification would earn the school more points under both STARS and GRC. At this time it may not be realistic for Wellesley to construct new LEED certified buildings, but the school could look into further renovations and improvements of many existing buildings. The College can earn more points toward a higher rating in both systems by looking into LEED for Existing Buildings: Operations & Maintenance (O&M) certification for buildings in addition to the Wang Campus Center. Also, if Wellesley invests in the construction of a new building, it should pursue LEED certification for New Construction (NC). Furthermore, if Wellesley makes the commitment to invest in LEED certification for O&M or NC, it should pursue the highest rating possible (Gold or Platinum) in order to maximize its points.

It is also important for Wellesley to pursue LEED certification for new and existing buildings whenever possible not only for points, but also to improve the College's sustainability. Pursuing certification, instead of just following the guidelines, will help Wellesley to have the greenest buildings that it is capable of creating. By following specific guidelines and continually having to meet the expectations of LEED certification, the College will be held to its intentions of improving sustainability through green building. Also, having LEED certified buildings will improve the visibility of Wellesley's sustainability initiatives because students and staff, as well as visitors, who would not necessarily know about Wellesley's green building accomplishments without certification, will be able to identify a green building if it is LEED certified.

Wellesley also loses points on GRC and STARS for lack of documentation of a formal indoor air quality plan, despite the fact that Wellesley's Sustainability Advisory Committee asserts

that the College does in fact have one. The posting of a formal policy to Wellesley's website is a simple and cost-effective way to obtain greater percentage points on STARS.

Finally, Wellesley can earn more credit on GRC and improve its sustainability by implementing small-scale energy efficiency and water conservation retrofits, such as light sensors and low-flow showerheads. At this time, the College has installed this equipment on some parts of campus, but it could expand these changes to all buildings. Wellesley could also divert a higher percentage of its hazardous waste off-campus.



Figure 5. Wellesley College Co-generation Power Plant

4.0 ENERGY AND GHG EMISSIONS

4.1 Introduction

College Campuses

Annually, U.S. colleges and universities emit an estimated 42 million metric tons of greenhouse gases (GHGs),⁴⁰ accounting for approximately 0.6 percent of the United States' national GHG emissions.⁴¹ To place this figure into context, institutions of higher education together release

⁴⁰ "ACUPCC 2008 annual report," *President's Climate Commitment*, <http://www.presidentsclimatecommitment.org/reporting/annual-report> (accessed: April 10, 2010).

⁴¹ US EPA 2009 U.S. Greenhouse Gas Inventory Report. <http://www.epa.gov/climatechange/emissions/usinventoryreport.html> (accessed: April 10, 2010).

as many GHGs as do all U.S. territories combined – the same amount of carbon dioxide emitted by 7.6 million personal vehicles or sequestered by 9.6 million acres of forest.⁴²

GHG emissions play an important role in global climate change. Through what is known as the greenhouse effect, GHGs trap some of the solar energy that hits the earth, thereby keeping the planet at a suitable temperature for life. Increasing emissions of GHGs such as carbon dioxide (CO₂), ozone (O₃), and methane (CH₄) intensifies the greenhouse effect, thereby raising the earth's average surface temperature. Scientists predict that anthropogenic climate change will have extreme social, economic, and environmental consequences.⁴³

Because the GHG emissions of colleges and universities are significant, the efforts of these institutions to limit their emissions matters in the global effort to slow the effects of climate change. Colleges and universities, as centers of innovation and education, can also serve as important models for society in terms of GHG emissions reduction. Any measure to reduce energy use or implement clean energy technology therefore plays an important role in reducing a college's contribution to global climate change.

Exemplary Institutions

College and university campuses have made noteworthy efforts to decrease their GHG emissions, implementing energy conservation and efficiency measures and switching to renewable energy sources. Many colleges and universities have signed The American College and University Presidents' Climate Commitment (ACUPCC) to demonstrate their dedication to GHG emissions reduction. By signing the ACUPCC, colleges and universities commit to reducing their net GHG emissions to zero. Signatory institutions agree, amongst other things, to complete an emissions inventory and create a plan of action for reaching GHG emissions reduction goals.⁴⁴ As of early 2010, 662 colleges and universities have signed the ACUPCC, representing over 33 percent of the U.S. student body. Together, these institutions have pledged to annually reduce GHG emissions by 10 million metric tons.⁴⁵

⁴² On average, a single motor vehicle produced 5.56 metric tons of CO₂ in 2003. "Environmental Defense Fund (2003) Automakers Corporate Carbon Burdens,"

http://www.environmentaldefense.org/documents/4715_CarbonBurdensUpdateFinal.pdf (accessed: April 10, 2010).

⁴³ "U.S. EPA (2009) Frequently Asked Questions about Global Warming and Climate Change: Back to Basics," *U.S. Environmental Protection Agency*, www.epa.gov/climatechange (accessed: April 10, 2010).

⁴⁴ "Presidents' Climate Commitment," *Presidents' Climate Commitment*, <http://www.presidentsclimatecommitment.org/html/commitment.php> (accessed: April 10, 2010).

⁴⁵ "ACUPCC 2008 annual report," *Presidents' Climate Commitment*.

Actions that signatory schools take to reduce energy use include a range of energy conservation and efficiency measures, as well as buying carbon offsets and switching to renewable energy sources. Many colleges and universities also institute policies for green building, purchasing ENERGY STAR certified products, offsetting GHG emissions generated by air travel, prioritizing environmentally responsible investments, and participating in the national RecycleMania competition.⁴⁶ The diversity of these actions demonstrates that an institution can reduce its carbon footprint in many different ways. A few of these pathways, notably LEED buildings and policies for ENERGY STAR certified products, are campus-focused GHG emissions reductions, whereas carbon offsets and socially and environmentally responsible investments target a college's total environmental footprint.

4.2 How Wellesley Approaches Energy and Greenhouse Gas Emissions

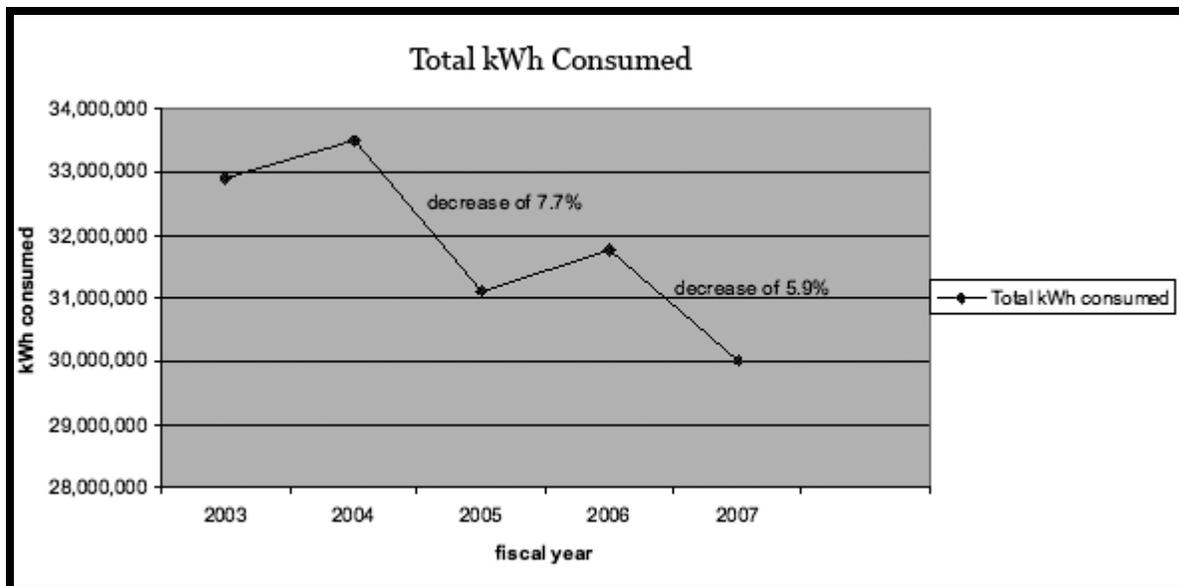


Figure 6. Wellesley College Decreasing Electricity Consumption 2003-2007⁴⁷

Priorities

Wellesley College currently takes a number of steps to conserve energy, increasingly prioritizing GHG emissions reduction. Economic concerns initially drove energy conservation

⁴⁶ "ACUPCC 2008 annual report," *Presidents' Climate Commitment*.

⁴⁷ "Wellesley College – Sustainability Update, January 2009" (Currently labeled 2008 on website), *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/> (accessed: April 17, 2010).

efforts at Wellesley, and the College still above all prioritizes financial considerations in its decision-making processes. With the incorporation of sustainability into Wellesley's mission statement and a growing institutional awareness of sustainability, environmental concerns increasingly motivate and inform the College's decisions. Wellesley's Sustainability Advisory Committee attempts to creatively implement projects that both reduce the College's carbon footprint and align with Wellesley's financial concerns.⁴⁸

Between 2004 and 2009, total energy use at Wellesley remained relatively steady, while electrical consumption declined by 21.3 percent.⁴⁹ These trends suggest that campus-wide efforts to reduce energy use have made a substantial overall impact,⁵⁰ especially since the College added two new major buildings, the Wang Campus Center and the Davis Parking Facility, between 2003 and 2005.⁵¹ By 2013, Wellesley aims to have decreased its electricity use by 25 percent below 2003 levels. The College has nearly achieved this goal, given its 21.3 percent reduction in electricity use since 2004.⁵²

Wellesley took a significant initial step toward energy use reduction when it constructed a cogeneration physical plant in 1994.⁵³ The cogeneration plant allows the College to produce most of its electricity and thermal energy on site. The cogeneration plant has five engines for electricity generation. All of these engines are normally fueled by natural gas, and one can switch to using #6 fuel oil.⁵⁴ Wellesley draws on #6 oil as an alternative to natural gas during times of high volume energy use.⁵⁵ Cogeneration is a more efficient process than most fossil fuel-powered generation because it recycles the waste heat produced by electricity generation. Wellesley reuses its waste heat to drive heating and air conditioning in the residence halls and academic buildings on campus.⁵⁶

Although a desire to reduce energy costs motivated the construction of the cogeneration plant, doing so helped Wellesley cut GHG emissions significantly.⁵⁷ Prior to 1994, the College

⁴⁸ "Wellesley College – Sustainability; Energy/Utilities (2008)," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/energyutilities.html> (accessed: April 17, 2010).

⁴⁹ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*.

⁵⁰ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*.

⁵¹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 86.

⁵² "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*.

⁵³ "Wellesley College – Sustainability; Energy/Utilities (2008)," *Wellesley College Sustainability*.

⁵⁴ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 31.

⁵⁵ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 33.

⁵⁶ "Wellesley College – Sustainability; Energy/Utilities (2008)," *Wellesley College Sustainability*.

⁵⁷ Data exists from 1990-2002 showing a decrease in GHG emissions (ES 300 GHG emissions Spring 2003, p 16). But from 2003-2007, we assumed a correlation between a decrease in energy use and a decrease in GHG emissions as gathered from data from Wellesley College – Sustainability; Energy/Utilities (2008).

purchased all of its energy from the town of Wellesley.⁵⁸ According to the ES 300 2008 GHG emissions audit, the College saves approximately 6,271 metric tons of carbon dioxide by producing its own electricity through cogeneration instead of buying it from the town.⁵⁹ Each year, the College still buys a small portion of its electricity from the Town of Wellesley, mostly to compensate for occasional breakdowns in the cogeneration system.⁶⁰ The amount of purchased electricity fluctuates each year but remains relatively negligible. For instance, the College purchased about 3.4 percent of its electricity in 2006 and 1.9 percent of its electricity in 2007 from the town.⁶¹

To further reduce energy use and GHG emissions, the cogeneration plant has installed water-cooling towers and has increased its use of natural gas relative to #6 residual oil over time. Natural gas emits 0.0599 metric tons of CO₂/MMBtu as compared to residual oil, which emits 0.0767 metric tons of CO₂/MMBtu.⁶² A reduction in the use of #6 oil therefore represents a reduction in GHG emissions. Furthermore, directing water towards the roof of the cogeneration plant helps decrease energy use and GHG emissions. The difference in temperature between the cold water on the roof and the heat in the building naturally forces out hot air without the expenditure of energy.⁶³

In the past several years, Wellesley has taken steps to investigate alternative energy sources. These investigations demonstrate the important role of the Sustainability Advisory Committee and other dedicated community members in actively promoting GHG emissions reduction measures.⁶⁴ In the fall of 2009, an Environmental Policy class submitted a proposal to install a solar panel-powered streetlamp at the College. The Sustainability Advisory Committee approved the program in spring 2010, and Wellesley will soon install the streetlamp on the west side of campus.⁶⁵ Other alternative energy sources are in the planning and testing stages (see *Challenges* section for more details).

Wellesley College recently made several structural and energy systems changes to improve the energy efficiency of its buildings, many of which are inefficient due to their old age and

⁵⁸ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 31.

⁵⁹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 20.

⁶⁰ Personal Communication with Patrick Willoughby, Director of Sustainability.

⁶¹ Wellesley College – Sustainability; Energy/Utilities (2008), *Wellesley College Sustainability*.

⁶² ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 86.

⁶³ Wellesley College – Sustainability; Energy/Utilities (2008), *Wellesley College Sustainability*.

⁶⁴ Wellesley College – Sustainability; Energy/Utilities (2008), *Wellesley College Sustainability*.

⁶⁵ Personal communication with members of Sustainability Committee.

architectural structure.⁶⁶ Wellesley's renovation of Alumnae Hall is on track for LEED certification, which guides "green building design, construction, operations and maintenance solutions" to address sustainability.⁶⁷ In complying with LEED standards, Wellesley will improve formerly inefficient aspects of the Alumnae Hall's original architecture, such as insulation and lighting efficiency.

Because it cannot fully renovate or reconstruct all of its buildings in the short term, Wellesley completes smaller projects to integrate energy efficient elements into other campus buildings. Small-scale renovations and technological upgrades have improved energy use in Wellesley's buildings at all stages of the energy use cycle, from system maintenance to energy use habits.⁶⁸ For example, the College installed energy efficient windows in Sage Lounge and extensively renovated the windows in the Tower Residence Hall Complex in 2009.⁶⁹

To improve the efficiency of thermal energy use at Wellesley, most of the College's buildings now have mechanical regulation systems to control indoor temperature. These systems use advanced monitors that consider multiple inputs, such as outside conditions and time of day.⁷⁰ The installation of air handling controls improved indoor air circulation and humidity levels in the Davis Museum, the Science Center, and Jewett Arts Center.⁷¹ To improve the efficiency of the chilled water plant, the College replaced and adjusted pipes and valves, and plans exist to extend the system to Alumnae Hall.⁷²

Wellesley continues to implement a number of additional initiatives to increase energy efficiency. The College recently replaced incandescent light bulbs with fluorescent ones in many parts of campus, such as student rooms and faculty offices. In 2008, 191 fluorescent lights were installed in the Davis Parking Facility, yielding a total annual savings of 204,126 kWh. This energy savings translates into a 91 metric ton reduction in CO₂ emissions and represents monetary savings

⁶⁶ Assumed based on evidence from Wellesley Sustainability website, ES 300 Reports, and personal communication with Patrick Willoughby, Director of Sustainability.

⁶⁷ LEED, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988> (March 18, 2010).

⁶⁸ "Energy," *ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College*, <http://www.wellesley.edu/EnvironmentalStudies/Research/pdf/ES300-2008-Wellesley-GHG-Audit.pdf> (accessed: March 18, 2010). ; "Sustainability Update, January 2009," *Wellesley College Sustainability*.

⁶⁹ The definition of "energy efficient" could not be found, so we assumed that Wellesley must have followed the requirements for energy efficient window use in MA as outlined by the "Energy efficient window requirements for MA" document at <http://www.efficientwindows.org/>. This document states that "energy efficient windows" have insulating spacers and protective coatings reduce heat loss and resist heat conduction. Further information regarding the Tower complex was not available. Wellesley College – Sustainability; Energy/Utilities (2008), *Wellesley College Sustainability*.

⁷⁰ Patrick Willoughby, Director of Sustainability, Email, March 12, 2010.

⁷¹ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 7 and 9.

⁷² "Wellesley College – Sustainability," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability> (accessed: April 25, 2010).

of \$26,000 per year.⁷³ Pilot programs testing the use of LED lights exist on the first floor of Pendleton Hall, some of the campus streetlights, and in the serving line of the Beebe dining area, with more installations planned for the Wellesley College Club.⁷⁴ Lighting sensors in various parts of campus reduce energy use during off-peak hours, and all non-refrigerated vending machines, and some non-refrigerated vending machines, have motion sensors that further decrease unnecessary energy use.⁷⁵

The Sustainability Advisory Committee has worked to raise awareness of energy concerns amongst the student body. Recent campaigns include holding annual building energy-reduction competitions and distributing CFL bulbs and energy awareness stickers; these initiatives reflect the important efforts made in recent years to involve the college community in reducing GHG emissions.⁷⁶

Challenges

Wellesley's cogeneration facility produces the vast majority of the energy that the College consumes. Wellesley therefore has little need to obtain energy from alternative sources. The cogeneration plant is, in many ways, a double-edged sword: while highly efficient as a way to generate energy through fossil fuel use, it nevertheless ties the college to fossil fuel. Given the investment Wellesley made into its cogeneration plant in 1994, the College is unlikely to make a complete switch to renewable energy in the near future. However, Wellesley recently conducted research on alternative energy sources such as solar, wind, and geothermal systems, indicating that the College may be willing to consider complementing its energy production with renewable sources.

Wellesley's recent alternative energy considerations illustrate some of the challenges the College faces in terms of GHG emissions reduction and indicate great potential for future change. For instance, Wellesley has extensively researched the use of both biomass systems and wind turbines, but several resource limitations put these projects on hold. Biomass represents a feasible option for Wellesley, but the College hesitates because of high initial costs, the challenge of finding space for the necessary fuel storage containers, and the large biomass resources needed to fuel the system.⁷⁷ Similarly, despite available space for a 50W wind turbine either near the sports fields or on

⁷³ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 8 and 9.

⁷⁴ Patrick Willoughby, Director of Sustainability, Email, March 12, 2010.

⁷⁵ Patrick Willoughby, Director of Sustainability, Email, March 12, 2010.

⁷⁶ Wellesley College – Sustainability; Energy/Utilities (2008), *Wellesley College Sustainability*.

⁷⁷ Patrick Willoughby, Director of Sustainability, Email, March 12, 2010.

Water Tower Hill, initial reviews conclude that wind in these areas is insufficient to yield a fast enough payback.⁷⁸ The three different models considered for the wind turbine cost between \$250,000 and \$1,900,000, but would only contribute enough energy to meet 0.2 to 1.9 percent of the College's demands because of low wind availability.⁷⁹ Depending on the model installed, the wind turbine would begin to yield positive value in 17 to 21 years.⁸⁰ Research continues into the wind turbine possibility, however. The wind turbine and biomass cases illustrate that cost is not the only factor limiting the implementation of energy efficiency projects; space, wind and available biomass limitations have equally restricted progress on these initiatives.

In August 2009, Wellesley began considering two possible scenarios regarding the use of geothermal energy to heat and cool the soon-to-be renovated Observatory buildings.⁸¹ Scenario A would require a smaller geothermal field with supplemental heat from the campus steam system or an on-site boiler, while Scenario B would involve a larger geothermal field that would not use supplemental heat. Both scenarios would use geothermal energy for all cooling.⁸²

Despite the large upfront premiums of geothermal energy, the payback period for Scenario A ranges between 27 to 29 years, and between 23 to 27 years for Scenario B. While Scenario B would have a faster payback period and a 73 percent decrease in GHG emissions compared to energy provided by the cogeneration plant, the campus may not be able to physically accommodate Scenario B due to limited space. Scenario A would still reduce GHG emissions by 23 percent compared to full reliance on the central steam system powered by the cogeneration plant, but Scenario B clearly represents a more effective option.⁸³

A closer look at some of these back-burner projects suggests that, despite Wellesley's increasing commitment to sustainability, the College has not been able to justify alternative energy use because of the costs involved. In addition, space and renewable resource limitations remain concerns. In facing these constraints, Wellesley must either drop or scale down certain projects. With Wellesley's Director of Sustainability, Patrick Willoughby, working to ensure that the College

⁷⁸ "Wind Turbine Analysis Final 2007," 30. For source contact Patrick Willoughby, Director of Sustainability.

⁷⁹ Boreal Renewable Energy: Wind Turbines Cost, Outputs. (April 2009), 1. For source contact Patrick Willoughby, Director of Sustainability.

⁸⁰ "Wind Turbine Analysis Final 2007," 9. For source contact Patrick Willoughby, Director of Sustainability.

⁸¹ Haley and Aldrich, Inc. "Preliminary Geothermal Feasibility Study, Whitin Observatory, Wellesley College, Wellesley, Ma." August 7, 2009.

⁸² Haley and Aldrich, Inc. "Preliminary Geothermal Feasibility Study, Whitin Observatory, Wellesley College, Wellesley, Ma." August 7, 2009.

⁸³ Haley and Aldrich, Inc. "Preliminary Geothermal Feasibility Study, Whitin Observatory, Wellesley College, Wellesley, Ma." August 7, 2009.

considers sustainability in all institutional decisions,⁸⁴ the abandonment or postponement of GHG emissions reduction initiatives is not for a lack of concern or awareness.

4.3 How GRC Conceptualizes Energy and Greenhouse Gas Emissions

The Green Report Card considers energy and greenhouse gas emissions through its Climate Change and Energy category. Within this category, GRC has a dual focus, awarding points both for “specific commitments” to GHG emissions reductions and for “reductions already achieved.”⁸⁵ Each year since 2008, Wellesley has received a grade of C in this category.

In its consideration of climate change and energy, GRC emphasizes the importance of realizing actual GHG emissions reductions. The breakdown of point allocation within the Climate Change and Energy category reflects this priority: the subcategories of Realized Emissions Reduction, Energy Efficiency, and Energy Conservation – all of which consider emissions reductions - together account for 50 percent of an institution’s Climate Change and Energy grade.

In rewarding colleges and universities for their current GHG emissions reduction efforts, the GRC’s framework does not recognize institutions that already emit low levels of GHGs. GRC therefore fails to fully reward the efforts of schools that have already achieved significant accomplishments in the area.

GRC also rewards colleges and universities for utilizing energy-efficient technologies. However, it does not clearly assign higher value to particular types of energy efficiency measures over others. GRC therefore does not seem to account for the greater emissions reductions from better energy efficiency initiatives.

In considering renewable energy, GRC creates two subcategories: Renewable Energy Generation (15 percent of the total category score) and Renewable Energy Purchasing (10 percent of the total category score). GRC thus considers not only the *total amount* of renewable energy a college uses but also the *source* of this energy. While colleges receive more credit for generating renewable energy, GRC awards credit for purchasing renewable energy as well.

Institutions also receive credit from GRC for conducting a GHG emissions inventory. However, GRC does not award points based upon how thorough or extensive an audit a school has

⁸⁴ “Wellesley College – Sustainability,” *Wellesley College Sustainability*.

⁸⁵ “Climate Change and Energy,” *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2009/categories/climate-change-energy> (accessed March 3, 2010).

conducted. Instead, it seems to consider simply whether or not an institution conducted an inventory in the first place.

GRC rewards colleges and universities for reducing GHG emissions that are attributable to on-campus activities. It places less emphasis on recognizing the broader carbon footprint of an institution. For instance, GRC does not consider the GHG emissions that result from travel to and from campus; it does not reward colleges and universities for efforts to reduce emissions from air travel.

Wellesley's Point Scenarios

Table 4.1 Wellesley's GRC performance in Climate Change and Energy					
Credit Title and Description	Regular Credit	Extra Credit	What Wellesley earns credit for	What Wellesley doesn't earn credit for	Change Wellesley could make
Greenhouse Gas Emissions Inventory Initiating, completing, and updating campus greenhouse gas (GHG) emissions inventories.	10%	5%	Completing a GHG Emissions Inventory in 2007-2008	Not completing additional inventories	Update inventories more frequently
Commitment to Greenhouse Gas Emissions Reduction Making a formal commitment to reducing GHG emissions by a specific amount.	15%	5%	Committing to reducing electricity consumption 13% by 2013 and reducing consumption of other energy as buildings and systems are upgraded	- Not making a specific commitment to reducing GHG emissions - Not signing a public commitment such as the President's Climate Commitment	Make a written commitment to reducing GHG emissions by a specific amount

Table 4.1 (Continued from previous page)

Credit Title and Description	Regular Credit	Extra Credit	What Wellesley earns credit for	What Wellesley doesn't earn credit for	Change Wellesley could make
<p>Realized Greenhouse Gas Emissions Reduction</p> <p>Achieving a reduction in GHG emissions, both on a per-square-foot basis and on a per-student basis.</p>	20%	10%	<p>Reducing electrical consumption by over 20% since 2003</p> <p>Reducing total MMBtu for thermal energy production by 11.5% from FY 04 to FY 08</p>	<p>Wellesley did not provide specific data on GHG emissions for years other than 2008 and may not have received a large percent of the credit in this category as a result.</p>	<p>Keep better record of emissions per year so as to be able to report them</p> <p>Realize greater emissions reductions</p>
<p>Using energy-efficient technology.</p> <hr/> <p>Energy Efficiency</p> <p>Retro commissioning HVAC systems and/or installing technology such as cogeneration plants and energy-efficient lighting to replace incandescent light bulbs.</p>	20%	--	<p>Using energy-efficient technology</p> <hr/> <p>Cogeneration plant</p> <p>Upgrading air handlers in the Science Center</p> <p>Using hot water setbacks in buildings with hot water heat</p> <p>Decoupling several buildings to increase efficiency of chilled water system</p> <p>Using VFDs for pump replacement</p> <p>- Pursuing the replacement of incandescent bulbs with CFLs</p> <p>Installation of LED street light</p>	<p>Wellesley earns full credit</p> <hr/> <p>Unclear – insufficient information available</p>	<p>Wellesley earns full credit</p> <hr/> <p>Expand LED installment initiatives</p>
<p>Energy Conservation</p> <p>Facilitating programs that provide incentives for members of the campus community to reduce energy use.</p>	10%	2.50%	<p>Placing “Turn Off the Lights” stickers on switch plates</p> <p>Holding a month-long energy competition</p> <p>Sending email reminders to faculty, staff, and students with energy saving tips</p>	<p>Unclear – insufficient information available</p>	<p>Wellesley already receives credit in this category.</p>

Table 4.1 (continued from previous page)

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for	What Wellesley doesn't earn credit for	Change Wellesley could make
Renewable Energy Generation	Installing solar, wind, geothermal, or other alternative sources of power on or off campus.	15%	10%	Wellesley earns no credit	No solar, wind, geothermal, or other alternative sources of power are used on campus.	- Move forward with installation of solar panel - Install wind turbine near athletic fields
	Operating solar hot water systems.			Wellesley earns no credit	No solar hot water systems currently operate on campus.	Changes are unlikely in this area in the near future.
Renewable Energy Purchase	Purchasing electric power from renewable sources or purchasing renewable energy credits.	10%	7.50%	Wellesley earns no credit	Wellesley's cogeneration facility produces most of the energy that the college consumes. Wellesley has little need to purchase energy from outside sources.	Wellesley will continue to utilize its cogeneration facility in the near future and will most likely not purchase renewable energy.
	Purchasing nonelectric energy from renewable sources.			Wellesley earns no credit	See above	See above
On-site Combustion	Generating energy for heating and/or cooling from renewable sources.	--	15%	It is possible that Wellesley earns points in this category for predominantly using natural gas as a fuel source. However, it is unclear whether or not this is actually the case.	Wellesley does not generate energy from renewable sources.	Changes are unlikely in this area in the near future

4.4 How STARS Conceptualizes Energy and Greenhouse Gas Emissions

Under its Operations credit category, STARS considers energy and greenhouse gas emissions within two subcategories: Climate and Energy. The Climate subcategory focuses on the extent to

which colleges measure and reduce their GHG emissions. The Energy subcategory focuses on the specific initiatives institutions implement to reduce energy consumption. STARS assigns the same value to each subcategory; both Climate and Energy represent 16.5 points each. The two subcategories together account for 33 points, or 11 percent of the total points available in STARS.⁸⁶

Climate

Credit Number	Credit Title	Possible Points
OP Credit 4	Greenhouse Gas Emissions Inventory	2
OP Credit 5	Greenhouse Gas Emissions Reduction	14
<i>Tier Two</i>	<i>Air Travel Emissions</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Local Offsets Program</i>	<i>0.25</i>
Total		16.5

Within the Climate subcategory, STARS emphasizes the importance of taking specific actions to measurably reduce GHG emissions. The Greenhouse Gas Emissions Reduction credit accounts for nearly 85% of the points available within the Climate subcategory, indicating that STARS places a higher value on realizing actual emissions reductions than on conducting an emissions inventory. This point allocation further suggests that, while STARS acknowledges the value of making commitments, it considers reducing emissions *in practice* to be more important.

With its strong emphasis on emissions reduction, STARS does not directly reward colleges and universities that already have relatively low GHG emissions. In this way, the STARS framework may fail to recognize schools that previously reduced their carbon footprints in significant ways or were low emitters to begin with.

With regards to the Greenhouse Gas Emissions Inventory credit, STARS rewards institutions not only for conducting a GHG emissions inventory but also for making it publically available and for taking specific types of emissions into account. STARS therefore not only values an

⁸⁶ STARS 1.0 Technical Manual, 94 and 114.

institution's effort to conduct an inventory, but also emphasizes the thoroughness of the inventory and the transparency of the GHG audit process.

Wellesley's Point Scenarios

Table 4.3 Wellesley's STARS Performance in Climate								
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes	
Greenhouse Gas Emissions Inventory Wellesley has conducted a GHG emissions inventory. The GHG emissions inventory is publicly available, either through the American College & University Presidents' Climate Commitment Reporting System, the institution's website, or another public website (Y/N)	1	Yes	Yes	Yes	1	1	1	
	OP Credit 4 GHG Inventory covers:	Air Travel (Y/N)	Yes	Yes	Yes	1	1	1
		Commuting (Y/N)	Yes	Yes	Yes			
		Embodied emissions from food purchases (Y/N)	Yes	Yes	Yes			
		Embodied emissions from other purchased products (Y/N)	Yes	Yes	Yes			
		Solid waste disposal (Y/N)	Yes	Yes	Yes			
		Other (Specify)	Construction	Construction and more	Construction and more			
Greenhouse Gas Emissions Reduction Percentage GHG reduction since 2005	14	6.1%	10%	13%	0.85	1.4	1.8	
Air Travel Emissions Wellesley has policies and/or programs in place to reduce emissions from air travel (Y/N)	0.25	No	No	Yes	0	0	0.25	
Local Offsets Program Institution has a local offsets program through which the institution offsets its greenhouse gas emissions by implementing projects that reduce GHG emissions in the local community. (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25	
Total	16.5				2.85	3.65	4.3	

Energy

Credit Number	Credit Title	Possible Points
OP Credit 7	Building Energy Consumption	8
OP Credit 8	Clean and Renewable Energy	7
<i>Tier Two</i>	<i>Timers for Temperature Control</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Lighting Sensors</i>	<i>0.25</i>
<i>Tier Two</i>	<i>LED Lighting</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Vending Machine Sensors</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Energy Management System</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Energy Metering</i>	<i>0.25</i>
Total		16.5

Within the Building and Energy Consumption credit, STARS emphasizes reduction of building energy consumption over time rather than granting points to institutions that already have relatively energy-efficient buildings. On the one hand, by allocating points this way, STARS encourages schools to continually better their building energy consumption. On the other hand, this type of structure does not reward institutions that already do well in the area of building energy efficiency.

Within the Clean and Renewable Energy credit, STARS outlines five different options for “development and use of clean and renewable energy.”⁸⁷ These options include both on and off-site renewable energy generation, the purchasing of Renewable Energy Certificates, and the use of cogeneration technologies. STARS therefore rewards schools for a number of different renewable energy initiatives.

STARS conceptualizes clean energy generation and purchasing within the same category. It places less emphasis, however, on rewarding the purchasing of energy generated off-campus by third parties; only one of the five options relates to purchasing. Therefore, while STARS recognizes the potentially important contribution of clean energy purchasing, it places higher value on the generation of electricity from clean and renewable sources.

⁸⁷ STARS 1.0 Technical Manual, 114.

Wellesley's Point Scenarios

Table 4.5 Wellesley's STARS Performance in Energy									
Credit Title and Description		Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes	
OP Credit 7	Building Energy Consumption Percentage reduction in building energy use since 2005 (per gross square foot)	8	7.2%	10%	13%	8	8	8	
OP Credit 8	Clean and Renewable Energy Energy Generated or purchased that meets criteria (MMBtu)	7	Option 1	0	0	11,374	0	0	0.14
			Option 2	0	0	0	0	0	0
			Option 3	0	0	0	0	0	0
			Option 4	0	0	0	0	0	0
			Option 5	566,760	566,760	566,760	1.7	1.7	1.7
Tier Two	Timers for Temperature Control Wellesley uses timers to regulate temperatures based on occupancy hours in at least one building (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25	
Tier Two	Lighting Sensors Wellesley uses motion, infrared, and/or light sensors to reduce energy use for lighting in at least one building (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25	
Tier Two	LED Lighting Wellesley uses LED technology in at least one lighting application (Y/N)	0.25	No	No	Yes	0	0	0.25	
Tier Two	Vending Machine Sensors Wellesley has installed vending machine motion sensors for at least one vending machine (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25	
Tier Two	Energy Management System Wellesley uses a centralized energy management system the allows it to track energy consumption and performance in multiple buildings in a central location (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25	
Tier Two	Energy Metering Wellesley meters all energy consumption (including electricity, natural gas, purchased steam) for at least one building (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25	
Total		16.5				10.95	10.95	11.34	

4.5 Comparative Analysis of the Green Report Card and STARS

While GRC focuses on various methods of energy conservation and GHG emissions reduction, STARS places more emphasis on absolute numbers. GRC awards Climate and Energy credit to three major activities: GHG reductions, energy efficiency and conservation, and renewable energy generation and purchase. STARS, on the other hand, primarily emphasizes measured GHG reductions, awarding more than 40 percent of the 33 total possible points in the Climate and Energy categories to actual measured reductions.

STARS mentions the use of specific technologies only in its Tier Two credits, each of which represents only 0.25 points. While Tier Two credit activities serve as a helpful list of best practices in energy conservation and climate change mitigation, STARS gives institutions the freedom to pursue whatever set of methods best fits their needs. STARS therefore takes into account the varying requirements and priorities of schools that differ by size, percentage of residential versus commuter students, financial resources, student involvement, and location.

STARS requires much more rigorous reporting and includes more specific point allocations than does GRC, which awards points in an unclear manner with a non-transparent methodology. For instance, GRC simply asks the yes or no question, “Has your school completed a GHG emissions inventory?” In contrast, STARS requires an institution’s GHG emissions audit to consider certain sectors, such as fuel combustion and energy purchasing. While the GRC survey simply asks for a description of energy saving techniques and in an unclear way allocates points within the Energy Efficiency subcategory, STARS awards specific points for the use of technologies such as cogeneration, vending machine sensors, and lighting sensors. STARS asks for gross measures of both greenhouse gas emissions and building energy use, while GRC only asks for gross measures of greenhouse gases emitted and does not require any gross reporting of campus-wide energy use. In many ways, GRC’s less stringent reporting requirements have the potential to distract institutions’ conservation efforts away from specific improvements in technologies and behavior, instead potentially encouraging schools to simply publicize whatever current efforts exist.

Within the structure of STARS’s methodology, it is simple to both pre-determine a school’s score and to identify methods for improvement. Tier Two credits for specific activities and designated requirements for what constitutes a complete GHG audit, for example, can guide

colleges toward making improvements in the future. Because STARS puts a heavy emphasis on net emissions reductions through a combination of actual reductions and offsets, it also motivates schools to find creative ways to substantially reduce their emissions. A similar reporting standard exists for energy use.

Each year since 2008, Wellesley College has received a C grade in GRC's Climate and Energy category. This grade indicates that Wellesley received 30 to 50 percent of total possible points within the category each year. Wellesley's grade in part reflects the difficulties inherent in making the College's energy system, which is already relatively efficient because of the cogeneration plant, even more efficient. Since almost all of the College's energy production and use is tied to the cogeneration plant, there are few large-scale changes that Wellesley can make in the foreseeable future to dramatically improve energy efficiency.⁸⁸ Although the College has recently made incremental reductions in its greenhouse gas emissions and energy use,⁸⁹ the school did not receive recognition from GRC for its progress. One possible explanation for this unchanging score is that GRC did not consider Wellesley's reductions to be significant. Wellesley also lost 25 possible percentage points and 17.5 extra credit percentage points for not utilizing renewable energy sources, as almost all of Wellesley's energy is generated through its cogeneration plant. It is unclear how Wellesley may have lost other points. It is possible that the College did not give impressive enough explanations for its institutional commitment to greenhouse gas reductions or energy efficiency and conservation measures. Wellesley has an institutional commitment to energy consumption reduction but has no specific commitment to reduce greenhouse gas emissions. Wellesley also may have lost points in the Realized Greenhouse Gases category, as GRC requested audit data from three consecutive years; Wellesley was only able to provide data for 2007.

Wellesley College currently receives 3 out of 16 points in the STARS Climate subcategory and 2 out of 16.5 points in the Energy subcategory. STARS uses 2005 as a baseline year for reporting GHG emissions but is flexible and allows schools to report data collected in other years. STARS, in contrast with GRC, recognizes that not all schools have the resources to conduct emissions audits each year.⁹⁰

⁸⁸ Patrick Willoughby, Director of Sustainability, Personal Communication, March 3, 2010.

⁸⁹ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*.

⁹⁰ The ES 300 2008 GHG audit data did not include data on purchased electricity, a required "Scope 2 emission" for STARS purposes. Any official calculations would need to include this data, working with the Wellesley Municipal Light Plant to determine their fuel mix and emissions from generation. We felt, however, that the ES 300 2008 GHG audit was a fairly comprehensive estimate of Wellesley College's emissions, including all other required Scope 2 emissions and several optional Scope 3 emissions. Purchased electricity also constituted less than 2% of total electricity usage in both

Table 4.6 Reasons Wellesley Does Not Earn STARS Points in Climate

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 4	Greenhouse Gas Emissions Inventory	2	Yes	--	--
OP Credit 5	Greenhouse Gas Emissions Reduction	14	Yes	Only partially doing it	--
<i>Tier Two</i>	Air Travel Emissions	0.25	No	Do not do it but could	Never attempted
<i>Tier Two</i>	Local Offsets Program	0.25	No	Do not do it but could	Never attempted

2005 and 2007.

Another minor adjustment from the ES 300 report calculations would be the issue of forest offsets. STARS requires that any local offsets counted in the net emissions figure be third-party certified; the ES 300 report calculates forest carbon sequestration on campus that is not certified. Our current point calculations remove this “credit” from our net emissions figure.

Table 4.7 Reasons Wellesley Does Not Earn STARS Points in Energy

Credit Title	Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation	
OP Credit 7	Building Energy Consumption	8	Yes	--	--
OP Credit 8	Clean and Renewable Energy	7	Yes	Only partially doing it. Effort in progress	Cogeneration plant
<i>Tier Two</i>	Timers for Temperature Control	0.25	Yes	--	--
<i>Tier Two</i>	Lighting Sensors	0.25	Yes	--	--
<i>Tier Two</i>	LED Lighting	0.25	No	Only partially doing it. Effort in progress	Wellesley has installed several LED lights and is considering expanding its program.
<i>Tier Two</i>	Vending Machine Sensors	0.25	Yes	--	--
<i>Tier Two</i>	Energy Management System	0.25	Yes	--	--

4.6 Initial Recommendations

One low-cost administrative change that Wellesley College could make to improve its performance on SEI's Green Report Card would be to add the specific wording of "greenhouse gases" to the College's institutional commitment to reduce energy use. Adding this commitment could also spur the College to take specific action to decrease its GHG emissions. Such actions might include switching to cleaner fuel sources or implementing a local community offsets program. Even moderate steps, taking into account Wellesley's current infrastructure and financial realities, could give the College immediate energy savings. Because STARS awards points for incremental emissions reductions, taking these actions would improve Wellesley's STARS score and its environmental footprint without forcing the College to commit to carbon neutrality.

It is unlikely that the Wellesley will deviate from using co-generation to supply almost all of its energy in the near future, reducing the opportunity for significant renewable energy generation or purchasing. As a result, future actions to reduce Wellesley's energy use and greenhouse gas emissions could instead take the form of technological improvements. Student, faculty, and staff behavioral

changes, such as reducing use of lighting and personal electronic appliances, could also make a significant impact.

As discussed in the Transportation section of this report, student travel to and from home constitutes a large part of Wellesley's GHG emissions but is not a major consideration of STARS and GRC. This may be because colleges such as Wellesley necessarily require student travel, and it is difficult to ask students and faculty to travel less without hampering the educational goals of the institution. Offsets for this travel is one option, but the point allocations for these ratings systems provide low incentive to pursue travel offsets in comparison with other sustainability initiatives.

As of March 2010, Wellesley is in the process of implementing several initiatives that may improve the College's future scores. LED lights are currently being tested in street lighting applications and may be expanded to the College Club; changing technology may make this an even more feasible option for widespread future use. Wellesley has also considered the feasibility of both geothermal and wind energy, with the possibility of a medium-sized wind turbine to be installed next to the athletic fields. Continuing with these initiatives will further allow Wellesley to decrease its energy use, along with the associated costs and environmental impacts, and reduce its carbon footprint.

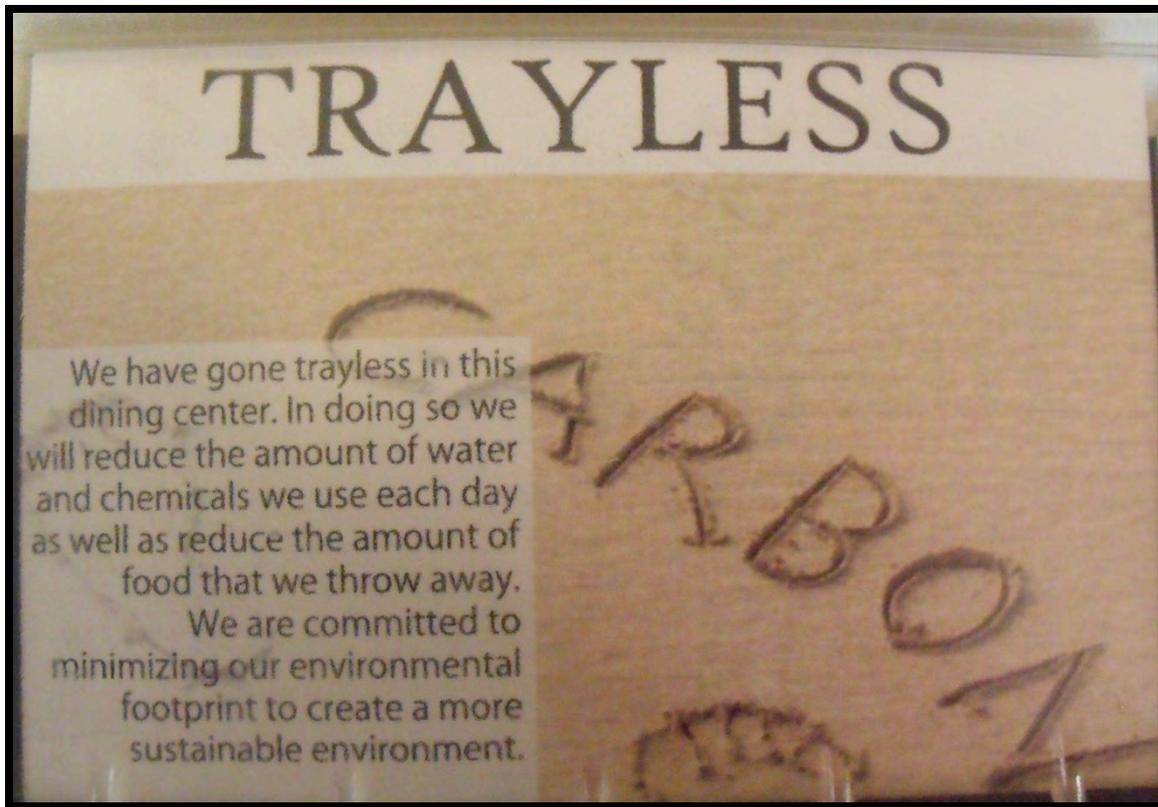


Figure 7. All Wellesley Dining Halls except one went trayless in 2009 to reduce waste

5.0 FOOD AND DINING SERVICES

5.1 Introduction

College Campuses

From trayless dining to reusable to-go cups to on-campus gardens, colleges and universities are transforming the way they think about food and dining services. Since some large universities spend tens of millions of dollars on food annually, the ways that schools approach their dining services can have a critical impact on their overall sustainability. Schools, spurred by institutional commitments and student demands, are considering a holistic approach to dining services, including considering where food comes from, where it is processed, and what chemicals are used in these processes. Many schools are choosing to invest their food purchasing dollars increasingly in local, organic, and other environmentally-friendly food options, purchasing cage-free eggs, grass-fed animal products, hormone- and antibiotic-free meat, and fairly traded products.

Schools have also improved their dining services by diverting and reducing food and other wastes associated with dining practices. While the reorganization of how a school purchases its food can face challenges, especially when the school contracts with a large food distributor, small-scale changes like trayless dining can be a huge step toward dining sustainability. Trayless dining alone can cut food waste by up to 50 percent at some schools and reduce energy costs by eliminating the need for washing trays.⁹¹ Schools also divert food waste by composting food scraps and donating leftover food to food banks. In order to reduce general waste in dining halls, campuses use biodegradable or reusable to-go containers, or offer discounts to those who use reusable containers. There are many strategies involving various levels of investment and time that colleges and universities can employ in order to approach food and dining services more sustainably.

Exemplary Institutions

Colleges and universities that have the greatest impact on food sustainability are using both a bottom-up and top-down approach. Institutions are driven by the voices of their students as well as institution-wide, administrative commitments when approaching their dining services. Schools that have gone above and beyond in this sector have implemented a diverse range of effective and innovative programs.

A direct form of student involvement in improving sustainability within this sector is through the collaboration of on-campus gardens or farms with dining services. These farms can act as a source of local foods for dining halls and as a sink for composted food scraps. A student-run garden at Colby College supplies about 3,000 pounds of food to on-campus dining facilities annually.⁹² Other schools have made institution-wide commitments to local food, such as Vassar College, which aims to purchase 40 percent of foods locally by 2013.⁹³ Finally, dedicated students have begun tackling the seemingly insurmountable challenge of negotiating with food distributors to increase locally grown and processed foods. A student at Columbia University, concerned with the sustainability of food on campus, revived the Columbia University Food Sustainability Project.⁹⁴ Innovative programs, such as Columbia's project and Yale University's Sustainable Food Project, tie

⁹¹ "More College Cafeterias Dump Food Trays," *USA Today*, http://www.usatoday.com/money/industries/food/2008-07-22-trays-college-cafeterias_N.htm (accessed: March 31, 2010).

⁹² "Food & Recycling – Leaders – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/food---recycling/leaders> (accessed: March 31, 2010).

⁹³ "Food & Recycling – Leaders – Green Report Card 2010," *The College Sustainability Report Card*.

⁹⁴ "Schools Go Sustainable: Greening College Food Services," *Wiredap*, <http://www.wiredapmag.org/environment/43530/> (accessed: March 31, 2010).

together student demands, institution commitments, and food into a comprehensive collaboration of many different working parts to achieve sustainability within a college's dining services.⁹⁵

5.2 How Wellesley Approaches Food and Dining Services



Figure 8. All Wellesley Dining Halls offer a variety of vegan and vegetarian options

Priorities

Wellesley has recently changed its contracted food service provider, and therefore the College has not yet collected significant data regarding the management of food and dining under its new contractor. Wellesley's total annual food budget is approximately \$4.8 million, and about 20 percent of that budget is used to purchase locally grown and produced food, organically grown or produced food, and Fair Trade Certified products. Additionally, the College buys seafood according to sustainability guidelines, and dairy products are hormone and antibiotic-free.⁹⁶

⁹⁵ "Yale Sustainable Food Project," *Yale Sustainable Food Project*, <http://www.yale.edu/sustainablefood/> (accessed: March 31, 2010).

⁹⁶ "Wellesley College: Dining Survey – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/Wellesley-college/surveys/dining-survey> (accessed: March 31, 2010).

While Wellesley aims to expand the use of local products and vendors in its dining halls, only four percent of its budget is directed to purchase food grown locally. An additional 16 percent of the budget is used towards purchasing food processed locally.⁹⁷ Because information on food purchasing is not available from Wellesley's previous contractor, it is not possible to establish whether the College is increasing in this particular endeavor. Over the next few academic years, more information will be available to ascertain whether Wellesley is actively striving to purchase more local products. Currently, Wellesley purchases directly from 5 local farms in the area and purchases from 2 local farms through a distributor. Most of the locally bought food consists of fruit, vegetables, honey, syrup, cereal, salad dressing, milk, ice cream, butter, and bread. The College also purchases yogurt, cheese, desserts, salads, and various meat products from local processors; four directly and five through a distributor. Furthermore, Wellesley participates in the Massachusetts Farm to Table Association, which is a farm-to-school program.⁹⁸ Farm-to-school programs across the country connect local farms with public and private schools and colleges to provide local food for dining services, inform students about the path "from farm to fork", foster healthy eating habits, and diminish the harmful environmental impacts of transporting food.⁹⁹ Wellesley's participation in the Massachusetts Farm to Table Association demonstrates a commitment to food sustainability and to involvement and collaboration within the greater community.

Wellesley also strives to reduce water use and paper waste in the dining halls. The College replaced all 17 sprayer heads in the kitchens with high-pressure, low spray heads, which reduces water usage from four gallons to one gallon per minute. Dining services eliminated paper cups from all dining halls except Pomeroy.¹⁰⁰ Moreover, the dining halls on campus, except for Bates, went completely trayless in 2009 to reduce waste and hot water use in the dining halls. Without trays, students are less likely to take excess food and less water is needed to wash trays.

Challenges

One of the greatest challenges Wellesley faces in approaching sustainability within its dining services is that the College contracts with external companies. As a result these companies control

⁹⁷ "Wellesley College: Dining Survey – Green Report Card 2010," *The College Sustainability Report Card*.

⁹⁸ "Wellesley College: Dining Survey – Green Report Card 2010," *The College Sustainability Report Card*.

⁹⁹ "FarmToSchool.org About Us," *FarmtoSchool.org*, <http://www.farmtoschool.org/aboutus.php> (accessed: April 24, 2010).

¹⁰⁰ "Dining Services," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/diningservices.html> (accessed: April 1, 2010).

many of the decisions regarding food purchasing and other dining-related operational practices. Wellesley has contracted with AVI Fresh Foodsystems Inc., a large food service provider, since 2009 and has used two other large food contractors within the past few years. The relatively new relationship with AVI Fresh and the inconsistency of food service providers in general, makes communication between Wellesley and these contractors especially difficult. AVI Fresh is a large company with its own guidelines and policies, therefore it is challenging for the College to increase sustainable food purchasing when contracts with certain food vendors and other policies already exist. Because Wellesley relies on its contractor for both food and dining services, the College cannot prioritize the sustainability of dining services outside of pre-existing contracts.

The organization of Wellesley's dining halls also presents some difficulties in achieving sustainability. Wellesley currently runs 4 full-size dining halls, and just last year the College supported six. The decentralization of dining halls provides a challenging context in which to implement institutionalized, effective measures. Operating four dining halls can also be unsustainable because resources cannot be shared across dining halls and waste may increase as a result of the inability to accurately measure how much food should be served each day.

The composting of food waste, a large component of food sustainability, also faces practical and economic challenges at Wellesley. In order for the College to compost food waste directly on campus, there would have to be nine pick-up points for all the major dining halls on campus, which would require funding and staff to implement. Wellesley would also need to create the infrastructure to support the composting of food waste, including a composting center and methods to transport and utilize compost on campus. Therefore, it would be difficult for the College to start a composting program, as it may not be cost-effective and requires too many resources.

Finally, Wellesley's location in Eastern Massachusetts limits the availability of many local goods year-round. It would not be possible to supply a full range of foods from local farms to the College all year-round because the climate of New England limits the harvesting of many crops at certain times of year.

5.3 How GRC Conceptualizes Food and Dining Services

GRC focuses on purchasing locally-grown and -produced food, including fruits, vegetables, dairy products, meat, bread, honey, and cereal. This rating system prioritizes how many and which local growers and producers the institution utilizes, and the percentage of the total food budget spent on the locally-grown and -produced food. Purchasing local food is important for an institution's path to sustainability because it cuts down on the emissions generated in the transport of food and ingredients.

GRC also focuses on the purchase of organic or sustainably produced food. As with the purchase of local foods, GRC considers the percentage of the food budget spent on organic food. GRC wants not only to know whether an institution purchases organic, but how much of its budget an institution denotes towards organic food and thus prioritizes organics in food purchasing. It also prioritizes the purchasing of grass-fed and confinement-free animal products, hormone and antibiotic-free meat and dairy, and seafood that meets environmental guidelines set by outside organizations. In this evaluation, GRC enables colleges to support a wide variety of sustainable food choices. GRC also asks if and how often vegan entrees are available and if and to what degree, an institution purchases Fair Trade Certified products, such as coffee and tea. An institution's purchase of organic and responsibly produced food contributes to the health of the planet as well as that of the students.

The environmental impact of a college's food consumption goes beyond what is purchased and extends into how the purchased food is prepared, served, and recycled. GRC's rating system therefore prioritizes using sustainable materials in dining halls and having sustainable practices in food services. These sustainable practices include purchasing disposable dishware (favoring biodegradable products), implementing trayless dining, composting food waste, and making recycling available in dining halls.

GRC also asks if the dining services are contracted and whether the dining services are represented on the campus sustainability committee. GRC, however, does not include this information in its online evaluation of each school's dining services, so it is difficult to ascertain the extent to which the rating system values this component of sustainability.

Wellesley's Point Scenarios

Table 5.1 Wellesley's GRC performance in Food

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Locally Grown and Produced Food	Prioritizing the purchase of food from local farmers and producers.	20%	10%	Purchase from 16 local farms/processors.	Only small portion of food budget spent on local food.	Use a greater portion of food budget on local food.
	Participating in farm-to-school programs and producing food on campus.			Participate in Massachusetts Farm to Table Association and have small on-campus farm.	On-campus farm does not produce very much food	Participate more in other farm-to-school programs and expand on-campus farm.
	Sourcing food from on-campus farms and gardens.			Have small on-campus farm/garden.	On-campus farm does not contribute much to food provided to dining halls.	Expand on-campus farm.
Organic and Sustainability Produced Food	Incorporating organic, fair trade, or other sustainably produced foods in the menu.	20%	10%	The college's dining service contractor tries to do this.	This could be done much more.	Use more sustainably produced foods in dining hall menus.
	Offering specifically labeled vegan meals on a daily, weekly, or other regularly scheduled basis.			Pomeroy Dining Hall has at least one vegan entrée each meal.	Not offered frequently in other dining halls.	Could be an option in other dining halls more often.
Fair Trade Products	Purchasing Fair Trade certified coffee and/or other food products.	5%	2.5%	All coffee and 85% of tea purchased is Fair Trade certified.	Not all tea is Fair Trade certified and the college does not purchase any other Fair Trade food.	Could purchase all Fair Trade tea and purchase other Fair Trade food products.
Dishware and Eco-Friendly Incentives	Decreasing dining hall waste by encouraging the use of reusable dishware.	10%		The college mostly uses reusable dishware.	Some dishware is disposable.	Eliminate use of disposable dishware.
	Providing incentives for use of reusable dishware or for bringing a bag			No to-go program where this would be necessary.	No to-go program.	No to-go program where this would be necessary.
	Offering takeout containers made from recycled, biodegradable, or eco-friendly materials			Disposable dishware is biodegradable.	Disposable dishware is biodegradable.	Disposable dishware is biodegradable.

Table 5.1 (Continued from previous page)

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Food Composting and Waste Diversion	Operating a composting program for pre- and post-consumer food waste.	15%		Nothing.	No composting of food waste on campus.	Implement policy and program to compost food waste.
	Donating excess food to a food bank, soup kitchen, or shelter.			Excess food donated to local Boston Food Bank Chapter and Rosie's Place.	This could be done more.	Find more places to donate food.
	Implementing a trayless dining program to reduce food waste and energy and water consumption.			Almost all dining halls are trayless.	A few dining halls still provide trays.	Remove trays from all dining halls.
	Managing additional programs to reduce or reuse waste (e.g., recycling used cooking oil for biodiesel).			All fry oils are recycled -- sold to a vendor who makes biodiesel. College does bi-annual waste audits.	No program to reduce food waste.	Implement program to reduce food waste.

5.4 How STARS Conceptualizes Food and Dining Services

Table 5.2 STARS Summary of Dining Services Points Allocation

Credit Number	Credit Title	Possible Points
OP Credit 6	Food Purchasing	6
<i>Tier Two</i>	<i>Trayless Dining</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Vegetarian and vegan Dining</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Trans-Fats</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Guidelines for Franchises</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Pre-consumer Food Waste Composting</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Post-Consumer Food Waste Composting</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Food Donation</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Recycled Content Napkins</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Reusable Mug Discounts</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Reusable to-go containers</i>	<i>0.25</i>
Total		8.5

STARS prioritizes the purchase of local, organic, Fair Trade, and sustainably harvested and produced food. Purchasing food that meets these requirements improves the sustainability of an institution by supporting local economies, healthier ecosystems, and the livelihood of farmers. In order to earn gain full credit from STARS, half of all food purchased on a campus must be either local¹⁰¹, third-party certified¹⁰², grown on a cooperative farm, or a combination of the three. These purchasing requirements are only for residential dining halls; convenience stores, vending machines, and concessions are excluded.

STARS also prioritizes other sustainable food service initiatives including trayless dining, offering vegetarian and vegan options for every meal, eliminating trans-fats, the adoption of sustainability guidelines for on-site franchises, pre- and post- consumer food waste composting, food donation, the purchase of recycled-content napkins, discounts for reusable mugs, and the provision of reusable to-go containers. While making all of these changes will undoubtedly improve the sustainability of an institution, they are all weighted the same, despite the possibility of huge variation in their impacts. While offering discounts for reusable mugs may have an indirect impact on decreasing waste, this type of initiative is not comparable to the amount of food waste that can be diverted and reused through post-consumer composting. It is also impossible to earn one of these credits if the specific credit is not applicable to your school. For instance, it would be difficult for Wellesley to incentivize the use of reusable mugs because our meal plan is a flat, yearly rate instead of a meal-by-meal basis, but could potentially be feasible in select dining areas on campus where students must pay per item, such as the café in the Campus Center.

¹⁰¹ “Local” is defined as grown and processed within 250 miles of the institution.

¹⁰² This includes USDA Certified Organic, the Marine Stewardship Council Blue Ecolabel, Food Alliance, and Fair Trade.

Wellesley's Point Scenarios

Table 5.3 Wellesley's STARS Performance in Dining Services

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
OP Credit 6 Food Purchasing Percentage of Total Food Expenditure spent on Sustainable Food	6	21%	25%	50%	2.5	3	6
Tier 1 no Trayless Dining Does Wellesley have trayless dining? (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier 1 no Vegetarian and vegan dining Wellesley offers diverse, complete-protein vegan and vegetarian dining options during every meal (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier 1 no Trans-Fats Wellesley uses frying oil that does not include trans-fats and seeks to avoid foods that include trans-fats in its dining operations (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier 1 no Guidelines for Franchises Wellesley has adopted sustainability policies or guidelines for food service franchises operating on campus (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
Tier 1 no Pre-Consumer Food Waste Composting Wellesley has a pre-consumer food waste composting program (Y/N)	0.25	No	No	Yes	0	0	0.25
Tier 1 no Pre-Consumer Food Waste Composting Wellesley has a post consumer food waste composting program (Y/N)	0.25	No	No	Yes	0	0	0.25
Tier 1 no Food Donation Wellesley donates leftover or surplus food (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier 1 no Recycled content napkins Wellesley uses recycled content napkins in its dining service operations (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier 1 no Reusable Mug Discounts* Wellesley dining operations offers discounts to customers who use reusable mugs instead of disposable cups in to-go food service operations (Y/N)	0.25	N/A	N/A	N/A	N/A	N/A	N/A

Table 5.3 (Continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier 1</i> Reusable To-Go Containers* Wellesley provides reusable containers for to-go food; these containers are returned to dining operations for cleaning and re-use (Y/N)	0.25	N/A	N/A	N/A	N/A	N/A	N/A
Total	8.5				3.75	4.5	8

*Credit does not apply to Wellesley

5.5 Comparative Analysis of GRC and STARS

STARS and GRC both prioritize the purchase of responsibly grown, produced, and processed food and reward institutions that provide trayless dining, vegan and vegetarian options, and composting. While GRC does ask how much of the food budget is spent on responsible purchasing, it is unclear if or how much that percentage plays into a college's rating. STARS, however, requires that a college spend at least 50 percent of its food budget on sustainable foods to gain full credit. Wellesley does not spend this much, and therefore does not get full credit, but it would be fairly easy to make some changes to improve the College's score. It is interesting, however, that STARS does not require a higher percentage of the budget to be toward sustainable purchases. To encourage institutions to make the greatest change toward sustainability as possible, it might be more valuable to set the bar higher than at just half the budget.

Like GRC, STARS awards credit simply for the implementation of certain programs, such as composting and the purchasing of recyclable or biodegradable disposables without taking into consideration the scope of the program. Wellesley's scores on both programs in some ways benefit from this formulation because many of the College's programs are small-scale and the implementations of some policies, such as trayless dining, are not campus-wide. Because Wellesley has a non-centralized dining hall system, policies vary in ease-of-application across different dining halls, though institutionalizing changes in all dining halls is still achievable.

Both systems also are interested in how institutions handle to-go food service operations because having the purchasing of unsustainable containers generates unnecessary waste. Wellesley does not have a to-go food service operation, and therefore does not purchase disposable food

containers that students might throw away (except for paper cups in the kosher dining hall). Wellesley thus has more sustainable food services practices than institutions that have a to-go option. In STARS, the colleges with to-go operations that improve them are eligible for more points in the Dining Services section than an institution such as Wellesley that does not have a to-go option. An institution with a more unsustainable dining service to-go program could receive a higher score in this section than an institution that makes the more sustainable choice of having no to-go food service at all.

Table 5.4 Reasons Wellesley Does Not Earn STARS Points in Dining Services

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 6	Food Purchasing	6	No	Only partially doing it	Purchase some sustainably grown/processed food.
<i>Tier Two</i>	Trayless Dining	0.25	Yes	--	--
<i>Tier Two</i>	Vegetarian and vegan Dining	0.25	Yes	--	--
<i>Tier Two</i>	Trans-Fats	0.25	Yes	--	--
<i>Tier Two</i>	Guidelines for Franchises	0.25	No	No formal policy	Makes some sustainability decisions beyond AVI guidelines, but no formal policy.
<i>Tier Two</i>	Pre-consumer Food Waste Composting	0.25	No	Do not do it but could	Do not compost food waste.
<i>Tier Two</i>	Post-Consumer Food Waste Composting	0.25	No	Do not do it but could	Do not compost food waste.
<i>Tier Two</i>	Food Donation	0.25	Yes	--	--
<i>Tier Two</i>	Recycled Content Napkins	0.25	Yes	--	--
<i>Tier Two</i>	Reusable Mug Discounts	0.25	No	Credit does not apply to Wellesley	No to-go food service operations.
<i>Tier Two</i>	Reusable to-go containers	0.25	No	Credit does not apply to Wellesley	No to-go food service operations.

5.6 Initial Recommendations

Wellesley has implemented a plethora of programs and initiatives to improve the sustainability of its dining services; these programs serve as a solid foundation on which to build and expand the College's commitment to sustainability. Some programs will be easy for the college to employ in order to supplement currently standing programs, while others require significant additional investment. The first thing Wellesley should consider is effecting and documenting a campus-wide commitment to sustainable food and dining practices. Doing so would benefit Wellesley's GRC rating, and it would also help forge a framework within which to develop other sustainable initiatives. Wellesley could benefit from a program that promotes collaboration from various sectors and departments across the campus and aims to connect many facets involving food on campus, including dining services and academics. In this same vein, the College could also designate one dining hall as a sustainability-themed hall, in order to establish a widely visible commitment. Such a dining hall could also serve as a place to experiment with sustainability options that, if successful, could be adopted elsewhere on campus.

When approaching food sustainability, purchasing initiatives are the most challenging and require the most investment; however, they will most likely have the greatest impact both in terms of the Wellesley's score on GRC and STARS and its overall environmental footprint. At this time, Wellesley does purchase some sustainable food, including local and organic foods, but could do more. For example, the College does not purchase any cage-free eggs, confinement-free meat, or hormone- or antibiotic-free meat, and only about four percent of its annual food budget goes towards food that is grown locally.¹⁰³ The greatest challenge is that Wellesley gets its food through a contract with AVI Fresh, a food service provider, and for the most part, the decisions of food purchasing are left up to AVI. Thus, if the College wants to reevaluate or reform its purchasing decisions, it needs to negotiate with the distributor; at this time, the ability for Wellesley to purchase food independently of a distributor is not a feasible option. Negotiating and communicating with AVI Fresh is not an insurmountable challenge and if there is significant demand from both the administration and students to purchase more sustainable food, the distributor may be more willing to incorporate sustainable practices into dining services.

¹⁰³ "Wellesley College – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/wellesley-college/surveys/dining-survey> (accessed: March 31, 2010).

Furthermore, students and the administration should hold AVI Fresh accountable for any stated commitments to sustainability. Wellesley's use of local and organic foods in the dining halls could also be augmented by food sourced directly from the campus garden. The implementation of this program requires communication between students and AVI Fresh administrators, verification that food at the farm meets any standards, and transportation of food from the farm to the College. Students involved in this program would be more directly invested in issues of food sustainability. Finally, while Wellesley does earn points under GRC and STARS for having a vegetarian and vegan option at each meal, the College does not prioritize these meals. A greater focus on vegetarian and vegan dining would benefit both students and overall food sustainability.

While total food waste and dining service waste is not incorporated into either rating system, practices that serve to reduce or divert this waste are, and Wellesley would benefit from the incorporation of these practices. At this time, the College does not have a composting program for pre- or post-consumer food scraps on campus. Implementing a composting program would involve a significant investment of time and funds to begin with, but a compost program would help divert a substantial amount of food waste and decrease waste costs, in addition to earning Wellesley more points under both systems. Wellesley could also eliminate food waste by monitoring waste in each dining hall and reporting it to the student body. Wellesley could also reduce other dining hall related wastes by eliminating the use of to-go containers. Despite the fact that the College provides biodegradable ones, the total use of reusable containers is a fairly easy option to implement, though students might meet this change with some opposition.



Figure 9. Alumnae Valley Restoration converted a 175 spot parking lot into a functioning wetland

6.0 GROUNDS

6.1 Introduction

College Campuses

Grounds maintenance plays a significant role in the upkeep and management of college and university campuses in the United States. Suburban and rural institutions with large areas of non-built environment often take great care to maintain their landscapes, and even urban schools engage in gardening and maintenance practices. The land around an institution can provide ecosystem services, and improving sustainability in grounds-keeping can impact a wide range of other environmental indicators, such as water, air, and student quality of life. At the same time,

mismanagement of campus landscapes can cause environmental damage that poses a danger to current and future local and regional residents.

Implementing sustainable grounds management practices can impact air and water quality, improve campus aesthetics, and create educational opportunities. Increasing the proportion of non-built to built environment also allows a campus to harness rain as a water resource and reduces runoff. Trees not only have aesthetic value, but also provide carbon sequestration, natural shade and temperature control for indoor and outdoor areas, and habitat for wildlife. Promotion of native plants decreases the amount of water and fertilizer needed to maintain a landscape and helps reduce the need for pest control. Emphasizing native plants can also help prevent invasive species from becoming costly and difficult to control. About 85 percent of the invasive species in the United States were introduced for landscape or ornamental use.¹⁰⁴ Runoff from chemical fertilizers and pesticides can trickle into watersheds, polluting the water and affecting the balance of aquatic life. Ecosystems in the Chesapeake Bay and the Gulf of Mexico have famously suffered. On a local scale, contaminants from chemical use increase water treatment costs and threaten human health. About 33 million tons of yard waste entered the U.S. municipal waste stream in 2007, representing roughly 13 percent of all waste produced in the United States.¹⁰⁵ Re-using plant trimmings in the form of mulch or compost can reduce fertilizer and irrigation costs, decrease waste disposal costs, and help to close an ecological loop. Sustainable grounds management can also offer a school millions of dollars in savings or avoided costs.

In the fields of construction and landscape architecture, the idea of holistic, sustainable grounds management has become increasingly popular as information about ecological and economic benefits and costs has emerged. In 2006, to promote sustainability in open spaces as well as in built landscapes, the American Society of Landscape Architects joined forces with the Lady Bird Johnson Wildflower Center in Austin, Texas and the National Botanical Garden to establish the Sustainable Sites Initiative (SITES). In 2009, SITES released its ratings system, which evaluates soils, hydrology, vegetation, materials/construction, and human well-being and interaction. The US Green Building Council, which aided in the development of these performance benchmarks, plans to incorporate SITES metrics into future versions of the LEED Green Building Rating System.¹⁰⁶

¹⁰⁴ Reichard, S.H. and P. White, *Horticulture as a pathway of invasive introductions in the United States*. *BioScience* 51 (2001): 103-113, from the Sustainable Sites Initiative, <http://www.sustainablesites.org/why/>.

¹⁰⁵ US EPA, "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2007," <http://www.epa.gov/epawaste/nonhaz/municipal/pubs/msw07-fs.pdf> (accessed: March 31, 2010).

¹⁰⁶ "History," *The Sustainable Sites Initiative*, <http://www.sustainablesites.org/about/> (accessed: March 31, 2010).

Exemplary Institutions

A number of both urban and rural institutions implement sustainable grounds management practices, adapting landscape maintenance to their needs to gain environmental, economic, health, and social benefits. Over 72 percent of institutions surveyed by the National Wildlife Federation's Campus Report Card 2008 use native plants, while 61 percent of schools have an Integrated Pest Management (IPM) program. Seventy percent of institutions wish they could do more in the future to make their landscaping practices more sustainable.¹⁰⁷

The Sustainable Sites Initiative highlights Evergreen State College in Olympia, Washington as a case study.¹⁰⁸ The public institution, which has a \$30 million endowment for 4,800 students, institutionalized sustainability in grounds management despite tight budget constraints. In 2008, the school completed its Master Plan, which identified environmental stewardship as one of the main goals for its 1,033-acre campus. The Master Plan establishes a reserve that limits development on key ecological habitats, including mixed forests and wetlands. Evergreen uses no pesticides or herbicides, uses only natural fertilizers, and does not maintain most of its campus, about 80 percent of which is forested. Fourteen teaching gardens, outdoor laboratories, and a 1,000-acre lowland rainforest offer community members research opportunities in plant ecology and carbon sequestration.¹⁰⁹

Arizona State University at Tempe (ASU) is another a model institution in sustainable grounds-keeping. ASU is a large school in an urban location, but it has nevertheless made significant achievements in terms of sustainable grounds-keeping. ASU uses an IPM plan, although it is not legally required to do so. The University composts and re-uses all landscaping waste on campus, allowing it to eliminate the use of commercial fertilizers. The only insecticides used are for termite spraying within buildings. The entire 145-acre campus is designated as a historical arboretum, and tree-lined malls, planter boxes, and landscaping populate the campus with vegetation. Landscaping decisions take both historical and ecological factors into account: the University plans construction projects around Native American artifacts on campus and maintains vegetation as it was found during each phase of construction. ASU renovates older areas, replacing the plants that were there when the site was developed, and plants newer areas using vegetation

¹⁰⁷ "Campus Environment 2008: National Report Card on Sustainability in Higher Education," *National Wildlife Federation*, 50.

¹⁰⁸ "Case Study: Evergreen State College – Master Plan," *The Sustainable Sites Initiative*, <http://www.sustainable-sites.org/cases/show.php?id=20> (accessed: March 31, 2010).

¹⁰⁹ "Case Study: Evergreen State College – Master Plan," *The Sustainable Sites Initiative*.

native to the Sonoran desert. The grounds department even recently developed a Japanese-style Zen garden using recycled construction materials from old buildings instead of water-hogging bamboo.¹¹⁰ ASU was also one of the first participants in the Arbor Day Foundation's Tree Campus USA program, which recognizes institutions for effective management of campus trees. An executive order by Arizona's governor two years ago banned backpack leaf blowers, and grounds staff now use brooms for all brush work, eliminating noise, air pollution, and sediment that could contribute to desert windstorms. The school is currently exploring rainwater harvesting.¹¹¹

New York University (NYU) is a large, private, urban school, with buildings scattered across 229 square acres in Greenwich Village in Manhattan, New York City. The institution's lack of a traditional campus limits opportunity for activities such as wildlife habitat creation. But according to Jeremy Friedman, NYU's manager of sustainability initiatives, the school's non-traditional campus eliminates many of the environmental problems associated with grounds-keeping. There is no tendency, for example, to plant wide monoculture lawns of Bermuda grass.¹¹² Instead, NYU plants its gardens with native plants and "low-mow" native grasses, initiated a plan to eliminate all synthetic fertilizers, established an IPM plan, and uses low-volume micro-irrigation. In 2008, Supervisor of Sustainable Landscaping George Reis used a \$25,000 senior class legacy gift to set aside and design a 2,200 square foot native woodland garden. Thirty-seven species of ferns, bushes, and young trees indigenous to Manhattan Island in the 17th century were planted on the parcel, equivalent to only 0.05 acres but worth millions of dollars.¹¹³

¹¹⁰ "Groundskeeper adds tranquility to Tempe campus," http://asunews.asu.edu/20071205_zengarden(accessed: March 31, 2010).

¹¹¹ Most information gathered through personal communication with Ellen Newell, Assistant Director of Arboretum/Grounds Services, ASU-Tempe, March 31, 2010.

¹¹² Jeremy Friedman, Personal communication, Manager of Sustainability Initiatives, March 31, 2010.

¹¹³ Anne Raver, "In The Garden: Restoring Manhattan as It Once Was," *New York Times*, September 2, 2009, <http://www.nytimes.com/2009/09/03/garden/03garden.html>(accessed: March 31, 2010).

6.2 How Wellesley Approaches Grounds

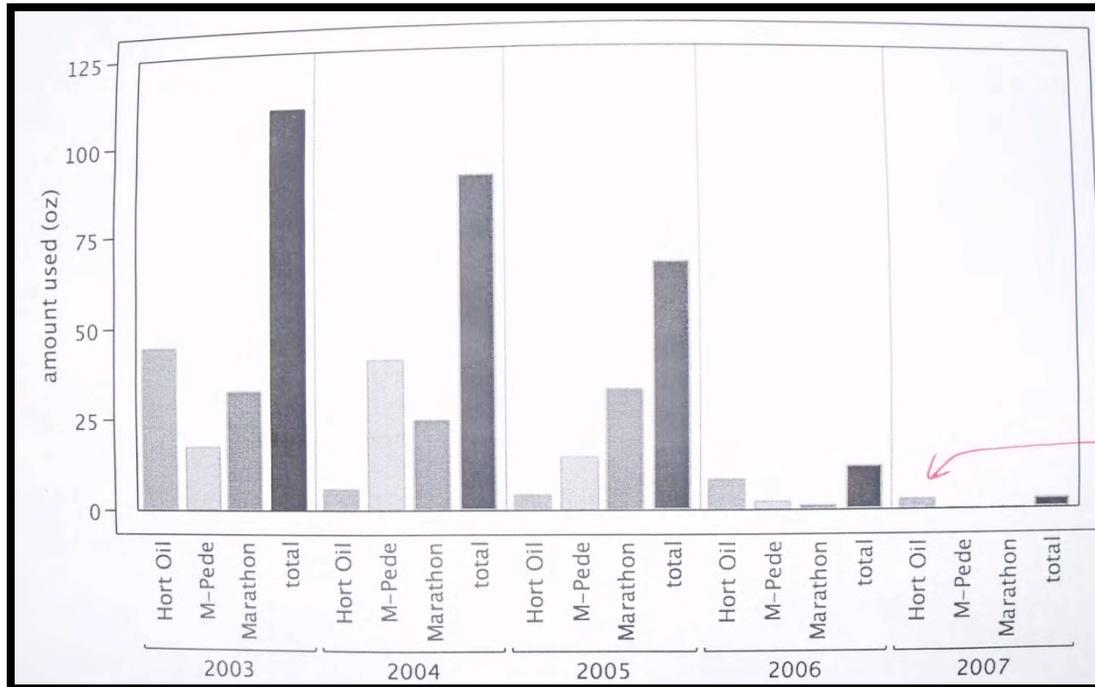


Figure 10. Chemical Use Reductions 2003-2007 in Wellesley College Botanic Gardens through IPM

Priorities

One of Wellesley's distinguishing features is its beautiful campus. With its rolling hills, meadows, footpaths, woodlands, and wetlands, Wellesley's 500 acres include the Hunnewell Arboretum, the Alexandra Botanic Garden, and Lake Waban.¹¹⁴ In 1902, landscape architect Frederick Law Olmsted, Jr. described the campus as "not merely beautiful, but with a marked individual character not represented so far as I know on the ground of any other college in the country."¹¹⁵ Forbes Magazine recently included Wellesley in its list of the world's most beautiful college campuses,¹¹⁶ and Wellesley ranks #8 in Princeton Review's beautiful campus list.¹¹⁷

Wellesley's landscape gives grounds management particular importance in terms of campus sustainability. In the 1990s, Wellesley began a strong effort to adopt sustainable grounds

¹¹⁴ "Wellesley College: The Campus," *Wellesley College*, <http://www.wellesley.edu/Welcome/buildings.html> (accessed: March 31, 2010).

¹¹⁵ "Wellesley College Historical Article," *Wellesley College*, http://www.wellesley.edu/Welcome/HistoricalMaps/maps_main.html (accessed: March 18, 2010).

¹¹⁶ Le Draoulec, Pascale. "In Pictures: The World's Most Beautiful College Campuses," *Forbes Magazine*, http://www.forbes.com/2010/03/01/most-beautiful-campus-lifestyle-college_slide.html (accessed: 1 March 2010).

¹¹⁷ "The Best 351 Colleges, Quality of Life: Most Beautiful Campus," *Princeton Review*, <http://www.princetonreview.com/Schoollist.aspx?type=r&id=728> (accessed: March 31, 2010).

maintenance methods.¹¹⁸ The College currently gives significant attention to sustainable landscaping and grounds-keeping, aiming to use innovative, cutting-edge techniques and to serve as a model institution on a national level.¹¹⁹

Central to Wellesley's approach to sustainable landscaping and grounds management is the overarching goal of inviting people into the landscape. Focusing on the "primacy of the pedestrian,"¹²⁰ Wellesley aims to foster within members of the community an appreciation of the outdoors and the natural environment. The College increasingly strives to maintain open space, protect natural habitats, and utilize ecologically sound grounds maintenance practices while maintaining the campus' aesthetic value.¹²¹

With this broad vision, Wellesley implements a number of sustainable grounds management initiatives. Amongst its central priorities, the College aims to limit on-campus use of inorganic fertilizers, herbicides, pesticides, and fungicides. Wellesley's IPM plan is integral to meeting this goal. Integrated Pest Management, according to principles established by the U.S. Environmental Protection Agency, is a method of pest management that "uses current, comprehensive information on the life cycles of pests and their interaction with the environment," in combination with best available pest control methods, to "manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment."¹²² IPM plans involve taking four steps to control pests: 1.) Setting action thresholds; 2.) Monitoring and identifying pests; 3.) Prevention; and 4.) Control.¹²³

In accordance with its IPM plan, Wellesley strives to limit the use of pesticides to the greatest degree possible, applying them only in worst-case scenarios. Pesticides, where used, are "carefully targeted," and biological pest control methods are implemented wherever possible. Wellesley constantly refines its IPM plan to include innovative approaches and adapts the plan to best suit the College's needs.¹²⁴

In conjunction with its IPM plan, Wellesley limits its fertilizer use and, where fertilizer is deemed necessary, substitutes organic fertilizers for synthetic ones. Wellesley initially aimed to

¹¹⁸ Patrick Willoughby, Director of Sustainability, Personal communication, March 30, 2010.

¹¹⁹ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 1.

¹²⁰ "Landscaping," *Wellesley College Sustainability*.

¹²¹ "Landscaping," *Wellesley College Sustainability*.

¹²² "Integrated Pest Management (IPM) Principles," U.S. Environmental Protection Agency website: <http://www.epa.gov/pesticides/factsheets/ipm.htm>(accessed: March 31, 2010).

¹²³ "Integrated Pest Management (IPM) Principles," U.S. Environmental Protection Agency website: <http://www.epa.gov/pesticides/factsheets/ipm.htm>(accessed: March 31, 2010).

¹²⁴ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 1.

increase its organic fertilizer use to 30 percent of total fertilizer by 2008. The College exceeded this goal; in 2008, 41 percent of all fertilizer was organic. All inorganic fertilizers used on campus are long chain nitrogen fertilizers, helping to minimize the frequency of application and reduce the leaching of fertilizer into surrounding areas.¹²⁵

Wellesley implements a wide range of ecological control methods to reduce the need for fertilizer application. For instance, in the summer of 2007, a student project released *Galerucella* beetles to control invasive Purple Loosestrife in the Paint Shop Pond wetlands and the Science Center meadow. The beetles had a significant impact in Paint Shop Pond, defoliating or weakening approximately 90 percent of all Purple Loosestrife in the area.¹²⁶ Within the past year, the initiative has also been highly successful in the Science Center Meadow.¹²⁷

Wellesley is in the process of investigating and testing additional methods of ecologically friendly control. In the summer of 2007, the College initiated a project to test the application of high temperature corn and coconut sugars to control invasive *Phragmites* in the Science Center meadow. While these efforts ultimately proved ineffective, they exemplify Wellesley's creativity in pursuing sustainable grounds initiatives and willingness to experiment with new techniques.¹²⁸

In its grounds-keeping measures, Wellesley also emphasizes expanding green spaces and establishing, restoring, and maintaining "naturalistic areas." One of Wellesley's major ongoing initiatives is to convert paved areas into green space. With the underlying philosophy that "the automobile must be subservient to the landscape and pedestrians," Wellesley has replaced 5.7 acres of asphalt and gravel with landscape.¹²⁹

Wellesley also takes measures to increase the number of trees and shrubs on campus, particularly emphasizing the use of native species. Between 1997 and 2002, the College planted over 2,500 trees, 7,000 shrubs, and 17,000 herbaceous plants.¹³⁰ Wellesley added 162 trees and 445 shrubs to the landscape in 2008 alone. For example, in re-landscaping Pendleton Hill, the College cleared out invasive plants and replaced them with native species. Wellesley also plans to remove dead Hemlocks from the shores of Lake Waban and plant native trees.¹³¹

¹²⁵ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 2.

¹²⁶ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 3.

¹²⁷ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 18.

¹²⁸ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 3.

¹²⁹ "Landscaping," *Wellesley College Sustainability*.

¹³⁰ "Landscaping," *Wellesley College Sustainability*.

¹³¹ "Wellesley College – Sustainability Update, January 2009," *Wellesley College Sustainability*, 3.

Wellesley additionally prioritizes the expansion of natural areas on campus. For instance, as part of its remediation of Paint Shop Pond, Wellesley recreated 7.5 acres of wetlands, increasing wetland area on campus by 30 percent. Through its remediation efforts, the College restored Lake Waban to a pristine state and created viable habitat for wildlife species.¹³² In the interest of protecting the lake and surrounding native landscape, Wellesley has a formal policy not to develop the shorelines of Lake Waban. The College also installs blue bird boxes and bat boxes to promote native wildlife conservation.¹³³

Through another landscaping initiative, Wellesley expanded natural areas at the Nehoiden Golf Course by 25 percent in recent years and currently aims to obtain International Audubon Certification for the property. The College completed the planning stage of the certification process and is currently waiting for evaluation and recommendations from Audubon International.¹³⁴ The College also increasingly uses less mowing on its grounds, allowing native plant species and wildflowers to grow in areas such as the Science Center meadows and a parcel of land adjacent to Washington Street.¹³⁵

Composting is another key grounds initiative at Wellesley. The College composts all of its yard waste on site, utilizing it for landscaping projects on campus. Yard waste provides nearly all the compost used on campus; only very large landscaping projects use loam from elsewhere. With the exception of trees used for firewood, Wellesley grinds all of its woody debris, producing approximately 90 percent of the mulch used at the College.¹³⁶

Challenges

While Wellesley has had great success in its implementation of sustainable grounds initiatives, the College faces certain constraints. There is a limit to which the College can manage its land in a “naturalistic” way. Wellesley seeks to expand natural areas and native plantings to the greatest degree possible, but it also seeks to maintain certain traditionally landscaped areas, such as lawns and flower gardens. Because the College prioritizes a particular aesthetic, it can only allow natural landscapes to expand up to a point. It is also highly unlikely that the College will completely eliminate its fertilizer and pesticide use in the near future.

¹³² “Landscaping,” *Wellesley College Sustainability*.

¹³³ Patrick Willoughby, Director of Sustainability, Personal Communication, March 30, 2010.

¹³⁴ “Wellesley College – Sustainability Update, January 2009,” *Wellesley College Sustainability*, 2.

¹³⁵ “Wellesley College – Sustainability Update, January 2009,” *Wellesley College Sustainability*, 2.

¹³⁶ “Solid Waste (Rubbish),” *Wellesley College Sustainability*.

Ecologically friendly control and management practices are subject to unpredictable biological factors. Such techniques are often experimental and do not yield perfect results, as demonstrated by the failure of the use of sugars to control Phragmites. In some cases the College must resort to more traditional and environmentally damaging techniques, despite its attempts at sustainable management.

The College also faces limitations because grounds management decisions must be made with the interest of campus users in mind. Wellesley is a place designed for human use; as a result, the College in some cases compromises sustainability for practical reasons. For instance, Wellesley must salt many of its roads and footpaths in the wintertime in the interest of the safety of its community members. The College does aim to implement sustainable snow removal initiatives, using sand instead of salt around sensitive areas such as wells, but there is a limit to which these initiatives can be expanded.¹³⁷

6.3 How GRC Conceptualizes Grounds

The Green Report card does not include a separate category for Grounds. Instead, GRC acknowledges two aspects of grounds, composting landscape waste and use of organic pesticides, within the categories of Food & Recycling and Green Purchasing, respectively. Composting landscape waste translates directly into a credit, whereas the use and purchasing of organic pesticides is acknowledged only as a survey question.

GRC does not prioritize the broader category of Grounds in its overall assessment of institutional sustainability. This observation is evident in the fact that the only credit assigned within this category, composting of landscape waste, accounts for only five percent of the Food & Recycling category, or 0.5 percent of an institution's total score.

In its survey, GRC is interested not only in whether an institution composts, but in what percentage of landscape waste is composted. GRC also encourages institutions to describe their efforts, suggesting that it evaluates action in this area on a non-absolute, weighted scale.

¹³⁷ Patrick Willoughby, Director of Sustainability, Personal Communication, March 30, 2010.

Wellesley's Point Scenarios

Table 6.1 Wellesley's GRC performance in Grounds

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	What Wellesley doesn't earn credit for	Changes Wellesley could make
Composting (Aside from Dining Facilities)	Composting landscaping waste or recycling landscape waste into mulch for use on campus	5%		Wellesley composts 100% of landscaping waste on campus	--	--
	Providing composting receptacles around campus in locations other than dining halls					

6.4 How STARS Conceptualizes Grounds

Table 6.2 STARS Summary of Grounds Points Allocation

Credit Number	Credit Title	Possible Points
OP Credit 9	Integrated Pest management	2
<i>Tier Two</i>	<i>Native Plants</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Wildlife Habitat</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Tree Campus USA</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Snow and Ice removal</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Compost</i>	<i>0.25</i>
Total		3.25

At 3.25 possible points, Grounds makes up only 1% of an institution's possible score in STARS. While evidently not a priority, STARS includes Grounds as a separate category, by which it aims to "recognize institutions that plan and maintain their grounds with sustainability in mind."¹³⁸ STARS also notes, however, that this category is more relevant to some campuses than others. Some institutions are urban and have minimal grounds or landscape, while other institutions like Wellesley distinguish themselves as landscaped campuses. There exists a broad range in the

¹³⁸ STARS 1.0 Technical Manual, 139.

importance of Grounds to institutional sustainability. STARS appears to address this issue by weighing the category minimally, while still recognizing Grounds as a distinct aspect of institutional sustainability.

Of the six credits available within Grounds, STARS awards the most points to institutions that practice Integrated Pest Management (IPM). STARS uses IPM because its predefined principles facilitate an institution's reporting process.¹³⁹ Rewarding schools for using IPM also allows STARS to measure campus-wide sustainability by way of an established framework, which aligns with STARS's general preference for standardization.

STARS is concerned with the extent to which institutions practice IPM on campus, awarding full points only to institutions with IPM plans that cover 100 percent of campus grounds. By considering the percent, not total acreage, of grounds covered by an IPM plan, STARS prioritizes the extent of participation over the absolute environmental impact of IPM. This distinction is relevant where there is significant variability in the size of campus grounds. Practicing IPM on 50 percent of a large, landscaped campus may have a larger environmental benefit than practicing IPM fully on a much smaller campus. Since Grounds is a category for which some institutions are intrinsically capable of having a greater environmental impact than others, this methodology levels the playing field, but denies institutions with large campus grounds recognition for their absolute sustainability efforts.

The five Tier Two credits under Grounds allocate points on absolute terms and without considering the extent of a school's action. For all Tier Two credits except Tree Campus USA, an institution can receive full credit without having a formal policy in place. STARS wants to know simply that institutions have considered the environmental benefits of snow and ice removal practices, native vegetation, composting and wildlife habitat, and that the institution has taken *some* action on these fronts. The rationale for this structure may be that the environmental benefits of Tier Two credit actions are hard to measure. Moreover, Tier Two credits in particular vary greatly in how applicable they are to institutions nationwide.

Although the Tier Two credits available in Grounds cover a range of topics within landscape management, STARS does not include a credit related to fertilizer use. The environmental rationale for including fertilizers is similar to the concern presented by pesticide use, so its absence in the STARS framework is puzzling. Moreover, use of organic fertilizer was originally included in the STARS pilot program in place of IPM. Schools participating in the pilot study suggested the

¹³⁹ STARS Pilot Project Results, 153, http://www.aashe.org/files/documents/STARS/STARS_Pilot_Results.pdf.

switch to IPM, voicing uncertainty about the validity of the organic certification process, and felt that IPM provided a better assessment of sustainable grounds management.¹⁴⁰

It is important to note that elements of Grounds intersect with other credit categories within STARS. For example, STARS includes irrigation and storm water runoff planning in the Water category. It is evident that STARS recognizes the complexity of grounds and landscape management. STARS gives this category, broadly defined, more credit than is apparent through the Grounds category alone.

Wellesley's Point Scenarios

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>OP Credit 7</i> Integrated Pest Management Percentage of Campus Grounds Covered by an IPM Plan	2	100%	100%	100%	2	2	2
<i>Tier Two</i> Native Plants Wellesley prioritizes the use of native plant species in landscaping (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Wildlife Habitat Wellesley has programs in place to protect and/or create wildlife habitat on institution-owned land (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Tree campus USA Wellesley is recognized by the Arbor Day Foundation's Tree Campus USA program (Y/N)	0.25	No	No	0.25	0	0	0.25
<i>Tier Two</i> Snow and Ice Removal Wellesley has implemented technologies or strategies to reduce the environmental impacts of snow and ice removal (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Compost Wellesley composts or mulches waste from grounds keeping, including grass trimmings (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	3.25				3	3	3.25

¹⁴⁰ STARS Pilot Project Results, 153.

6.5 Comparative Analysis of GRC and STARS

Both GRC and STARS assign comparatively little point value to the Grounds category. This fact reflects the difficulty inherent in creating a single framework for measuring sustainable grounds management across colleges and universities. As institutions, all colleges and universities use water and energy, produce waste, and have curricula, buildings, and financial concerns. But not all colleges have significant grounds. It is therefore difficult to reward schools that use sustainable landscaping practices without disadvantaging schools with limited grounds.¹⁴¹ The two ratings systems' conceptualizations of the Grounds category acknowledge this fact.

In minimizing the Grounds category, GRC and STARS both suggest that other sustainability initiatives have more significant environmental impacts. STARS includes Grounds as a more definitive category than does GRC, but neither rewards colleges for outstanding sustainable grounds-keeping initiatives. For example, under the framework of STARS's Wildlife and Native Plants Tier Two credits, schools with truly exceptional and impactful initiatives receive the same number of points as institutions that take only minimal action.

Both STARS and GRC reward colleges and universities for onsite composting programs. The environmental advantages of onsite composting seem relatively small compared to the benefits of other sustainable grounds-keeping initiatives, such as decreasing pesticide or fertilizer use. For example, a small school that occasionally trims small amounts of shrubbery could have a larger environmental impact by instead discontinuing pesticide use on its shrubbery. The inclusion of onsite composting in both systems speaks to the fact that most campuses have at least some trees, bushes or sections of lawn; the category therefore has near universal applicability across campuses.

GRC's composting question requires calculating a percentage of composted grounds materials. This structure suggests that the rating system allocates points on a sliding scale, assigning incremental credit to institutions depending upon the percentage of waste they compost. In contrast, STARS assigns credit on a yes/no basis. Awarding points based on a percentage leaves room for a school to improve its score on GRC if it does not already compost 100 percent of grounds trimmings. Although STARS acknowledges that not all credits apply universally by adjusting the total points possible for each institution, assigning points on a yes/no basis does not necessarily encourage improvement, since an institution can earn credit by doing the bare minimum.

¹⁴¹ In its introduction, the *STARS 1.0 Technical Manual* does acknowledge that future versions will better account for regional and institutional differences. *STARS 1.0 Technical Manual*, 4.

Neither system addresses the negative environmental impacts of fertilizer and water use in traditional lawn maintenance. Furthermore, neither STARS nor GRC directly rewards schools for having designated botanic gardens, greenhouses and other such landscape elements that can serve as important educational resources for an institution and the surrounding community. Lastly, GRC indirectly acknowledges the importance of switching to organic pesticides under the purchasing section, and the STARS IPM criteria encourage reduced pesticide use. But neither system definitively discourages chemical use in grounds maintenance. This prioritization may reflect the perceived necessity of pesticides and their ease of use compared to alternative methods.

Table 6.4 Reasons Wellesley Does Not Earn STARS Points in Grounds					
Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 9	Integrated Pest Management	2	Yes	--	--
<i>Tier Two</i>	Native Plants	0.25	Yes	--	--
<i>Tier Two</i>	Wildlife Habitat	0.25	Yes	--	--
<i>Tier Two</i>	Tree campus USA	0.25	No	Do not do it but could Does not align with Wellesley's priorities	The idea has not been pushed, and the added administrative burden does not align with Wellesley's best interests.
<i>Tier Two</i>	Snow and Ice Removal	0.25	Yes	--	--
<i>Tier Two</i>	Compost	0.25	Yes	--	--

6.6 Initial Recommendations

Wellesley's current landscaping practices already go above and beyond the minimum requirements of both STARS and GRC criteria. The only points Wellesley does not receive on STARS are for Tree Campus USA Tier Two credit. The Tree Campus program, designed to recognize "excellence in campus tree management,"¹⁴² requires an established committee, a yearly allocation of funds to tree planting, and yearly programs and educational service projects. In Wellesley's well-kept woodlands, arboretums, and botanical gardens, caring for trees already plays an

¹⁴² "Tree Campus USA," *The Arbor Day Foundation*, <http://www.arborday.org/programs/treecampususa/> (accessed: March 3, 2010).

integral role in grounds-keeping. Participating in the Tree Campus program would only require the College to comply with complicated guidelines; doing so would involve unnecessary administrative effort.

Rather than focus its efforts on implementing the Tree Campus program, Wellesley should continue to pursue its already substantial grounds management goals and should expand current sustainable landscaping initiatives. For example, Wellesley should continue to increase its use of organic fertilizers relative to inorganic ones. Given the extensive lawns on campus, further upgrading of horticultural aerification and seeding practices that improve lawns could reduce the college's use of herbicides, pesticides and fungicides. As the College moves forward with new construction projects, such as the upcoming renovation of the Observatory, it should integrate sustainable elements into its landscape design. Wellesley should further experiment with innovative new techniques and should continue to maintain its active, dynamic approach to sustainable grounds management.

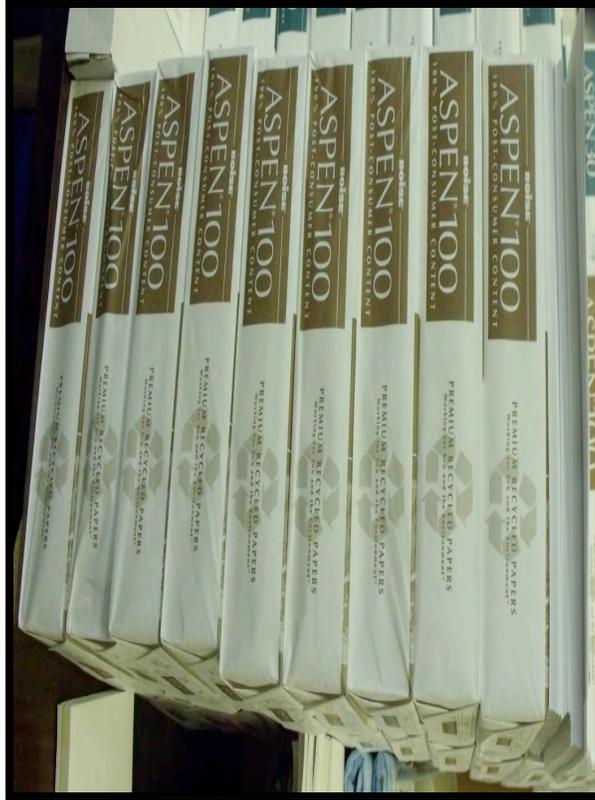


Figure 11. Wellesley Copy Center offers 100% Post-Consumer Recycled Paper for all services

7.0 PURCHASING

7.1 Introduction

College Campuses

American colleges and universities spend nearly \$200 billion on goods and services annually.¹⁴³ Higher education institutions exert a tremendous amount of influence in the national economy through their purchasing power. More and more colleges and universities across the nation are participating in green purchasing initiatives and becoming regular buyers of green products that are less resource-intensive, less polluting, and less harmful to human and environmental health than their conventional counterparts.¹⁴⁴ It is becoming easier to enact green purchasing policies and

¹⁴³ “Green Purchasing Plans,” *National Wildlife Federation*, <http://www.nwf.org/campusEcology/climateedu/articleView.cfm?iArticleID=86> (accessed: March 2, 2010).

¹⁴⁴ “Green Purchasing Guides,” *Environmentally Preferable Purchasing*, <http://www.epa.gov/epp/pubs/greenguides.htm> (accessed March 2, 2010).

choose environmentally friendly products with the emergence of several third party environmental certification and labeling programs such as ENERGY STAR, GreenSeal and the Electronic Product Environmental Assessment Tool (EPEAT).¹⁴⁵ By buying large quantities of green products, colleges and universities can help environmentally-conscious markets expand and become more widely available to the general public.

Green purchasing often minimizes negative environmental impacts and maximizes resource efficiency. Green products on the market help to reduce deforestation, decrease greenhouse gas emissions, and minimize air pollution. The simple act of buying high recycled content paper can result in several environmental benefits. Paper is one of the most highly demanded products by colleges and universities. The average college student uses 5,000 sheets of paper each year.¹⁴⁶ Colleges and universities that purchase high recycled content paper help decrease overall solid waste in landfills and incinerators, reduce deforestation, and conserve energy.¹⁴⁷ Purchasing and using recycled paper also reduces nitrogen oxide and particulate pollution and eliminates the harmful environmental effects of “virgin” pulp and whitening agents.¹⁴⁸

Additionally, there are several health benefits often associated with green purchasing. Institutions that only use green products, especially green cleaning products with lower chemical content, provide healthier and happier working environments. Statistics show that institutions that use green cleaning products increase worker satisfaction, improve morale, reduce absenteeism and increase productivity and efficiency.¹⁴⁹ By reducing exposure to toxic cleaners, solvents, paints, and other hazardous materials, green purchasing can decrease liability and occupational health costs.

¹⁴⁵ “Third Party Certification of Environmentally Preferable Products,” *Environmental Choice*, <http://www.environmentalchoice.com/en/> (accessed: March 2, 2010).

¹⁴⁶ Barbara Schulze, “Reducing Paper Usage at Smith College,” May 3, 2006, http://www.science.smith.edu/departments/esp/Research_EVS300/2003/BSchulzePaper.pdf (accessed: March 20, 2010).

¹⁴⁷ “Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper,” *Environmental Defense Fund*, December 15, 1995. http://www.edf.org/documents/1688_synopsis.pdf (accessed: March 2, 2010).

¹⁴⁸ “Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper,” *Environmental Defense Fund*.

¹⁴⁹ “Benefits of Using Environmentally Friendly Cleaning Products,” *ABM Industries Incorporated*, <http://www.abm.com/news/white-papers/pages/environmentally-safe.aspx> (accessed: March 20, 2010).

Exemplary Institutions

Many institutions have already made great strides in green purchasing. Recently, several colleges and universities have begun to consider and adopt green purchasing policies. A 2009 “Current State of Green Procurement in Higher Education” survey produced by the National Association of Educational Procurement (NAEP) found that 24 percent of higher education respondents had a green purchasing policy and an additional 48 percent planned on implementing one in the next year.¹⁵⁰ Oberlin College has made green purchasing policies a central component of its commitment to sustainability. When determining whether a product is environmentally preferable, Oberlin considers all phases of a product’s life cycle, including raw materials acquisition, production, manufacturing, packaging, distribution and disposal.¹⁵¹ The savings Oberlin has received as a result of green purchasing demonstrates that green purchasing policies can enable colleges to be both more environmentally conscious and economically efficient.

In addition to implementing green purchasing policies, many colleges and universities buy green certified products. A survey produced by the Sustainable Endowment Institute in 2010 found that 88 percent of colleges and universities interviewed are purchasing at least some Green Seal or Environment Choice certified products and 33 percent are purchasing all certified cleaning products.¹⁵² Furthermore, 57 percent of schools surveyed also purchase at least some Electronic Product Environmental Assessment Tool (EPEAT) rated computer products.¹⁵³ Northeastern University and University of Virginia are two examples of universities that strictly buy only EPEAT-rated technology, Green Seal certified cleaning products and ENERGY STAR appliances.¹⁵⁴

¹⁵⁰ “The Current State of Green Procurement Trends within Higher Education: Executive Summary,” *National Association of Educational Procurement*, 2009. http://www.sciquest.com/library/NAEP_Green_Survey_Results.pdf (accessed: March 2, 2010).

¹⁵¹ “Oberlin Green Purchasing Policy,” *Oberlin College*, http://www.oberlin.edu/sustainability/portfolio/docs/OC_green_purchasing_policy.pdf (accessed: March 5, 2010).

¹⁵² “Administration – Green Report Card 2010,” *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/administration> (accessed; March 17, 2010).

¹⁵³ “Administration – Green Report Card 2010,” *The College Sustainability Report Card*.

¹⁵⁴ “Administration Leaders – Green Report Card 2010,” *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/administration/leaders> (accessed: March 17, 2010).

7.2 How Wellesley Approaches Purchasing



Figure 12. 25% of all Wellesley's Cleaning Products are GreenSeal Certified

Priorities

Since the founding of the Sustainability Advisory Committee in 2005, Wellesley has attempted to balance environmental and fiscal responsibilities in making green purchasing decisions.¹⁵⁵ Wellesley's Purchasing Department is strengthening its commitment to green purchasing in an incremental fashion. In addition to continually investigating eco-friendly products and services for the college community, the Purchasing Department recently amended Wellesley's Requests for Proposal bid criteria so that now "all bidders are asked to demonstrate their commitment to environmental stewardship by reporting on any and all policies related to their

¹⁵⁵ "Purchasing Accomplishments," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/purchasing.html> (accessed: March 4, 2010).

sustainability efforts, conservation and reduced environmental footprints.”¹⁵⁶ The Purchasing Department has begun purchasing beverage machines with Enviro-Cool technology, hardwoods from state regulated forests rather than rainforest species, and floor finishing systems that emit zero volatile organic compounds into the atmosphere. For quality reasons, Wellesley purchases exclusively Lenovo brand PC computers and Apple Macs. Because of this preference, Wellesley coincidentally purchases 100 percent EPEAT gold-rated computers.¹⁵⁷ Wellesley also now requires that all appliances purchased be ENERGY STAR rated.¹⁵⁸

Wellesley’s copy center and academic departments play an important role in supporting green purchasing initiatives. The copy center offers customers the option of printing and copying on recycled paper. Additionally, many academic departments purchase and use environmentally preferable paper despite the fact that they are autonomous and are free to purchase whatever type of paper they want. In a survey we conducted on Wellesley’s academic departments, one third of the 12 surveyed departments have a stated preference for recycled paper and 50 percent of the departments surveyed purchase only 100 percent recycled content paper.¹⁵⁹

Wellesley is also making strides in socially responsible purchasing, an important component of a comprehensive sustainability effort. The Wellesley Purchasing Department is working on initiating an aggressive outreach program to minority/woman-owned businesses in order to meet the College’s purchasing needs in a socially responsible way.¹⁶⁰ The Department of Facilities is also transitioning to all green cleaning products. As of early 2010, Wellesley uses green cleaning products in Pendleton, the Lulu Chow Wang Campus Center, and all residence halls except Tower.¹⁶¹ Wellesley is in the midst of using up all previously purchased, traditional cleaning products in these other residence halls and slowly transitioning to green cleaning products in every building. Even though the majority of green cleaning products at Wellesley are non-certified, approximately 25 percent of the green cleaning products that Wellesley purchases are in fact GreenSeal certified.¹⁶²

¹⁵⁶ “Purchasing Accomplishments,” *Wellesley College Sustainability*.

¹⁵⁷ “Purchasing Accomplishments,” *Wellesley College Sustainability*.

¹⁵⁸ “Purchasing Accomplishments,” *Wellesley College Sustainability*.

¹⁵⁹ Survey of 12 Academic Departments at Wellesley College, March 16, 2010.

¹⁶⁰ “Minority/Woman Owned Business Program,” *Wellesley College Purchasing Department*, <http://www.wellesley.edu/Purchasing/site/diversity.html> (accessed: March 4, 2010).

¹⁶¹ Thomas Kane, Purchasing Manager, Email, March 7, 2010.

¹⁶² Thomas Kane, Purchasing Manager, Email, March 8, 2010.

Challenges

Although Wellesley has a laudable list of green purchasing accomplishments, the College has struggled to implement a formal green purchasing policy. Since 2008, Wellesley has tried to establish a green purchasing policy and a Buy Green Program that will offer customers environmentally friendly purchasing options.¹⁶³ Instead of completing the final institutional phases of the green purchasing policies, the Purchasing Department has been preoccupied with restructuring the department because of economic crisis induced budget cuts.¹⁶⁴

Another challenge that Wellesley has faced is documentation. Wellesley rarely fully documents its actions. In several instances, Wellesley has failed to establish a stated preference policies for green products it already buys. For example, Wellesley already purchases all EPEAT gold rated computers for quality reasons but does not have a stated policy for purchasing EPEAT computers in place.

7.3 How GRC Conceptualizes Purchasing

The Green Report Card's Purchasing category focuses predominantly on the institutionalization of green purchasing behavior. GRC rewards colleges for having broad policies, granting colleges flexibility in implementing their own green purchasing commitments. In particular, GRC emphasizes formal, campus-wide green purchasing policies.¹⁶⁵ Although different colleges' green purchasing policies vary in their stringency, GRC does not evaluate the varying levels of these policies. GRC simply rewards colleges for the act of implementing a formal green purchasing policy.

GRC also values certain green products in the market more so than others. It pays the most attention to whether or not colleges buy ENERGY STAR qualified products, energy efficient computers, environmentally preferable paper products and green cleaning products.¹⁶⁶ GRC does not differentiate between certified and non-certified green products. GRC equally values certified cleaning products and non-certified "biorenewable" cleaning products.¹⁶⁷

¹⁶³ "Buy Green Program," *Wellesley College Purchasing Department*, http://www.wellesley.edu/Purchasing/site/buy_green.html (accessed: March 4, 2010).

¹⁶⁴ Thomas Kane, Purchasing Manager, Email, March 7, 2010.

¹⁶⁵ "Administration – Green Report Card 2010," *The College Sustainability Report Card*.

¹⁶⁶ "Methodology – Green Report Card 2010," *The College Sustainability Report Card*.

¹⁶⁷ "Administration – Green Report Card 2010," *The College Sustainability Report Card*.

Although GRC attempts to recognize colleges that make green purchases, its evaluation is ultimately broad and simplistic. One of the major disadvantages of the GRC purchasing category is that it does not attempt to address the problem of greenwashing. Greenwashing describes efforts by corporations to claim more of an environmental advantage than is warranted by their actions. The fact that GRC does not value certified green products more than non-certified green products suggests that GRC is less concerned about the possibility of deceptive environmental marketing schemes. While there are certainly “green” products on the market that for whatever reason have not been officially certified, it is also possible that some of the non-certified green products GRC values are manufactured by companies that view environmentalism as little more than a convenient slogan.

Another disadvantage of the GRC purchasing category is that it does not examine the quantity of green products purchased by different colleges. Without knowing the actual percentages of green products bought in relation to the total number of products purchased by colleges, it is difficult to determine the extent colleges are adhering to green purchasing ideals. GRC’s approach to green purchasing bases its evaluation on a few select products. It only rewards colleges based on whether or not they purchase environmentally preferable electronics, computers, cleaning products and paper. GRC fails to recognize colleges that consider the indoor air quality of purchased products and consequently provides no added incentive for colleges to buy carcinogen free, low volatile organic compounds, reduced heavy metal paints or furniture.

Additionally, the Purchasing category of GRC does not address consumerism. GRC rewards colleges for purchasing green products without simultaneously rewarding them for reducing their consumption levels. Decreased consumerism is important given the negative environmental externalities associated with transporting, packaging, and manufacturing individual products. GRC also does not evaluate the quality and life span of different products purchased by colleges. From an environmental perspective, single use, disposable products should be avoided at all costs, as using these products involves using more resources and generating more waste.

Wellesley's Point Scenarios

Table 7.1 Wellesley's GRC performance in Purchasing

Credit title and description		Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Green Purchasing	Implementing Formal Green Purchasing Policy	10%	--	Wellesley currently earns no points in this category	Wellesley currently does not have a green purchasing policy	Wellesley could implement a green purchasing policy
	Purchasing ENERGY STAR qualified products			Wellesley only purchases ENERGY STAR qualified appliances ¹⁶⁸	Wellesley earn full points	Wellesley earns full points
	Purchasing Environmentally preferable paper products			All paper towels and toilet paper purchased have recycled content. Wellesley purchasing department buys some recycled paper	Only 10% of paper purchased by the Purchasing Department is 100% post-consumer recycled content. Only some Academic Departments purchase recycled paper.	Wellesley could either centralize paper purchasing and only buy 100% recycled paper or institute recycled paper policy requiring post-consumer recycled content.
	Purchasing Green Seal, Environmental Choice certified or biorenewable cleaning products			Wellesley currently buys about 25% Green Seal-Certified cleaning products. In general, Wellesley uses green cleaning products in two major building and all residence halls except one. ¹⁶⁹	Wellesley does not use a majority of green certified products. It also does not only use green cleaning products in general and is still transitioning to green cleaning products in some buildings.	Wellesley could transition to purchase and use only green certified cleaning products in all buildings
	Purchasing computer electronics in accordance with standards such as the Electronic Product Environmental Assessment Tool (EPEAT)			Wellesley currently purchases all EPEAT gold-rated computer products ¹⁷⁰	Wellesley earns full points	Wellesley earns full points

¹⁶⁸ Thomas Kane, Purchasing Manager, Email, March 7, 2010.

¹⁶⁹ Thomas Kane, Purchasing Manager, Email, March 7, 2010.

¹⁷⁰ Christopher Card, Computing Purchasing Specialist, Email, March 7, 2010.

7.4 How STARS Conceptualizes Purchasing

Table 7.2 STARS Summary of Purchasing Points Allocation

Credit Number	Credit Title	Possible Points
OP Credit 10	Computer Purchasing	2
OP Credit 11	Cleaning Products Purchasing	2
OP Credit 12	Office Paper Purchasing	2
OP Credit 13	Vendor Code of Conduct	1
<i>Tier Two</i>	<i>Historically Underutilized Businesses</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Local Businesses</i>	<i>0.25</i>
Total		7.5

STARS rewards colleges for establishing green purchasing policies and for purchasing environmentally preferable products that have been certified by a third-party authority. The STARS purchasing category, however, does not reward colleges that simply make laudable promises and establish nonbinding policies. Rather, STARS expects colleges to provide data to prove that they practice sustainable behavior on a regular basis. STARS requires physical proof of both intention and action. For example, STARS rewards colleges for having a stated preference for energy efficient EPEAT computers and for having a high percentage of EPEAT Gold or Silver rated computers as a percentage of total computer expenditures. In order for colleges to be recognized under the STARS purchasing category, they must provide exact numbers that can be used to determine their level of commitment to green purchasing.

STARS specifically rewards colleges for establishing stated preferences because it wants to ensure that any environmentally preferable behavior observed is a result of a desire to be sustainable. For example, a school may purchase environmentally preferable products because they happen to be cheaper. Without a stated preference for eco-friendly products, the school may switch to a less sustainable product if given a financial incentive. Under the STARS purchasing category, colleges that do not have a stated preference for EPEAT certified computers but still buy one hundred percent EPEAT certified computers for financial and quality related reasons do not earn full points.

STARS goes to great lengths to avoid rewarding colleges that have fallen prey to

greenwashing. Rather than awarding institutions that purchase products that simply claim to be green, STARS only rewards colleges for showing commitment to three specific rating systems (EPEAT for computers and GreenSeal™ or EcoLogo™ for cleaning products).¹⁷¹ STARS also protects against greenwashing in its evaluation of colleges' office paper purchasing. Rather than rewarding colleges for purchasing paper with any type of recycled content, STARS assesses colleges based upon the percentages of recycled content paper that they purchase. Maximum points can only be achieved by purchasing exclusively 100 percent post-consumer recycled-content paper. Buying "recycled-content" paper that only has 50 percent recycled content is not, according to STARS, sufficiently sustainable. This provides an incentive for schools to not only purchase paper with some recycled content, but specifically to purchase paper with a high percentage of recycled content.

STARS is also unconventional in that it includes corporate social responsibility as part of its green purchasing definition. STARS asks schools to expand their definition of sustainability to include the "Three E's of sustainability – economy, ecology, and equity."¹⁷² STARS believes that sustainability is inextricably linked to social and economic justice. A step towards the achievement of the Three E's is to encourage colleges and universities to invest in "underutilized businesses," such as those owned by women and minorities, and to support their local economy whenever possible. In addition, STARS rewards colleges for implementing vendor codes of conduct that help ensure that they buy products and support companies that meet standards of social and environmental responsibility.

Although STARS provides a systematic and thorough evaluation of institutional commitment to green purchasing, the STARS system is not comprehensive. STARS only considers energy efficient computers, green cleaning products and environmentally preferable paper. Computers, paper, and cleaning products make up a large part of the overall inventory of colleges and universities, but they do not represent a complete list of all the products institutions buy. For example despite the fact that STARS evaluates colleges based on high content recycled paper usage, it does not consider the recycled content in toilet paper, paper towels or napkins in its evaluations. These paper products are important to consider given that they make up a significant portion of total paper purchasing—especially at residential colleges. STARS also does not value environmentally preferable furniture. Purchasing a used couch made with old-growth wood would be environmentally preferable to purchasing a new couch made out of bamboo. Lastly, like GRC,

¹⁷¹ STARS 1.0 Technical Manual, 144.

¹⁷² STARS 1.0 Technical Manual, 5.

STARS does not value decreased consumerism in its purchasing category. Although STARS rewards institutions that purchase sustainable products, it provides no incentive to reduce overall consumption.

Wellesley's Point Scenarios

Table 7.3 Wellesley's STARS Performance in Purchasing							
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
OP Credit 10 Computer Purchasing Wellesley has an institution-wide stated preference for purchasing EPEAT solver or higher computers and monitors (Y/N)	0.5	No	Yes	Yes	0	0.5	0.5
	Percentage of total computer expenditures spent on EPEAT computers- Silver (\$)	1.5	100%	100%	1.5	1.5	1.5
Percentage of total computer expenditures spent on EPEAT computers- Gold (\$)							
OP Credit 11 Cleaning Products Purchasing Wellesley has an institution-wide stated preference to purchase Green Seal and/or EcoLogo certified cleaning products (y/n)	2	No	No	Yes	0	0	2
	Percentage Expenditure on Certified Green cleaning products	25%	50%	100%			
OP Credit 12 Office Paper Purchasing Wellesley has an institution-wide stated preference to purchase recycled-content office paper (Y/N)	0.5	No	No	Yes	0	0	0.5
	10-29	1.5	90%	25%	0.6	1.275	1.5
	30-49						
	50-69						
	70-89						
90-100							
Percentage of total expenditures on recycled content paper at (%)							
OP Credit 13 Vendor Code of Conduct Wellesley has and acts on a vendor code of conduct or equivalent policy that sets expectations about the social and environmental responsibility of vendors with whom the institution does business (Y/N)	1	No	Yes	Yes	0	1	1
Tier T _{no} Historically Underutilized Businesses Wellesley seeks to support historically underutilized businesses, minority-owned businesses and women-owned businesses (Y/N)	0.25	No	No	Yes	0	0	0.25
Tier T _{no} Local Businesses Wellesley gives preference to local products and businesses in its purchasing decisions (Y/N)	0.25	Yes	Yes	Yes	.25	0.25	0.25
Total	7.5				2.25	4.5	7.5

7.5 Comparative Analysis of GRC and STARS

STARS and GRC approach purchasing in several similar ways. Both systems reward institutions that make an effort to purchase green cleaning products, energy efficient computers, and recycled paper. Additionally, both STARS and GRC recognize the difficulties that colleges and universities face in changing ingrained institutional purchasing preferences and policies. To address this hurdle, both systems award partial credit for preliminary efforts. This is important because it gives colleges and universities incentives to get started, implement pilot programs, and work their way towards the ambitious goal of 100 percent environmentally preferable products. STARS and GRC are also similar in that they both do not reward decreased consumerism as a part of green purchasing. While green products are preferable to regular products, green products often still inflict some level of harm onto the environment. STARS and GRC fail to recognize that the most environmentally conscious choice is not purchasing any products at all.

Another related similarity between STARS and GRC is that neither system rewards colleges for purchasing high quality, durable products over disposable products. Different quality products have different effects on the environment. Lower quality products tend to have shorter life spans and a higher replacement rate, which means they often increase waste as well as energy usage. Additionally, both STARS and GRC do not prioritize environmentally preferable packaging. Excess packaging used in the shipping of products increases transportation emissions and creates waste. STARS and GRC fail to reward colleges that make an effort to buy products that include minimal, or recyclable, packaging.

Although STARS and GRC conceptualize green purchasing in similar ways, the two systems use different criteria to reward purchasing behavior. While STARS generally takes a more narrow and detail-oriented approach to green purchasing, GRC examines green purchasing from a broader and shallower perspective. For example, unlike STARS, which solely focuses on energy efficient computers, green cleaning products and environmentally preferable paper, GRC also evaluates colleges based on whether they purchase ENERGY STAR rated appliances. STARS, on the other hand, fails to look at any other electronic appliances besides computers.

Another example that demonstrates the broadness of GRC and the specificity of STARS is that GRC rewards colleges for having campus wide green purchasing policies, whereas STARS only rewards colleges that have stated preferences for three certain types of products. STARS takes a more detail-oriented approach by examining the specific purchased quantities of these three

environmentally preferable products. In comparison, GRC fails to evaluate the percentage of green products purchased. Instead, GRC trusts that the mere existence of a green purchasing policy is stringent and meets ambitious environmental goals. This is particularly troubling because GRC may unintentionally reward colleges that are good at painting a picture of sustainability without having achieved accomplishments to back up their claims. A college may have a beautifully written yet nonbinding purchasing policy stating all of its supposed “preferences” for green products, but if the green purchasing policy does not result in actual change in purchasing behavior, it means little.

In addition, STARS and GRC have different definitions of green purchasing. Although GRC generally tends to be broader in its conceptualizations, STARS takes a more comprehensive view of green purchasing and includes corporate social responsibility. STARS rewards colleges that help to support historically underutilized businesses run by women and minorities, and for making an effort to support their own local economies by buying locally produced goods. GRC fails to consider social responsibility and the importance of buying local.

STARS and GRC also take different positions on certification. The GRC survey includes open-ended questions that allow for products that are not certified to still be considered green. STARS, in comparison, only recognizes colleges that purchase certified green products. GRC equally values non-certified green products and certified green products, creating a potential concern that colleges will be rewarded for falling prey to greenwashing, which is rampant in today’s market. A 2007 study conducted by the environmental marketing firm TerraChoice found that more than 99 percent of 1,018 common consumer products randomly surveyed for the study were guilty of greenwashing.¹⁷³

Lastly, STARS and GRC place different values on green purchasing. In the calculation of total points, STARS values purchasing more than GRC does. Although STARS’s purchasing category is weighted less than most of its other categories, it includes purchasing as its own separate entity. In contrast, purchasing is a small focus of GRC and only makes up a minute portion of its overall Administration grade.

¹⁷³ “Six Sins of Greenwashing”, *A Study of Environmental Claims in North American Consumer Markets*, http://www.terrachoice.com/files/6_sins.pdf (date accessed: March 14, 2010).

Table 7.4 Reasons Wellesley Does Not Earn STARS Points in Purchasing

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 10	Computer Purchasing	2	No	No documentation	Wellesley does not have stated preference policy. Wellesley currently buys all certified computer products for other reasons, including cost effectiveness and types of computers available
OP Credit 11	Cleaning Products Purchasing	2	No	Only partially doing it Effort in progress	No stated preference. The majority of the products purchased are not green-certified products. Although Wellesley is currently transitioning to green cleaning products, the majority are not certified and therefore do not receive STARS points.
OP Credit 12	Office Paper Purchasing	2	No	No formal policy Does not align with Wellesley's priorities	Wellesley does not have a campus paper purchasing policy. Decentralization allows for each academic department to decide on what type of paper they choose to purchase.
OP Credit 13	Vendor Code of Conduct	1	No	Does not align with Wellesley's priorities	Wellesley currently prioritizes cost-effectiveness over social responsibility in purchasing decisions
<i>Tier Two</i>	Historically Underutilized Businesses	0.25	No	Effort in progress	Wellesley is in the process of implementing a purchasing program that favors historically-underutilized businesses
<i>Tier Two</i>	Local Businesses	0.25	Yes		

7.6 Initial Recommendations

A formal purchasing policy with stated preferences for EPEAT, EcoLogo, GreenSeal certified products and high recycled content paper would help strengthen Wellesley's commitment to green purchasing as well as help Wellesley gain additional STARS and GRC points. Although Wellesley purchases many green products, the College is not gaining the recognition it deserves because it does not have a formal policy and does not always purchase certified products. Wellesley

should establish these preferences in order to institutionalize actions the College is already taking. After the restructuring of Wellesley's Purchasing Department is complete, the College should emphasize to the Purchasing Department the importance of expediting the policy process and implementing a green purchasing policy in a timely manner. By implementing a green purchasing policy, the Purchasing Department will be able to accomplish significant environmental change without tremendous effort. A green purchasing policy is important because it makes vendors and suppliers aware of Wellesley's commitment to environmentally sensitive products, reduced waste and recycled goods. By making Wellesley's green priorities explicit, the companies that Wellesley buys from will be more likely to fulfill the College's new demand by manufacturing and supplying more environmentally friendly products.

In addition to instituting a formal green purchasing policy and a vendor code of conduct, Wellesley should consider implementing a standardized policy requiring that all paper defaults on campus be set to 100 percent post-consumer content recycled paper. Increasing the use of high recycled content paper is advantageous for several environmental reasons and would increase Wellesley's STARS and GRC scores. The fact that several academic departments already have high recycled content paper preferences suggest that this would be a welcome change to many members of the Wellesley community.

Wellesley should also consider creating a policy to purchase green-certified products. This action in particular would ensure that Wellesley could be easily recognized as a purchaser of credible green products that are proven to be environmentally friendly. The process of selecting environmentally preferable products is not easy or straightforward. Certification programs are beneficial in that they thoroughly examine the environmental, health and safety effects found in the life-cycle stages of products and provide aggregate assessments. Product claims of recyclability, biodegradability, recycled content, or organic status are not regulated in most states and cannot always be trusted. Purchasing certified products will help Wellesley avoid falling prey to greenwashing. Greenwashing is environmentally harmful because it causes buyers to underestimate what is necessary to do to protect the environment and often creates the impression that people can consume their way out of the current environmental crisis.

Additionally, Wellesley should centralize its purchasing. Although centralization would not earn Wellesley any additional points on either STARS or GRC, it would help strengthen Wellesley's commitment to green purchasing. Centralizing purchasing decisions would help to increase efficiency and reduce waste. Centralized purchasing would also make it easier to ensure that

environmentally-conscious purchasing decisions were being made campus wide rather than haphazardly by a limited number of individual departments. Specifically, it would allow the Purchasing Department to be more cost effective and buy more products in bulk, reducing transportation and packaging material needed to deliver products.

Similar to centralized purchasing, Wellesley should re-evaluate its departmental budget structure. Many of academic departments do not have rollover budgets. This structure encourages increased consumerism because if the departments do not use the money by the end of the fiscal year it disappears from their control.¹⁷⁴ While end-of-year purchasing may cover things that would otherwise be purchased later, it nevertheless may lead to unnecessary consumption of items that wouldn't be purchased otherwise. If Wellesley is not prepared to take the dramatic step of completely centralizing purchasing, a smaller reform could include mandating a rollover budget system. If departments were able to keep funds from year-to-year, they would have a reduced incentive to purchase unnecessary items at the end of the year. They would also be able to consolidate funds that have "rolled-over" from previous years in order to raise the extra cash needed to purchase eco-friendly alternative products.

Even though purchasing only accounts for a small percentage of Wellesley's final STARS and GRC scores, it is an area in which Wellesley could improve with relative ease. It is apparent from the decisions that the college has already made, such as voluntarily choosing to switch to all-eco-friendly cleaning products and beginning the process of creating a green purchasing policy, that Wellesley's Purchasing Department has green priorities in mind. To the extent that these priorities align economically and logistically with STARS and GRC, Wellesley should take the necessary steps needed to gain its rightful recognition as a green purchaser.

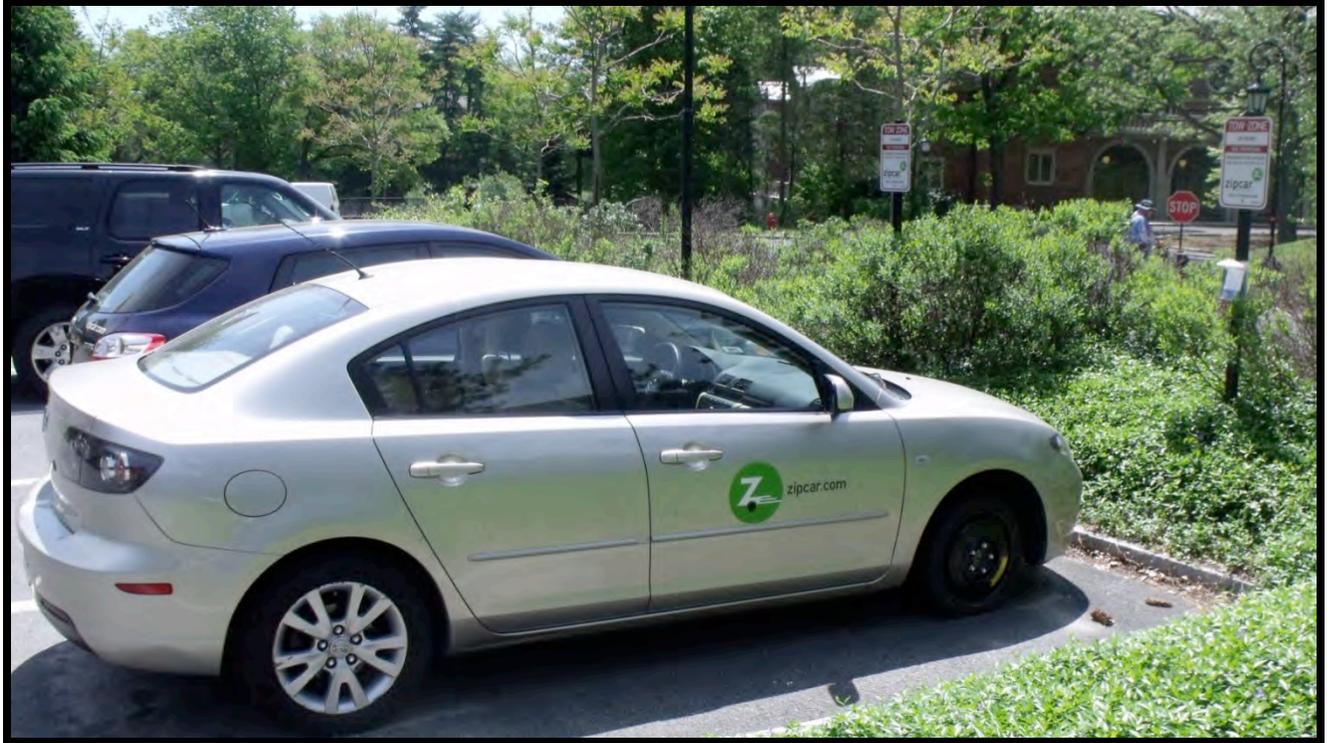


Figure 13. Wellesley's car sharing program, Zipcar

8.0 TRANSPORTATION

8.1 Introduction

College Campus

Transportation has become a focus of sustainability initiatives on college campuses. Currently, transportation is the fastest-growing source of greenhouse gases, accounting for up to 29 percent of the United States' total greenhouse gas emissions.¹⁷⁵ Vehicles used for transportation emit greenhouse gases throughout all life cycle stages including fuel extraction, refinement processes and vehicle manufacturing.

Transportation also produces other harmful airborne emissions that are public health hazards. Carbon monoxide, particulate matter, nitrogen oxides, sulfur dioxide and hydrocarbons are

¹⁷⁵ "Transportation and Climate," U.S. Environmental Protection Agency, <http://www.epa.gov/otaq/climate/index.htm> (accessed; March 13, 2010).

the most common toxic air pollutants emitted by mobile sources burning fossil fuels.¹⁷⁶ The Massachusetts EPA found that mobile sources account for 48% of volatile organic pollutants, 70 percent of carbon monoxide and 47 percent of all nitrogen oxides emitted in the state.¹⁷⁷ These toxic air pollutants are known to contribute to cancer, cardiovascular, respiratory and neurological diseases.¹⁷⁸

Nitrogen oxides from transportation can also create acid rain resulting in damaging effects on building structures and monuments, forest decline, and significant damage to agricultural crop yield.¹⁷⁹ Additionally, smog produced by vehicle exhaust can reduce natural visibility, adversely affect quality of life, and can destroy the attractiveness of tourist destinations. Furthermore, fuel and oil spills from motor vehicles leads to soil contamination.

Colleges and universities significantly contribute to the United States' greenhouse gas and toxic air pollution emissions. In 2008, transportation needs contributed to 36 percent of Wellesley's greenhouse gas emissions.¹⁸⁰ Many higher education institutions experience the negative environmental effects of transportation. Traffic on campus creates noise disturbance to teaching. Space allocation for parking and roads leads to a loss of natural environment and greenery as well as despoliation of the visual environment. Lastly, air pollution from vehicle traffic may lead to adverse health effects to students, faculty, and staff on campus. Instituting a sustainable transportation model that focuses on increasing vehicle efficiency, reducing commuting to campus, and promoting public transportation can help to reduce these adverse effects of transportation.

Exemplary Institutions

Many higher education institutions have already begun taking steps to create more sustainable transportation systems. According to GRC, 64 percent of the colleges and universities surveyed offer financial incentives to students and/or employees for the use of public transit and one-third of schools offer car-sharing programs to students.¹⁸¹ Similarly, 77 percent of institutions

¹⁷⁶ Jean-Paul Rodrigue, "Environmental Impacts of Transportation," <http://people.hofstra.edu/geotrans/eng/ch8en/conc8en/ch8c1en.html> (accessed; March 13, 2010).

¹⁷⁷ Sarah Hammond Creighton, *Greening the Ivory Tower*, (Cambridge: MIT Press, 1998), 221.

¹⁷⁸ Jean Paul-Rodrigue, "Environmental Impacts of Transportation".

¹⁷⁹ Jean-Paul Rodrigue, "Environmental Impacts of Transportation".

¹⁸⁰ "Transportation Sector," *ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College*, Spring 2008, <http://www.wellesley.edu/EnvironmentalStudies/Research/pdf/ES300-2008-Wellesley-GHG-Audit.pdf> (accessed March 12, 2010).

¹⁸¹ "Transportation" The *College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/transportation> (accessed; March 13, 2010).

surveyed include hybrids or other alternative-energy vehicles as part of school motor fleets that operate intra-campus transportation.

The University of Wisconsin-Madison is one example of a university with a strong green transportation policy. All faculty, staff, and students at the University of Wisconsin-Madison receive unlimited local bus passes. The University has implemented a community car-sharing program, offers carpoolers discounts on parking passes, and its campus motor fleet includes 25 hybrid and 19 electric vehicles.¹⁸² Cornell University is another institution that is working toward more sustainable transportation on campus by instituting higher parking fees as well as mass transit and ride-sharing programs. These changes saved Cornell over \$2.7 million that would otherwise have been spent on new parking lots.¹⁸³ Creating transportation efficiency programs, similar to Cornell's higher parking fees and mass transit programs, can be more cost-effective for universities than allocating space and building parking lots.¹⁸⁴ By mitigating the need for vehicles and large areas of paved surface, campuses are better able to manage storm water and decrease vehicle traffic and congestion.¹⁸⁵

¹⁸² "Leaders in Transportation," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/transportation/leaders>(accessed; March 13, 2010).

¹⁸³ Sarah Hammond Creighton, *Greening the Ivory Tower*.

¹⁸⁴ Sarah Hammond Creighton, *Greening the Ivory Tower*.

¹⁸⁵ Sarah Hammond Creighton, *Greening the Ivory Tower*.

8.2 How Wellesley Approaches Transportation



Figure 14. One of Wellesley's five electric bicycles used by Campus Police and Facilities

Priorities

As a small residential college, 97 percent of Wellesley's students live on campus and do not need to commute to school each day.¹⁸⁶ Wellesley's student body, however, comes from all over the world. The College relies heavily on air travel in comparison to commuter colleges. Fortunately, as a small walkable campus, Wellesley also does not need to invest in local transportation systems within campus but instead runs several shuttles in order to connect students to other campuses and to Boston.

Wellesley has taken several steps to make transportation more sustainable on campus. Starting in 1998, the college trustees established a Pedestrian Master Plan as a part of the Landscape Master Plan, which recommended that "the primacy of pedestrians be restored throughout campus."¹⁸⁷ As a result, vehicles have mostly been eliminated in the core of campus and the majority of parking now occurs on the periphery of the campus. By making a pedestrian-oriented campus a priority, Wellesley has both cut down on vehicle transportation within its grounds and promoted walking and biking throughout campus.

¹⁸⁶ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/wellesley-college/surveys/campus-survey> (accessed March 13, 2010).

¹⁸⁷ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

Additionally, Wellesley has instituted a faculty mortgage plan that is open to tenured faculty and high administrators who buy homes within 10 miles of the college.¹⁸⁸ Wellesley also provides 102 faculty rental units within walking distance of the campus.¹⁸⁹ Although these policies were not undertaken explicitly to decrease the environmental impact of transportation, they nevertheless have had the effect of shortening faculty commuting and increasing the number of faculty who are able to commute by walking or biking. The problem, however, is that despite the large number of faculty and staff that live within walking or biking distance of the college, many faculty and staff members still drive to work every morning. A survey conducted on faculty and staff at Wellesley in 2008 revealed that 62.5 percent of faculty and staff who live within 5 miles of campus and could walk or bike to campus still choose to drive each day.¹⁹⁰

The Wellesley campus motor fleet used for intra-campus travel has started using greener, more fuel-efficient options. Wellesley currently has 1 hybrid vehicle and 3 electric golf utility carts used for maintenance. In 2009, Campus Police and Facilities personnel bought and began using 5 electric bicycles to promote on-campus bicycle commuting.¹⁹¹ The College is also working toward switching to biodiesel and decreasing its reliance on fossil fuel. It installed a biodiesel tank and dispenser to the Wellesley fuel station in fall 2009.¹⁹² Although the biodiesel pump is ready to use, Wellesley is still waiting to change its motor fleet's fuel filters to be able to process this new fuel.¹⁹³

Wellesley also provides options and incentives for greener student transportation. The College's Transportation Department runs several shuttle services for students. During the week, it runs a free a shuttle service to Boston and Cambridge as well as a van to local, neighboring colleges. On the weekends, it provides a low-cost shuttle service to a local mall, Boston, and Cambridge. The Transportation Department also sells discount Commuter Rail and subway passes to students at 11 percent off regular pricing, encouraging students to make use of public transportation when off campus.¹⁹⁴ Additionally, Wellesley also tries to encourage more efficient transportation options by offering both a car-sharing and bike-sharing program to students. The car-sharing program, Zipcar,

¹⁸⁸ "Faculty Mortgage Plan," *Wellesley College*, July 2009, <http://www.wellesley.edu/Finance/Docs/FacMortDescJul09.pdf> (accessed March 17, 2010).

¹⁸⁹ Peter Eastment, Transportation, Email, March 9, 2010.

¹⁹⁰ "Faculty and Staff Survey," *2008 ES 300 Transportation and Waste Conference*.

¹⁹¹ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

¹⁹² "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

¹⁹³ Patrick Willoughby, Director of Sustainability, Email, March 17, 2010.

¹⁹⁴ Peter Eastment, Transportation, Email, March 9, 2010.

provides four compact cars for hourly rental use.¹⁹⁵ Bike Revolution, the Wellesley bike-sharing program, provides five bikes for use across campus and is planning to add more bikes by end of May 2010.¹⁹⁶

Challenges

Wellesley has encountered difficulties in the past switching its fleet to higher efficiency vehicles. In 2000, Wellesley considered adding ten electric powered Ford Ranger trucks as an alternative to gasoline or diesel powered vehicles.¹⁹⁷ Wellesley went through a trial lease of three years but faced problems toward the end of the lease.¹⁹⁸ Ford was not supportive in providing repair parts and a Ranger could be down for weeks, and sometimes as long as a month, because Wellesley would be waiting on a relatively inexpensive part to be delivered.¹⁹⁹ Due to lack of support from Ford, Wellesley ultimately abandoned plans to purchase these vehicles.²⁰⁰

Although Wellesley provides alternative transportation options for students, it has not implemented many programs for faculty and staff, the major commuters to and from campus. While students are required to pay for parking permits, faculty and staff do not have to pay parking fees. The College also does not provide any direct incentives for faculty to use of public transportation. Beginning in February 2009, faculty and staff were forced to pay to ride the Exchange buses. Additionally, the routes on these buses are tailored to students needs and often too inconvenient for faculty. Another problem preventing many faculty and staff from taking mass transit is the difficulty of getting to mass transit from Wellesley. Although the commuter rail is close to Wellesley, the closest subway line into Boston and Cambridge is over 5 miles away and therefore inaccessible without a shuttle service.²⁰¹ The College ran a shuttle service in 2008 from Wellesley, Olin and Babson to the Green Line. Due to the budget crisis, long commute time, and lack of usage, the shuttle service stopped after one semester.

¹⁹⁵ "Transportation," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/transportation.html> (accessed; March 13, 2010).

¹⁹⁶ Anna Belkin, Email, March 14, 2010.

¹⁹⁷ *Wellesley College Sustainability*.

¹⁹⁸ Patrick Willoughby, Director of Sustainability, Email, March 17, 2010.

¹⁹⁹ "Transportation," *Wellesley College Sustainability*.

²⁰⁰ "Transportation," *Wellesley College Sustainability*.

²⁰¹ "Directions from Wellesley College to Riverside T Station," *Google Maps*, http://maps.google.com/maps?q=352+grove+st,+newton,+ma&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&hq=&hnear=352+Grove+St,+Newton,+MA+02466&gl=us&ei=5HqmS470Gcqztge_rLT-DA&sa=X&oi=geocode_result&ct=title&resnum=1&ved=0CAkQ8gEwAA (accessed: March 20, 2010).

Wellesley's commitment to having a diverse and international student body also affects its transportation environmental footprint. International students represent a large portion of Wellesley's student body. In 2009, international students represented over 15 percent of students admitted.²⁰² Wellesley not only provides extensive support and financial aid to international students but also offers financial assistance for their travel expenses.²⁰³ While an international presence on campus is essential to creating a stimulating and diverse Wellesley community, recruitment of students from far away dramatically increases Wellesley's transportation emissions. In fact, 79 percent of Wellesley's Transportation greenhouse gas emissions are due to student travel to and from campus.²⁰⁴ More importantly, it will be difficult to reduce this large source of emissions if Wellesley continues to prioritize geographical diversity.

8.3 How GRC Conceptualizes Transportation

GRC's Transportation category focuses largely on alternative transportation. GRC heavily emphasizes the importance of colleges providing local transportation alternatives in order to decrease single occupancy vehicle usage. GRC rewards colleges that make public transportation easily accessible as well as affordable. It recognizes colleges that offer transportation to public transportation systems and local destinations as well as colleges that subsidize public transportation fees. GRC emphasizes the importance of public transportation because it is an environmentally preferable mode of transportation that reduces gasoline usage and carbon dioxide emissions.

GRC also rewards colleges that have pedestrian and bike-friendly campuses. For shorter distances, GRC prefers if students, faculty, and staff bike or walk to their destinations. GRC recognizes colleges that have improved the accessibility of bikes and bike repair services on campus and have made bikes a more convenient and feasible option for community members. Additionally, GRC acknowledges there are certain situations where students, faculty, and staff have to drive personal vehicles. In these instances, GRC rewards colleges that provide monetary incentives, such as parking fee discounts and reserved parking spots, to carpool.

GRC, however, fails to address important aspects related to higher education transportation. Most importantly, GRC does not address air travel and does not account for the fact that students

²⁰² "Class of 2013 Statistics," *Wellesley College Admissions*, <http://www.wellesley.edu/admission/admission/statistics.html> (accessed: March 13, 2010).

²⁰³ "International Students," *Wellesley College Admissions*, <http://www.wellesley.edu/admission/admission/intstudents.html> (accessed: March 13, 2010).

²⁰⁴ "Transportation Sector," *ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College*.

travel from across the country and the world to campuses multiple times of year. It also does not account for student and faculty funded air travel. By not including air travel in its evaluation of higher education transportation, GRC fails to encourage decreases in airplane mileage and to promote other environmentally friendly alternatives.

Another aspect of higher education transportation that GRC does not examine is how far students, faculty and staff travel to and from campus. GRC does not evaluate colleges based upon how close students and college employees live to campus. By not allocating points to colleges that provide residential housing and subsidize employee housing close to campus, GRC fails to acknowledge colleges that are taking important steps to decrease mileage or automobile usage. Theoretically the closer students and employees live to campus, the less likely they will be to use environmentally harmful modes of transportation.

Wellesley's Point Scenarios

Table 8.1 Wellesley's GRC performance in Transportation						
Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Campus Motor Fleet	Maintaining motor fleets that include vehicles that run on clean-burning fuels or electricity.	12.5%	12.5%	Wellesley currently has one hybrid and 3 electric vehicles in its motor fleet ²⁰⁵	Wellesley has a low percentage of alternative fuel vehicles out of total fleet	Wellesley could increase the number of alternative-fuel vehicles
	Minimizing greenhouse gas emissions from campus vehicles on a per-passenger-mile basis.			Wellesley chooses to include several compact cars in its fleet ²⁰⁶	Wellesley still operates several fuel-inefficient large trucks	Wellesley could switch some larger vehicles to hybrids or biodiesel models
Local transportation Alternatives	Offering incentives to campus community members for carpooling or using public transportation.	37.5%	5%	Wellesley offers 11% discount for semester MBTA Subway and Commuter Rail Passes	Wellesley does have not a carpool program and did not specify in the survey about discounts to public transportation	Wellesley could implement a carpooling program for faculty and staff as well as provide subsidies to public transportation
	Providing transportation or access to public transportation systems around campus and/or to local destinations.			Wellesley runs a on campus escort van as well as offers free transportation to Boston and Cambridge to students during the week. ²⁰⁷	Wellesley does not provide public transportation options to faculty nor provide incentives to do so.	Wellesley could implement incentives for faculty to take public transportation including free Exchange Bus or shuttle to the Green Line
Bicycle Program	Encouraging bike use by providing bicycle rental or sharing and offering repair services.	15%	5%	Wellesley has a bike sharing program of 5 bicycles ²⁰⁸	Wellesley earns full points in this section	Wellesley could expand its bicycle sharing program and institute a bike repair system to ensure that the program continues
Car Sharing Program	Partnering with a car-sharing program in order to reduce the need for car ownership.	15%	10%	Since 2002, Wellesley has been operating a car sharing program that includes 4 cars for a registration fee of \$35.00 ²⁰⁹	Wellesley earns full points in this section	We could increase the number of vehicles and lower the rental costs

²⁰⁵ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

²⁰⁶ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

²⁰⁷ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

²⁰⁸ Anna Belkin, Email, March 14, 2010.

²⁰⁹ "Wellesley College Campus Survey – Green Report Card 2010," *The College Sustainability Report Card*.

Table 8.1 (Continued from previous page)

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Planning	Planning and implementing policies to promote a pedestrian- and bike-friendly campus.	20%	10%	Wellesley has a Pedestrian Master Plan that prioritizes pedestrian-centered campus ²¹⁰	Wellesley is a small campus and currently does not have a Bike Master Plan that would help prioritize biking on campus	Wellesley could implement a Bike Master Plan and provide facilities in the morning for bike commuters
	Creating parking policies to encourage the use of alternative modes of transportation.			Wellesley does not earn points in this section	Wellesley cannot put in place parking policies to discourage driving to campus since it does not charge faculty and staff for parking	Wellesley could charge faculty and staff for parking and provide discounts for those who choose to carpool or travel by alternative fuel
	Achieving a high percentage of commuters who travel via means other than single-occupancy vehicles.			Majority of students live on campus and therefore do not need to commute. ²¹¹	Most faculty and staff travel via single-occupancy vehicles	Tailoring the current student transportation system to faculty needs. Wellesley would need to provide both subsidies and better access (i.e. a shuttle) to mass transit to faculty and staff.

²¹⁰ “Wellesley College Campus Survey – Green Report Card 2010,” *The College Sustainability Report Card*.

²¹¹ “Wellesley College Campus Survey – Green Report Card 2010,” *The College Sustainability Report Card*.

8.4 How STARS Conceptualizes Transportation

Credit Number	Credit Title	Possible Points
OP Credit 14	Campus Fleet	2
OP Credit 15	Student Commute Modal Split	4
OP Credit 16	Employee Commute Modal Split	3
<i>Tier Two</i>	<i>Bicycle Sharing</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Facilities for Bicyclists</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Bicycle Plan</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Mass Transit</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Condensed Work Week</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Telecommuting</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Carpool Matching</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Cash-out of Parking</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Carpool Discount</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Local Housing</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Prohibiting Idling</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Car Sharing</i>	<i>0.25</i>
Total		12

The STARS Transportation category places a heavy emphasis on student and staff commuting. Commute-related points account for approximately 70 percent of total STARS Transportation points. STARS favors residential colleges and urban colleges in the way its points are calculated. STARS favors residential colleges by rewarding colleges with the lowest percentage of students who commute daily by car. At residential colleges, most students live on campus and therefore do not need to commute to campus each day. Under the STARS Transportation category, colleges in urban areas benefit because cities often have extensive and easily accessible public transportation options that are readily available to students, faculty, and staff. When evaluating suburban colleges, STARS does not account for their disadvantage due to the lack of public transportation options. STARS rewards schools for encouraging faculty and staff to live close to campus in hopes that it increases the number of faculty and staff who bike or walk to campus.

STARS values bicycling as a crucial part of a sustainable transportation system. By rewarding colleges for having a bicycle plan, a bicycle sharing program, and providing facilities for bicyclists,

STARS encourages colleges to support bicycle transportation. In general, STARS pushes colleges to support as many alternative transportation programs as possible in order to cut down on single occupancy travel. STARS offers schools several alternative transportation options by awarding points for carpool matching, carpool discounts, and cash-out of parking programs.

STARS views the development of sustainable higher education transportation as an incremental process. Colleges are rewarded based on the percentage of their fleet that uses sustainable technology as well as the percentage of their community that commutes using environmentally preferable methods. This point-allocation system allows colleges to gain points incrementally as they build up their sustainable transportation systems. STARS also values small, incremental policy changes in transportation by offering easy attainable Tier Two credits for carpooling discounts, telecommuting policies, prohibiting idling, and providing car and bike sharing services.

STARS's incremental point system in this section is a reflection of the nature of transportation in general. Large, sweeping policies are harder to implement because many different groups of people including administrators, faculty, staff and students, are involved in transportation policy and program decisions. Also, these policies may have serious economic consequences for employees and students. Although it would be environmentally beneficial if colleges instituted impossibly high fees for parking, it would also be unfair to commuters who could not afford them and do not have another means of transportation, and would therefore conflict with other college priorities. It is politically easier to make institutional changes that do not directly affect employees, like switching to more environmentally-friendly cleaning products, than to change policies that affect the pocketbooks of individuals. Transportation changes affect employees more directly than the institutional changes made in other sections such as Purchasing. STARS thus recognizes this issue may need to be tackled slowly. Meanwhile, making small possible changes can lead to larger cumulative positive impacts.

There are a few important features of sustainable higher education transportation that STARS fails to address. STARS does not take student air travel into account. By failing to consider student air travel it further favors residential colleges over commuter institutions. STARS penalizes a student's daily 2-mile commute to school but does not take any account for a student who flies across the world to get to school 2 times a year.

In addition, STARS fails to take the size of a campus's fleet into account and thus does not reward schools for making the most efficient use of a smaller motor fleet. The better environmental

choice is often to abstain from purchasing any vehicle—even a hybrid. Lifecycle-based externalities of purchasing new vehicles are incredibly high given the large manufacturing inputs required for heavy machinery. This may be a result of the challenge STARS faces in attempting to compare very different sized schools. Maintaining a small motor fleet may be more difficult for a larger school with bigger transportation needs in comparison to a smaller school with fewer needs. It is unfortunate that a school that chooses to have fewer vehicles that use traditional fuel and technology would not be as rewarded as a school that chooses to purchase an unnecessarily large fleet of vehicles, several of which use alternative fuels or technologies.

Wellesley's Point Scenarios

Table 8.3 Wellesley's STARS Performance in Transportation							
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>OP Credit 14</i> Campus Fleet Percentage of Total Motor Fleet Vehicles that Meet Criteria (A-G) for Power or Fuel Type	2	4/103	4/103	11/103	0.08	0.08	0.21
<i>OP Credit 15</i> Student Commute Modal Split Percentage of Student Body that does not commute by driving alone	4	97%	97%	97%	3.88	3.88	3.88
<i>OP Credit 16</i> Employee Commute Modal Split Percentage of Employees who do not commute by driving alone	3	16.7%	35%	50%	0.668	1.4	2
<i>Tier T_{no}</i> Bike Sharing Wellesley has a bicycle-sharing program or participates in a local bicycle-sharing program (Y/N)	.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier T_{no}</i> Facilities for Bicyclists Wellesley has indoor and secure bike storage, shower facilities, and lockers for bicycle commuters in at least one building (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
<i>Tier T_{no}</i> Bicycle Plan Wellesley has developed a bicycle plan (Y/N)	0.25	No	No	Yes	0	0	0.25

Table 8.3 (Continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier 1 no</i> Mass Transit Wellesley offers free or reduced price transit passes and/or operates a free campus shuttle (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier 1 no</i> Condensed Work Week Wellesley offers a condensed work week option for employees. The institution does not have to offer the option to all employees in order to earn this credit (Y/N)	0.25	No	No	No	0	0	0
<i>Tier 1 no</i> Telecommuting Wellesley offers a telecommute program for employees (Y/N)	0.25	No	No	No	0	0	0
<i>Tier 1 no</i> Carpool Matching Wellesley has a carpool matching program (Y/N)	0.25	No	No	Yes	0	0	0.25
<i>Tier 1 no</i> Cash-out of Parking Wellesley allows commuters to cash out of parking spaces (i.e., it pays employees who do not drive to work) (Y/N)	0.25	No	No	Yes	0	0	0.25
<i>Tier 1 no</i> Carpool Discount Wellesley offers reduced parking fees for car and van poolers (Y/N)	0.25	No	No	Yes	0	0	0.25
<i>Tier 1 no</i> Local Housing Wellesley has incentives or programs to encourage employees to live close to campus (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier 1 no</i> Prohibiting Idling Wellesley has adopted a policy prohibiting idling (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
<i>Tier 1 no</i> Car Sharing Wellesley participates in a car sharing program, such as ZipCar or HourCar (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	12				6.6	6.9	8.6

8.5 Comparative Analysis of GRC and STARS

Both STARS and GRC place particular emphasis on personal transportation—how individual students and employees get to and from campus on a daily basis. They view single occupancy vehicles as the least desirable transportation option. STARS and GRC are also concerned with the sustainability of the campus fleet. They award points based on the types of vehicles that are used on campus. Both systems reward higher education institutions that have invested in alternative fuel or alternative technology vehicles such as hybrid, electric, or biofuel technology for a large percentage of the total fleet. Finally, both STARS and GRC award points for policies that give incentives and reward alternative transportation. For example, points are awarded for bike-sharing programs and subsidized or easy access to public transportation.

GRC puts particular emphasis on policies that encourage the use of local transport alternatives, while STARS puts more value on the actual behavior of people commuting to and from campus. GRC gives points to institutions that provide alternatives, while STARS heavily rewards schools on the extent to which the available alternatives are actually used. Both systems address the form of transportation actually utilized by students and employees, but STARS weighs action more heavily than policy in the final score.

STARS is predominantly interested in real results and actual reductions in carbon footprints. GRC, on the other hand, gives more weight to policy than action by rewarding schools that provide incentives and transportation alternatives. There are advantages and disadvantages to each approach. The GRC approach gives colleges good ideas to work with, but could result in ineffective policies and programs. Higher education institutions could achieve a high score on GRC's transportation category without actually producing measurable results. Although the STARS score, based on actual percentages, is more difficult to compute, it provides more flexibility to schools and universities. By awarding points based on the extent to which alternative methods of commuting are actually used rather than the existence of specific policies, institutions are able to find the most effective way to change behavior for their particular community. Schools in urban areas may find that providing public transit subsidies is the most effective way to increase sustainable commuting, while a suburban school may choose to focus its efforts on promoting carpooling.

Both STARS and GRC reward alternative means of traveling off campus, but only GRC explicitly addresses intra-campus transportation options for the college community. GRC rewards

colleges for having campus planning that encourages biking and walking. STARS offers a few small points for having a bicycle plan as well as a bike-sharing program, but no large points are awarded for having a campus landscape design that is meant to be pedestrian and bike friendly. This point allocation may be a way to avoid favoring smaller campuses, but it is an interesting omission.

Both STARS and GRC fail to address certain aspects of transportation. Neither STARS nor GRC include points for having high parking fees, which may be an important deterrent to personal vehicle use. In fact, STARS seems to assume that all schools already require parking fees. Although high parking fees may be an effective deterrent to single-occupancy vehicle commuting, it is also important to recognize the potential inequities of implementing these fees across the board. Lower-income employees, such as dining hall workers, would be much more negatively affected by high parking fees than high-level administrators.

In addition, neither system accounts for air travel. In the 2008 Greenhouse Gas Emissions Audit, the ES300 students found that air travel is one of the most important parts of Wellesley's overall carbon footprint. Wellesley is not penalized for these emissions in either system. In fact, the vast majority of Wellesley's potential STARS points come from the fact that it is a residential campus where 97 percent of students do not commute. This observation is slightly troubling, because these approaches could benefit wealthier residential colleges over community colleges and other commuter schools, but not necessarily because what the residential colleges are doing is more sustainable. Wealthier colleges are more likely to be residential and to attract students from farther away. The result is that many students fly to campus, emitting GHGs in the process. Because these students tend to live on campus and not own cars, they are actually helping boost the school's total score in STARS and GRC.

Table 8.4 Reasons Wellesley Does Not Earn STARS Points in Transportation

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 14	Campus Fleet	2	No	Only partially doing it	Due to the lack of available repair part for fuel alternative vehicle models, the Wellesley Motor fleet has not switched to alternative fuel models.
OP Credit 15	Student Commute Modal Split	4	Yes	--	--
OP Credit 16	Employee Commute Modal Split	3	No	Only partially doing it	Wellesley does not provide any public transportation subsidies or other incentives for alternative transportation to faculty and staff. Public transportation is also not accessible to faculty and staff.
<i>Tier Two</i>	Bicycle Sharing	0.25	Yes	--	--
<i>Tier Two</i>	Facilities for Bicyclists	0.25	No	Has not been attempted	Wellesley does not extend sport facilities to faculty and staff who commute by bike without paying
<i>Tier Two</i>	Bicycle Plan	0.25	No	Credit does not apply to Wellesley	Wellesley is a small campus so a bicycle plan many not seem useful and hard to get trustees on board for changing campus
<i>Tier Two</i>	Mass Transit	0.25	Yes	--	--
<i>Tier Two</i>	Condensed Work Week	0.25	No	Does not align with Wellesley's priorities	Wellesley values the community created on campus and the availability of faculty to students.
<i>Tier Two</i>	Telecommuting	0.25	No	Does not align with Wellesley's priorities	Wellesley values building of community through groups and meetings
<i>Tier Two</i>	Carpool Matching	0.25	No	Has not been attempted	--
<i>Tier Two</i>	Cash-out of Parking	0.25	No	Credit does not apply to Wellesley	Since Wellesley does not charge faculty and staff for parking , it would not be able to implement "cash-out of parking"

Table 8.4 (Continued from previous page)

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
<i>Tier Two</i>	Carpool Discount	0.25	No	Credit does not apply to Wellesley	Similar to the cash-out of parking, Wellesley cannot provide a carpool parking discount if it does not charge for parking
<i>Tier Two</i>	Local Housing	0.25	Yes	-	--
<i>Tier Two</i>	Prohibiting Idling	0.25	No	Has not been attempted	Wellesley does not currently have its own no-idling policy, but Campus Police does enforce the current Massachusetts no-idling law
<i>Tier Two</i>	Car Sharing	0.25	Yes	-	--

8.6 Initial Recommendations

There are easy and cost effective changes that Wellesley could make in transportation that would both help raise its STARS and GRC scores as well as help advance sustainability on campus. Wellesley could easily open up sports facilities (showers and lockers) to the small number of bicycle commuters without requiring membership fees for joining the sports center, and allow them to store their bicycles there. Wellesley would also gain points on STARS by providing these facilities for bicyclists.

Massachusetts currently has a no-idling law that prohibits engine operation when a motor vehicle is idling longer than five minutes.²¹² Wellesley could expand on Massachusetts' current no-idling law by prohibiting idling by the Exchange buses as well as enforcing stricter no-idling regulations on smaller motor vehicles around campus. Instituting this no-idling policy could be another easy change that Wellesley could implement to help raise its STARS score and reduce vehicle emissions on campus. Additionally, expanding the current Revolution bike sharing program of five bicycles and providing bicycle repair services would help promote alternative modes of

²¹² "The Massachusetts Anti-Idling Law," *Mass General Law*, http://www.somervillema.gov/CoS_Content/documents/Anti-Idling%20Law%20With%20Penalties.pdf (accessed: March 20, 2010).

transportation and improve both Wellesley's GRC and STARS scores.

In order to raise both GRC and STARS scores, Wellesley could also consider making its current student transportation system more economically attractive to faculty and staff members. For faculty and staff, where walking or biking is not an option, making the current student transportation system more accessible would provide another feasible alternative to personal vehicle use. Making the Exchange bus to Boston and Cambridge free to all faculty and staff would provide some incentives and then tailoring a couple of stops on those routes to faculty and staff would help with accessibility. These changes could be easily identified and implemented by surveying faculty and staff on their potential interest and transportation needs.

Additionally, another recommendation would be to require the faculty and staff who participate in either the faculty mortgage plan or faculty housing to pay parking fees if they drive to campus. A survey conducted on faculty and staff at Wellesley found that 62.5 percent of faculty and staff who live within five miles of campus and could walk or bike to campus still choose to drive each day.²¹³ Parking fees, and facilities for bike commuters, would encourage faculty and staff who live within close range of the college to take advantage of alternative transportation options (walking or biking) rather than driving to campus.

Wellesley should take insight from STARS's transportation philosophy and begin to make small, incremental steps toward a more sustainable transportation system. The College should not forget, however, the large impact that student and faculty air travel has on the environment and look for innovative ways to help mitigate this problem and allow Wellesley to move toward greater overall sustainability.

²¹³ "Faculty and Staff Survey," 2008 ES 300 Transportation and Waste Conference.



Figure 15. Wellesley's BigBelly Solar Compactor for Recycling and Waste

9.0 WASTE AND RECYCLING

9.1 Introduction

College Campuses

Three words have long delineated the environmental movement: reduce, reuse, recycle. This waste management doctrine has been the fundamental mainstay of the sustainability discussion among individuals, schools, and businesses. Institutes of higher education are no exception; many colleges and universities readily engage in waste management activities. While some aspects of campus sustainability require substantial investment, like a green building, waste management and recycling are approachable strategies for tackling sustainability. Waste management is essential for the environment when you consider that Americans generate approximately 4.5 pounds of waste per

person per day.²¹⁴ Wellesley alone produces 1,839 tons of trash annually.²¹⁵ The importance of waste management has encouraged colleges and universities to consider and implement new ways to both manage and reduce waste by eliminating the source of waste, and by recycling and composting. Waste reduction has far-reaching environmental impacts by reducing energy and carbon emissions needed to produce extra materials and lessening the movement of wastes to landfills. Proper waste disposal also prevents air and groundwater contamination.²¹⁶ Reducing waste is also economically beneficial to schools as they reduce their need for expensive waste removal services by producing less waste.²¹⁷

If the waste stream cannot be ebbed, the next best stop is to focus on recycling. Recycling efforts focus on materials such as bottles, cans, plastics, and electronics, but at academic institutions and the country as a whole, paper is the predominant concern. In 2008, 77 million tons, or 31 percent of total municipal solid waste generated in the United States, were paper and paperboard products.²¹⁸ This percentage was higher than any other waste category. There are many environmental benefits from recycling paper, such as reduced energy emissions required to produce paper products, lessened need for landfill space, reduced water usage, and sustained forests necessary for carbon sequestration.²¹⁹ Forests play a vital role in climate management by acting as terrestrial carbon sinks; when forests are cut down, carbon is released into the atmosphere, contributing to atmospheric carbon concentrations.²²⁰ In order to mitigate the extent of paper use, some colleges limit or charge students for printing, or offer materials online.²²¹

Schools have expanded their capacity to recycle paper and other materials by participating in competitions, disseminating information, providing material exchanges, and making recycling receptacles readily available. There are essential educational, environmental, social, and economic benefits from these endeavors. Many of these efforts serve to make individuals more aware of the

²¹⁴ "Non-Hazardous Waste | Basic Information | Wastes | US EPA," *U.S. Environmental Protection Agency*, <http://www.epa.gov/waste/basic-solid.htm> (accessed: March 7, 2010).

²¹⁵ "Solid Waste: Rubbish," *Wellesley College: Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/solidwaste.html> (accessed: March 7, 2010).

²¹⁶ STARS 1.0 Technical Manual, 180.

²¹⁷ STARS 1.0 Technical Manual, 180.

²¹⁸ "Basic Information | Paper Recycling | US EPA," http://www.epa.gov/osw/conserva/materials/paper/basic_info.htm (accessed: March 7, 2010).

²¹⁹ "Basic Information Details | Paper Recycling | US EPA," <http://www.epa.gov/osw/conserva/materials/paper/basics/index.htm#reduction> (accessed: March 7, 2010).

²²⁰ "US EPA – Carbon Sequestration in Agriculture and Forestry: Frequently Asked Questions," *U.S. Environmental Protection Agency*, <http://www.epa.gov/sequestration/faq.html> (accessed: March 7, 2010).

²²¹ "Waste," *STARS Technical Manual*, January 2010, 180, http://www.aashe.org/files/documents/STARS/STARS_1.0_Technical_Manual.pdf (accessed: March 7, 2010).

amount of waste they are generating and educate students on how this waste can be minimized. Recycling and waste reduction initiatives, like friendly competitions, can be a positive way to engage students and promote environmental sustainability.

Exemplary Institutions

Started in 2001, the RecycleMania competition reflects the drive of hundreds of colleges and universities across the globe to increase their recycling efforts through a friendly competition.²²² California State University in San Marcos, the RecycleMania champion in both waste reduction and recycling in 2009, has a recycling rate of over 50 percent and now aims for an ambitious goal of zero waste.²²³ Colby College in Maine also shows a commitment to waste reduction. Colby diverts a substantial amount of waste by hosting a clothing swap and an end-of-the-year program that recycles or reuses bulk waste, such as household items and furniture.²²⁴ In 2006, Pacific Lutheran University implemented the Can the Can program, which downsized the volume of students' and faculty's trash cans to 1.5 liters, contributing to an outstanding diversion rate of 71 percent.^{225 226}

²²² "RecycleMania: General Overview," *RecycleMania!*, <http://www.recyclemania.org/> (accessed: March 7, 2010).

²²³ "CSUSM: Recycling," *California State University – San Marcos*, <http://www.csusm.edu/facilities/sustainability/recycling.html> (accessed: March 7, 2010).

²²⁴ "Colby College – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/colby-college/surveys/dining-survey> (accessed: March 18, 2010).

²²⁵ "FAQ / Can the Can," *Pacific Lutheran University*, <http://www.plu.edu/wastenot/faq.htm> (accessed: March 18, 2010).

²²⁶ "Food & Recycling - Leaders – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/food---recycling/leaders> (accessed: March 18, 2010).

9.2 How Wellesley Approaches Waste & Recycling



Figure 16. Wellesley Recycling Receptacle

Priorities

Wellesley has taken steps to reduce the disposal of solid waste and to increase the percentage of waste being recycled on campus in the past few years. The total amount of solid waste generated by the College is estimated to be 1,839 tons per year. The College currently recycles paper, cardboard, metals, wood, construction debris, appliances, mattresses, batteries, fluorescent lamps, some automobile parts, computer and TV cathode ray tubes, and carpets.²²⁷

Wellesley's primary focus is on the reduction of solid waste on campus. The College's goal is to decrease the total solid waste stream by 20 percent by 2013. In order to decrease the solid waste stream consumption of products should be reduced, and the amount recycled should increase. Despite these efforts,, the total amount of waste produced annually remains similar at 1,800 tons even after the College set the goal to reduce waste.²²⁸

Wellesley nevertheless has increased the amount of waste that is recycled from 10 percent in 2006 to 18 percent in 2007.²²⁹ The College's goal is to increase the percentage of recycled waste by 25 percent by 2013. Wellesley tries to continue to upgrade the recycling program periodically to

²²⁷ "Solid Waste (Rubbish)," *Wellesley College Sustainability*, <http://www.wellesley.edu/AdminandPlanning/Sustainability/solidwaste.html> (accessed: March 12, 2010).

²²⁸ "Solid Waste (Rubbish)," *Wellesley College Sustainability*.

²²⁹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College.

further reduce solid waste disposal. To meet this goal, large swap loader recycling containers were placed in Stone Davis and Bates to increase recycling, while additional recycling containers were added throughout the campus.²³⁰ Wellesley should still take more steps to increase recycling as a waste audit at the College estimates that approximately 40 percent of Wellesley's waste can be recycled.²³¹

Wellesley also emphasizes the importance of capturing products before they enter the waste stream, and strives to refine and coordinate programs that can capture the materials left behind during the end of year move-out period. Wellesley's efforts are extended to include not only recyclable items but other materials such as clothes, furniture, and appliances to increase re-use on campus. End of the year recycling in 2008 captured more material than in 2007, and several truckloads of clothes were donated to a non-profit organization.²³²

Finally, Wellesley is investigating the feasibility of composting food wastes from the college's dining facilities, and this issue will be discussed further in the Food and Dining section.

Challenges

While Wellesley does relatively well in the Waste & Recycling sector, there are still steps Wellesley could take to increase waste reduction and recycling on campus. The College could make improvements in implementing a materials exchange program on campus and implement a move-in waste reduction program. While Wellesley has some success in recycling during move-in and move-out, it still lacks formal programs that may increase the amount reduced. Unfortunately, these programs can be time consuming to plan and need staffing to implement as formal programs; the College may not have sufficient resources to allocate to these programs. Similarly, implementing a materials exchange program, or charging for or limiting printing on campus could also be difficult to implement. It takes a time commitment and administrative efforts to start new programs. Wellesley may not be willing to allocate limited resources toward these programs, especially when the College already has some programs that partially reduce waste, such as the For Sale conference on First Class and move-out donations to Big Brothers Big Sisters.

²³⁰ "Solid Waste (Rubbish)," *Wellesley College Sustainability*.

²³¹ Waste Audit 2002, Wellesley Energy and Environmental Defense, April 26, 2002.

²³² "Solid Waste (Rubbish)," *Wellesley College Sustainability*.

9.3 How GRC Conceptualizes Waste & Recycling

For Waste & Recycling, GRC's main focus is on the materials generated from food services on campus. This system prioritizes whether or not institutions have a comprehensive recycling program connected to dining halls. Having a recycling program associated with dining halls is an important consideration for a green college because dining halls produce a large amount of easily recyclable materials compared to other operations on campus. This may be a priority for GRC because this system wants to encourage green activities that are relatively easy changes, which also have large scale of impacts for the required effort, such as recycling and composting waste from dining halls.

GRC also values, to a lesser degree, recycling of electronic waste, composting of yard waste, and reuse of items such as clothing and furniture. Waste produced from food services is an important contribution to recycling efforts, but GRC does not include an evaluation of any other waste produced on campus that could be recycled, such as garbage from academic activities or dorms. Evaluating each institution's recycling activity and total waste production would be a more accurate representation of an institution's recycling initiatives and would encourage schools to have a broader, more comprehensive waste reduction and recycling policy.

The GRC evaluation aligns with some of Wellesley's recycling priorities because the College composts all of its yard waste and is concerned about proper disposal of electronic waste and reuse of dorm items. Wellesley also has a good system in place for recycling in dining halls. Wellesley does not receive recognition on GRC for providing recycling bins in most common areas on campus, attempting to reduce the total amount of waste produced, and encouraging less consumption of materials that contribute to waste. Additionally, GRC fails to look into paper use and recycling on campus associated with academic and administrative activities, even though this is a significant part of waste management on college campuses.

Wellesley's Point Scenarios

Table 9.1 Wellesley's GRC Performance in Waste & Recycling

Credit title and description	Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Recycling of Traditional Materials Administering a recycling program for dining hall recyclables, such as bottles, cans, and cardboard.	15%	2.5%	Has a recycling program for all dining halls.	Does not recycle all plastics, only some.	Recycle all plastics.
Recycling of Electronic Waste Providing recycling for items such as batteries, cell phones, computers, and printer cartridges.	5%	2.5%	Provides safe recycling for all of these items.	Wellesley earns full points.	Could make recycling these items easier by providing more locations.
Composting (Aside from Dining Facilities) Composting landscaping waste or recycling landscape waste into mulch for use on campus.	5%	--	Composts all yard waste generated on campus.	Wellesley earns full points.	No potential changes needed.
			Wellesley does not earn credit	No composting receptacles around campus in locations other than dining halls.	Provide composting receptacles around campus.
Source Reduction Operating programs that facilitate the continued use of items in good condition (instead of disposal), instead of disposal, such as end-of-semester furniture or clothing swaps and collections.	5%	--	Unwanted clothing picked up by Big Brothers Big Sisters (BBBS). All unwanted books donated and reused. Rescues any useable furnishings including furniture, lamps, rugs, etc.	Does not always encourage/enforce these actions.	Could do more to encourage reuse of materials on campus.

9.4 How STARS Conceptualizes Waste & Recycling

Table 9.2 STARS Summary of Waste Points Allocation		
Credit Number	Credit Title	Possible Points
OP Credit 17	Waste Reduction	5
OP Credit 18	Waste Diversion	3
OP Credit 19	Construction and Demolition Waste Diversion	1
OP Credit 20	Electronic Waste Recycling Program	1
OP Credit 21	Hazardous Waste Management	1
<i>Tier Two</i>	<i>Materials Exchange</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Limiting printing</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Materials online</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Chemical Reuse Inventory</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Move-in Waste Reduction</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Move-our waste reduction</i>	<i>0.25</i>
Total		12.5

In Waste & Recycling, STARS prioritizes an institution's commitment to waste reduction per campus user, which includes what is recycled, composted, and disposed of per person based on each person's amount of use of the campus. This priority is important because it accounts for the number of people involved in recycling on campus and considers increased recycling of waste and reductions in the actual amount of waste being generated. STARS also evaluates schools on how much construction and demolition waste they divert from landfills and incinerators. STARS also considers how schools manage electronic waste and hazardous materials, which is important because the chemicals and other contaminants in these materials can have significant negative impacts on the environment and on human health.

Wellesley's Point Scenarios

Table 9.3 Wellesley's STARS Performance in Waste							
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
OP Credit 17 Waste Reduction Percentage Waste Reduction (Garbage+Recycling+Compost) per Campus User from Baseline Year 2005	5	11%	15%	20%	1.1	1.5	2
OP Credit 18 Waste Diversion Percentage of Total waste recycled, donated or otherwise recovered	3	35.5%	40%	65%	1.07	1.2	1.95
OP Credit 19 Construction and Demolition Waste Diversion Percentage of C&D Waste recycled, donated or otherwise recovered from total waste generated	1	84%	84%	90%	0.84	0.84	0.9
OP Credit 20 Electronic Waste Recycling Program Wellesley has a program in place to recycle, reuse and/or refurbish all electronic waste generated by the institution (Y/N)	1	Yes	Yes	Yes	1	1	1
OP Credit 21 Hazardous Waste Management Wellesley has strategies in place to safely dispose or all hazardous, universal, and non-regulated chemical waste and seeks to minimize the presence of these materials on campus (Y/N)	1	Yes	Yes	Yes	1	1	1
Tier Two Material Exchange Wellesley has a surplus department or formal office supplies exchange program that facilitates reuse of materials (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
Tier Two Limited Printing Wellesley limits free printing for students in all computer labs and libraries (Y/N)	0.25	No	No	Yes	0	0	0.25
Tier Two Materials Online Wellesley's default is to not print course catalogs, course schedules, and directories, but instead make these materials available online (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25

Table 9.3 (Continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier Two</i> Chemical Reuse Inventory Institution has implemented a campus-wide inventory system to facilitate the reuse of laboratory chemicals (Y/N)	0.25	No	No	Yes	0	0	0.25
<i>Tier Two</i> Move-In Waste Reduction Wellesley has a program to reduce residence hall move-in waste (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
<i>Tier Two</i> Move-Out Waste Reduction Wellesley has a program to reduce residence hall move-out waste (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	12.5				5.26	6.54	8.35

9.5 Comparative Analysis of GRC and STARS

STARS and GRC both prioritize the reduction of waste generation and encourage recycling and composting in order to reduce the amount of waste that goes to incinerators and landfills. STARS's conceptualization of the waste category recognizes the benefits of recycling as well as overall waste reduction. It prioritizes waste reduction per campus user in its evaluation. In addition, it considers the content of what is recycled, composted, and disposed of in the specific categories of construction and demolition waste diversion, electronic waste recycling, and hazardous waste management. STARS's values in the category of an institution's waste policies are weighted by population of campus users while GRC values that an institution makes a commitment to recycling and composting without considering changes made over time or per user. STARS's conceptualization of an institution's waste policies is much more comprehensive than GRC's and allows for more improvement between surveys. This reflects STARS's commitment to prioritize performance over strategy, while GRC rewards the implementation of programs rather than focusing on specific results.

Wellesley does well in GRC's evaluation because of the College's recycling programs, composting of landscaping waste, and source reduction programs. Since STARS requires a move toward zero waste and focuses on improvement in order to garner points, there is an opportunity

for Wellesley to do well with the implementation of a few programs that will contribute to the institution's overall sustainability goals.

Table 9.4 Reasons Wellesley Does Not Earn STARS Points in Waste					
Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 17	Waste Reduction	5	No	Only partially doing it Effort in progress	Do a little
OP Credit 18	Waste Diversion	3	No	Only partially doing it Effort in progress	Do some
OP Credit 19	Construction and Demolition Waste Diversion	1	No	Effort in progress	Do a lot, but not completely
OP Credit 20	Electronic Waste Recycling Program	1	Yes	--	--
OP Credit 21	Hazardous Waste Management	1	Yes	--	--
<i>Tier Two</i>	Materials Exchange	0.25	No	Only partially doing it	Do a little
<i>Tier Two</i>	Limiting printing	0.25	No	Only partially doing it	Do very little
<i>Tier Two</i>	Materials online	0.25	No	Only partially doing it	Do a little
<i>Tier Two</i>	Chemical Reuse Inventory	0.25	No	Has not been attempted	Would need to coordinate effort between departments
<i>Tier Two</i>	Move-in Waste Reduction	0.25	No	Effort in progress	Just implemented new policy
<i>Tier Two</i>	Move-our waste reduction	0.25	Yes	--	--

9.6 Initial Recommendations

Wellesley's waste and recycling scores under GRC and STARS could improve if the College demonstrates a deeper commitment to implementing waste management initiatives that both maximize the amount of waste recycled and the amount diverted from the waste stream. Many of these activities are cost-effective and easily implementable because they involve expanding upon pre-

existing programs. At this time, the College engages in some essential activities like providing recycling receptacles, participating in RecycleMania, and having an Eco Rep in each dorm. Each of these activities positively contributes to waste management on campus, but their role on campus and in the total amount of waste recycled could be maximized by greater awareness and involvement. Wellesley should prioritize the dissemination of information regarding these activities, coupled with an education campaign outlining the basic how-tos of recycling. By doing so Wellesley could substantially increase student and faculty knowledge of and engagement in recycling.

There are some programs that Wellesley currently does not implement but could, in a cost effective manner, in order to earn more points and further its waste reduction efforts. Wellesley currently does not recycle all plastics, but by doing so would earn more credit on GRC. While Wellesley has initiated a program to minimize move-out waste, it does not have a similar one to reduce move-in waste. Implementing this type of program would earn the College additional points under STARS and help it reduce its waste stream at the beginning of the semester. Wellesley could also limit or charge for printing in libraries and computer labs. Similarly, the College could minimize paper waste by providing course catalogs, schedules, and directories online as its default; Wellesley does provide these materials online now, but its default is to print them. An office supply exchange program would help Wellesley to divert office waste. Finally, the College should look into providing composting receptacles on campus for non-dining hall related waste.

Lastly, while Wellesley does earn credit for having an electronic waste recycling and reusing program, this program does not by any means capture all electronic waste on campus. The College could expand this program, not to earn any more points, but as a commitment to sustainability practices in general. Wellesley has also recently initiated the recycling of clothes and household items during move-out, and this program too, could expand throughout the year to capture a higher percentage of student waste.



Figure 17. Wellesley's Lake Waban

10.0 WATER

10.1 Introduction

College Campuses

Water is one of the primary components of life. Every plant, animal and person depends on this valuable resource to function successfully, and global water supplies are dwindling. People need water to help their brain function, provide physical strength and provide immunities.²³³ Although 70

²³³ Daniel Snape, "Importance of Water," <http://www.scribd.com/doc/15946755/The-Importance-of-Clean-Water> (accessed: April 1, 2010).

percent of the Earth is made up of water, only one percent of that water supply is drinkable.²³⁴ The demand for water is predicted to increase by 40 percent in the next two decades as a consequence of growing populations and increased agricultural needs.²³⁵ Since colleges and universities in the United States have far easier access to clean water than most of the world, it is their moral responsibility to conserve water whenever possible. By instituting water conservation measures today, colleges and universities can help prevent the need for new dams, reduce the money needed for recycling, cleaning and purifying water as well as decrease erosion of land associated with increased irrigation.²³⁶

In addition to the moral considerations of water conservation, conserving water is economically beneficial for many institutions. Water conservation is an economic decision for institutions that pay for their water. Today's colleges and universities are likely to continue to exist for hundreds of years to come. These institutions have a particular incentive to conserve their water in order to have access to water for future operating procedures.

Each year colleges and universities use large quantities of water for dining halls, dorms, athletic fields, and landscaping. Many institutions recognize their impact on this limited resource and are taking steps to fulfill their socially responsible role in water conservation. According to Niles Barnes of AASHE, "toilets and urinals that use low water volume and low-flow showerheads and faucets are pretty much standard practice across U.S. colleges today."²³⁷ The NWF survey of 400 colleges and universities similarly found that in 2008 Water Conservation and Efficiency was the most prevalent environmental initiative on campuses.²³⁸ More than thirty-eight colleges adhere to LEED standards, which often result in more conservative water usage. LEED rating system awards points for controlling discharge water, managing runoff, and limiting use of potable water for irrigation.²³⁹

For schools in drought prone areas, water conservation is an absolute necessity. When the Southeast was hit by a serious drought in 2007, local universities facing state mandates and

²³⁴ "Importance of Water Conservation," *Benefits of Recycling*, <http://www.benefits-of-recycling.com/importanceofconservationofwater.html> (accessed: March 31, 2010).

²³⁵ "Importance of Water Conservation," *Benefits of Recycling*.

²³⁶ "Importance of Water Conservation," *Benefits of Recycling*.

²³⁷ Katherine Cure, "Going with the Flow: Colleges get Serious About Saving Water," *E-Magazine*, April 2008, <http://www.emagazine.com/view/?4105> (accessed: March 31, 2010).

²³⁸ National Wildlife Federation, "Campus Environment 2008: National Report Card on Sustainability in Higher Education," pg. 14.

²³⁹ Katherine Cure, "Going with the Flow: Colleges get Serious About Saving Water".

regulations were forced to find new ways to conserve water on campus.²⁴⁰ Institutions installed low flow showerheads, encouraged students to report leaky faucets and take shorter showers.²⁴¹ Colleges also drastically changed their irrigation and landscaping procedures in order to comply with statewide bans on outside watering.²⁴²

Exemplary Institutions

Many of the higher education institutions in drought prone areas are leaders in campus water conservation efforts. After North Carolina's governor called for 50 percent reduction in water consumption, North Carolinian colleges and universities came up with impressive and innovative water conservation programs.²⁴³ With \$5 million designated for water conservation efforts, Duke University installed 10,000 low flow showerheads across campus, and developed a comprehensive campus storm water management plan, using all reclaimed water for irrigation purposes.²⁴⁴ Duke also invested more than \$50 million to build and expand a central chilled water system, which consumes substantially less water than individual cooling systems for buildings on campus.²⁴⁵

The University of Georgia faced a similar problem in 2007 and 2008 when the state banned watering and pressured institutions to implement water saving measures. The university responded by instituting its *Every Drop Counts Campaign* which shut down campus fountains, discontinued washing most campus vehicles and asked fans at some sport events not to flush stadium toilets.²⁴⁶ The campaign also set up a website where students, faculty and staff could post their water conservation tips. Within one academic year, the University reduced its water consumption by 30 percent, saving more than \$250,000.²⁴⁷

The University of California, Santa Barbara (UCSB) has also instituted an aggressive water conservation program in order to deal with chronic droughts and arid conditions. UCSB has focused its conservation efforts on housing, which is responsible for more than half the university's water usage. In each residence hall, the Campus Sustainability Energy and Water Team has installed

²⁴⁰ Elia Powers, "All the Grass is Brown (and the Skies Aren't Gray)," *Inside Higher Education*, November 6, 2007, <http://www.insidehighered.com/news/2007/11/06/drought> (accessed: March 31, 2010).

²⁴¹ Elia Powers, "All the Grass is Brown (and the Skies Aren't Gray)".

²⁴² Katherine Cure, "Going with the Flow: Colleges get Serious About Saving Water".

²⁴³ Elia Powers, "All the Grass is Brown (and the Skies Aren't Gray)".

²⁴⁴ "Duke Establishes \$5 Million Water Conservation Fund," *Duke University Office of News & Communications*, December 4, 2007, <http://news.duke.edu/2007/12/watercon.html> (accessed: March 31, 2010).

²⁴⁵ "Duke Establishes \$5 Million Water Conservation Fund," *Duke University Office of News & Communications*,

²⁴⁶ Elia Powers, "All the Grass is Brown (and the Skies Aren't Gray)".

²⁴⁷ "UGA reports success in water conservation efforts," *NBC Augusta*, September 30, 2008, <http://www.nbcaugusta.com/news/georgia/29961814.html> (accessed: March 31, 2010).

low-flow sink taps and more than 50 waterless urinals. In addition, UCSB runs education campaigns and competitions between residence halls to encourage students to decrease their daily water use.²⁴⁸ Finally, UCSB keeps 94 percent of campus grounds green with drought tolerant native plants and uses reclaimed water for irrigation.²⁴⁹

10.2 How Wellesley Approaches Water



Figure 18. One of the Dual Flush Toilets installed in Chapel renovation

²⁴⁸ Katherine Cure, "Going with the Flow: Colleges get Serious About Saving Water".

²⁴⁹ Katherine Cure, "Going with the Flow: Colleges get Serious About Saving Water".

Priorities

Although it would be easy to take water for granted on a campus graced with multiple ponds and lakes, water conservation has become a priority for Wellesley College and is one of the areas in which the College has made the most gains in the past few years. In 2008, 100 percent of Wellesley's potable water was obtained from the College's Botany Wells on campus.²⁵⁰ Furthermore, in the past ten years, a comprehensive water conservation program has resulted in over 30 percent water consumption reduction.²⁵¹

Unlike many colleges and universities, Wellesley sources its own water supply, making all of Wellesley's water essentially free. It is important to note, however, that there are non-monetary reasons to take water conservation seriously at Wellesley. By conserving water today, Wellesley will reduce its need for outside water sources in the future even if the campus continues to expand. Protection of the aquifer is imperative to the future of the College's water security. Certain responsibilities come from being a municipal supply. The Massachusetts Department of Environmental Protection (DEP) limits water withdrawal, particularly within the Charles River Basin. Because Wellesley is located within the Charles River Basin, it has been impacted by limited permitted withdrawal rates and state-mandated water conservation measures.

In buildings across campus, Wellesley has installed low flow fixtures as a part of all new renovations and has started to expand this program in buildings not being renovated.²⁵² Over 400 low-flow showerheads were set up in dorms across campus in summer 2008, saving the College over 6.9 million gallons of water as well as over \$65,000 from energy savings. Similarly, Wellesley Dining Services installed low-flow devices in all kitchens and as part of the Chapel renovation, the College installed its first dual flush toilets and plans to continue to install dual flush toilets in future renovation projects.²⁵³

Additionally, Wellesley has made great strides in landscape water conservation. The College prioritizes native plant species in landscaping that can survive normal New England weather conditions without heavy irrigation.²⁵⁴ Wellesley has taken efforts to naturalize areas across campus,

²⁵⁰ "Wellesley College Water Supply: Consumer Confidence Report for the Year," *Wellesley College Office of Environmental Health and Safety*, <http://www.wellesley.edu/Safety/information.html> (accessed: April 2, 2010).

²⁵¹ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

"Water Conservation," *Wellesley College Sustainability*,

<http://www.wellesley.edu/AdminandPlanning/Sustainability/waterconservation.html> (accessed: March 30, 2010).

²⁵² "Water Conservation," *Wellesley College Sustainability*.

²⁵³ "Water Conservation," *Wellesley College Sustainability*.

²⁵⁴ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

such as the Alumnae Valley area, as a part of a more sustainable landscape approach with reduced irrigation demands.²⁵⁵

Despite Wellesley's expanded irrigated acreage over the past ten years, the College has actually been able to reduce its potable water demand by using Lake Waban water as the water source for the majority of irrigation systems. The largest irrigation systems on campus including all of Wellesley's athletic fields, Alumnae Valley, the Wang Campus Center, Davis Parking Garage area, as well as the landscapes near the Tower dormitory complex, are all sourced solely from the Lake Waban reservoir.²⁵⁶

Wellesley has not only largely eliminated its potable water need for irrigation but has also further reduced overall irrigation by installing weather station controlled irrigation systems on the West Side of campus that are able to limit or shut down depending on the weather. The rest of irrigation systems on campus are controlled by rain sensors which shut down the irrigation systems if enough rain has occurred.²⁵⁷

Challenges

Wellesley faces several challenges when it comes to water conservation. Although Wellesley has significantly increased its water efficiency, it still has high water consumption levels in comparison to schools of similar sizes.²⁵⁸ Currently, water meters can only be found in the Campus Center, Sports Complex, and Power Plant.²⁵⁹ No housing or academic buildings are metered. Wellesley fails to meter water consumption for most of the campus and is therefore unable to implement effective water saving initiatives without knowing the largest sources of water consumption. Wellesley also lacks incentive to reduce its water consumption since it does not pay for its water. Since the College sources its own water, it does not have to directly pay for the amount of water used each year and therefore faces little economic incentive to reduce its water consumption from year to year.

Additionally, Wellesley has largely focused its water conservation efforts on changing technology rather than individual behavior. The Wellesley Sustainability Committee did distribute a small number of five-minute shower reminders to students in 2008 but, on a whole, has not heavily

²⁵⁵ "Water Conservation," *Wellesley College Sustainability*.

²⁵⁶ "Water Conservation," *Wellesley College Sustainability*.

²⁵⁷ ²⁵⁷ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

²⁵⁸ "Water Conservation," *Wellesley College Sustainability*.

²⁵⁹ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

channeled its resources towards water conservation education, by providing incentives for personal water conservation efforts or instituting regulations or limits on personal water usage.²⁶⁰ Focusing efforts on changing student behavior would help to instill water conservation values in students that would impact water conservation far beyond each student's time at Wellesley. In contrast to universities facing severe droughts, Wellesley may find difficulties in motivating students to conserve water when water at Wellesley is free and in abundance.

Although Wellesley has made significant progress in reducing landscape water consumption, there is still work to be done regarding the artificially created Paramecium Pond on campus. Paramecium Pond is currently being supplied with potable water, circulating 12 million gallons of potable water every year.²⁶¹ Wellesley has taken steps to remove the potable feed and utilize lake water and recirculation pumps instead but has failed to complete the hook up.²⁶² Wellesley will continue to waste this large amount of water until it takes the necessary steps to switch over to Lake Waban water and install recirculation pumping, which will reduce Paramecium Pond's water needs.²⁶³

It is also important to note that most water-related sustainability efforts at Wellesley have focused on conservation and quantity, rather than protecting water quality. Although there have been hardly any complaints about Wellesley's drinking water quality during the past several years, during a round of sampling in Spring 2010, Wellesley found some higher than expected lead levels at faucets located in three of Wellesley's older buildings, Billings/Schneider, Simpson Dormitory, and Claflin Bake Shop.²⁶⁴ Wellesley concluded that the source of the high levels of lead was mostly likely either older pipes or the distribution system within each building.²⁶⁵ Wellesley is continuing to investigate this problem and has informed the college community of the high levels, provided information on their potential effects as well as offered ways to avoid lead consumption. However, Wellesley has not developed any formal plan to remediate the high lead levels.²⁶⁶ If Wellesley does not successfully address the lead in drinking water problem, it is likely that students and staff will increasingly turn to bottled water out of fear and increase Wellesley's environmental impact in terms of recycling, energy usage and water conservation.

²⁶⁰ "Water Conservation," *Wellesley College Sustainability*.

²⁶¹ "Water Conservation," *Wellesley College Sustainability*.

²⁶² "Water Conservation," *Wellesley College Sustainability*.

²⁶³ "Water Conservation," *Wellesley College Sustainability*.

²⁶⁴ Wellesley College Water Supply: Consumer Confidence Report for the Year," *Wellesley College Office of Environmental Health and Safety*; Susanne Howard, Email, March 23, 2010.

²⁶⁵ Susanne Howard, Email, March 23, 2010.

²⁶⁶ Susanne Howard, Email, March 23, 2010.

10.3 How GRC Conceptualizes Water

The Green Report Card addresses the issue of water through one question in its green building category. It only rewards colleges that have found innovative ways to increase the efficiency of water delivery to their campuses. GRC evaluates colleges' water usage and water conservation efforts based on the type of water conservation technologies that have been installed in existing buildings. Specifically, colleges are evaluated based upon the number of low-flow faucets, low-flow showerheads, waterless urinals, dual-flush toilets, graywater systems, laundry technology and other water saving technologies present on their campuses. GRC is solely concerned with the percentage of water conservation technology compared to overall campus fixtures as well as the percentage of overall maintained building space that has been renovated with the water conservation technology.

The fact that GRC examines colleges' commitment to water conservation based on the results of one single question is significant. Although water is a critical environmental issue, it is likely that GRC places such a small emphasis on water because of the potential challenges associated with determining a fair and equitable way to evaluate colleges' water conservation efforts. The wide variation in types of colleges, college campus sizes and college locations make it difficult to create a non-biased water rating system. GRC most likely decided to avoid extensively looking at water because of the dramatically different relationships colleges have with water and the relative ease some schools have in reducing water consumption compared to others.

Table 10.1 Wellesley's GRC performance in Water

Credit Title and Description	Regular Credit	Extra Credit	What Wellesley earns credit for	What Wellesley doesn't earn credit for	Changes Wellesley could make	
Renovation and Retrofits	Renovating existing buildings in accordance with LEED-EB and Energy Star standards.	40%	32.5%	Wellesley has installed low flow faucets in all dining halls and low flow shower heads in newly renovated residence halls	Wellesley has not installed low flow faucets and low flow shower heads in all relevant campus locations	Wellesley could install low flow fixtures and low flow shower heads campus wide
	Installing various energy efficiency and water conservation retrofits such as lighting motion sensors or low-flow plumbing equipment.					
	Diverting nonhazardous construction and demolition waste from landfills.					

10.4 How STARS Conceptualizes Water

Table 10.2 STARS Summary of Water Points Allocation

Credit Number	Credit Title	Possible Points
OP Credit 22	Water consumption	7
OP Credit 23	Stormwater Management	2
<i>Tier Two</i>	<i>Waterless Urinals</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Building Water Metering</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Non-Potable Water Usage</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Xeriscaping</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Weather-Informed Irrigation</i>	<i>0.25</i>
Total		10.25

STARS believes that all colleges and universities should invest in reducing their water consumption regardless of their size and geographic location. Because colleges in drought-prone regions often already go to great lengths to conserve water, they may find it hard to improve in STARS's water category. After a certain point, additional progress becomes difficult and expensive.

STARS addresses this issue by focusing on reduction from a baseline measurement. To achieve full STARS approval, colleges must reduce overall water consumption by 30 percent from the 2005 baseline level. STARS calculates current water usage based on the number of water users on campus. With the STARS calculation, a college that was already using very little water-per-campus-user in 2005 can still be rewarded for a small numerical change because the overall percentage reduction will be significant. In this way, STARS is able to account for both the existing differences in water usage patterns as well as differences in school size. Additionally, STARS makes a point of not penalizing schools that experience an increase in total water consumption from the baseline. STARS rewards positive change, but does not punish negative change. By allocating points in a way that focuses on positive reinforcement, STARS also avoids heavily penalizing schools for new building constructions, which often increase overall campus water consumption.

When evaluating colleges' commitments to conserving water, STARS is primarily concerned with the effectiveness of policies in producing tangible results. STARS rewards colleges for achieving large scale, quantifiable accomplishments. By focusing on measurable results, STARS allows more flexibility for institutions to decide the most efficient and effective way to conserve water on their particular campus. Overuse of water may stem from different causes, from infrastructure to personal behavior. There is no one-size-fits-all solution for excessive water use. According to the STARS perspective, an institution that reduces water consumption through a public awareness campaign focused on short showers is equally commendable as an institution that reduces water consumption by installing low-flow showerheads.

To a lesser degree, STARS acknowledges colleges that have implemented innovative water conservation pilot programs. In addition to allocating a small number of points to colleges that have single building water meters and waterless urinals, STARS rewards a limited number of points to colleges that institute pilot programs focused on utilizing graywater for irrigation. The hope is that by experimenting with these new technologies and systems, colleges may become more comfortable with and open to implementing them on a campus wide scale.

Though STARS focuses primarily on water consumption, it also includes storm water management. Storm water runoff is a potential source of pollution, erosion, and natural aquifer degradation. The value placed on storm water management relates to the STARS model of socially responsible sustainability. STARS views institutions of higher education as having a duty not only to reduce global environmental effects, but also to protect the environment and health of their immediate community.

Wellesley's Point Scenarios

Table 10.3 Wellesley's STARS Performance in Water							
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
OP Credit 22 Water Consumption Weighed water consumption reduction	7	20.3% ²⁶⁷	25%	30%	6.32	6.5	7
OP Credit 23 Stormwater Management Wellesley has adopted a stormwater management policy, plan, and/or strategies that mitigate the stormwater runoff impacts of new construction, major renovation, and other projects that increase paved surface (Y/N)	2	Yes ²⁶⁸	Yes	Yes	2	2	2
Tier Two Wellesley has adopted a stormwater management policy, plan, or strategies that mitigate the stormwater runoff impacts of ongoing campus operations (Y/N)		Yes	Yes	Yes			
Tier Two Waterless Urinals Wellesley has at least one waterless urinal (Y/N)	0.25	No	No	No	0	0.25	0.25
Tier Two Building Water Metering Wellesley has building water consumption meters for at least one building (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier Two Non-Potable Water Usage Wellesley uses non-potable water (e.g., harvested rainwater or graywater) for irrigation and/or other applications (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier Two Xeriscaping Wellesley uses xeriscape landscaping techniques, including the selection of drought tolerant plants (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25

²⁶⁷ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010, 2005 and 2009 Wellesley Water Consumption Weighted Campus Users, APPENDIX

²⁶⁸ Wellesley is required to implement a stormwater management for every construction project in order to comply with Massachusetts DEP standards. "Massachusetts Stormwater Management Handbook," *MassDEP*, <http://www.mass.gov/dep/water/laws/policies.htm#storm> (accessed: April 10, 2010).

Table 10.3 (continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier Two</i> Weather Informed Irrigation Wellesley uses weather data or weather sensors to automatically adjust irrigation practices (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	10.25				9.3	9.75	10.25

10.5 Comparative Analysis of STARS and GRC

STARS and GRC both acknowledge colleges that have installed water conservation technologies on campus. Both STARS and GRC value the role innovative water conservation technology plays in reducing excess water usage. It is likely that STARS and GRC emphasize the importance of water conservation technology because it often involves little to no behavioral changes and tends to result in significant water savings when implemented on a large scale.

Another similarity between STARS and GRC is that when evaluating the issue of water, both rating systems fail to examine the quality of water on different college campuses. STARS and GRC do not closely examine the susceptibility of colleges' water supplies to contamination. Neither system asks any questions regarding how close colleges' water supplies are to railroad tracks, underground storage tanks, and other hazardous waste sites. Additionally, STARS and GRC do not evaluate colleges based on whether there is a harmful level of microbial contaminants, pesticides, herbicides, and radioactive contaminants in their on-campus drinking water. It is likely that both systems fail to look at quality of drinking water because most colleges get their water from municipal treatment plants that must abide by EPA and state DEP drinking water regulations. Specifically, EPA regulates the amount of certain contaminants, such as lead, copper, perchlorate, cyanide, and hexavalent chromium, in water provided by public water systems. This suggests that STARS and GRC trust regulatory agencies to act as effective watchdogs and ensure that college students, faculty and staff are supplied with clean drinking water.

Both STARS and GRC fail to reward colleges for having well maintained infrastructure and installing advanced leak detection systems. One way colleges could improve their water conservation efforts is to ensure that water is being efficiently delivered without leaking in

undesired locations. STARS and GRC fail to look at the issue of water at this level of detail because it is likely that most colleges take good care of their water infrastructure. Colleges that pay for their own water are likely to closely monitor their water infrastructure due to economic incentives.

Although there are similarities between STARS and GRC, the systems ultimately approach water in different ways. STARS does a more comprehensive job examining the issue of water on college campuses. It looks at water as a separate category whereas GRC takes a narrower approach and looks at water from the standpoint of green buildings. Additionally, STARS's water section is more thorough than GRC's in that it looks at the actual percentage of water saved each year. Unlike GRC, STARS is interested in overall water trends on campus. Another difference between STARS and GRC is that GRC focuses exclusively on the issue of water in relation to on campus buildings. STARS, on the other hand, takes a more holistic approach to water by examining colleges' commitment to water by looking at how water is used and managed in campus buildings, throughout the campus grounds as well as in times of stormy weather. Lastly, STARS rewards colleges for becoming more conscious about their water use. STARS encourages colleges to build water metering and install weather informed irrigation. These systems have the ability to generate extensive information about the how much water is being used on campus during specific time periods and highlight areas where colleges could improve.

Table 10.4 Reasons Wellesley Does Not Earn STARS Points in Water

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
OP Credit 22	Water consumption	7	No	Only partially doing it	Wellesley continues to face difficulties in providing incentives to reduce individual water consumption
OP Credit 23	Stormwater Management	2	Yes		
<i>Tier Two</i>	Waterless Urinals	0.25	No	Effort in progress	Wellesley currently is in the process of installing waterless urinals in the tradeshop
<i>Tier Two</i>	Building Water Metering	0.25	Yes	--	--
<i>Tier Two</i>	Non-Potable Water Usage	0.25	Yes	--	--
<i>Tier Two</i>	Xeriscaping	0.25	Yes	--	--
<i>Tier Two</i>	Weather-Informed Irrigation	0.25	Yes	--	--

10.6 Initial Recommendations

Although Wellesley has made significant progress in reducing overall water consumption on campus in the last few years, Wellesley could improve both its STARS and GRC water scores by better conserving its water. Excessive water usage at Wellesley results from a combination of structural shortcomings and careless water use habits. To dramatically reduce water usage, the College needs to focus on both institutional changes and behavioral changes.

The Wellesley College Sustainability Advisory Committee has already outlined several potential future initiatives to further water conservation on campus.²⁶⁹ Out of all these initiatives, Wellesley should first focus on getting Paramecium Pond off potable water by redirecting water from Lake Waban. Wellesley has installed all the piping needed and just needs to do the final hook

²⁶⁹ "Water Conservation," *Wellesley College Sustainability*.

up and install water filters to prevent invasion by Eurasian Milfoil from the lake.²⁷⁰ Once the hook up to the pump from Lake Waban is complete, Wellesley will increase its STARS water score and save nearly 12 million gallons of potable water per year.²⁷¹

Wellesley could also reduce its water usage and increase the number of points it received in the STARS water category by installing water meters throughout campus. Currently, no academic or residential buildings are being monitored for water use, making targeted reduction very difficult. Installing water meters in dorms and academic buildings would help identify specific water inefficiencies in particular buildings, such as leaks, inefficient faucets, and water habits of buildings users, and make it easier for Wellesley to spot and address the water waste problem.

In order to decrease water use and increase both its STARS and GRC scores, Wellesley should also continue to replace old fixtures with low-flow water fixtures. Low-flow fixtures result in significant water savings by reducing the amount of water that is released from a given tap. In addition, less water needs to be heated, resulting in large economic and energy savings.²⁷² Another important way Wellesley could reduce its water conservation and improve its STARS and GRC scores is by installing more water-conserving toilets. Wellesley already has dual-flush toilets in two buildings on campus, but many more could be installed. Wellesley should also follow through on plans to install waterless urinals in the Trades Shops building and at Grounds and Motor Pool, the areas most heavily frequented by male staff on campus.²⁷³ Installing just one waterless urinal would allow Wellesley to gain both STARS and GRC points and would demonstrate the feasibility of the technology.

Wellesley could also take more radical steps that would result in dramatic water savings across campus by implementing a pilot program that would use graywater and/or harvested rainwater for toilets. If re-plumbing the toilets proves to be too difficult, graywater could be collected and used for irrigation. With the added nutrients available in graywater, this system of irrigation would also reduce the need for fertilizer. By using graywater, Wellesley could also stop diverting irrigation water from Lake Waban.

In addition to the institutional initiatives described above, Wellesley could also improve its STARS water score by influencing student behavior in the residence halls. Between showering, washing clothes and using sinks, one student can use multiple gallons of water in the course of a

²⁷⁰ "Water Conservation," *Wellesley College Sustainability*.

²⁷¹ "Water Conservation," *Wellesley College Sustainability*.

²⁷² "Water Conservation," *Wellesley College Sustainability*.

²⁷³ "Water Conservation," *Wellesley College Sustainability*.

couple of hours. Something as simple as strategically placed signs or stickers in the bathrooms and a monthly reminder email from their Resident Director would help keep water on the students' minds. Rather than just stating "turn off the faucet when you brush your teeth!", bathroom signs should give small examples of why water conservation is important, such as pointing out that four gallons of water are wasted if the faucet is left running for one minute. Students will be more likely to respond to these reminders if they realize that their personal actions have a significant impact.



Figure 19. Students completing field research on Wellesley's Lake Waban

11.0 ACADEMICS

11.1 Introduction

College Campuses

Academics have the potential to engage students in a topic through coursework and research, provide students with the tools to tackle real-world challenges in a vast array of disciplines, and inspire them to take action. Because institutions of higher education serve foremost to provide an education to their students, colleges and universities pursuing sustainability should consider academics as a way to frame and relate to sustainability and its goals. The belief in the effectiveness

of academics providing a conceptual framework for sustainability operates under the central tenet that sustainability-focused academics will lead to positive environmental impacts. Whether or not there is in fact a direct correlation between how students learn and the decisions they make later in life, academics is a fitting avenue by which to pursue sustainability. The study of sustainability is a dynamic one; sustainability is an entity requiring an interdisciplinary approach that synthesizes environmental, economic, and social components, that fosters understanding, sparks imagination, cultivates collaboration, builds skill sets, and most importantly informs and inspires action.

The primary ways through which colleges and universities can incorporate a sustainability lens or focus into academics are curriculum, research, and outreach. As more institutions of higher education recognize the need for the study of the intersection between the environment, economics, and society, they have created majors and minors that incorporate an interdisciplinary study of sustainability or require the completion of a sustainability-focused course in order to earn a degree. Additionally, colleges and universities are offering more research opportunities centered on this expanding issue in order to engage students in critical thinking, problem solving, and decision-making processes that are implicit in an academic approach to sustainability, and faculty are independently choosing to take up this line of research. Lastly, schools are acting through student outreach groups and other student-driven programs to inform the larger community about sustainability. The proliferation of courses, research, and outreach programs focused on sustainability reflect that it is not just an environmental issue, but also a framework for how to approach many global challenges.

Exemplary Institutions

Some colleges and universities are taking a formal step in their commitment to sustainability through academics by offering a sustainability degree requirement or major. The student government at the University of Vermont, responding to the fear that university students graduate with little to no knowledge of sustainability issues, passed a resolution in the spring of 2010 creating a sustainability education requirement.²⁷⁴ Johns Hopkins University began offering a major in Global Environmental Change and Sustainability in 2009.²⁷⁵ Other schools make a strong commitment to sustainability through programs designed to actively engage students on campus.

²⁷⁴ "University considers new sustainability requirement," *The Vermont Cynic*, <http://news.collegemedia.com/news/university-considers-new-sustainability-requirement> (accessed: April 7, 2010).

²⁷⁵ "Earth and Planetary Sciences," *Johns Hopkins University*, <http://www.jhu.edu/eps/gecs/> (accessed: April 7, 2010).

Additionally, many institutions are taking further steps to teach sustainability outside of courses and emphasize its importance in a co-curricular setting. Bates College's Sustainable Bates runs an Eco-Reps program and offers paid internship opportunities, and the College also incorporates sustainability into orientation programming. Similarly, Allegheny College provides training for its residential advisors in sustainable practices so that they can disseminate information regarding composting, recycling, and energy use to new students, and Mills College has a new student orientation that involves tours of sustainability-related resources on campus.²⁷⁶

11.2 How Wellesley Approaches Academics



Figure 20. Wellesley's Sustainable Living Cooperative

²⁷⁶ "Students – Leaders – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/student-involvement/leaders> (accessed: April 7, 2010).

Priorities

Wellesley has a strong interdepartmental Environmental Studies program that exposes students to sustainability issues with an interdisciplinary approach. Furthermore, Wellesley recently joined forces with Babson College and Olin College of Engineering to form the Sustainability Certificate program, a tri-campus program integrating engineering, business, and liberal arts for the environment and sustainability. This program is currently under review on all three campuses, with the first class expected to begin in Fall 2011.

Wellesley has active student involvement on campus through student organizations and student positions that promote sustainability. The Sustainability Coop, a student group living in a sustainability-themed residential hall, established fairly recently in 2008, emphasizes food justice, local/sustainable agriculture, personal environmental impact and campus awareness of sustainability.²⁷⁷ Other student groups, like the Wellesley Energy and Environmental Defense (WEED), a student-run environmental organization, and Regeneration, a student-run farm, are involved in improving campus sustainability and prioritize sustainability issues.²⁷⁸ WEED works to increase environmental awareness on campus and to implement environmental policy changes on campus, while Regeneration emphasizes farm justice and organic gardening.²⁷⁹

Outside of student groups, Wellesley participates in sustainability competitions and programs that aim to involve the entire student body. Every year the College participates in competitions such as RecycleMania against other colleges, and inter-campus competitions between residence halls (Residence Complex Energy Competition).²⁸⁰ Starting in 2008 during Orientation, first year students and parents participated in a poster board session on sustainable practices at Wellesley College. New students were provided with information on how they could become involved with improving sustainability at Wellesley and received reusable drinking vessels to discourage bottled water use on campus.²⁸¹

Challenges

²⁷⁷ "Wellesley College: Student Survey – Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/Wellesley-college/surveys/student-survey> (accessed: April 8, 2010).

²⁷⁸ "Wellesley College: Campus Survey - Green Report Card 2010," *The College Sustainability Report Card*.

²⁷⁹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College.

²⁸⁰ "Wellesley College: Campus Survey - Green Report Card 2010," *The College Sustainability Report Card*.

²⁸¹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College.

While Wellesley does have a strong Environmental Studies program, it could have more sustainability-focused courses throughout its overall curriculum. The current curriculum makes it possible for some students to go through Wellesley without ever needing to consider or focus on sustainability issues in any of their courses. However, incorporating more sustainability into the general overall curriculum could be potentially difficult. For Wellesley to change directions in its education and to incorporate more sustainability-related courses into its curriculum, it would require collaboration between different departments and implementation of changes in how courses are structured.

Although Wellesley has some existing programs outside of coursework that promotes sustainability interests on campus, participation remains low. Programs such as the residential Eco-Reps program and the annual sustainability-themed month could be enhanced to include more of the student body and to be more comprehensive. While Wellesley could expand the current programs to further educate students on sustainability, this would require the cooperation of the student body, which may be difficult due to a lack of strong student interest and involvement in sustainability issues on campus.

11.3 How GRC Conceptualizes Academics

GRC does not have a specific category for the consideration of academics, but its Student Involvement sector includes questions about the level of student participation in sustainability initiatives and support for these activities from the college administration. One of the factors taken into account by GRC is the existence of active student organizations that work toward expanding sustainability efforts on campus. Sustainability competitions, which challenge the community to reduce water and electricity use in order to engage the broader campus population in behavioral change, are also considered in scoring. The category also examines whether orientation programs for new students integrate sustainability policy as well as the opportunities for students to hold positions as Eco-Reps or work in sustainability-related jobs as part of the work-study program.

Such student-focused initiatives increase student awareness and knowledge of sustainability, which is a key factor in addressing sustainability at institutions of higher education. Making sustainability a priority in student life helps to encourage behavioral changes that could last long after the students graduate. Evaluating these aspects of an institution ensures that student initiatives are recognized as an integral part of sustainability education.

Wellesley's Point Scenarios

Table 11.1 Wellesley's GRC performance in Student Involvement

Credit title and description	Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Residential Communities Offering sustainability-themed residential housing options.	10%	--	The Sustainability Coop, a student group that lives together in a residence hall and focuses on food justice, local/sustainable agriculture, personal environmental impact and campus awareness of sustainability.	Earns full credit.	Expand visibility of Coop on campus.
New Student Orientation Integrating sustainability into new-student orientation.	10%	5%	A poster board session on sustainable practices and an informational table were available for new students. First Years were provided with high quality, reusable drinking vessels to discourage bottled water use.	Sustainability not completely integrated into orientation.	Have a themed sustainability event and/or make sustainability more visible throughout orientation.

Table 11.1 (continued from previous page)

Credit title and description		Regular Credit	Extra Credit	What Wellesley earns credit for	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Internships/Outreach Opportunities	Offering sustainability internship opportunities for students on campus.	30%	20%	One paid internship, assist as needed on a project basis, with another summer internship in 2010. (Asked Jessica Hunter for specifics)	No other job or internship opportunities.	Offer more sustainability-related internships for students on campus.
	Providing student positions through supported Eco-Rep programs or similar initiatives.			Each residence hall has an Eco-Rep. It is the responsibility of the Eco-Rep to educate her community about living more sustainably through sharing information, running programs, etc.. They also provide information to the overall community and assist with sustainable programming and events.	No Eco-Reps outside of residence halls.	Expand Eco-Rep position to other parts of campus.
Student Organizations	Existence of active student organizations that prioritize campus sustainability efforts	35%	7.5%	WEED: Wellesley Energy and Environmental Defense, and Regeneration, a group dedicated to farm justice and organic gardening. They maintain two organic garden plots and a series of Earth Boxes on campus.	Earns full credit.	Continue to expand the efforts of student organizations.
	Comprehensiveness of student efforts to advance sustainability on campus.			Students in these organizations are very involved in improving campus sustainability.	This effort is not a priority of all students on campus.	Expand effort to greater number of students on campus.
Sustainability Challenges and Competitions	Overseeing sustainability challenges or competitions on campus or with other colleges at least once a year.	15%	7.5%	Competes in RecycleMania and has Residence Complex Energy Competitions.	Earns full credit.	Could create more challenges and competitions on a broader range of sustainability issues.

11.4 How STARS Conceptualizes Academics

Table 11.2 STARS Summary of Co-curricular Points Allocation		
Credit Number	Credit Title	Points Possible
ER Credit 1	Student Sustainability Educators Program	5
ER Credit 2	Student Sustainability Outreach Campaign	5
ER Credit 3	Sustainability in new Student Orientation	2
ER Credit 4	Sustainability Outreach and Publications	4
<i>Tier Two</i>	<i>Student Group</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Organic Garden</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Model Dorm Room</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Themed Housing</i>	<i>0.25</i>
Total		17

Table 11.3 STARS Summary of Curriculum Points Allocation		
Credit Number	Credit Title	Points Possible
ER Credit 5	Sustainability Course Identification	3
ER Credit 6	Sustainability-Focused Courses	10
ER Credit 7	Sustainability-Related Courses	10
ER Credit 8	Sustainability Courses by Department	7
ER Credit 9	Sustainability Learning Outcomes	10
ER Credit 10	Undergraduate Program in Sustainability	4
ER Credit 11*	Graduate Program in Sustainability	4
ER Credit 12	Sustainability Immersive Experience	2
ER Credit 13	Sustainability Literacy Assessment	2
ER Credit 14	Incentives for Developing Sustainability Courses	3
Total		55

*Credit does not apply to Wellesley

Table 11.4 STARS Summary of Research Points Allocation		
Credit Number	Credit Title	Possible Points
ER Credit 15	Sustainability Research Identification	3
ER Credit 16	Faculty Involved in Sustainability Research	10
ER Credit 17	Departments involved in Sustainability Research	6
ER Credit 18	Sustainability Research Incentives	6
ER Credit 19	Interdisciplinary Research in Tenure and Promotion	2
Total		27

STARS favors academics above all else, emphasizing learning experiences both within and outside the formal curriculum as an integral part of addressing sustainability. Incorporating sustainability into academics allows for the practical integration of sustainability into the higher education system. Because STARS rates academic institutions, emphasizing and utilizing academics as a way to frame sustainability is essential. STARS values the education of sustainability issues in coursework and engagement through co-curricular activities because such opportunities allow students to deepen their understanding of sustainability and apply what they learn in college to their roles and communities in the future.

STARS places importance on curricular and co-curricular education along with research because it helps integrate sustainability into the larger campus culture by establishing a positive attitude about sustainability among students and faculty. The attitudes and beliefs learned during students' time in college, including an appreciation for sustainability, can be carried over into their later lives, allowing them to make an impact beyond the time and space of a college campus. For these reasons, STARS seeks to reward institutions that provide sustainability-focused and -related courses within its curriculum, encourage institution-sponsored co-curricular sustainability offerings, and support sustainability-related research.

11.5 How STARS Conceptualizes Co-Curricular Education

Co-Curricular Education focuses on elements of sustainability education outside of the curriculum. It includes programs that engage students to serve as educators in positions such as Eco-Reps, or other peer-to-peer sustainability outreach programs. For example, one point rewards the presence of a student sustainability outreach campaign that yields results such as a reduction in energy consumption or water use. This sector also places a focus on the inclusion of sustainability in orientation activities, which sets the tone for the campus experience. STARS recognizes the production of outreach materials and publications for use outside of the classroom, such as a sustainability website and signage providing information in sustainable buildings, grounds, and food.

The Tier Two credits include the presence of student organizations with a sustainability focus, an organic garden, a model dorm room with sustainable products, sustainably themed housing, a sustainable enterprise, and sustainability themed events. The co-curricular education subcategory recognizes an engagement in sustainability issues through co-curricular activities that

allow students to deepen their understanding of sustainability principles. Assessing these co-curricular activities is important to ensure a well-balanced approach to sustainability.

11.6 How STARS Conceptualizes Curriculum

The Curriculum subcategory focuses on formal education programs and courses aimed at training and educating future leaders to understand and address sustainability challenges. In order to be considered a sustainability-focused course, it must concentrate on three dimensions of sustainability, including social, economic, and environmental aspects.²⁸² Additional points are available for offering sustainability courses in multiple academic departments or as a requirement for earning a degree. STARS values institutions that offer both undergraduate and graduate programs in sustainability. Furthermore, STARS awards sustainability immersive experiences, such as a semester working on a farm or at an eco-village. Other components of this sector give points to an institution that assesses the sustainability literacy of its students and gives incentives for the development of sustainability courses. Including curriculum in an evaluation of an institution's sustainability is essential because the inclusion of sustainability-focused and -related classes ensures that students will at least possess an increased awareness of sustainability issues and ways to approach them.

11.7 How STARS Conceptualizes Research

STARS believes that research related to sustainability is an important indicator of an institution's overall sustainability; at 27 points, Research is the third largest category within STARS, and makes up nine percent of an institution's overall score. STARS conceptualizes sustainability research as both the amount of research occurring at an institution, and as the formal policies in place to measure and sustain research related to sustainability.

STARS places the most value on the absolute amount of sustainability-related research occurring at an institution, as measured by the percentage of an institution's faculty who conduct research on sustainability topics. An institution receives full points for this credit if 25 percent of faculty are involved in any degree of research related to sustainability. STARS accounts for variable campus sizes by valuing the percentage of faculty, not the absolute number of faculty. This approach

²⁸² STARS 1.0 Technical Manual, 32.

is consistent across STARS, demonstrating its interest in an institution's proportional, not absolute, contribution to sustainability.

Additionally, STARS emphasizes the importance of having academic departments involved in sustainability research, and indicates that it values both the depth and the breadth with which such research is conducted. While large, specialized environmental programs may be rewarded through the previous credit, this credit rewards institutions that have incorporated sustainability into a range of different academic programs. STARS recognizes the long-term advantages of incorporating sustainability into a diversity of disciplines, an approach that may ultimately reach a greater number of students with diverse interests than if sustainability research is confined to a single department. Moreover, STARS has a distinctly multidisciplinary perception of sustainability. An institution receives full points for this credit if sustainability research has been conducted by at least 25 percent of academic departments within the previous three years.

STARS believes that institutional policies matter when it comes to maximizing the impact of an institution's sustainability research. STARS awards significant points for developing a definition of sustainability research, conducting an inventory of sustainability research, and making this inventory public. STARS does not expect most institutions to have such a definition in place before signing on to STARS. Rather, STARS expects institutions to create this definition as they get involved in the STARS process, based on the incentive STARS provides for having a definition. In addition to "providing a foundation for measurement and goal setting," STARS seeks to promote collaboration between diverse academic departments, and connect traditionally segregated programs that share an interest in sustainability.

STARS also rewards institutions that have an explicit policy in place for valuing interdisciplinary research in faculty promotions and tenure decisions. In doing so, STARS further emphasizes its interdisciplinary conceptualization of sustainability, and the fact that it wants institutions to make their policies and practices as clear as possible, helps institutions move towards sustainability in the long-term.

Wellesley's Point Scenarios

Table 11.5 Wellesley's STARS Performance in Co-Curricular Education							
Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
ER Credit 1 Student Sustainability Educators Program Percentage of Total Degree-Seeking Students served by a Peer-to-Peer Outreach Program	5	80%	100%	100%	4	5	5
ER Credit 2 Student Sustainability Outreach Program Wellesley holds at least one sustainability-related outreach campaign directed at students. The campaign yields measurable, positive results in advancing sustainability (Y/N)	5	Yes	Yes	Yes	5	5	5
ER Credit 3 Sustainability in New Student Orientation Wellesley includes sustainability prominently in its new student orientation activities and programming (Y/N)	2	No	Yes	Yes	0	2	2
ER Credit 4 Sustainability Outreach and Publications Wellesley produces outreach materials and/or publications that foster sustainability learning and knowledge (Y/N)	4	Yes	Yes	Yes	2	4	4
Tier Two Student Group Wellesley has an active student organization focused on sustainability (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier Two Organic Garden Wellesley has an on-campus garden where students are able to gain organic farming and/or gardening experience (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier Two Model Dorm Room Wellesley has an occupied, formal designated model dorm room that is open to students during regular hours and demonstrates sustainable living principles (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25

Table 11.5 (continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier Two</i> Themed Housing Wellesley has sustainability-themed housing where residents learn about sustainability together and to which residents must apply (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Sustainable Enterprise Wellesley has a student-run sustainable enterprise, such as a cafe, through which students gain sustainable business skills (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Sustainability Events Wellesley holds major events related to sustainability, such as conferences, speaker series or symposia, which have students as the intended audience (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Outdoors Program Wellesley has a wilderness or outdoors program that organizes hiking, backpacking, kayaking, or other outings for students and follows Leave No Trace Principles (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Themed Semester or Year Wellesley has chosen a sustainability-related theme for its themed semester, year, or first-year experience during the past three years (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
Total	18				12.5	18	18

Table 11.6 Wellesley's STARS Performance in Curricular Education

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
ER Credit 5 Sustainability Course Identification Wellesley has developed a definition of sustainability in the curriculum Y/N Wellesley has identified its sustainability-focused and sustainability-related course offerings (Y/N) Wellesley makes its sustainability course inventory publicly available online. (Y/N)	3	No	Yes	Yes	0	3	3
		No	Yes	Yes			
		No	Yes	Yes			
ER Credit 6 Sustainability-Focused Courses Percentage of Total Courses offered are Sustainability-Focused Courses	10	2.60%	3%	8%	2.6	3	8
ER Credit 7 Sustainability-Related Courses Percentage of Total Courses offered are Sustainability-Related Courses	10	1.8%	2.5%	9%	0.6	0.83	3
ER Credit 8 Sustainability Courses by Department Percentage of All Academic Departments that offer a sustainability course	7	25.5%	30%	45%	2	2.33	3.5
ER Credit 9 Sustainable Learning Outcomes Percentage of Total Graduated students who received a degree from a program that has adopted at least one Sustainability Learning Outcome	10	9%	10%	25%	0.9	1	2.5
ER Credit 10 Undergraduate Program in Sustainability Wellesley offers at least one sustainability-focused undergraduate major, degree program, or equivalent (Y/N)	4	Yes	Yes	Yes	4	4	4
ER Credit 11* Graduate Program in Sustainability* Wellesley offers at least one sustainability-focused graduate concentration, degree program, or equivalent (Y/N)	4	N/A	N/A	N/A	N/A	N/A	N/A

Table 11.6 (continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
ER Credit 12 Sustainability Immersive Experience Wellesley offers at least one immersive, sustainability-focused educational student program (Y/N)	2	No	No	Yes	0	0	2
ER Credit 13 Sustainability Literacy Assessment Wellesley Conducts an assessment of the sustainability literacy of its students (Y/N)	2	No	No	Yes	0	0	2
Wellesley conducts a follow-up assessment of the same cohort group using the same instrument (Y/N)		No	No	Yes			
ER Credit 14 Incentives for Developing Sustainability Courses Wellesley has an ongoing program or programs that offer incentives for faculty in multiple disciplines or departments to develop new sustainability courses and/or incorporate sustainability into existing courses or departments (Y/N)	3	No	No	Yes	0	0	3
Total	55				10	14	31

*Credit does not apply to Wellesley

Table 11.7 Wellesley's STARS Performance in Research

Credit Title and Description		Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
ER Credit 15	Sustainability Research Identification Wellesley has developed a definition of sustainability research (Y/N)	3	No	Yes	Yes	0	3	3
	Wellesley has identified its sustainability research activities and initiatives (Y/N)		No	Yes	Yes			
	Wellesley Makes its sustainability research inventory publicly available online (Y/N)		No	Yes	Yes			
ER Credit 16	Faculty Involved In Sustainability Percentage of Faculty Members Conducting Sustainability Research	10	7.7%	7.7%	9.6%	3.1	3.1	3.9
ER Credit 17	Departments Involved in Sustainability Research Percentage of Researching Departments that conduct Sustainability Research	6	24%	24%	33%	1.8	1.8	2.7
ER Credit 18	Sustainability Research Incentives Wellesley has an ongoing program to encourage students in multiple disciplines or academic programs to conduct research in sustainability (Y/N)	6	Yes	Yes	Yes	6	6	6
	Wellesley has an ongoing program to encourage faculty in multiple disciplines or academic programs to conduct research in sustainability (Y/N)		Yes	Yes	Yes			
ER Credit 19	Interdisciplinary research in tenure and promotion Wellesley gives positive recognition to interdisciplinary, trans-disciplinary, and multi-disciplinary research during faculty promotion and tenure decisions (Y/N)	2	No	No	Yes	0	0	2
Total		27				11	14	17.6

11.8 Comparative Analysis of GRC and STARS

Both GRC and STARS value student involvement including student groups, sustainability competitions, and sustainability-focused orientation programs. GRC does not consider research or curriculum in its evaluation of an institution's sustainability. While the STARS analysis of co-curricular education encompasses more than GRC's, awarding points for initiatives such as an on-campus organic garden and a model sustainable dorm room, both rating systems prioritize similar values. STARS and GRC both reward the implementation of programs to raise awareness and change behavior and the presence of active student organizations supported by the administration. Unlike other categories evaluated by the systems, the factors for awarding credit in the category of sustainable extra-curricular are determined by their existence rather than their effectiveness.

Wellesley does well in the extra-curricular categories of both GRC and STARS due to student involvement and an increased awareness of the importance of sustainability education. The main way Wellesley could improve in this category is simply by upping the ante on many activities it already participates in.

Only STARS considers curriculum or research in its evaluation of an institution's sustainability. STARS heavily prioritizes academics in its assessment. Sustainability education helps future leaders to be aware of sustainability issues and equips them with the tools to approach those issues in the future. Research in the field of sustainability is also a crucial element for building knowledge and raising awareness. An education that includes sustainability gives students the ability to address sustainability challenges they may face.

Table 11.8 Reasons Wellesley Does Not Earn STARS Points in Co-Curricular Education

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
ER Credit 1	Student Sustainability Educators Program	5	No	Only partially doing it	Only in residence halls
ER Credit 2	Student Sustainability Outreach Campaign	5	Yes	--	--
ER Credit 3	Sustainability in new Student Orientation	2	No	Only partially doing it	Do a little
ER Credit 4	Sustainability Outreach and Publications	4	No	Only partially doing it	Do some
<i>Tier Two</i>	<i>Student Group</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Organic Garden</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Model Dorm Room</i>	<i>0.25</i>	<i>No</i>	<i>Do not do it but could</i>	<i>Could do relatively easily</i>
<i>Tier Two</i>	<i>Themed Housing</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Sustainable Enterprise</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Sustainability Events</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Outdoors Program</i>	<i>0.25</i>	<i>Yes</i>	<i>--</i>	<i>--</i>
<i>Tier Two</i>	<i>Themed Semester or Year</i>	<i>0.25</i>	<i>No</i>	<i>Do not do it but could</i>	<i>Do not have themed semesters</i>

Table 11.9 Reasons Wellesley Does Not Earn STARS Points in Curriculum

Credit Title	Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation	
ER Credit 5	Sustainability Course Identification	3	No	Do not do it but could	Could do relatively easily
ER Credit 6	Sustainability-Focused Courses	10	No	Only partially doing it	Do some
ER Credit 7	Sustainability-Related Courses	10	No	Only partially doing it	Do a little
ER Credit 8	Sustainability Courses by Department	7	No	Only partially doing it	Do a little
ER Credit 9	Sustainability Learning Outcomes	10	No	Only partially doing it	Do a little
ER Credit 10	Undergraduate Program in Sustainability	4	Yes	--	--
ER Credit 11	Graduate Program in Sustainability*	4	N/A	N/A	N/A
ER Credit 12	Sustainability Immersive Experience	2	No	Do not do it but could	Could do, with some effort
ER Credit 13	Sustainability Literacy Assessment	2	No	Do not do it but could	Could do, with some effort
ER Credit 14	Incentives for Developing Sustainability Courses	3	No	Do not do it but could	Could do, with some effort

*Credit does not apply to Wellesley

Table 11.10 Reasons Wellesley Does Not Earn STARS Points in Research

Credit Title	Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation	
ER Credit 15	Sustainability Research Identification	3	No	No formal policy No documentation Do not do it but could	Has had no reason in past to do but could do easily
ER Credit 16	Faculty Involved in Sustainability Research	10	No	Effort in progress	Still growing
ER Credit 17	Departments involved in Sustainability Research	6	No	Effort in progress	Still growing
ER Credit 18	Sustainability Research Incentives	6	Yes	--	--
ER Credit 19	Interdisciplinary Research in Tenure and Promotion	2	No	Do not do it but could	Could do, with some effort

11.9 Initial Recommendations

Wellesley's strong Environmental Studies program and student organizations and positions help promote sustainability on and off campus, but the College has not committed to sustainability in education and research nearly to the extent that it could or to the extent that STARS values this sector. Because academics constitute one third of all points that an institution can earn under the STARS system and there are many categories for which Wellesley does not earn points, the College has potential for great improvement. Many of the potential improvements in academic not only require the reallocation or use of funds towards curriculum and research, but also a commitment to a definition of sustainability established by the College. If Wellesley does not truly prioritize the integration of sustainability and academic, then it may not be worth it for the College to transform its approach to academics at this time, and participation in STARS may not be relevant to the interests of the College. However, if the College does consider the sustainability lens provided by academics to be a critical part of its sustainability mission, then STARS could serve as a helpful framework by which Wellesley can examine and transform the role of its curriculum and research in sustainability.

From the very onset of Wellesley's academic year, the College has opportunities to infuse sustainability into its educational practices. At this time, the integration of sustainability into new student orientation and programming could be expanded, a step that GRC and STARS would both reward. More importantly, however, sustainability programming would improve sustainability on campus by educating new students about the importance of sustainability, which would likely influence their behavior and attitudes throughout their time at Wellesley. Other programs that directly engage students in sustainability issues include the expansion of eco-representatives, the implementation of a sustainability-related theme for a semester or year, and the creation of a model dormitory room that could serve to allow students to adopt more sustainable behaviors within their own dormitory rooms. These programs could be significantly enhanced and student-focused if the school surveyed student knowledge and perceptions of sustainability at different times. Additionally, these types of programs are cost-effective and primarily serve to inform students, faculty, and staff about the important effects of sustainable practices, rather than cultivating a sustainable frame of mind or ethic, like curriculum and research.

Wellesley could pursue a more overarching approach to sustainability through establishing a definition of sustainability and a strong commitment to the meaning of sustainability within academics. While the College is pursuing sustainable practices, it has not defined sustainability within an academic context. After Wellesley has developed its definition of sustainability via a committee of at least three faculty members, it can begin to identify classes that focus on or are related to sustainability. This initiative would not require an overhauling of curriculum, but rather inspire the collaboration between different departments and programs to achieve success in this sector. STARS rewards points for this process of definition, identification, and publication of a school's commitments to sustainability-focused and -related courses and research. These processes would allow the College to provide opportunities for education that not only expand students' perceptions of sustainable practices, but also their perspective on the synthesis between environmental, economic, and social factors which compose sustainability and its challenges. In addition to providing a context in which to explore sustainability issues, the restructuring of Wellesley's curriculum and research will help the College to gain a significant number of points under STARS.



Figure 21. Wellesley Tower Court Residence Hall Complex

12.0 INVESTMENT

12.1 Introduction

College Campuses

American institutions of higher education together manage a total of over \$400 billion in assets.²⁸³ Wellesley College, despite losses due to the recent financial crisis, has an endowment of \$1.3 billion as of June 30, 2009,²⁸⁴ and Harvard University boasts a nationally high endowment of \$25.7 billion.²⁸⁵

Colleges and universities invest their assets in order to generate financial returns.²⁸⁶ Through endowment investments, institutions of higher education are influential stakeholders in the business world. Investing in environmentally and socially conscious companies and funds represents a significant way for institutions to express their commitment to sustainability and promote

²⁸³ "Responsible Investment: Overview," *Responsible Endowments Coalition*, <http://www.endowmentethics.org/responsible-investment> (accessed: March 1, 2010).

²⁸⁴ Wellesley College June 2009 Annual Report.

²⁸⁵ Healy, Beth. "Harvard Endowment Leads Others Down." *The Boston Globe*, www.boston.com (accessed: March 1, 2010).

²⁸⁶ STARS 1.0 Technical Manual, 248.

sustainable business practices. Conversely, investing in companies with harmful practices contributes to environmental and social damage. Colleges and universities thus have the ability to express their values through their financial decisions. Institutions that make sustainability-informed investment choices acknowledge that the environmental and social impact of a college or university extends far beyond the campus. Even financial markets are beginning to acknowledge this notion to some extent. Many investment managers now consider companies with poor environmental and social records to be less financially competitive in the long run, because their future viability is less secure than more sustainable companies.²⁸⁷

Higher education institutions can promote sustainability through their investment practices in several different ways, including choosing to make investments that promote sustainability, withholding investment or divesting from companies with environmentally or socially irresponsible practices, and engaging in shareholder advocacy to promote corporate sustainability.

Endowment transparency is also a key element of sustainable investment practices. Many colleges and universities choose not to disclose their investment decisions due to financial concerns. However, endowment transparency can promote accountability, community engagement, and dialogue on sustainability issues.

Exemplary Institutions

A number of colleges and universities nationwide have taken steps to align their investment decisions with their social and environmental values. More than 44 percent of colleges and universities surveyed by the Sustainable Endowment Institute in 2010 invest a portion of their endowment in renewable energy funds, and 14 percent of schools have investments in community development funds. A number of institutions also invest part of their endowments in on-campus sustainability projects.²⁸⁸

Approximately 10 percent of institutions included in the 2010 Green Report Card have an advisory committee on shareholder responsibility.²⁸⁹ At Amherst College, for instance, a strong student-led initiative helped create an Advisory Committee on Socially Responsible Investing, which includes student, faculty, alumni, and staff representatives. This committee advises the college on all

²⁸⁷ Debby Kuestner, Wellesley CIO, Email, March 24, 2010; "Sustainable investment seen gaining momentum," *Reuters*, <http://www.reuters.com/article/idUSTRE58L3CK20090922> (accessed: April 8, 2010).

²⁸⁸ "Investment Priorities - Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/investment-priorities> (accessed: April 8, 2010).

²⁸⁹ "Shareholder Engagement - Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/categories/shareholder-engagement> (accessed: April 8, 2010).

socially and environmentally related proxy voting decisions.²⁹⁰ Through a password-protected website, Amherst makes a list of votes cast on proxy resolutions available to the college community and also publishes a list of its external managers, mutual funds, and equity holdings.²⁹¹

Swarthmore College is another leading institution in the area of environmentally and socially responsible investment. Swarthmore gives donors the option of making gifts directly into an investment fund that considers environmental factors,²⁹² and has a Committee on Investor Responsibility whose voting guidelines are made publicly available on the College's Finance and Investment Offices website.²⁹³ Additionally, in 2001, a student-led initiative at Swarthmore filed shareholder resolutions urging Fortune 100 companies to add sexual orientation to their non-discrimination policies.²⁹⁴

Amherst, Swarthmore, and a number of other institutions comparable to Wellesley have taken significant action in terms of responsible investment. As they become more mindful of the broader environmental and social implications of their decisions, institutions of higher education increasingly consider the positive impacts they can make through socially and environmentally conscious endowment management.

²⁹⁰ "Amherst College Success Story," *Responsible Endowments Coalition*, <http://www.endowmentethics.org/amherst-college>(accessed: April 8, 2010).

²⁹¹ "Amherst College - Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/amherst-college> (accessed: April 8, 2010).

²⁹² "Swarthmore College - Green Report Card 2010," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/swarthmore-college> (accessed: April 8, 2010).

²⁹³ "Committee on Investor Responsibility," *Swarthmore College Finance and Investment Offices*; <http://www.swarthmore.edu/x21996.xml> (accessed: April 8, 2010).

²⁹⁴ "Shareholder Resolution Filing at Swarthmore College," *Responsible Endowments Coalition*, <http://www.endowmentethics.org/swarthmore-college->(accessed: April 8, 2010).

12.2 How Wellesley Approaches Investment

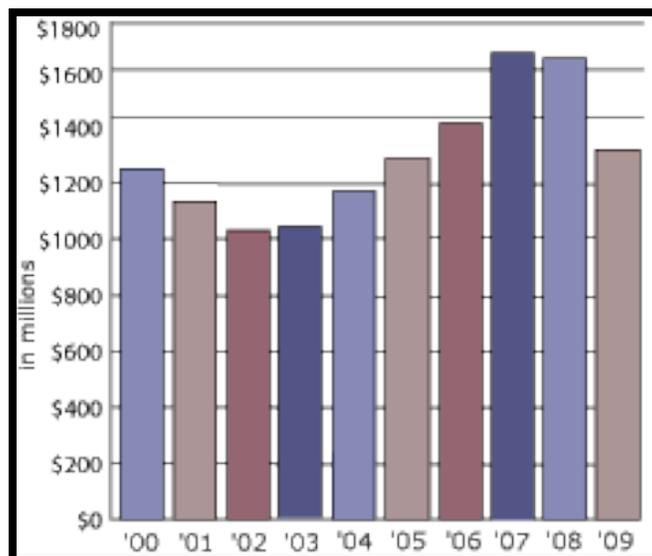


Figure 22. Wellesley College Endowment 2001-2009²⁹⁵

Priorities

Wellesley College pays competitive faculty and staff salaries, gives broad institutional support to classroom activities and research, and provides generous funding for on-campus activities. In Fiscal Year 2008-2009, Wellesley had an operating budget that totaled \$226.8 million, or over \$100,000 per student.²⁹⁶

The primary purpose of Wellesley's endowment is to provide a sustainable and reliable level of support to the operating budget of the College.²⁹⁷ The yearly proceeds from the endowment provide about 35 percent of Wellesley's operating expenses each year, compared with the 38 percent that comes from tuition and fees.²⁹⁸ Clearly, endowment health is key to the functioning of the College. Wellesley invests its endowment in a variety of financial instruments, such as private equity, real estate, and bonds, which yield yearly interest or dividend income.

In all its decision-making processes, Wellesley's overarching priority is to provide an excellent liberal arts education for women. In accordance with this goal, Wellesley's endowment exists above all to fund and promote students' education. Wellesley's Investment Office therefore

²⁹⁵ http://www.wellesley.edu/resources/images/Endowment_graph.gif (accessed: April 8, 2010).

²⁹⁶ "Wellesley College Annual Report 2008-2009," 6, <http://www.wellesley.edu/Finance/Docs/AnnualReport2009.pdf> (accessed: April 8, 2010).

²⁹⁷ Debby Kuenstner, Wellesley CIO, Email, March 24, 2010.

²⁹⁸ Annual Reports of Wellesley College, Office of the Vice President for Finance, Administration, and Treasurer, <http://www.wellesley.edu/Finance/AnnualReports.html> (accessed: March 24, 2010).

strives to manage the College's endowment to maximize earnings. In a very real way, Wellesley and other institutions first and foremost invest their endowments with their financial health in mind, despite other social or environmental values they may have.

At Wellesley, endowment management falls to the Investment Committee and the Investment Office. The Investment Committee approves an annual investment policy that outlines investment objectives and does not include social or environmental priorities. According to Wellesley's Chief Investment Officer (CIO), including non-investment objectives would complicate the mission of the endowment and potentially reduce the returns from the endowment. The College created the Investment Office, headed by the CIO, for day-to-day management, such as making recommendations regarding asset allocation, rebalancing assets, performing due diligence on investment managers, researching new strategies, and providing operational support. The multi-constituent Board of Trustees Investment Committee makes larger managerial decisions, and the Subcommittee on Proxy Voting exercises the College's shareholder rights and responsibilities. Both committees include student representatives along with faculty, staff members, and trustees.

Wellesley is rare among colleges in that it chooses to vote its own proxies, rather than delegating the task to investment managers. A Proxy Voting Subcommittee acts on issues advanced by the shareholders of the companies in which Wellesley invests. A general voting template exists for some topics, but more intense discussion take place when issues arise that the voting template does not cover. There are two student representatives on the Proxy Voting Subcommittee; these students contribute their opinions to discussions about specific issues or amendments to the voting template. Wellesley's Student Organizations and Appointments Committee, part of the College's Student Government, conducts an application and interview process to select these student representatives.

Challenges

Wellesley College chooses not to make detailed information about its endowment or investments publicly available. This nondisclosure policy prevents Investment Office staff and committee members from revealing certain information related to their work, even to those who sit on each committee.

Wellesley does not publish its endowment holdings for a variety of reasons. The purpose of the endowment is to maximize returns so as to support educational activities on campus, and asset allocations are not currently meant to be political statements in any way. The Investment Office and

Committee decided that transparency would compromise this goal, potentially confusing stakeholders and prompting questions about the reasoning behind Wellesley's numerous investment decisions. Many top investment funds contractually prohibit their investors from disclosing their decision to invest. Because Wellesley gains access to selective, high-performing funds, the College must accept certain conditions.²⁹⁹ Complete freedom of information has the potential to endanger Wellesley's inclusion in such investment funds and threaten Wellesley's "edge" in financial markets. Increased investment disclosure may therefore conflict with Wellesley's earnings-maximizing goal.

Wellesley's stated reason for non-disclosure is that, given existing time and budget constraints, transparency could place added burden on the Investment Office. As of June 30, 2009, Wellesley's endowment was invested with 67 different investment managers in 139 different strategies or funds, representing a total of about 3,500 separate companies.³⁰⁰ Some fund managers require Wellesley to keep its membership confidential, while others do not. As a result, if transparency policies were put in place, office staff would have to revisit each investment fund contract to determine what information could legally be released. There is a concern that transparency would require the Investment Office to employ a full-time staff member to field all the phone calls and emails sent to the office as a result.³⁰¹

Wellesley College publishes an annual financial report,³⁰² which includes a section on the endowment and the general types of funds that the college holds. The annual report lists the dollar value invested in general types of holdings, such as fixed income, stocks, hedge funds, real estate, and venture capital. The report does not list the amount invested in specific funds or companies. It is therefore difficult to determine the composition of Wellesley's investment portfolio in terms of sustainable and unsustainable investments.

Wellesley also does not publicize its proxy voting subcommittee's procedures or results, nor does it commit to any resolutions regarding social responsibility. Of the 25 to 30 colleges that have proxy-voting subcommittees, only 2 to 3 do not disclose their votes.³⁰³ Thus, Wellesley is unusual in its protection of proxy voting decisions and guidelines.

The Investment Committee and Proxy Voting Subcommittee do consider sustainability in their decisions, but they are not bound by specific sustainability guidelines or policies. The student

²⁹⁹ Debby Kuenstner, Wellesley CIO, Email, March 24, 2010.

³⁰⁰ Debby Kuenstner, Wellesley CIO, Email, March 24, 2010.

³⁰¹ Debby Keunstner, Wellesley CIO, Personal Conversation, March 29, 2010.

³⁰² "Annual Reports of Wellesley College, Office of the Vice President for Finance, Administration, and Treasurer," *Wellesley College*, <http://www.wellesley.edu/Finance/AnnualReports.html> (accessed: March 29, 2010).

³⁰³ Mark Orłowsky, Founder & Executive Director of SEI, Personal Communication, October 31, 2008.

representatives on the committees are required to follow extremely strict confidentiality rules; even the specifics of the voting process and template are not disclosed. One current student representative described Wellesley's proxy voting as a process that is kept sheltered from public pressures so that appointed representatives can best make decisions.³⁰⁴ The student representative on the Investment Committee gives a presentation to the College Government Senate each year on endowment and investment matters, but she is limited by confidentiality rules. In essence, student representatives sit on the two committees to act on the student body's behalf, not necessarily to provide direct communication between the committees and the rest of the campus community.

Donors to Wellesley, whose gifts add to the endowment, do not have control over where their donations are invested. The College generally discourages donation restrictions, except when donations are made to specific funds, such as financial aid or endowed projects. Wellesley has endowment investments in renewable energy, according to the 2010 SEI Green Report Card, but not in community development funds. Wellesley also does not use its endowment to support campus energy or water conservation projects, although this lack of support may actually be because the College raises funds for large buildings and campus improvement projects through the general debt market. Wellesley likewise does not currently engage in shareholder advocacy due to limited funds and the College's mission to maximize returns.

12.3 How GRC Conceptualizes Investment

GRC divides investment into three interrelated categories: Shareholder Engagement, Endowment Transparency, and Investment Priorities. Together these categories account for a third of the total grade a school receives on GRC, indicating the high value that SEI, as its name suggests, places on investment as a key element of sustainability.

Shareholder Engagement

In the Shareholder Engagement category, an institution earns full credit for having an active advisory proxy voting committee that informs the Board of Trustees' investment committee on environmental, social and governance issues. By highlighting the importance of having a proxy voting committee, GRC encourages institutions to utilize their power as shareholders and push for

³⁰⁴ Edem Dzubej '11, Student Representative to the SCBT Investment Committee, Personal Conversation, March 3, 2010.

sustainable practices within companies.

GRC does not give schools credit for divestment or withheld investments. GRC instead focuses on rewarding institutions for promoting environmentally and socially beneficial change. In taking this positive approach, it does not acknowledge the role that active dissent can play in opposing negative practices.

Endowment Transparency

GRC grants institutions credit for the full public disclosure of the names of investment managers and the votes made by an existing proxy voting committee. By creating a separate section for endowment transparency, GRC suggests that public disclosure of information plays an important role in sparking community engagement. The hope is that community activism will put pressure on investment managers to change portfolio composition and include more investments in environmentally responsible firms and funds.

Investment Priorities

GRC rewards colleges and universities for optimizing investment returns, investing in renewable energy funds, and investing in community development loan funds or community development financial institutions. The allocation of points for the optimization of returns does not relate to sustainable investment, but acknowledges the importance of endowment growth for purely economic purposes.

Notably, GRC does not specify the degree to which an institution must invest in the aforementioned areas to earn full credit. In fact, an institution earns credit just for considering investing sustainably. GRC does not explicitly state how seriously an institution must be considering sustainable investment, nor does it explain what form this “consideration” must take. By including its Investment Priorities category, GRC places value on investment in sustainable companies and business initiatives. But in not requiring schools to demonstrate specific forms of commitment or action, GRC takes a broad and neither stringent nor specific approach to evaluating schools’ performance in this area.

The investment category also rewards institutions that allow donors to give directly into funds that consider social and environmental factors. GRC also gives schools credit for investing back into themselves via on-campus initiatives, such as energy or water efficiency projects. Including these credit opportunities acknowledges the value of making sustainable investments in multiple

areas, from corporate companies to small community endeavors. Overall, GRC values sustainable investments made from a variety of social angles, from local to corporate.

Table 12.1 Wellesley's GRC performance in Shareholder Engagement

Credit title and description		Regular Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Proxy Vote Decisions	Providing ways for the school to exercise its shareholder rights.	40%	Wellesley has a proxy voting subcommittee	Wellesley earns full credit.	--
	Advising trustees on proxy voting by a proxy voting advisory committee or similar committee structure.			Other shortcomings of the subcommittee are detailed below.	
Stakeholder Involvement	Incorporating multiple stakeholders into the investment advisory process.	30%	The proxy voting subcommittee is made up of 13 members, including faculty, staff, students, alumni and trustees	Wellesley earns full credit.	--
	Including faculty, student, and alumni representation on an advisory committee to the trustees.			Other shortcomings of the subcommittee are detailed below.	
School Community Input	Encouraging members of the school community to provide input via open forums or a website.	10%	No credit earned.	Wellesley does not make proxy voting records of any kind available outside of the committee	Make records available but limit access to a password protected website and to those affiliated with the college. Make proxy voting template publicly available, and encourage involvement of student government.
Sustainability Voting Record	Voting in favor of sustainability-related shareholder proposals (when school proxy voting records are available for review)	20%	No credit earned. Wellesley's Proxy voting records are not available for review.	Wellesley does not make proxy voting records of any kind available outside of the committee although Wellesley likely votes in favor of sustainability related shareholder proposals.	Making voting records public will allow Wellesley to receive credit for what it likely already does.

Table 12.2 Wellesley's GRC performance in Investment

Credit title and description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Renewable Energy and Sustainable Investment	Using environmental sustainability criteria in selecting all or part of endowment investments.	30%	--	Wellesley is currently invested, and is exploring further investment in renewable energy funds	Wellesley earns full credit	--
	Investing in renewable energy funds or actively investigating the option.					
Community Investment	Making investments in community development loan funds or other community development financial institutions or actively investigating the option.	30%	--	Wellesley does not earn credit	Wellesley does not hold such investments	Applying more institutional pressure to create a student-managed socially responsible investment fund
On-Campus Sustainability Projects	Investing in on-campus energy/water efficiency projects through the endowment (as an investment, not as a payout).	--	30%	Wellesley does not earn credit	Wellesley does not hold such investments	Creating a student-managed socially responsible investment fund
Donor Fund Option	Offering donors the opportunity to direct their gift to an investment fund that considers environmental sustainability factors.	--	20%	Wellesley offers donors the option of investing into the class of 1969 Green Fund.	Wellesley earns full credit	---
Optimizing Investment Return	Investing to optimize long-term profit—a vital aspect of maintaining endowment sustainability.	40%	--	Optimizing long-term profit is Wellesley's top investment priority	Wellesley earns full credit	--

Table 12.3 Wellesley's GRC performance in Endowment Transparency

Credit title and description		Regular Credit	What Wellesley earns credit for in this category	What Wellesley doesn't earn full credit for	Changes Wellesley could make
Investment Holdings	Making lists of investment holdings available to the school community or to a wider audience.	40%	Wellesley does not earn credit	Only asset allocation and a list of external managers are made public. Investment holdings are not.	Disclose investment holdings by request, or through a password protected website.
Proxy Voting Record	Making proxy-voting records available to the school community or to a wider audience.	30%	Wellesley does not earn credit	Proxy voting records are not made public	Disclose proxy votes by request, or through a password protected website.
Accessibility	Making investment holdings and proxy voting records available based on the following priorities: 1. Providing information via a publicly accessible website.2. Providing information via a password-protected website.3. Sending information, upon request, via email or post.	30%	Wellesley does not earn credit	Proxy voting records are not made public	Disclose proxy votes and investment holdings by request, or through a password protected website.

12.4 How STARS Conceptualizes Investment

Table 12.4 STARS summary of Investment Points Allocation

Credit Number	Credit Title	Possible Points
PAE Credit 16	Committee on Socially Responsible Investments	2
PAE Credit 17	Shareholder Advocacy	5
PAE Credit 18	Positive Sustainability Investments	9
<i>Tier Two</i>	<i>Student-managed SRI Fund</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Socially Responsible Investment Policy</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Investment Disclosure</i>	<i>0.25</i>
Total		16.75

The Positive Sustainability Investments credit accounts for the largest number of points within the STARS Investment category. This credit structure illustrates STARS's emphasis on specific actions that promote sustainability in direct ways. To gain the maximum number of points available for the credit, however, an institution needs to devote 30 percent or more its investment pool to positive sustainability investments. Doing so would entail a lack of investment diversity that a professional endowment manager may find difficult to justify financially, especially since sustainability-oriented businesses and industries are often newly emerging ones.

The Shareholder Advocacy credit, also worth more points than the Committee on Socially Responsible Investment credit, similarly highlights STARS's focus on concrete, tangible measures. Through shareholder advocacy, institutions can take specific actions to influence the decisions of publicly held companies, helping to push them towards sustainability.

STARS's inclusion of Investment Disclosure as a Tier Two credit also indicates how the rating system prioritizes direct and tangible sustainability initiatives. STARS recognizes transparency as an element that is important to sustainable investing. The inclusion of investment disclosure as a Tier Two credit as opposed to a regular credit, however, suggests that STARS views transparency as being less directly linked to concrete social and environmental results. STARS therefore gives transparency less importance in comparison to other investment initiatives.

The Student-Managed SRI Fund Tier Two credit illustrates another aspect of STARS's conceptualization of investment. Through this credit, STARS emphasizes the importance of student involvement in responsible investment, illustrating the broader value that STARS places on curriculum and teaching as a means of making a long-term investment in sustainability.

Table 12.5 Wellesley's STARS Performance in Investment

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
PAE Credit 16 Committee on SRI Does Wellesley have a committee on SRI? (Y/N)	2	Yes	Yes	Yes	2	2	2
PAE Credit 17 Shareholder Advocacy Wellesley has filed or co-opted one or more shareholder resolutions that address sustainability, or submitted one or more letters about social or environmental responsibility to a company in which it holds investments, during the previous three years (Y/N) OR Wellesley has conducted a negative screening of its entire investment pool within the last three years and sold all but \$2000 of affected direct holdings (Y/N)	5	No	No	Yes	0	0	5
PAE Credit 18 Positive Sustainability Investments Percentage of investment pool in Positive Sustainability Investments	9	6%	10%	10%	1.8	3	3
Tier 1 _{no} Student-Managed SRI Fund Does Wellesley have a student-managed socially responsible investment fund through which students are able to develop socially responsible investment skills and experience (Y/N)	0.25	No	No	Yes	0	0	0.25
Tier 1 _{no} Socially responsible Investment Policy Wellesley has a policy or directive to consider and/or environmental impacts of investment decisions, in addition to financial considerations (Y/N)	0.25	No	No	No	0	0	0
Tier 1 _{no} Investment Disclosure Wellesley makes available to the public: snapshot of its investment holdings, including the amount invested in each fund and/or company and proxy voting records (Y/N)	0.25	No	No	No	0	0	0
Total	16.75				3.8	5	10.25

12.5 Comparative Analysis of GRC and STARS

The Green Report Card and STARS approach the category of investment from different angles. This divergence is particularly apparent in the weight that each rating system allots to investment relative to other categories. Whereas investments relate to 33 percent of Wellesley's overall score on GRC, they make up about 5.6 percent of Wellesley's final score on STARS.

This observation alludes to a fundamental difference in how STARS and GRC conceive of campus sustainability. On the basis of points alone, investment is the single most important category by which GRC measures campus sustainability. GRC explains this emphasis by stating that universities are substantial investors in corporations, and can therefore be influential in improving corporate policies.³⁰⁵ This perspective suggests that, through endowment investment, institutions can have a much greater impact on global environmental sustainability than they would if they confined their efforts to the campus environment.

In contrast, STARS awards many points to campus-based sustainability initiatives, such as the integration of sustainability into the curriculum and administrative decisions. Unlike endowment management, these are categories that confine environmental impact to the college campus and the people (students, faculty, etc.) who interact with this environment directly. GRC conceives of campus sustainability in a broader sense than STARS does, and disproportionately values an institution's contribution to absolute global environmental improvement.

While GRC narrowly delineates credit-worthy activities in its Investment Priorities category, rewarding institutions specifically for maximizing returns, investing in renewable energy funds, and investing in community development loan funds, STARS does not specifically define what a sustainable investment is. STARS leaves it up to Wellesley to determine a working internal definition for a sustainable investment based on the College's priorities and goals.³⁰⁶ Finding agreement on such a definition for Wellesley could be difficult, as controversial issues will be raised and will need to be resolved, such as the sustainability of nuclear energy or of large, multinational, multifaceted companies such as Coca Cola, General Electric, and DuPont. STARS gives institutions the flexibility to decide on these matters for themselves.

GRC and STARS diverge in the value they place on transparency of endowment management. Whereas GRC gives its Transparency category the same weight as Investment

³⁰⁵ "Frequently Asked Questions," *The College Sustainability Report Card*, <http://www.greenreportcard.org/about/faq#d> (accessed: March 29, 2010).

³⁰⁶ Laura Matson, STARS Technical Developer, AASHE, Email, March 29, 2010.

Priorities and Shareholder Engagement, STARS includes transparency only as a Tier Two credit. Shareholder engagement and environmentally responsible investments relate directly to corporate sustainability, whereas endowment transparency does not. Although transparency may increase pressure towards environmentally responsible investing and increased shareholder activism, the one does not guarantee the other. For example, Wellesley's non-disclosure of its holdings does not necessarily reflect how "sustainable" its investments are; transparency itself does not in and of itself signify environmental benefit.

Of the two rating systems, only STARS includes a credit for having a student-managed socially responsible investment fund. Although GRC has more credits within investment overall, it does not address student involvement except with regards to membership on the proxy voting committee. STARS's inclusion of students within a smaller investment category perhaps reflects the value STARS places on using campus-based sustainability as an educational tool.

GRC and STARS also diverge in how they measure performance in specific credit areas. STARS tends to award credit based on measurable results, whereas GRC frequently awards credit for meeting binary criteria and having policies or programs in place. One key area where this occurs is with regards to socially and environmentally responsible investments. Although both GRC and STARS award credit in this area, STARS bases its score on the percentage of an institution's endowment actually invested in socially or environmentally responsible funds, whereas GRC awards credit for having *any* holdings invested in that manner. Under GRC, an institution with 50 percent of its endowment invested in renewable energy would receive as much credit as an institution with five percent of its holdings in such funds. Another area where this distinction can be made is in shareholder engagement. Both STARS and GRC award credit in this category, but GRC awards credit for having the institutional structure and policy in place to enable shareholder action, whereas STARS requires proof of regular action before awarding points.

Under GRC, an institution may receive full credit without taking real action to leverage its investments sustainably. Under STARS, an institution is bound to Tier Two credits unless it takes tangible action towards sustainability. On the whole, GRC credits are awarded much more liberally than STARS credits, as evidenced by Wellesley's poor performance on STARS, and its above-average performance on GRC. GRC rewards an institution for the things it does well, but undermines the value of improvement and overall environmental impact.

Table 12.6 Reasons Wellesley Does Not Earn STARS Points in Investment

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
PAE Credit 16	Committee on Socially Responsible Investments	2	Yes	--	--
PAE Credit 17	Shareholder Advocacy	5	No	Does not align with Wellesley's priorities	No consistent institutional pressure for shareholder advocacy.
PAE Credit 18	Positive Sustainability Investments	9	No	Only partially doing it	STARS does not provide guidelines for what constitute sustainable investments, complicating the reporting process
<i>Tier Two</i>	Student-managed SRI Fund	0.25	No	Does not do it but could	There have been no consistent attempts made to implement this
<i>Tier Two</i>	Socially Responsible Investment Policy	0.25	No	Does not align with Wellesley's priorities	Lack of consensus on the environmental and financial incentives for doing so. Conflicts with Wellesley's policy of maximizing returns.
<i>Tier Two</i>	Investment Disclosure	0.25	No	Does not align with Wellesley's priorities	Conflicts with Wellesley's policy of maximizing returns. Lack of pressure for at least partial disclosure.

12.6 Initial Recommendations

Wellesley does not disclose its investments or allow for transparency in the proxy voting process in part because of the managerial burden that doing so would create for the investment office. Wellesley might overcome this challenge by modifying the responsibilities of the Proxy Voting Subcommittee to account for this added burden, or by hiring work-study students to take on the additional tasks created.

Wellesley could also create a student-managed socially responsible investment fund separate from the endowment, with ongoing contributions from either students themselves or from alumnae. Wellesley students could manage such a fund in a continuously offered upper-level economics course, which would track progress year after year. A student organization could also manage the fund; students in the Investment Society, for example, might be willing to collaborate with members

of an environmental or social advocacy organization to found a critical group of students with the time and interest to move forward with this type of extracurricular undertaking.. Creating a student-managed fund would provide a valuable, real-life learning tool to students, and would leverage the environmental benefit of the investments in the fund by supplementing students' education. Wellesley may be more likely to approve such a fund if it were started by designated alumnae donations than if were created from existing endowment funds.

One major constraint to improving investment disclosure and shareholder activism is that the environmental and financial benefits of doing so are controversial and uncertain.³⁰⁷ As a result, Wellesley does not have an innate incentive to institute reforms. For this reason, student or alumnae pressure may be necessary for endowment and investment initiatives to move forward. Such action has driven reform at similar institutions, and may provide the necessary motivation for Wellesley to change as well.

³⁰⁷ Debby Keunstner, Wellesley CIO, Personal Conversation, March 29, 2010.



Figure 23. The Wellesley Sustainability Logo

13.0 INSTITUTIONAL STRUCTURES

13.1 Introduction

College Campuses

Colleges and universities have the ability to not only implement ad-hoc sustainable initiatives but also commit to a comprehensive sustainability vision. Higher education institutions can prioritize sustainability by integrating it into strategic campus plans and establishing separate climate and sustainability plans. By incorporating sustainability into plans that guide the running of colleges and universities, these institutions ensure that sustainability continues to be a priority in the present as well as in the future. Sustainability coordinators, offices, and committees can also help provide the physical infrastructure necessary to ensure that sustainability is being addressed in all aspects of campus life. Sustainability coordination helps colleges and universities maximize sustainable change by determining the best ways to efficiently allocate resources. In a different way, formalized

commitments and established plans not only help bring sustainability into the college's decision-making process, but hold institutions accountable to their goals as well.

Currently, colleges and universities across the United States are recognizing the benefits of incorporating sustainability into their institutional structures. According to GRC's 2010 survey, more than half of colleges and universities surveyed have full-time sustainability staff and those that don't are working toward instituting staff to address sustainability issues.³⁰⁸ Additionally, one in four colleges participating in GRC are going even further in institutionalizing sustainability by developing comprehensive sustainability office to deal with sustainability issues.³⁰⁹

Exemplary Institutions

University of Connecticut-Storrs has worked hard to incorporate sustainability into its infrastructure. The University not only signed the President's Climate Commitment but has also implemented an environmental policy statement to guide its sustainability initiatives.³¹⁰ University of Connecticut has developed a comprehensive Office of Environmental Policy, which includes a full-time sustainability director, a part-time coordinator, as well as a full-time administrative coordinator who all work to ensure that sustainability remains a priority on campus.³¹¹ Additionally, donors to the University are able to support these sustainability initiatives by directing their funds to the Green Campus Fund.³¹² Similarly, Harvard University has done an exemplary job integrating sustainability into its institutional structures. Harvard University's Green Campus Initiative is comprised of 24 full-time professionals dedicated solely to promoting sustainability to the Harvard community.³¹³ The Green Campus Initiative is responsible for implementing sustainability initiatives in all aspects of campus life and is supported by a \$12 million green campus loan fund.³¹⁴

³⁰⁸ "Administration: Key Findings - Green Report Card 2009," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2009/categories/administration> (accessed: April 6, 2010).

³⁰⁹ "Administration - Green Report Card 2009," *The College Sustainability Report Card*.

³¹⁰ "Administration - Leaders - Green Report Card 2009," *The College Sustainability Report Card*.

³¹¹ "Administration - Leaders - Green Report Card 2009," *The College Sustainability Report Card*.

³¹² "Administration - Leaders - Green Report Card 2009," *The College Sustainability Report Card*.

³¹³ "Administration - Leaders - Green Report Card 2009," *The College Sustainability Report Card*.

³¹⁴ "Administration - Leaders - Green Report Card 2009," *The College Sustainability Report Card*.

13.1 How Wellesley Approaches Institutional Structures



Figure 24. The Sustainability Advisory Committee organized Wellesley’s first Sustainable Move-Out Program in 2010

Priorities

Wellesley has made great progress in ensuring a wide range of sustainability issues are incorporated into institutional structures. Wellesley’s Sustainability Advisory Committee (SAC), which consists of students, faculty, staff and administrative representatives, meets at least ten times a year to address sustainability problems on campus and implement sustainability initiatives.³¹⁵ Currently SAC is working toward developing a formal sustainability plan and, in 2008, identified four “aspirational goals” to achieve by 2013. These goals help to shape the College’s policies and programs and guide Wellesley’s use of expenditures and resources.³¹⁶ The four goals include creating

³¹⁵ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

³¹⁶ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

a sustainable landscape, reducing waste, reducing energy use, and working toward reducing water consumption by a total of 50 percent. In order to meet these goals and continue to advance sustainability on campus, Wellesley created the position of Director of Sustainability in 2009. The Director of Sustainability works with departments and facilities to promote sustainability, helps carry out SAC initiatives, and devises innovative ways for Wellesley to move toward a more sustainable future.³¹⁷ Wellesley plans on expanding its sustainability staff by hiring a student sustainability intern in summer 2010. The intern will work with the current Director of Sustainability to spearhead a first-year orientation sustainability program, help revamp the College's recycling program, research and gather data on current behavior, and work during the academic year to increase student involvement on sustainability initiatives.

Although Wellesley does not have a strategic plan that incorporates sustainability nor made any formal climate or sustainability commitments, past Wellesley presidents, as well as the current president, have consistently identified sustainability as a priority. President Kim Bottomly identified "Sustainability" as a priority of Wellesley in the 2009-2010 Institutional Goals of the College.³¹⁸ In 2005, former President Diana Chapman Walsh also approved a statement that recognized environmental sustainability as an important component of Wellesley's core mission.³¹⁹

From a nontraditional vision of sustainability ascribed to by STARS, diversity and affordability can play an important role in institutionalizing sustainability on college campuses. STARS argues that colleges and universities need to promote equality and diversity as well as address problems of discrimination to aid in creating a more cohesive community and preventing environmental injustice. Higher education institutions have the chance to provide opportunities to these historically disadvantaged groups and foster the creation of an equitable and sustainable society. Wellesley's strong commitment to multiculturalism and diversity aligns with this philosophy.

The College has worked hard toward building a diverse and equitable community. Wellesley's Campus Wide Diversity Initiative (CWDI) was developed to address and challenge stereotypes and cultural misconceptions on campus. CWDI helps address student diversity issues and promote constructive dialogue. In addition, Wellesley's college government elects a Multicultural Advocacy Coordinator each year who works with both the college government and CWDI to make diversity a priority on campus. Each year, CWDI runs educational programs and campaigns to

³¹⁷ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

³¹⁸ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

³¹⁹ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

educate Wellesley students on diversity issues, and serves as advocates for diversity groups on campus. Their annual “Ally Convention” day provides educational sessions for students with all the multicultural groups on campus in order to share different cultures and solidify the importance of diversity on campus.

On the administrative level, Wellesley has established the Diversity Coalition, an administrative committee in charge of tackling Wellesley’s diversity issues and promoting multiculturalism on campus. In 2009, the College also created the office of Multicultural Programming with two full-time employees who work with campus groups to encourage cross-cultural interactions and programming. Wellesley prioritizes the importance of having a diverse faculty through its Committee on Minority Recruitment, Hiring and Retention.³²⁰

Another nontraditional approach that STARS incorporates into institutional structures is the importance of providing benefits and living wages to employees. STARS recognizes the importance of providing benefits and support to employees in order to create an equitable community to deal with sustainability. In addition, employees who are both paid living wages and given good investment are more likely to make more long term sustainable decision ins their own lives. Wellesley similarly recognizes the value of providing benefits and support for its faculty and staff in building a strong college community. Not only does Wellesley make sure it pays a living wage to all employees, it has also created an integrated development and support program called Valuing Work @ Wellesley that provides education and career development services to employees, encourages open discussion about work issues, and rewards and recognizes employees.³²¹ The Human Resources Office of Wellesley developed this program in conjunction with an outside consulting team. The College also has an Employee Assistance Program that provides confidential counseling and support for faculty, staff and their families. Wellesley further supports the families of faculty by providing tuition assistance to faculty dependents for college education. Select full time and tenured/tenure track faculty members can receive tuition grants in the sum of one half of Wellesley’s tuition for dependent sons or daughters to attend Wellesley or another accredited institution.³²²

STARS finally recognizes the role of public engagement and community service in a broader, nontraditional vision of sustainability. Higher education institutions can help create a compassionate

³²⁰ “Standing Committees 2009-2010,” *Wellesley College*,
<http://www.wellesley.edu/DeanCollege/committees.html>(accessed: April 6, 2010).

³²¹ “Value at Wellesley Program,” *Wellesley College*,
<http://www.wellesley.edu/HR/new/VWSite/vwcontents.html>(accessed: April 6, 2010).

³²² “2010 Benefits Summary for Faculty and Staff,” *Wellesley College Human Resources*,
<http://www.wellesley.edu/HR/benefit/2010BenefitsSummaryFacultyStaff.pdf>(accessed: April 6, 2010).

community by promoting community service and engagement. Community service helps to raise awareness and connects the college community to real world problems that our society faces. By instilling a sense of service in college students, higher education institutions help to promote sustainability far beyond their individual institutions. Wellesley too has a strong institutional commitment to service and community relations. Wellesley's Center for Work and Service (CWS) provides many community service opportunities and resources for students. Students may sign up on mailing lists or look for electronically posted information about volunteer opportunities organized through Wellesley or other institutions. Each year, CWS organizes volunteering around Thanksgiving, runs the Annual Day to Make a Difference, and supports recurring organized programs such as Wellesley Words on Wheels, which mentors children in Framingham Public Schools.³²³

Students can also receive financial support in the form of community service grants from the CWS for student-initiated projects or for conference travel. Qualified students can receive federal work-study funds for undertaking volunteer work or non-profit internships during the academic year. Although no comprehensive figures on community service rates exist for Wellesley students, the overwhelming majority of student service occurs during summers. CWS provides stipends for summer internships and service projects at non-profit organizations that cover domestic or international airfare, housing, and sustenance if the work is unpaid. Students can also apply for travel grants to participate in community service projects throughout the year.

Challenges

Wellesley has made some commendable initial steps towards addressing sustainability on campus but still faces obstacles when it comes to advancing sustainability institutionally. The College has not been able to develop any formal sustainability or climate plan nor has it incorporated sustainability into its existing plans. As a result, Wellesley has not incorporated sustainability decision-making processes and often places these issues on the backburner. The College needs to go further formalizing and institutionalizing its sustainability goals. For example, although the College's Landscape Master Plan indirectly supports sustainability by prioritizing a natural pedestrian-oriented

³²³ Day to Make a Difference takes place early in the academic year. Alumnae, faculty and staff, and students choose to donate a weekend morning and afternoon to one of a number of selected community service projects. Each year, about 350 members of the Wellesley College community donate approximately 1500 hours of service. In September 2009, projects included harvesting vegetables at Drumlin Farm Wildlife Sanctuary, helping with indoor cleaning projects at the Place to Turn women's shelter, and sorting food at the Red Cross Food Bank.

campus, it does not explicitly prioritize a “sustainable campus or landscape” in any way.³²⁴ Similarly, the College has made some laudable aspirational goals addressing climate change and resource conservation, but has failed to have the administration formally commit to these goals and thereby be held accountable to meeting them.³²⁵ Without integrating these commitments to sustainability into the important plans that guide the running of Wellesley, the College cannot make it publicly known that sustainability is an important priority on campus. This lack of centralized commitment overshadows the smaller efforts made by the SAC and the Director of Sustainability.

Similarly, Wellesley does an admirable job of creating a supportive work environment for its employees but fails to incorporate sustainability into its development trainings or provide ways for employees to support sustainability. Wellesley offers a number of career development trainings through Valuing Work @ Wellesley but none of these programs address sustainability issues. Wellesley also fails to incorporate any education on sustainability practices at Wellesley in its new employee orientation, making it difficult for employees to recognize the importance of sustainability at Wellesley.

Although Wellesley supports community service financially, the College has not made community service a requirement for all students. In general, Wellesley’s location in an affluent suburban community and transportation constraints make it difficult for most students to pursue community service opportunities during the academic year. With other academic, extracurricular, work, or personal commitments, the commute time to service opportunities in needy areas is a major reason that Wellesley students do not pursue these opportunities more fully. Likewise, students of higher socioeconomic status often have greater opportunity to volunteer because they have less pressure to pursue a paid job while at school or during the summers and often have better access to transportation. The students who do not qualify for federal work-study, but still need to work throughout the semester, are similarly at a disadvantage since they often cannot afford to pursue community service projects that do not provide monetary compensation.

³²⁴ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

³²⁵ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

13.2 How GRC Conceptualizes Institutional Structures

The Green Report Card's Administration category rewards colleges and universities that make sustainability a priority at the administrative level. GRC acknowledges institutions that have established sustainability offices and hired full-time sustainability staff members. Given that the success of many environmental initiatives rests upon strong leadership, GRC believes that colleges with a well-staffed sustainability office are better equipped to handle the daily challenges of overseeing and expanding environmental projects on campus.

Sustainability advisory committee, colleges are able to help ensure that sustainability is being practiced across academic disciplines and administrative departments. In order to evaluate the effectiveness of campus sustainability committees, GRC asks colleges to disclose how many times their sustainability advisory committees meet each year, who the stakeholders are, to whom the committee reports, what key issues the committees have addressed, and what programs the committees have implemented since August 2008.

Although GRC is predominantly concerned with colleges having sustainability staff, offices, and advisory committees, it also emphasizes that colleges should institutionalize sustainability through policy measures. GRC rewards colleges that have their own formal sustainability policies as well as a sustainability component in their institution's master strategic plan. GRC values policies and master strategic plans because of their far reaching effects and their ability to guide future behavior.

In addition to sustainability offices, GRC heavily emphasizes the importance of having a campus sustainability advisory committee. Campus sustainability advisory committees provide forums for stakeholders to discuss and address problems of sustainability. GRC rewards institutions that have such a committee, consisting of multiple stakeholders. By having a diverse campus

Wellesley's Point Scenarios

Table 13.1 Wellesley's GRC performance in Administration (without Green Purchasing Subcategory)						
Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Sustainability Policies	Demonstrating a commitment to campus sustainability by the president and senior administrators through a formal sustainability policy.	30%	5%	The Sustainability Advisory Committee is developing a sustainability plan that incorporates Wellesley's 4 aspirational goals for sustainability	Wellesley has not worked with the president or current administrators to formalize a sustainability policy.	-Formalize current sustainability goals. Work with the College President to create a formal sustainability policy
	Adopting sustainability-related mission statements, strategic plans, master plans, and/or endorsements of local, national, or international agreements.			Wellesley does not earn points in this category.	-Does not commit to any local, national, or international sustainability agreements. -Does not have an institutional master plan to incorporate sustainability.	Incorporate sustainability into a new mission statement along with a separate sustainability plan.
Advisory Council	Integrating multiple stakeholders into an active advisory council to guide the administration on issues of campus sustainability.	25%		Wellesley has an active Sustainability Advisory Committee	Wellesley earns full points in this category	Wellesley could expand the Committee, include the College President, and work less on individual initiatives and focus on creating and implementing formal sustainability policies to guide Wellesley's actions
	Facilitating student participation in institutional decision-making on sustainability-related issues.			Five students sit on the Sustainability Advisory Committee	There currently is no student chair on the committee.	Wellesley could add a student chair to the committee or add a student sub-committee.

Table 13.1 (continued from previous page)

Credit Title and Description		Regular Credit	Extra Credit	What Wellesley earns credit for in this category	Why Wellesley doesn't earn full credit	Changes Wellesley could make
Sustainability Staff	Designating staff to help develop, facilitate, and oversee sustainability programs and policies.	25%	10%	Wellesley has one sustainability coordinator and is implementing a sustainability intern position.	Wellesley only has one paid position	Expand staff designated to work on sustainability. Including Sustainability Coordinators for each building and a sustainability education coordinator
	Supporting the sustainability staff, as indicated by level of funding and authority of lead sustainability official.			The Director of Sustainability deals almost exclusively with sustainability and chairs the Sustainability Committee	Wellesley only funds one sustainability position	Wellesley could also better integrate the Director of Sustainability into the administration.
Office or Department	Maintaining an office or department focused on achieving campus sustainability goals.	5%		Wellesley has a sustainability office located at the edge of campus	The Office currently consists of only one position and is not located at the center of campus	Wellesley could relocate the office to a central location on campus, expand it, and make it more visible to the college community.
Website	Operating an Internet resource for community education on sustainability.	5%		Comprehensive sustainability website includes past, present and future goals	Website is updated infrequently and does not include curriculum or investment.	Update the website and make it more visible and accessible from the Wellesley College Website
	Offering a school website to facilitate involvement in campus sustainability initiatives.		Effective Sustainability Website	The Website does not offer any concrete resources for getting involved in sustainability initiatives	Wellesley should incorporate a resources page for ways to get involved in current on campus sustainability initiatives	

13.3 How STARS conceptualizes Institutional Structures

Table 13.2 STARS Summary of Coordination and Planning Points Allocation

Credit Number	Credit Title	Possible Points
PAE Credit 1	Sustainability Coordination	3
PAE Credit 2	Strategic Plan	6
PAE Credit 3	Physical Campus Plan	4
PAE Credit 4	Sustainability Plan	3
PAE Credit 5	Climate Plan	2
Total		18

Table 13.3 STARS Summary of Diversity and Affordability Points Allocation

Credit Number	Credit Title	Possible Points
PAE Credit 6	Diversity and Equity Coordination	2
PAE Credit 7	Measuring Campus Diversity Culture	2
PAE Credit 8	Support Programs for Under-Represented Groups	2
PAE Credit 9	Support Programs for Future Faculty	4
PAE Credit 10	Affordability and Access Programs	3
<i>Tier Two</i>	<i>Gender Neutral Housing</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Employee Training Opportunities</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Student Training Opportunities</i>	<i>0.25</i>
Total		13.75

Table 13.4 STARS Summary of Human Resources Points Allocation

Credit Number	Credit Title	Possible points
PAE Credit 11	Sustainable Compensation	8
PAE Credit 12	Employee Satisfaction Evaluation	2
PAE Credit 13	Staff Professional Development in Sustainability	2
PAE Credit 14	Sustainability in New Employee Orientation	2
PAE Credit 15	Employee Sustainability Educators Program	5
<i>Tier Two</i>	<i>Childcare</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Employee Wellness Programs</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Socially Responsible Retirement Plan</i>	<i>0.25</i>
Total		19.75

Table 13.5 STARS Summary of Public Engagement Points Allocation

Credit Number	Credit Title	Possible Points
PAE Credit 19	Community Sustainability Partnerships	2
PAE Credit 20	Inter-Campus Collaboration on Sustainability	2
PAE Credit 21*	Sustainability in Continuing Education	7
PAE Credit 22	Community Service Participation	6
PAE Credit 23	Community Service Hours	6
PAE Credit 24	Sustainability policy Advocacy	4
PAE Credit 25	Trademark Licensing	4
<i>Tier Two</i>	<i>Graduation Pledge</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Community Service on Transcripts</i>	<i>0.25</i>
<i>Tier Two</i>	<i>Farmer's Markets</i>	<i>0.25</i>
Total		31.75

*Credit does not apply to Wellesley

STARS takes a unique approach to institutional structures. Although the majority of higher education green rating systems evaluate colleges' and universities' institutionalization of sustainability based upon their coordination and planning efforts, STARS incorporates social responsibility in its assessment of campus sustainability by also evaluating institutions in the context of public engagement, human resources, and diversity and affordability. STARS believes that institutions of higher education have a duty not only to reduce harmful environment impacts, but also to institutionalize policies that result in socially and economically responsible administrative decision-making. STARS takes this unconventional approach even further by weighting these subcategories more heavily than many of the more "traditional" areas of sustainability, such as buildings, waste, transportation, water, dining, purchasing, and grounds.

Planning and Coordination

According to STARS, colleges and universities should focus on building an administrative infrastructure that prioritizes a broad definition of sustainability.³²⁶ To achieve this goal, STARS encourages institutions to include the social, economic, and environmental aspects of sustainability in various policy plans, from the college's overall strategic plan to more specific plans relating to

³²⁶ STARS 1.0 Technical Manual, 206.

climate change. By incorporating sustainability into existing plans as well as new sustainability plans, colleges are able to publicly declare their commitment to sustainability and integrate sustainability into their institution's infrastructure. STARS also values committees, offices and individuals that are leaders in campus wide sustainability coordination. Having designated sustainability staff members and sustainability forums helps ensure that colleges have the necessary manpower and support to implement environmental initiatives.

Diversity and Affordability

STARS evaluates higher education institutions' commitments to diversity. STARS further evaluates schools on issues of diversity and multiculturalism. It views efforts towards diversity and intercultural communication as a crucial step towards building a more sustainable economy. While many environmentalists and social activists view their struggles as separate from one another, STARS emphasizes the importance of the connection between environmental and social problems. STARS argues that if current inequities are not addressed, solutions to environmental problems will reflect these inequities rather than combat them.

By incorporating diversity into its broad definition of sustainability, STARS encourages colleges and universities to create more collaborative community environments. Historically discriminated minority groups are often left without the political and economic resources to address environmental harms. STARS recognizes that colleges and universities need to promote equality and address problems of discrimination. By celebrating diversity and including it in its definition of sustainability, STARS hopes to foster a more cohesive community and prevent future acts of environmental injustice. STARS firmly believes that higher education institutions have a responsibility to provide opportunities to historically disadvantaged groups in order to create an equitable and sustainable society.

STARS utilizes a broad and expansive definition of diversity. For instance, STARS rewards colleges and universities for having gender-neutral housing. Institutions are also encouraged to conduct an assessment to "gain information about campus stakeholders' personal experiences on campus" on issues related to diversity.³²⁷ STARS rewards colleges and universities for having institutionalized diversity and equity coordination, but does not specify how it should be structured or what the committee, coordinator, or office should be in charge of. Rather than advocating a generalized prescription, STARS wants schools to keep multicultural policy and action rooted in

³²⁷ STARS 1.0 Technical Manual, 221.

their own contexts. Conducting a campus assessment of diversity and equity issues allows colleges and universities to recognize their strengths and weaknesses and develop diversity initiatives best suited to their individual institution.

Additionally, STARS rewards colleges based on the extent to which they make an effort to engage in dialogues on issues of diversity and support students from under-represented groups on campus. STARS encourages institutions to support under-represented student groups through mentoring, counseling, peer support, affinity groups, and academic support programs.³²⁸ Additionally, STARS believes that institutions should use their resources to create support programs for future faculty members from under-represented groups. Establishing faculty support programs for minorities is important in aiding the creation of a more diverse faculty throughout the higher education community.

Human Resources

The STARS view of Human Resources follows from STARS's belief that "an institution's people define its character and capacity to perform."³²⁹ STARS heavily rewards institutions that provide sustainable compensation to employees, arguing that employees are more able to "contribute positively and productively to the community" when they receive just compensation.³³⁰ Being able to afford childcare also allows community members to contribute to the community because they do not have to exert copious amounts of time and energy into ensuring that their children are properly taken care of during the day. When all members of the community are working together positively, institutions are more likely to move towards effective sustainability efforts.

Another key component of the Human Resources subcategory is employee education. In particular, STARS emphasizes the importance of peer-to-peer education. Peer-to-peer education fosters the type of collaboration needed to address sustainability issues. STARS views all members of a campus community—from the most prestigious faculty member to the dining hall and custodial staff—as important actors in the quest toward sustainability. Making sustainability education available to all of these individuals expands the intellectual dialogue on campus and puts sustainability on the agenda in areas of administration where it might otherwise be ignored.

³²⁸ STARS 1.0 Technical Manual, 223.

³²⁹ STARS 1.0 Technical Manual, 232.

³³⁰ STARS 1.0 Technical Manual, 233.

Public Engagement

STARS also rewards colleges and universities that contribute to their communities on both an institutional and an individual level. By becoming involved in community initiatives for sustainability, colleges and universities can offer their monetary, intellectual, and physical resources to the larger community. One way for schools to increase community involvement is through continuing education programs that are economically accessible and include sustainability-related coursework. On an individual level, STARS believes that students involved in community service develop a type of compassion that will be fundamental to addressing issues of sustainability in the future. It is important to note however that STARS does not require that the community service that institutions claim credit for is related to the environment. According to STARS, any community service activity helps building a sense of engagement and community connection.

Although many colleges and universities avoid getting involved in politics for fear of seeming biased or distracting from their priority of educating students, STARS rewards political activism by colleges and universities. STARS believes that institutions can play a powerful role in advancing sustainability through legislation and policy on a federal, state, or local level.³³¹ In addition, STARS encourages institutions to demonstrate economic activism by patronizing socially irresponsible businesses. One way institutions can reward socially responsible business practices is through restrictions on trademark licensing. Tee-shirts with college or university logos are popular, and most institutions go through legal channels to ensure that they reserve compensation for the use of their trademarks. STARS believes that they should go further in protecting the use of their trademarks by ensuring that the clothing is produced under economically and environmentally fair conditions.

In seeking to improve the “fairness factor” of apparel, STARS has specific guidelines it would like institutions to follow. Rather than rewarding vague policies or undefined standards, STARS wants to see that institutions are members of either the Fair Labor Association or the Worker Rights Consortium. The Fair Labor Association is a coalition of apparel businesses, higher education institutions, and non-governmental organizations that work together to promote compliance with existing international labor laws and standards.³³² The Worker Rights Consortium is a monitoring organization made up of individuals from colleges and universities devoted to

³³¹ STARS 1.0 Technical Manual, 275.

³³² STARS 1.0 Technical Manual, 278.

protecting the rights of workers manufacturing goods sold in the United States. STARS puts additional emphasis on one program administered by the Worker Rights Consortium called the Designated Suppliers Program. The program's purpose is to proactively select factories that respect worker rights by conducting independent screening and verification.³³³

STARS rewards institutions that participate in these particular organizations because they provide a standard of fair business practices that is objective and transparent. This requirement is similar to the use of third-party certification programs in the purchasing category—third-party assessment programs prevent schools from falling prey to the workers' rights equivalent of "greenwashing," putting on appearances of "greenness" for the sake of sales without living up to the claims. Most companies will probably claim that they treat their workers fairly. By encouraging colleges and universities to participate in certification programs, claims about workers' rights made by apparel corporations are more likely to be investigated and substantiated.

³³³ STARS 1.0 Technical Manual, 278.

Wellesley's Point Scenarios

Table 13.6 Wellesley's STARS Performance in Coordination and Planning

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
PAE Credit 1 Sustainability Coordination Wellesley has a sustainability committee, office, and/or coordinator that are tasked by the administration or board or trustees to advise on and implement policies and programs related to Sustainability on campus (Y/N)	3	Yes	Yes	Yes	3	3	3
PAE Credit 2 Strategic Plan Wellesley's current, formally adopted strategic plan or equivalent guiding document includes sustainability at a high level and covers the whole college (Y/N)	6	No	No	No	0	0	0
PAE Credit 3 Physical Campus Plan Wellesley's current plan for its physical campus (campus master plan) includes sustainability at a high level (Y/N)	4	No	Yes	Yes	4	4	4
PAE Credit 4 Sustainability Plan Wellesley has a sustainability plan that was developed with input from faculty, staff and students. (Y/N)	3	No	Yes	Yes	0	3	3
PAE Credit 5 Climate Plan Wellesley has a formal plan to mitigate its GHG emissions etc. (Y/N)	2	No	No	Yes	0	0	2
Total	18				6	10	12

Table 13.7 Wellesley's STARS Performance in Diversity and Affordability

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
PAE Credit 6 Diversity and Equity Coordination Wellesley has a diversity and equity committee, office, and/or coordinator that are tasked by the administration or board of trustees to advise on and implement policies and programs related to diversity and equity on campus (Y/N)	2	Yes	Yes	Yes	2	2	2
PAE Credit 7 Measuring Campus Diversity Culture Wellesley assesses attitudes about diversity and equity on campus and uses the results to guide policy, programs and initiatives	2	No	No	Yes	0	0	2
PAE Credit 8 Support Programs for Under-Represented Groups Wellesley has mentoring, counseling, peer support, affinity groups, academic support programs or other programs in place to support under-represented groups on campus (Y/N)	2	Yes	Yes	Yes	2	2	2
PAE Credit 9 Support Programs for Future Faculty Wellesley administers and/or participates in a program or programs to help build a diverse faculty throughout higher education (Y/N)	4	Yes	Yes	Yes	4	4	4
PAE Credit 10 Affordability and Access Programs Wellesley has policies and programs in place to make it accessible and affordable to low income students (Y/N)	3	Yes	Yes	Yes	3	3	3
Tier Two Gender Neutral Housing Wellesley offers housing options to accommodate the special needs of transgender and transitional students (either as a matter of policy or as standard practice) (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Tier Two Employee Training Opportunities Wellesley makes cultural competence trainings and activities available to all employees (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25

Table 13.7 (continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier Two</i> Student Training Opportunities Wellesley makes cultural competence trainings and activities available to all students (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	13.75				11.5	11.75	13.75

Table 13.8 Wellesley's STARS Performance in Human Resources

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>PAE Credit 11</i> Sustainable Compensation Percentage of employees that Wellesley ensures earn sustainable compensation	8	100%	100%	100%	8	8	8
<i>PAE Credit 12</i> Employee Satisfaction Evaluation Wellesley conducts a survey or other evaluation that allows for anonymous feedback at least once every five years to measure employee satisfaction. (Y/N)	2	100%	No	Yes	0	0	2
<i>PAE Credit 13</i> Staff Professional Development in Sustainability Wellesley makes available training and/or other professional development opportunities in sustainability to all staff at least once per year (Y/N)	2	No	Yes	Yes	0	2	2
<i>PAE Credit 14</i> Sustainability in New Employee Orientation Wellesley covers sustainability topics in new employee orientation and/or in outreach and guidance materials distributed to new employees, including faculty and staff (Y/N)	2	No	Yes	Yes	0	2	2
<i>PAE Credit 15</i> Employee Sustainability Educators Program Percentage of Employees Served by a Peer-to-Peer Outreach Program	5	0%	30%	75%	0	1.5	3.75

Table 13.8 (continued from previous page)

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier Two</i> Childcare Wellesley has an on-site child care facility, partners with a local facility, and/or provides subsidies or financial support to help meet the child care needs of students, faculty and staff (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Employee Wellness Program Wellesley has an employee assistance or wellness program that provides counseling, referral, and well-being services to employees (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
<i>Tier Two</i> Socially Responsible Retirement Plan Wellesley offers a socially responsible investment option for retirement plans (Y/N)	0.25	Yes	Yes	Yes	0.25	0.25	0.25
Total	19.75				8.75	14.25	18.5

Table 13.9 Wellesley's STARS Performance in Public Engagement

Credit Title and Description	Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>P AE Credit 19</i> Community Sustainability Partnerships Wellesley has formal partnerships with the local community, including school districts, government agencies, non-profit organizations or other entities, to work together to advance sustainability within the community (Y/N)	2	No	No	Yes	0	0	2
<i>P AE Credit 20</i> Inter-Campus Collaboration on Sustainability Wellesley collaborates with other colleges and universities to support and help build the campus sustainability community (Y/N)	2	Yes	Yes	Yes	2	2	2

Table 13.9 (continued from previous page)

Credit Title and Description		Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
PAE Credit 21	Sustainability in Continuing Education* Percentage of Sustainability continuing Education Courses	7	N/A	N/A	N/A	0	0	0
	Wellesley has a sustainability-related certificate program through its continuing education or extension department (Y/N)		N/A	N/A	N/A	0	0	0
PAE Credit 22	Community Service Participation Percentage of students engaged in community service	6	15%	35%	85%	.87	2.1	5.1
PAE Credit 23	Community Service Hours Average number of community service hours per student	6	.69%	5	25	0.21	1.2	6
PAE Credit 24	Sustainability Policy Advocacy Wellesley advocates for federal, state or local public policies that support campus sustainability or that otherwise advance sustainability (Y/N)	4	Yes	No	Yes	0	0	Yes
PAE Credit 25	Trademark Licensing Wellesley is a member of the Fair Labor Association or Worker Rights Consortium (Y/N)	2	No	Yes	Yes	2	2	4
	Wellesley has signed on to participate in the Designated Suppliers Program (Y/N)	2	No	No	Yes			
Tier Two	Graduation Pledge Wellesley administers a graduation pledge through which students pledge to consider social and environmental responsibility in future job and other decisions (Y/N)	0.25	No	No	No	0	0	0
Tier Two	Community Service on Transcripts Wellesley includes community service achievements on student transcripts (Y/N)	0.25	No	No	No	0	0	0

Table 13.9 (continued from previous page)

Credit Title and Description		Possible Points	Survey Data Now (2010)	Survey Data With Small Changes	Survey Data With Big Changes	Wellesley's Points Now (2010)	Wellesley's Points With Small Changes	Wellesley's Points With Big Changes
<i>Tier 1</i>	Farmer's Market Wellesley hosts a farmers' market (Y/N)	0.25	No	Yes	Yes	0	0.25	0.25
Total		31.75				5	7.5	23.3

*Credit does not apply to Wellesley

13.4 Comparative Analysis of GRC and STARS

STARS and GRC both believe in the importance of colleges institutionalizing their commitment to achieve sustainability. STARS and GRC value institutional documents that incorporate sustainability, sustainability committees, and sustainability offices. Plans and committees are an interesting focus because they do not usually lead to measurable short-term environmental benefits the same way that concrete actions, like installing water-saving showerheads, would. Both STARS and GRC, however, understand the importance of creating more lasting environmental impact through long-term thinking and coordination between diverse stakeholders.

Although there are many similarities between STARS and GRC, both rating systems approach institutional structures in different ways. While STARS awards points based on a transparent method that evaluates the existence of certain programs or offices, GRC requests information about what specific offices do and how effective they are at fulfilling their roles. GRC puts more emphasis on results and the way that the committee in particular functions—including how frequently it meets and who exactly is involved. STARS does not have a set definition of how a sustainability office should be run, and encourages institutions to adapt the models it proposes to their own particular situations.

Another difference between STARS and GRC is that each rating system has different beliefs about which college community members should be involved in sustainability efforts. GRC focuses primarily on faculty and student behavior and involvement. The only staff members that are valued by GRC for their intellectual contribution to the discourse on sustainability are sustainability office staff. STARS, on the other hand, believes that all members of the college community should be educated and actively involved in sustainability efforts.

STARS and GRC also have different definitions of sustainability. Whereas GRC evaluates colleges' commitments to sustainability in institutional structures by looking exclusively at institutional planning and coordination, STARS evaluates looks at diversity and affordability, workers' rights, and community service. STARS is unique in that it incorporates typically non-environmental issues into its conceptualization of sustainability. GRC, in contrast, does not view social justice efforts as necessary components to sustainability. STARS believes it is important to expand beyond the narrow GRC definition of sustainability because adopting a limited definition of sustainability could result in perpetuating existing injustices through burden shifting and outsourcing of environmental harms.

Overall STARS places a higher value on the integration of sustainability into institutional structures than GRC. In STARS, the Human Resources, Public Engagement, Coordination and Planning, and Diversity and Affordability categories together make up over 27% of the final STARS score. All of STARS's institutional structure sub-categories will take a long time to result in measurable sustainability improvements, but STARS recognizes them as crucial components in working toward the long-term goal of achieving a just and enduring environmental world.

Table 13.10 Reasons Wellesley Does Not Earn STARS Points in Coordination and Planning

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
PAE Credit 1	Sustainability Coordination	3	Yes	--	--
PAE Credit 2	Strategic Plan	6	No	Does not align with Wellesley's priorities	Wellesley does not have a Strategic Master Plan in which to incorporate sustainability
PAE Credit 3	Physical Campus Plan	4	Yes	--	--
PAE Credit 4	Sustainability Plan	3	No	No formal policy Effort in progress	SAC is currently working on formalizing a sustainability plan. Wellesley does have 4 aspirational goals to advance sustainability on campus but Wellesley has not formalizes any type of sustainability plans
PAE Credit 5	Climate Plan	2	No	No formal policy	Wellesley is taking action to reduce energy usage but does not have a formal Climate Plan

Table 13.11 Reasons Wellesley Does Not Earn STARS Points in Diversity and Affordability

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
PAE Credit 6	Diversity and Equity Coordination	2	Yes	--	--
PAE Credit 7	Measuring Campus Diversity Culture	2	No	Does not do it but could	Wellesley did not have the infrastructure or resources to conduct this type of survey but could be done by new office on Multicultural Programming
PAE Credit 8	Support Programs for Under-Represented Groups	2	Yes	--	--
PAE Credit 9	Support Programs for Future Faculty	4	Yes	--	--
PAE Credit 10	Affordability and Access Programs	3	Yes	--	--
<i>Tier Two</i>	Gender Neutral Housing	0.25	Yes	--	--
<i>Tier Two</i>	Employee Training Opportunities	0.25	No	Does not do it but could.	
<i>Tier Two</i>	Student Training Opportunities	0.25	Yes	--	--

Table 13.12 Reasons Wellesley Does Not Earn STARS Points in Human Resources

Credit Title		Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
PAE Credit 11	Sustainable Compensation	8	Yes	--	--
PAE Credit 12	Employee Satisfaction Evaluation	2	No	Do not do it but could	Wellesley does not currently survey employee satisfaction but could easily implement this as a part of Human Resource activities
PAE Credit 13	Staff Professional Development in Sustainability	2	No	Do not do it but could Does not align with Wellesley's priorities	Wellesley has not invested in sustainability education for staff. In general, the College has not focus on educating and changing staff behavior
PAE Credit 14	Sustainability in New Employee Orientation	2	No	Do not do it but could. Does not align with Wellesley's priorities	Similarly, Wellesley does not include any sustainability education in new employee orientation
PAE Credit 15	Employee Sustainability Educators Program	5	No	Do not do it but could. Does not align with Wellesley's priorities	Wellesley has not invested in sustainability education for staff. In general, the College has not focus on educating and changing staff behavior
<i>Tier Two</i>	Childcare	0.25	Yes	--	--
<i>Tier Two</i>	Employee Wellness Programs	0.25	Yes	--	--
<i>Tier Two</i>	Socially Responsible Retirement Plan	0.25	No	Do not do it but could	Although Wellesley provides numerous resources for retirement savings and planning, they have no incorporate sustainable and socially responsible investment options

Table 13.13 Reasons Wellesley Does Not Earn STARS Points in Public Engagement

Credit Title	Possible Points	Does Wellesley earn full points? (Y/N)	Reasons Wellesley does not earn full points	Explanation
PAE Credit 19 Community Sustainability Partnerships	2	No	No formal policy	Wellesley does work sporadically with schools and organizations but has not made any formal partnerships
PAE Credit 20 Inter-Campus Collaboration on Sustainability	2	Yes	--	--
PAE Credit 21* Sustainability in Continuing Education	7	No	Credit does not apply to Wellesley	Wellesley does not currently provide continuing education classes
PAE Credit 22 Community Service Participation	6	No	Does not align with Wellesley's priorities	Wellesley does not require students to do community service. It does provide some incentives but Wellesley's location and student time make it difficult for community service to be a priority.
PAE Credit 23 Community Service Hours	6	No	Does not align with Wellesley's priorities	Wellesley does have a community service requirement. Wellesley's CWS does provide some incentives but Wellesley's location and student time make it difficult for community service to be a priority.
PAE Credit 24 Sustainability Policy Advocacy	4	No	No formal policy	Although Wellesley does directly or indirectly support local, state and federal sustainability policies, they do not have any formal policy
PAE Credit 25 Trademark Licensing	4	Yes	--	--
<i>Tier Two</i> Graduation Pledge	0.25	No	Do not do it but could. Does not align with Wellesley's priorities	Wellesley currently does not have a graduation pledge but could easily implement one if the College decided that social and environmental responsibility was a key component to Wellesley graduation
<i>Tier Two</i> Community Service on Transcripts	0.25	No	Do not do it but could	This unfairly advantages Higher Income Students who do not need to work and this does not align with Wellesley commitment to fair treatment of all students
<i>Tier Two</i> Farmer's Markets	0.25	No	Do not do it but could	There are already many surrounding farmer markets and Wellesley's location may not ideal for a Farmer's Market

13.5 Initial Recommendations

Wellesley should focus on integrating sustainability into its existing institutional structures. Although Wellesley does not have an overall campus strategic plan to incorporate sustainability, the Wellesley Sustainability Advisory Committee (SAC) should continue working on formalizing and implementing a sustainability plan that will help to prioritize sustainability in all campus decision-making. The Wellesley administration should also formally commit to the SAC's four current goals. By formalizing this commitment, Wellesley will be held accountable to accomplishing these goals by 2013.

Additionally, Wellesley should invest in creating a centralized sustainability office. Wellesley would benefit in several ways from moving the current office of the director of sustainability located at the edge of campus to a more centralized location. This relocation would help to increase coordination with other departments and the administration and also provide easy access for students, staff, and faculty who want to get involved in sustainability efforts. It would also help increase visibility of sustainability on campus. Currently, many students are unaware that Wellesley even has a Director of Sustainability.

Wellesley clearly agrees with STARS's emphasis on the importance of multiculturalism and could make some changes to better address diversity on campus. The 2009-2010 academic year resulted in many diversity initiatives on campus, with increased emphasis on multiculturalism and cultural interaction. While the College is ethnically and socioeconomically diverse, the administration should still formalize a comprehensive statement of diversity for Wellesley that emphasizes the important connection between diversity and achieving both environmental and social sustainability. Wellesley should encourage the different diversity groups, such as Diversity Coalition, CWDI and the Committee for Minority Recruitment, and Hiring, and Retention, to collaborate on programming and addresses issues together instead of working separately. Faculty diversity, student diversity, and cross-cultural interchanges are complementary goals that can be strengthened with unified strategies. A centralized office for diversity with individual branches could help in this collaboration. With a more visible and unified diversity effort on campus, both faculty and students will recognize the integral importance of diversity at Wellesley.

Wellesley could also improve public engagement on campus. Many students are unaware of the community service resources that the Center for Work and Service provides. Several of these

programs provide both transportation and economic assistance that would enable more students to take advantage of community service opportunities. More publicity about these resources should be distributed during First-Year orientation and throughout the year to all students. Better advertising of these community services resources would likely strengthen Wellesley's commitment to community service.

Finally, an audit of community service activity on campus would be helpful in gauging students' commitment to community service, utilization of current community resources and identification of obstacles students face in participating in community service projects. The audit could collect suggestions on how to provide better resources to students. Since many Wellesley students face both time and transportation problems when trying to access community projects, it would be helpful for the CWS to coordinate more community service projects on campus, enabling more students to participate. Many students are not eligible for federal work-study but still find it difficult to take time away from paying jobs to volunteer. The College should consider offering assistance to these students through grants or stipends.

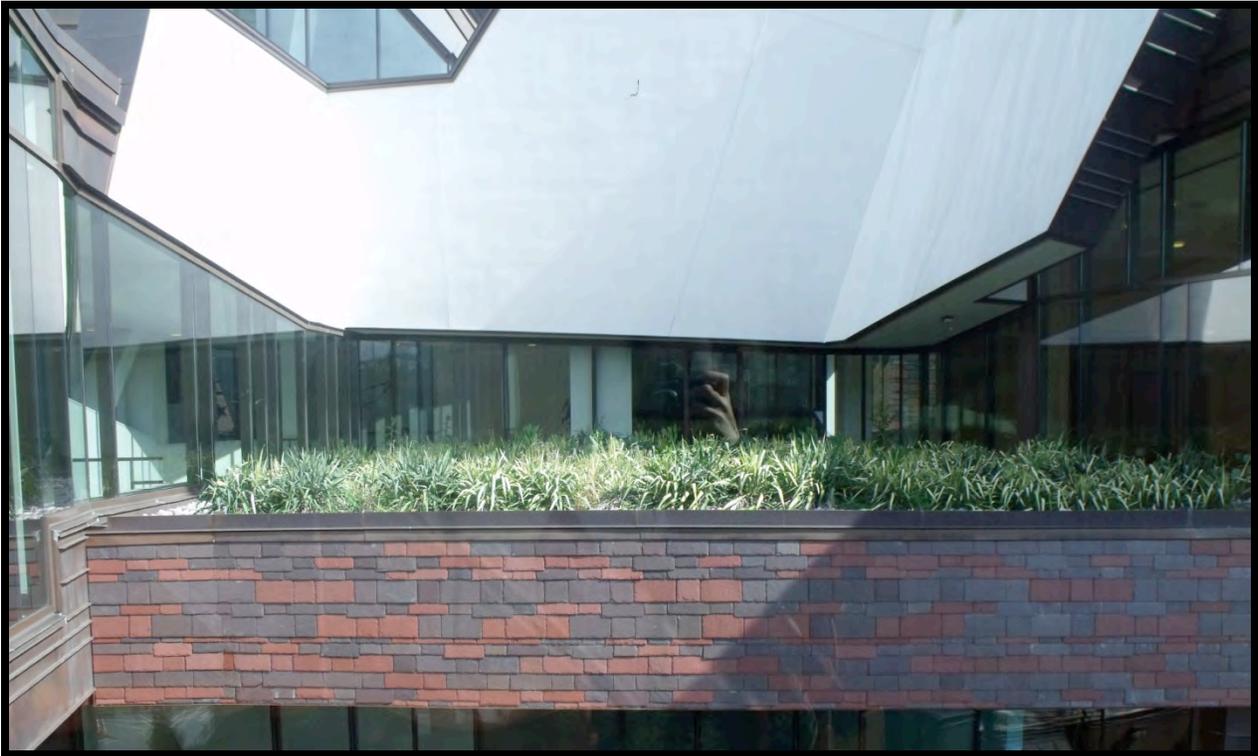


Figure 25. One of Wellesley's Green Roofs across campus

14.0 INNOVATION

14.1 Introduction

College Campuses

Sustainability characterizes a system's capacity, whether environmental, economic or social, to efficiently manage, conserve and replenish resources. Because educational institutions utilize resources in numerous ways, they can pursue sustainability through multiple pathways. The absence of a universal formula for addressing sustainability requires schools to seek out creative, effective initiatives that align with their educational priorities and resources. Fostering innovation therefore fuels effective and efficient sustainable development, and institutions of higher education should continuously strive to attain this goal.

Exemplary Institutions

Colleges and universities across the country take innovative approaches to sustainability in both large and small ways. Institutions can creatively take advantage of geographical location and locally available resources in their sustainability pursuits.

In recent years, Middlebury College took innovative steps to reduce its GHG emissions by implementing mechanisms to generate power using renewable resources. The installation of an on-site woodchip biomass gasification plant, considered carbon neutral, decreased fuel oil use by 50 percent and effectively reduced CO₂ emissions by 40%. Furthermore, a 3kW solar array, an 8kW photovoltaic array, and a 10kW wind turbine collectively satisfy 25 percent of the College's electricity needs. These achievements are no small matter for a school that educates 2,350 undergraduate students on its main 350 acres of campus.³³⁴ Middlebury College further pushes the bar by capitalizing on its geographic location and making use of a resource particularly available in rural Vermont: cow manure. The term "cow power"³³⁵ refers to Middlebury's use of cow manure to power 50% of the Franklin Environmental Center and the President's house. "Cow power" generates approximately 20,000 kWh per year,³³⁶ representing a resourceful way to further sustainability.

The University of New Hampshire (UNH) also utilizes locally available alternative resources to reduce fossil fuel use and meet energy demands. The ECOline project powers 10% of the campus' on-site cogeneration power plant by tapping the methane gas supply from a nearby landfill – UNH is the first university in the country to accomplish this task.³³⁷ While the ECOline project currently meets only 10% of campus energy demands, a 20,000 BTU energy reduction, the system is technically designed to meet an impressive 85% of energy demands. The college temporarily sells Renewable Energy Credits to help cover the costs of the ECOline project and to finance additional renewable energy initiatives that will ultimately help it reach its near zero GHG emissions target.³³⁸

³³⁴ "Quick Facts," *Middlebury College*, <http://www.middlebury.edu/about/facts> (accessed: April 6, 2010).

³³⁵ "Middlebury College Campus Survey," *The College Sustainability Report Card*, <http://www.greenreportcard.org/report-card-2010/schools/middlebury-college/surveys/campus-survey#climate> (accessed: April 6, 2010).

³³⁶ "Middlebury College Campus Survey," *The College Sustainability Report Card*,

³³⁷ "Sustainability at the University of New Hampshire," *University of New Hampshire*, http://www.sustainableunh.unh.edu/climate_ed/cogen_landfillgas.html (April 10, 2010).

³³⁸ "Sustainability at the University of New Hampshire," *University of New Hampshire*.

14.2 How Wellesley Approaches Innovation



Figure 26. Wellesley College Greenhouses and Arboretum could earn innovation credit³³⁹

Priorities and Accomplishments

Wellesley takes many steps to be innovative in its sustainability initiatives and to imaginatively make use of campus resources. Wellesley's emphasis on landscaping and building design has led the College to creatively approach sustainability through its green roof initiatives. Wellesley's six green roofs each take a different form, serving both aesthetic and functional purposes. For example, the green roof adorning the architecturally contemporary Lulu Chow Wang Campus Center serves as a publicly visible symbol of the campus' green initiatives. The less noticeable green roof bordering the path leading to the Science Center serves as an experimental and educational ecosystem study. Other less publicized installations, such as those atop the water treatment facility, function as storm water mitigation efforts through the absorption and slow release of rainwater over several hours, reducing flooding, erosion, and potential discharge of raw sewage into rivers.^{340,341} Green roofs conserve energy by regulating indoor temperatures through improved

³³⁹“Wellesley Botanic Gardens Photo,” *Wellesley College Botanic Gardens*, http://www.wellesley.edu/WCFH/About_us/about_us_graphics/visitor_center.jpg (accessed: May 10, 2010).

³⁴⁰ “Green Roof Research Program,” *Michigan State University, Department of Horticulture*, <http://www.hrt.msu.edu/greenroof/#Benefits%20of%20green%20roofs> (accessed: April 20, 2010).

³⁴¹ *Wellesley Sustainability*. <http://www.wellesley.edu/AdminandPlanning/Sustainability/buildingmech.html> (accessed: April 20, 2010).

insulation.³⁴² Though not confined to roofs, the Earthbox project initiated by Regeneration, Wellesley's student sustainable farming organization, uses mobile garden boxes on wheels to grow food on top of the Bates residential building, with plans this Spring to expand to other campus areas lacking flora.³⁴³

With its extensive grounds and relatively large amount of open space, Wellesley College prides itself as an educational hotspot for plant enthusiasts both on and off campus. The Wellesley College Botanic Gardens (WCBG) include the Alexandra Botanic Garden, the H. H. Hunnewell Arboretum, and the Margaret C. Ferguson Greenhouses, as well as smaller educational niches such as the dwarf conifer garden and the butterfly garden. The WCBG's twofold mission to "increase participation in the sciences [and] to promote scientific and environmental literacy"³⁴⁴ guides the programs hosted in these spaces, which aim to use aesthetics and an interactive curriculum "to stimulate interest in the natural world."³⁴⁵ Related Wellesley College courses include Botanical Art and Environmental Horticulture, and public courses cover topics such as native edible plants, wildflowers, plant ecology, and constructing an environmentally engineered home and landscape.³⁴⁶

Challenges

Many of Wellesley's sustainability projects reflect a tendency to invest in ideas already proven effective on other college campuses. A challenge Wellesley faces in implementing identifiably unique projects is that the College currently does not have to seek out new ways to address sustainability given that many common methods are suitable. Initiatives such as the establishment of an Environmental Studies Program and Sustainability Advisory Committee, the installation of LED lights, and the use of motion sensors on vending machines exemplify Wellesley's progress towards sustainability. But these initiatives do not represent unique measures within the larger educational community. It is difficult to find the time and financial resources to carry out creative projects that may or may not prove successful, especially when tried and true options already exist.

³⁴² "Green Roof Research Program," *Michigan State University, Department of Horticulture*.

³⁴³ Genevieve Goldleaf, Regeneration President, Personal Communication, April 8, 2010.

³⁴⁴ "Mission Statement," *Wellesley College Botanic Gardens*, <http://www.wellesley.edu/WCBG/Welcome/statement.html> (accessed: April 20, 2010).

³⁴⁵ *Wellesley College Botanic Gardens*.

³⁴⁶ "WCFH Program Brochure," *Wellesley College Friends of Horticulture*, http://www.wellesley.edu/WCFH/Courses/foh_courses.html (accessed: April 20, 2010).

14.3 How GRC Conceptualizes Innovation

The Green Report Card rewards colleges and universities for innovation through its extra credit system. SEI added extra credit to GRC for the first time in 2010; earlier report cards did not include a mechanism for recognizing innovative sustainability initiatives.³⁴⁷

Under GRC's new system, institutions can earn extra credit in addition to the general credit available for particular indicators. GRC does not have a set metric for awarding extra credit. Instead, in 2010 GRC created a framework for allocating extra credit only *after* it received the survey responses of participating colleges and universities. Based upon survey responses, GRC made extra credit available in areas where schools completed a wide variety of "rare and highly noteworthy" initiatives.³⁴⁸ Extra credit is available for certain indicators but unavailable for others. It is unclear whether GRC will structure extra credit in this way on future report cards or if it will change its system.

At least in its first attempt at granting extra credit, GRC does not use its extra credit system to actively encourage institutions to implement innovative initiatives. Rather, it adds in extra credit to account for innovative effort already made. This structure could prove to be problematic, preventing schools from accurately predicting in advance how they will perform on GRC.

GRC does not specifically indicate how "wide a range" of survey responses it must receive in order to justify making extra credit available for a particular indicator. For instance, no extra credit is available in the Shareholder Engagement category. Does this absence of extra credit imply that no institution did anything innovative in the area? Or does it simply mean that survey responses, taken together, did not include a wide enough range of answers to merit the establishment of innovation credit? If a single school took particularly innovative action in an area but others did not, would GRC include extra credit in that area? If not, GRC may fail to recognize the institutions that are actually the most innovative. The way GRC deals with extra credit highlights the lack of transparency in GRC's allocation of credit, and suggests the vague, indefinite, and perhaps not well-developed nature of GRC's conceptualization of innovation.

³⁴⁷ "Methodology – Green Report Card 2010," *The College Sustainability Report Card*.

³⁴⁸ "Methodology – Green Report Card 2010," *The College Sustainability Report Card*.

GRC also does not disclose the specific methodology it uses to assign different amounts of extra credit to different indicators. Institutions can receive a lot of extra credit in certain categories and relatively little in others. For instance, in the Green Building category, available extra credit totals 62 percent, with 32.5 percent extra credit available for the Renovation and Retrofits indicator alone. In contrast, extra credit totals only 15 percent in the Administration category. Because of GRC's lack of methodological transparency, the reasoning behind this credit allocation is unclear. Does GRC include more extra credit in particular areas to recognize innovative actions that were particularly significant in terms of their impact, or to highlight where opportunities for innovation exist? Or does it make large amounts of extra credit available in areas where many institutions take innovative action? It is difficult to determine which is the case.

Certain indicators on GRC are only available as extra credit. The On-Campus Sustainability Projects and Donor Fund Option indicators in the Investment Priorities category and the On-site Combustion indicator in the Climate category do not have regular credit attached to them, only extra credit. Through this structure, GRC highlights three relatively rare but significant actions. GRC therefore specifically emphasizes the importance of these initiatives while recognizing that they are difficult to accomplish or less common amongst institutions.

Despite making a great deal of extra credit available, GRC does not discuss extra credit when it describes the overall results for each category, nor does it disclose what percentage of institutions received extra credit on the 2010 Report Card. GRC also does not mention what particular programs, policies, or actions schools received extra credit for. It is therefore unclear which particular institutions receive extra credit and what specific initiatives merit extra credit in general.

14.4 How STARS Conceptualizes Innovation

Table 14.1 STARS summary of Innovation point allocation	
Credit Title	Possible Points
Innovation	4
Total	4

In its conceptualization of innovation, STARS attempts to be concrete and definitive. STARS reserves innovation credits for “new, extraordinary, unique, ground-breaking, or uncommon outcomes, policies, and practices that greatly exceed the highest criterion of an existing STARS credit or are not covered by an existing STARS credit.”³⁴⁹ STARS clearly establishes high standards, awarding innovation credit only for outstanding action. It is less clear what kinds of actions “not covered by STARS” can earn an institution an innovation credit. Perhaps STARS assumes that any action not covered by its framework must inherently be unique and groundbreaking. However, it is difficult to discern whether this is actually the case.

STARS awards schools innovation credit only for actions they have taken within the past three years.³⁵⁰ STARS therefore values the active, current pursuit of sustainability, attempting to push institutions toward future change. Only crediting recent innovation also suggests STARS’s attempt to strictly define the category and prevent institutions from claiming innovation credits for outdated initiatives. Similarly, colleges and universities cannot receive innovation credit for planned future action.³⁵¹ STARS values tangible, completed action, awarding schools for what they physically accomplish as opposed to what they plan to do.

STARS stipulates that an institution can only receive innovation credit once for any particular sustainability initiative.³⁵² If a college or university updates its STARS submission, it cannot claim innovation credit for an activity that it was previously awarded credit for. STARS again seems to include this criterion to encourage institutions to continually innovate and to progress in terms of sustainability.

In its attempt to concretely define innovation, STARS includes room for creativity. For instance, an institution can receive credit for implementing multiple activities whose sum is innovative. STARS also awards credit for innovative action taken as part of a partnership.³⁵³ In this sense, STARS makes room for flexibility, encouraging institutions to think broadly in their pursuit of unique sustainability initiatives.

STARS also states that an institution can receive credit for an initiative that is innovative for its particular region or type of institution. This point again emphasizes how STARS conceptualizes

³⁴⁹ STARS 1.0 Technical Manual, 265.

³⁵⁰ STARS 1.0 Technical Manual, 265.

³⁵¹ STARS 1.0 Technical Manual, 265.

³⁵² STARS 1.0 Technical Manual, 265.

³⁵³ STARS 1.0 Technical Manual, 265-266.

innovation in accordance with its inclusive attitude, aiming to account for the differences between institutions and fairly reward them accordingly.

STARS's pilot program results also indicate its broad and inclusive conceptualization of sustainability. The results report includes a list of the initiatives that garnered schools innovation credit on the pilot program. This list is quite broad, including diversity achievements, planning partnerships, transportation projects, and experimentation with new technologies and strategies. Notably, many of the listed types of initiatives relate to education and research, suggesting STARS's overall emphasis on academics.³⁵⁴

STARS additionally includes stringent reporting standards for its innovation credits. To be considered for credit, an institution must submit a thorough description of its innovative practice or policy, including a letter of affirmation from a qualified professional in an area relating to the activity to ensure that the program or project is “truly innovative.”³⁵⁵ STARS thus emphasizes accountability and aims to make certain that only outstanding action garners an institution innovation credit.

14.5 Comparative Analysis of GRC and STARS

The innovation category indicates one of the challenges inherent in creating a common framework to measure sustainability in higher education. Means of pursuing sustainability are inevitably diverse. How can a rating system most fairly reward schools for their actions while considering them through a common metric? One concern about rating systems is that they have the potential to stifle innovation since many use an inflexible rubric that does not credit non-delineated initiatives. Both STARS and GRC include extra credit or innovation sections as a part of their efforts to respond to this question.

GRC and STARS approach innovation through vague and subjectively conceptualized credit categories. The definition of “innovative” in the context of campus sustainability is open for interpretation and depends highly upon context. GRC's extra credit system and STARS's innovation section represent attempts to grapple with this fact so as to reward schools for especially significant sustainability efforts.

To account for innovation, STARS and GRC take two distinct approaches. STARS includes a much more stringent and definitive conceptualization of innovation, laying out as many specific

³⁵⁴ STARS Pilot Project Results, 329.

³⁵⁵ STARS 1.0 Technical Manual, 266.

criteria as possible for allocating innovation credit. While still remaining vague, STARS attempts to define innovation to the greatest extent it can. In contrast, GRC does not define specific criteria relating to extra credit or innovation and includes far fewer specifications.

In its innovation section, STARS attempts to create a specific framework for rewarding schools for outstanding sustainability action. This framework largely encourages schools to look to the future and continue to innovate. In contrast, GRC approaches innovation in an opposite manner. Looking back in time and rewarding institutions for what they have already accomplished, GRC pinpoints certain past actions as outstanding. In this sense, GRC does not as strongly encourage schools to move forward in terms of innovation. This difference in GRC and STARS's conceptualization reflects the fact that GRC added extra credit to a preexisting rating system, while STARS included it as part of a new one.

Another difference between the two rating systems is that GRC awards extra credit with regards to specific indicators, considering innovation within each of its categories. In contrast, STARS specifically makes a point to separate innovation from the rest of its sections, considering innovation apart from any particular category. In doing so, STARS takes a broader view of innovation, including greater opportunity to award institutions for truly unique initiatives.

14.6 Initial Recommendations

Whether or not Wellesley institutes a single innovative program that truly sets it apart from other colleges and universities, it can strive to be creative in all of its sustainability initiatives. Considering what best suits the College should lead Wellesley to implement new programs in innovative ways. The further Wellesley prioritizes sustainability and gains experience in the area, the more opportunity the College will have to be innovative in its approach.

In particular, a number of opportunities exist at Wellesley to take advantage of untapped resources. For instance, Wellesley's nature as a largely residential college sets it apart from many other institutions. Focusing on sustainability in on-campus housing could provide the College with many opportunities for innovation. Additionally, Wellesley is in the process of designing opportunities to collaborate with Olin College and Babson College on sustainability education initiatives. Creative development of sustainability partnerships represents further opportunity for innovation at Wellesley.

While Wellesley should do its best to think creatively about sustainability, there is nothing wrong with also implementing tried and true campus greening initiatives. Wellesley can make great strides toward sustainability by using conventional strategies. Therefore, while the College should constantly consider sustainability with open-mindedness, creativity, and willingness to experiment, it should continue to pursue a sustainability strategy grounded in what is most sensible for Wellesley.

15.0 CONCLUSION

15.1 Wellesley's STARS Score

Table 15.1 Summary of Wellesley's STARS Score

	Now (2010)	With small changes	With big changes
Total Points	108	143	205
STARS Score Percent applicable points	38	50	72
STARS Rating	Bronze	Silver	Gold

Table 15.2 Summary of Wellesley's Performance in Education & Research (ER)

Category 1: Education & Research (ER)					
Credit Number	Credit Title	Possible Points	Wellesley's Points Now (2010)	Wellesley's Points with small changes	Wellesley's Points with big changes
Co-Curricular Education					
ER Credit 1	Student Sustainability Educators Program	5	4	5	5
ER Credit 2	Student Sustainability Outreach Campaign	5	5	5	5
ER Credit 3	Sustainability in New Student Orientation	2	0	2	2
ER Credit 4	Sustainability Materials and Publications	4	2	4	4
<i>Tier Two</i>	<i>Co-Curricular Education Tier Two Credits</i>	2	1.5	2	2
Curriculum					
ER Credit 5	Sustainability Course Identification	3	0	3	3
ER Credit 6	Sustainability-Focused Courses	10	2.6	3	8
ER Credit 7	Sustainability-Related Courses	10	0.6	0.8	3
ER Credit 8	Sustainability Courses by Department	7	2	2.3	3.5
ER Credit 9	Sustainability Learning Outcomes	10	0.9	1	2.5
ER Credit 10	Undergraduate Program in Sustainability	4	4	4	4
ER Credit 11*	Graduate Program in Sustainability	4	0	0	0
ER Credit 12	Sustainability Immersive Experience	2	0	0	2
ER Credit 13	Sustainability Literacy Assessment	2	0	0	2
ER Credit 14	Incentives for Developing Sustainability Courses	3	0	0	3
Research					
ER Credit 15	Sustainability Research Identification	3	0	3	3
ER Credit 16	Faculty Involved in Sustainability Research	10	3.1	3.1	3.9
ER Credit 17	Departments Involved in Sustainability Research	6	1.8	1.8	2.7
ER Credit 18	Sustainability Research Incentives	6	6	6	6
ER Credit 19	Interdisciplinary Research in Tenure and Promotion	2	0	0	2
Total		100	33.5	46	66.6

*Credit does not apply to Wellesley

Table 15.3 Summary of Wellesley's performance in Operations (OP)

Category 2: Operations (OP)					
Credit Number	Credit Title	Possible Points	Wellesley's Points Now (2010)	Wellesley's Points with small changes	Wellesley's Points with big changes
Buildings					
OP Credit 1	Building Operations and Maintenance	7	0.6	0.9	2.1
OP Credit 2	Building Design and Construction	4	0	0.0	0.0
OP Credit 3	Indoor Air Quality	2	0	2	2
Climate					
OP Credit 4	Greenhouse Gas Emissions Inventory	2	2	2	2
OP Credit 5	Greenhouse Gas Emissions Reduction	14	0.9	1.4	1.8
<i>Tier Two</i>	<i>Climate Tier Two Credits</i>	0.5	0	0.25	0.5
Dining Services					
OP Credit 6	Food Purchasing	6	2.5	3	6
<i>Tier Two</i>	<i>Dining Services Tier Two Credits</i>	2.5	1.25	1.5	2
Energy					
OP Credit 7	Building Energy Consumption	8	2.89	3.73	5
OP Credit 8	Renewable Energy	7	1.7	1.7	1.84
<i>Tier Two</i>	<i>Energy Tier Two Credits</i>	1.5	1.25	1.25	1.5
Grounds					
OP Credit 9	Integrated Pest Management	2	2	2	2
<i>Tier Two</i>	<i>Grounds Tier Two Credits</i>	1.25	1	1	1.25
Purchasing					
OP Credit 10	Computer Purchasing	2	1.5	2	2
OP Credit 11	Cleaning Product Purchasing	2	0	0	2
OP Credit 12	Office Paper Purchasing	2	0.6	1.3	2
OP Credit 13	Vendor Code of Conduct	1	0	1	1
<i>Tier Two</i>	<i>Purchasing Tier Two Credits</i>	0.5	0.25	0.25	0.5
Transportation					
OP Credit 14	Campus Fleet	2	0.1	0.1	0.2
OP Credit 15	Student Commute Modal Split	4	3.9	3.9	3.9
OP Credit 16	Employee Commute Modal Split	3	0.7	1.4	2
<i>Tier Two</i>	<i>Transportation Tier Two Credits</i>	3	2	1.5	2.5
Waste					
OP Credit 17	Waste Reduction	5	1.1	1.5	2
OP Credit 18	Waste Diversion	3	1.1	1.2	2.0
OP Credit 19	Construction and Demolition Waste Diversion	1	0.8	0.8	0.9
OP Credit 20	Electronic Waste Recycling Program	1	1	1	1
OP Credit 21	Hazardous Waste Management	1	1	1	1
<i>Tier Two</i>	<i>Waste Tier Two Credits</i>	1.5	0.25	1	1.5

OP (Continued from previous page)					
Credit Number	Credit Title	Possible Points	Wellesley's Points Now (2010)	Wellesley's Points with small changes	Wellesley's Points with big changes
Water					
OP Credit 22	Water Consumption	7	6.3	6.5	7
OP Credit 23	Stormwater Management	2	2	2	2
<i>Tier Two</i>	<i>Water Tier Two Credits</i>	1.25	1	1.25	1.25
Total		100	40	48.4	63

Table 15.4 Summary of Wellesley's performance in Planning, Admin. & Engagement (PAE)

Category 3: Planning, Admin. & Engagement (PAE)					
Credit Number	Credit Title	Possible Points	Wellesley's Points Now (2010)	Wellesley's Points with small changes	Wellesley's Points with big changes
Coordination and Planning					
PAE Credit 1	Sustainability Coordination	3	2	3	3
PAE Credit 2	Strategic Plan	6	0	0	0
PAE Credit 3	Physical Campus Plan	4	4	4	4
PAE Credit 4	Sustainability Plan	3	0	3	3
PAE Credit 5	Climate Plan	2	0	0	2
Diversity and Affordability					
PAE Credit 6	Diversity and Equity Coordination	2	2	2	2
PAE Credit 7	Measuring Campus Diversity Culture	2	0	0	2
PAE Credit 8	Support Programs for Under-Represented Groups	2	2	2	2
PAE Credit 9	Support Programs for Future Faculty	4	4	4	4
PAE Credit 10	Affordability and Access Programs	3	3	3	3
<i>Tier Two</i>	<i>Diversity and Affordability Tier Two Credits</i>	0.75	0.5	0.75	0.75
Human Resources					
PAE Credit 11	Sustainable Compensation	8	8	8	8
PAE Credit 12	Employee Satisfaction Evaluation	2	0	0	2
PAE Credit 13	Staff Professional Development in Sustainability	2	0	2	2
PAE Credit 14	Sustainability in New Employee Orientation	2	0	2	2
PAE Credit 15	Employee Sustainability Educators Program	5	0	1.5	3.75
<i>Tier Two</i>	<i>Human Resources Tier Two Credits</i>	0.75	0.75	0.75	0.75
Investment					
PAE Credit 16	Committee Socially Responsible Investment	2	2	2	2
PAE Credit 17	Shareholder Advocacy	5	0	0	5
PAE Credit 18	Positive Sustainability Investments	9	1.8	3	3
<i>Tier Two</i>	<i>Investment Tier Two Credits</i>	0.75	0	0	0.25

Public Engagement					
PAE Credit 19	Community Sustainability Partnerships	2	0	0	2
PAE Credit 20	Inter-Campus Collaboration on Sustainability	2	2	2	2
PAE Credit 21*	Sustainability in Continuing Education	7	0	0	0
PAE Credit 22	Community Service Participation	6	0.87	2.1	5.1
PAE Credit 23	Community Service Hours	6	0.21	1.2	6
PAE Credit 24	Sustainability Policy Advocacy	4	0	0	4
PAE Credit 25	Trademark Licensing	4	2	2	4
<i>Tier Two</i>	<i>Public Engagement Tier Two Credits</i>	0.75	0	0.25	0.25
Total		100	35	48.6	76

15.2 Final Analysis of GRC and STARS

GRC

In a sense, GRC sets itself apart from other sustainability rating systems by looking at colleges as businesses. Although GRC claims to want to provide a general understanding of schools' sustainability as implied by its full name, the College Sustainability Report Card, it focuses more of its survey questions and evaluations on institutional endowment transparency and the allocation of endowment funds. The allocation of the endowment can have a great negative or positive environmental impact depending on its size, so evaluating endowment investments is important and should be considered when thinking about sustainability at colleges. Because Wellesley is an institution with a relatively large endowment, the sustainability impact of the College's endowment plays a significant role.

GRC does not emphasize sustainability in academics (e.g. research and teaching). The focus on the business side of institutions may not match with most schools' overall mission to educate the next generation. Colleges may prefer to focus on sustainability through curriculum so that the lessons can later be applied outside of the college environment. While both academics and endowments are prime target areas for sustainable reform because of the potential for far reaching positive impact extending both beyond the classroom, and whether the endowment section should carry the most weight in determining exemplary sustainability leaders depends on the values of individual institutions.

GRC prioritizes sustainability policies, programs, public commitments and certification programs, thus encouraging the institutionalization of sustainability. In emphasizing policies,

programs and public commitments, GRC encourages public devotion to sustainability that carries over from year to year. In general, many public commitments lack a system of enforcement. On the other hand, certifications also make a public statement regarding sustainability with the added benefit of third parties that generally serve to enforce accountability (though there are exceptions). GRC does not, however, require an in-depth evaluation of the effectiveness of the policies and programs, or the extent of the certifications. For example, GRC asks whether or not a school has a paper purchasing policy but does not require information about the recycled content or amount of paper purchased, or whether there is a target reduction. Having policies, programs, public commitments and certified products are important ways for colleges to demonstrate their commitment to sustainability and allow qualitative comparison across institutions. Enforcement, accountability, and the actual impact are necessary factors to gage the actual effects of a particular policy, program, or certification that cannot be understood through answering a simple 'yes/no' question regarding their existence.

GRC most generally utilizes the 'yes/no' questions in assessing a school's level of sustainability. Yes/no questions are an effective means of addressing what kinds of actions a school is taking, but not the actual impact of the action. For example, GRC asks whether or not a school has its own formal sustainability policy, but does not ask about what goes into the policy and how effective or accountable the policy is.

GRC serves as a guide to colleges for improvement in terms of sustainability. It is valuable for schools to have a way to see how they are doing in moving toward sustainability in many different areas, and to be able to compare their progress to other institutions. The use of grades can also provide incentive for improvement through competition. For the system to be a thorough guide, however, it needs to make it easy for colleges to see how their efforts translate into scores, and GRC does not do this well. While the indicators used to evaluate activity within each category and the process for calculating the overall sustainability grade are transparent, as are each school's answers to the survey questions, how survey responses translate into category grades remains unclear. It is therefore difficult for a college to be certain where it should improve its activity within a category to improve its category grade. In effect, category grades suggest whether or not improvement is necessary, but not how they might go about actually doing that.

STARS

Because STARS is so new, it welcomes feedback from participating schools - and all types of schools are encouraged to fill out the forms - clearly encouraging an evolution of the system over time to best suit the needs of institutions of higher education. Given the limitless possibilities of sustainable initiatives on college campuses, STARS recognizes the challenge inherent in creating a sustainability rating system for higher education. An important discrepancy is that by taking this inclusive attitude, some schools have an advantage. For example, residential colleges can more easily achieve maximum points in the Transportation sector for having students commute daily by car. It is questionable whether any green rating or ranking system would be able to create a one-size fits all metric in terms of fairly and accurately accounting for the sustainable choices of all schools in the nation. Thus, both the strengths and limitations of the STARS system demand consideration within the broader context of what rating systems can and should actually accomplish, which is to provide a meaningful assessment of a particular topic.

As a ratings system, STARS takes a positive approach to measuring sustainability. STARS rewards progress by granting points to schools for taking specific action. STARS does not subtract points for failure to act, nor does it penalize schools for performing poorly. Through this framework, STARS serves as a positive reinforcement mechanism, encouraging colleges and universities to move forward in terms of sustainability. It still creates a distinction between schools that do better than others, but in a manner that encourages progress.

STARS extends a common definition of sustainability centered on the environment to include social and economic responsibility. Through this conceptualization, STARS encourages colleges and universities to think more broadly about the complex ramifications of their actions. STARS in effect pushes schools to consider the connections between environmental, economic and social issues in areas ranging from curriculum to dining services.

In accordance with its broad conceptualization of sustainability, STARS encourages colleges and universities to collaborate with and involve surrounding communities. STARS therefore encourages colleges and universities to consider their role in educating responsible citizens, serving as centers of innovation and forward thinking, and providing models for the surrounding community and beyond.

Furthermore, STARS sees sustainability as a constant pursuit by rewarding schools that demonstrate both a commitment to the future and for continually pushing the bar. The

encouragement of institutionalized policies and programs ensures long-lasting dedications, while a measurement of their impact encourages continual improvement by rewarding progress. And the fact that initiatives can only be counted for innovation credit once pushes schools to seek out other initiatives to earn this credit the next time they fill out the application.

The influence of AASHE's vision of academics and sustainability is reflected in STARS's stress on academics and research in comparison to other sectors. STARS recognizes the potential impact that sustainability education and research can have on advancing sustainability far beyond each institution. By investing in sustainability education, colleges and universities will improve their ability to both change students' mindsets and help them draw connections to sustainability in their individual fields. The students drawn to such educational programs and classes, however, may already be environmentally conscious in their actions.

In general, STARS rewards schools the most points for taking concrete measurable action. STARS places strong value in measurable action in order to deter schools from adopting ineffective promises and nonbinding policies, STARS holds colleges to this standard by requiring them to provide quantifiable measurements of their progress in the context of a schools size, budget, etc. STARS requires proof of both intention and action by having each credit signed off for by the appropriate administrator. Another way STARS measure actions is through third-party certification. Schools, for example, that buy all green certified cleaning products avoid purchasing greenwashing products that just claim to be green. The importance of certification systems such as LEED and Green Seal in the rating system represents STARS's commitment to rewarding schools for actual sustainable change rather than making ineffective changes that do not result in advancing campus sustainability.

By awarding the most points to actual behavior change or resource conservation, STARS gives schools flexibility to adopt and invest effectively in measures best suited to their individual situation. STARS gages actual impact of actions instead of enforcing the adoption of specific technologies or methods. Some examples of this emphasis on action include points awarded for percentage reductions in GHG, percentage of sustainability courses, or the percentage of faculty who do not drive to work, without saying how to achieve these actions. Also, by awarding points based on percentage change rather than an all-or-nothing scale, STARS allows schools to gain points for making incremental changes. Schools are encouraged to take any possible small step and continue making these incremental changes that can add up to large sustainable change.

Furthermore, by awarding points on a scale, STARS recognizes the constraints schools face and enables them to earn some points for taking whatever steps are possible.

In a similar way, STARS's Tier Two credits reward schools for making smaller, steps toward sustainability. Tier Two points encourage schools to get sustainability programs and policies started. Several Tier Two points are also given for implementing pilot programs. STARS sees the importance of pilot programs in getting schools to try out different things on a small scale in order to see what works best for their individual institutions before wasting resources implementing a potentially ineffective large scale program. Since these points do not require much data or level of commitment, they could potentially be a source for point grubbing. Fortunately, the small 0.25 point value of Tier Two credits prevents schools from creating ineffective policies and programs merely to gain STARS points. Institutions also realize that they need to make bigger, long term changes in order to gain the number of points needed for distinction in the STARS system.

Like GRC, another way STARS rewards schools for making effective moves toward sustainability is rewarding schools for publicly articulating commitments. Rather than just implementing changes and setting goals, public commitments help hold institutions accountable for their actions as well as hold them responsible for achieving their goals by a certain date. Public commitments to sustainability, such as a formalized green purchasing policy, a sustainability plan, or a climate plan, help schools prioritize sustainability in their decision-making process as well as outline a strategy for advancing sustainability for schools to follow into the future. One downside to public commitments is that they are voluntarily taken on by the institution and, other than public pressure and accountability, there is often little to no recourse in punishing schools for failing to achieve their public committed goals.

15.3 Recommendation for STARS Participation

Wellesley should participate in AASHE's Sustainability Tracking, Assessment, and Rating System (STARS). This recommendation is based on an evaluation of the advantages and disadvantages of STARS, an estimate of Wellesley's STARS score, and an analysis of how participation in STARS would motivate Wellesley to make sustainability changes that align with the College's priorities.

Our assessment of Wellesley's current and planned sustainability efforts and our understanding of Wellesley's goals as a higher education institution suggest that STARS's definition

of sustainability is appropriate for Wellesley and will guide the institution in a positive direction. STARS defines sustainability in a clear, broad, holistic sense. Based upon this definition, STARS divides sustainability initiatives into different categories that are weighted to value certain areas, such as Academics, that Wellesley also prioritizes. STARS will encourage the College to consider broad social justice and economic issues and will reward Wellesley for its strong commitment to academics and diversity.

One of STARS's greatest strengths is its methodological rigor. Through its transparent evaluation and scoring process, STARS clearly shows institutions how they can improve in terms of sustainability. Wellesley will be able to see exactly where it does and does not receive points on STARS. This will help the College determine what specific actions it can take to both improve its score, further incorporate sustainability into its institutional priorities, and lessen its environmental impact.

Participating in STARS will also help Wellesley to concretely measure the extent of its sustainable actions and behavior. Wellesley's advancement toward sustainability is not always visible and obvious to the college community, and STARS will help Wellesley more clearly see the progress it makes. STARS also encourages institutions themselves to institutionalize sustainability and to be public and persistent in their actions. It is important that Wellesley be encouraged to take this kind of approach so as to promote accountability and tangible, meaningful change.

STARS takes a positive approach that encourages institutions to continually improve in terms of sustainability. This framework will reward Wellesley for the beneficial changes it makes and will push the College to become increasingly sustainable. Within the STARS framework, receiving a low number of points in a particular area indicates potential for improvement as opposed to reflecting negatively on an institution's efforts. STARS also rewards schools for making incremental changes in pursuit of sustainability. In many areas, Wellesley will receive STARS recognition not only for implementing large initiatives but also for taking smaller steps along the way.

STARS's positive attitude extends to its inclusivity of all types of higher education institutions. Rather than simply considering institutions with large endowments, STARS is structured to allow a broad range of schools to participate. Wellesley should want to be included in a system that inspires all colleges and universities to teach and practice sustainability.

Participating in STARS will help Wellesley complete the forms necessary for involvement in other rating systems since STARS requires the collection and organization of extensive information. Working toward a higher STARS rating will also help Wellesley improve its score on other ratings

systems, such as GRC, since STARS is comprehensive and shares sustainability priorities with many other systems.

It is important to recognize that, in some respects, Wellesley may not benefit from participating in STARS. STARS does not necessarily highlight all of Wellesley's strengths, and the College does not receive extra points in certain areas where it goes above and beyond credit requirements. Wellesley must also consider whether it agrees with STARS's broad definition of sustainability. The College should evaluate whether this definition will limit Wellesley's ability to make innovative changes and adapt sustainability initiatives to suit the College's specific needs. Finally, STARS is a new system, and it is difficult to determine how important it will be in the future. Since collecting the data necessary for a STARS submission requires significant time and effort, uncertainty about the future value of STARS participation may discourage Wellesley from signing on.

From a different perspective, since STARS is comprehensive and aims to continually adapt to changes in sustainability attitudes and behavior over time, it could potentially make all other rating systems insignificant. STARS will likely be genuinely useful to participating schools and already has a high level of institutional support; it may indeed become *the* definitive rating system examining sustainability in colleges and universities. As a charter participant, Wellesley will have the chance to be one of the first institutions to help shape and improve STARS. If STARS becomes the system that replaces all others, Wellesley could be one of the first institutions to benefit from the advantages of participating in a groundbreaking green rating system.

15.4 Recommendations for Garnering STARS Points

Although Wellesley should not prioritize the acquisition of STARS points over other sustainability initiatives, it is a useful exercise to examine what Wellesley could do to increase our score on STARS. These recommendations serve as an assessment of Wellesley's sustainability according to the STARS perspective.

15.4.1 Policies

One of Wellesley's greatest point deficits under STARS results from lack of documentation and formal policy. Wellesley could gain STARS points simply by documenting many of its practices

on the College website and translating existing actions into written policy. Formal documentation and policy creation could cumulatively earn the College 7.5 points.

Computer Purchasing

By creating a computer purchasing policy, Wellesley could gain STARS points without making behavioral changes. The computers that Wellesley currently purchases, both Macs and Lenovos, are EPEAT Gold computers. Wellesley could easily earn half a point by creating a formal policy outlining an institution-wide preference to purchase EPEAT Silver or higher computers and monitors. Wellesley could also earn two points with little difficulty by documenting its indoor air quality (IAQ) policy. By publishing the existing IAQ policy on the College's website, Wellesley would receive the full number of points available for the IAQ credit.

Cleaning Product and Paper Purchasing

Wellesley could earn half a point by creating an institution-wide stated preference to purchase certified green cleaning products (Green Seal and/or EcoLogo) and could earn another half point by instituting a stated preference for recycled-content office paper. These stated preferences could take the form of purchasing policies, guidelines, or administrative directives. At this time, some of Wellesley's departments already purchase green cleaning products and recycled paper. The implementation of these policies therefore would not require a total overhaul of Wellesley's purchasing system.

Education and Research

Wellesley can also earn points in Education and Research by developing a definition of sustainability within the context of curriculum and research. Gaining points in this area would require a committee of at least three faculty members who teach courses in different departments to create a definition of "sustainability" in the curriculum. Similarly, it would require a committee of at least three faculty members who conduct research in different departments to create a definition of sustainability research. If Wellesley formulates these definitions, it can then identify and create sustainability courses and research opportunities. Wellesley could earn an additional two points by publishing a list of sustainability courses and research.

Table 15.5 Available points through policy changes in STARS		
Category	Policy	Available Points
Purchasing	Computer purchasing	.5
Purchasing	Purchasing of green cleaning products	.5
Purchasing	Purchasing of recycled-content office paper	.5
Curriculum	Definition of sustainability in curriculum	1
Curriculum	List of sustainability courses	1
Research	Definition of sustainability in research	1
Research	Information about sustainability research	1
Buildings	Indoor air quality	2
Total		7.5

15.4.2 Practices

Sustainability Research

Increasing the number of departments that conduct sustainability research could earn Wellesley up to six points; currently the college only earns 1.8 points for this credit. Since research is an integral part of student-faculty collaboration and communication with the outside world, this initiative also aligns with Wellesley's priorities as an educational institution. An increase in sustainability research could be achieved through a fund offered by the College that would support sustainability research as defined by a faculty committee. The creation of a sustainability research fund would also promote Wellesley's commitment to sustainability and engage students and faculty in important environmental, economic, and social issues.

Greenhouse Gas Emissions Reduction

Wellesley can also gain more points on STARS by reducing its GHG emissions. The Greenhouse Gas Emissions credit – measured by percentage GHG emissions reduction per weighted campus user since 2005 – is worth a total of 14 points, of which Wellesley currently receives 0.85.

Wellesley can take a number of different measures to reduce its GHG emissions. For example, the College can expand the use of LED lights on campus. Standard incandescent light bulbs have a luminous efficiency of 5-20 lumens/watt, whereas LEDs have a luminous efficiency of

25-60 lumens/watt. Installing LEDs therefore represents significant potential for energy savings.³⁵⁶ Pilot programs testing LEDs exist on the first floor of Pendleton Hall, in one of the College's many campus streetlights, and in the serving line of the Beebe dining area. Wellesley plans to test more LEDs in the Wellesley College Club.³⁵⁷

Wellesley can also reduce its GHG emissions by better insulating its buildings. Measures to seal cracks and properly insulate attics and walls could annually save Wellesley about 1,129.28 metric tons of emitted CO₂.³⁵⁸ Decreased heating could also translate into GHG emissions reductions. Even slightly reducing the heat available to the College in the winter would help Wellesley burn less natural gas and oil and thus release fewer GHGs. Wellesley can additionally reduce its emissions by installing more time and motion sensors for lights across campus.

Several larger initiatives could especially help Wellesley reduce its GHG emissions and gain more STARS points. For instance, eliminating residual oil use in boilers on campus through the conversion of boiler systems would result in a minimum emissions reduction of 1,458 metric tons of CO₂ per year.³⁵⁹ Pursuing renewable energy options, such as geothermal or biomass, would also significantly decrease emissions.

Green Buildings

Wellesley can also gain more STARS points by adhering to LEED construction, renovation, and maintenance standards. Wellesley currently receives 0.58 of the seven points available in Building Operations and Maintenance. The College does not earn any of the four Building Design and Construction credit points. Wellesley can first and foremost improve its score in these two categories by pursuing LEED certification and LEED for Existing Buildings certification wherever possible. Wellesley can also gain more points by establishing concrete policies and guidelines for sustainable building operations, maintenance, and construction. By renovating and constructing buildings in accordance with established policies, Wellesley can gain STARS points even without directly pursuing LEED certification.

³⁵⁶ "EcoLED Lighting: LED Efficiency Comparison," *EcoLED Lighting*, <http://ecoledlighting.com> (accessed: April 2, 2010).

³⁵⁷ Patrick Willoughby, Director of Sustainability, Personal Communication.

³⁵⁸ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 84.

³⁵⁹ ES 300 2008 Report: Climate for Change: Greenhouse Gas Audit Wellesley College, 87.

Water Consumption

Wellesley can further increase its STARS score by continuing to reduce its water consumption, something the College already prioritizes. STARS's Water Consumption credit – based upon each weighed campus user's water consumption reduction – is worth seven points; Wellesley currently receives 6.33 points. The College can take a number of both small and large steps to reduce its water consumption and increase its STARS score. For instance, Wellesley can decrease its water use by installing water meters in dorms and academic buildings, which will allow the College to pinpoint leaks and determine where and how water is being used. Currently, water meters exist only in the Campus Center, Sports Complex and Power Plant.³⁶⁰ Implementing a campus-wide metering program would help Wellesley measure its water consumption and implement more effective water saving initiatives.

Installing more dual-flush toilets would also help Wellesley garner Water Consumption STARS points. Wellesley installed dual-flush toilets in the Houghton Chapel and plans to integrate them into future renovation projects.³⁶¹ If Wellesley informs campus users of how to use these toilets effectively, continuing with the initiative could allow Wellesley to increase its STARS score through a program that is already under way. Wellesley can similarly gain more points by continuing to replace all old water fixtures with low-flow fixtures.

Category	Credit	Available Points
Research	Increase number of faculty involved in sustainability research	6.9
Research	Increase number of departments involved in sustainability research	4.2
Climate	GHG emissions reductions	13.1
Buildings	LEED construction, renovation, and maintenance	6.42
Water	Water consumption reduction	0.7
Total		31

³⁶⁰ Patrick Willoughby, Director of Sustainability, Email, April 2, 2010.

³⁶¹ "Water Conservation," *Wellesley College Sustainability*.

15.5 Recommendations for Wellesley

Wellesley should not limit its sustainability efforts to actions rewarded by STARS and GRC. While these systems are useful tools for assessing sustainability, Wellesley should ultimately make decisions about sustainable actions that make the most sense for the College. We have developed a list of recommended changes that we believe are the most pressing for Wellesley as it works to address sustainability on campus. While some of these changes will help the College improve its rating scores, these changes will, more importantly, help Wellesley move toward a more sustainable future. In addition to the seven large changes we highlight in this section, we include a table addressing several smaller, but still important, steps that Wellesley should consider.

15.5.1 Institutionalize Sustainability Through Plans and Policies

Finalize and adopt a formal sustainability policy

The Sustainability Committee has taken important first steps towards creating a formal sustainability policy, but there is more work to be done. A taskforce of students, faculty, and staff should work together to complete a formal guiding document that outlines in detail the College's long-term sustainability goals and priorities. The final text should be brought before the administration for official approval. Formalization will promote actualization. By creating a policy that acts as a guiding document rather than a list of short-term goals, Wellesley will be holding itself accountable in the present while ensuring that sustainability does not become a peripheral concern in overall institutional planning in the future.

In its official sustainability policy, Wellesley should establish a single definition of "sustainability" to be used in all future policies, decisions, and documents related to sustainability. Having an official definition will help clarify future sustainability goals and priorities. The definition should connect sustainability to the characteristics that define Wellesley, such as its importance of a natural landscape and academic excellence. A definition that is informed by Wellesley's particular environment, values and priorities will be most effective in helping to move the College toward its sustainability goals.

Wellesley's sustainability plan should also include a commitment to LEED certification for all new constructions and renovations. By adopting this standard, the College will prove that it is willing to take a concrete stance on environmental building standards. Beyond the environmental

benefits, Wellesley will also receive a reputation boost by committing to a well known environmental standard. Through publicly declaring its commitment to LEED certified buildings, Wellesley will impress environmentally minded prospective students and alumnae. When seeking donations to fund new construction, LEED certification may encourage benefactors to give even more, knowing that their funds are helping create a more sustainable campus. Furthermore, Wellesley will enjoy the long-term financial benefits that come from having energy efficient and environmental-friendly buildings.

Adopt a formal GHG reduction commitment

Although Wellesley is not going to stop climate change alone, the College has a moral responsibility to reduce its carbon dioxide emissions. By adopting a climate-specific commitment rather than formalizing its commitment to energy reduction, Wellesley could make a powerful statement regarding its role in mitigating the effects of climate change. A formal GHG commitment would allow Wellesley to hold itself accountable and significantly reduce its impact on the environment. The College could either become a signatory of the American College and University Presidents Climate Commitment (ACUPCC) or it could create its own formal GHG commitment unique to Wellesley. One of the advantages of Wellesley creating and adopting its own formal GHG commitment is it would allow the College to create a feasible and realistic GHG reduction plan based upon its own values and priorities.

As a leading higher education institution, Wellesley has a responsibility to model positive environmental behavior to its community and peer institutions. Sustainability is becoming an increasingly important concern for incoming college first-years. By adopting a formal GHG reduction commitment, Wellesley will stand out amongst its peers and prove that it “walks the walk” of sustainability. The impact of attracting students concerned about sustainability is multiplied once those students get to campus and begin pushing the college towards an even greener direction.

Having an official GHG reduction commitment will ensure that sustainability does not get pushed to the backburner in budgeting and decision-making processes. Much of the work has already been done to determine how GHG emissions reductions are possible on Wellesley’s campus. An excellent first step towards implementing the new commitment would be to follow the recommendations outlined in the 2008 ES300 report *Climate for Change*.

Create a Sustainability Course Requirement

Wellesley should also require all students to take a course related to sustainability as a graduation requirement. While establishing a sustainability course requirement may seem like a radical step, it would not be difficult to implement in the context of the current graduation requirement system. In order to fulfill the sustainability course requirement, the registrar could allow students to “double-count” a course that fills a major or distribution requirement. There are many courses to choose from both within and outside the Environmental Studies Program that address sustainability. If the initial list of courses related to sustainability proves too small to accommodate all student interests, professors may respond to demand by adding or emphasizing sustainability-related material in existing courses. To allow for even more flexibility, students could even fulfill the sustainability course requirement by choosing to write a paper on a sustainability-related topic in a course that does not itself focus directly on sustainability.

Wellesley is an academic institution committed to producing well-rounded graduates. Wellesley’s motto – “not to be served, but to serve” – is exemplified in the lives of thousands of Wellesley alumnae who have served as ambassadors, business pioneers, physicians, journalists, scientists, and hundreds of other important positions. To have a truly widespread impact on global sustainability, one of the most important things Wellesley could do is incorporate sustainability into the education of its college students.

15.5.2 Move Wellesley toward a more sustainable dining system

Compost food waste in all dining halls

As is evident in our assessment of dining and food at Wellesley, the College still has a long way to go towards achieving a sustainable food system. Composting food waste would be a great first step for Wellesley. As a result of Wellesley’s current unlimited meal plan, the College produces significant food waste each year. Although reducing waste may be difficult, composting food waste would not require any dramatic meal plan policy changes. The compost collected could be used to promote sustainable practice on other parts of campus. Specifically, compost from the dining halls could be used on campus for organic landscaping as well as be given to the campus farm plots and gardens run by the student farming organization, Regeneration.

Provide incentives to reduce food waste

Wellesley could also more sustainable if it reduced its food waste from the outset. Wellesley's current unlimited food plans provide no incentives for students to reduce their waste or even carefully consider the portions they take. Additionally, the current dining system set-up provides no market signals to the dining service on how much food to produce, and results in food waste on the supply side as well. There are many ways Wellesley could help reduce food waste. Implementing a pay-by-waste system would encourage students to only take what they will eat. An even easier option could be requiring students to swipe their OneCards to gain access to the dining halls. By having all students swipe their OneCards before meals, dining services could better estimate how much food to make for high traffic and low traffic dining halls.

Create sustainability themed dining hall or provide a sustainable meal plan option

Beyond reducing food waste, Wellesley should provide more sustainable food options. Increasing the number of local and organic food items in the dining hall would provide healthier alternatives for students. Organic foods do not use pesticides and tend to have higher nutritional contents. Wellesley could expand its themed dining halls to include an organic, sustainability-themed dining hall. An organic, sustainability-themed dining hall could prioritize local food when possible and could incorporate produce from the College farm.

Furthermore, the addition of an organic, sustainability themed dining hall would help satisfy the demands of environmentally conscious students on the meal plan. Currently, it is difficult for students to be conscientious eaters on the meal plan with few to no organic and local options. Many students who cannot join the sustainable residence hall SCOOP would benefit from a dining hall that prioritizes these environmentally options and many students would likely be willing to pay more to have this option available. Additionally, having a themed dining hall would provide signals to dining services about the extent of demand for these types of food options; if such a dining option becomes popular it could lead to spread of these options to other dining halls.

Limit and/or Charge for Printing on Campus

Currently, printing in all libraries and computer labs on Wellesley's campus is unlimited and free. A disturbingly large number of unclaimed printouts are left in printers every day, and students

do not stop to consider whether they need to print before doing so. In order to reduce paper waste and consumption, the College should begin limiting the number of pages students are allowed to print each semester. Wellesley's ID and dorm entry cards could be altered to include a print limit, or the domain login that is already required to use public computers could be configured to keep track of printing. Under the new system, students would swipe every time they used the printers. Once they reached a set limit, they would have to use "points" or money on their college ID cards to pay for extra printing.

Many other colleges and universities already charge for or otherwise limit printing. By limiting and charging for printing, Wellesley could encourage students to make sure that they only print what is necessary and cut down on overall paper waste. There would be some start up cost to consider when revamping the OneCard or domain login system and purchasing machines or software to control print limits, but the college would ultimately save money from reduced paper demand and would earn revenue from post-limit printing fees.

Centralize purchasing

Wellesley's current purchasing system is financially and environmentally unsustainable. Many departments are purchasing the same items separately and in small amounts when they could be benefiting economically by purchasing in bulk through a centralized purchasing system. Centralized purchasing would also reduce packaging and make environmentally preferable alternatives more affordable. Many departments would like to purchase recycled-content paper but are limited by their budgets and must prioritize the economy over the environment.

A centralized purchasing system would also make it easier for the College to set standards and policies regarding green products. Creating a policy requiring that all newly purchased paper and cleaning products are certified "green" without increasing the budgets of the custodial staff, libraries, and academic departments would be akin to requiring each administrative department to completely revamp its budget and potentially cut important programs. By pooling existing resources, a centralized purchasing system would make sustainable purchasing more feasible.

Create a Socially Responsible Investment (SRI) fund managed by students

Although there are many hurdles towards making Wellesley's endowment holdings sustainable and socially responsible, the College can address sustainability in its investments by creating a socially responsible investment (SRI) fund that would be managed by a group of students.

An SRI fund would provide an opportunity for interested students to gain experience in socially responsible investing and serve as a model for the College community and other interested parties.

Revamp Wellesley's transportation system for students and faculty

Currently, Wellesley has not made many investments in public transportation for faculty and could do more to encourage mass transit for students. In order to move toward more sustainable transportation, Wellesley needs to revamp its current transit system to be more accessible to faculty and public transportation needs. Increasing sustainable transportation options would aid in reducing GHGs as well as decrease the need for vehicles and more parking lots on campus.

A great first step would be for Wellesley to make the weekday Exchange bus free for faculty members again and to add more bus stops tailored to faculty needs. A survey on faculty interest would be helpful in identifying potential new stops. Wellesley could also provide easier access to public transit hubs for everyone on campus. A frequent and reliable shuttle to a local T subway stop would help in making public transit a more viable option for college community members and help promote public transportation between Wellesley's suburban campus and the greater Boston area. Wellesley could also strengthen its commitment to sustainable transportation by installing a parking fee system for faculty and staff members. Although this is much more controversial and radical change, installing a parking fee system would provide incentives for the use of public transportation, encourage carpooling, and allow the College to implement a carpooling discount.

In addition to these larger-scale changes, below are several smaller steps that would help Wellesley move towards overall sustainability.

Table 15.7 Suggested small scale changes to help move Wellesley toward Sustainability

Recommended Action	Environmental Impact	Cost	Logistical Difficulty
Remove potable water feed to Paramecium pond	***	\$\$	X
Increase Move-Out Recycling Program	*	\$	X
Install Water and Energy meters in all residence halls and academic buildings	**	\$\$	X
Install all low flow fixtures across campus	**	\$\$	XX
Expand the roles and visibility of Eco-Reps	*	\$	X
Expand bike sharing program and install bike repair system	*	\$\$	X
Increase organic fertilizer use	*	\$\$	X
Standardized Recycling Bins	*	\$	XX

15.6 General Recommendations About Rating Systems

In deciding which ratings systems would be useful to participate in, Wellesley needs to consider both the costs and the benefits. Costs include the time and money taken to complete the application and the potential fallout from negative publicity should the College rate or score poorly. But there is a wide range of potential benefits.

Higher education green rating systems can offer meaningful assessments of an institution's sustainability performance, encouraging the school to do better. Ratings systems covering a broad range of categories provide institutions with a holistic picture of their environmental performance. By highlighting progress over time, schools are provided with positive feedback and rewarded for their efforts, which in turn creates incentives for continual improvement toward sustainability. Rating systems invoke a competitive spirit in participants, encouraging schools to pursue innovative

sustainable initiatives to set themselves apart from other institutions. By providing an extensive sustainability rubric, guidelines for how to improve are readily available, which aids institutions in making sustainability a larger priority in college operations. Good scores on rating systems could lead to increased donations from environmentally aware alumnae, increased interest from prospective students, and recognition from the higher education and professional environmental community.

Furthermore, green ratings systems promote information sharing both among campuses and across different departments on a given campus. The publication of innovative environmental initiatives by exemplary institutions facilitates information sharing, providing inspiration and ideas from which a college can learn. Filling out a system's application requires inter-departmental communication, often bringing together college staff, faculty, and students from a diverse range of departments and disciplines that may not share information normally. By encouraging environmental engagement among a wide range of individuals, participating in green ratings systems may encourage those who had previously not been involved in sustainability issues to think more consciously about the environment.

The benefits Wellesley could garner from participation in a given system are contingent upon several factors. First, the scoring rubric and vision of sustainability within a system must be transparent if the College is to use it as a set of guidelines for improvement. Second, other schools must participate widely in a given rating system for it to have credibility and weight. Third, in an effort to improve publicity efforts about strides in sustainability currently occurring, the College should consider how well a given ratings system will recognize our improvements in the context of our values and priorities, or whether it is biased in some way against Wellesley's situation and context. If a system is well-regarded by environmental and higher education professionals and can prove useful as a tool for improvement, the possibility that Wellesley may do poorly in it should not be an automatic disqualifier. Being able to point to improvements in addressing many sustainability concerns, as Wellesley has done over the past few years, also benefits the school's image by highlighting progress and growth.

Whether or not STARS becomes the next leader in green ratings for higher education, other existing ratings systems will likely persist into the near future. Though STARS is attempting in some part to end the need for other potentially redundant or less complete measures of sustainability in higher education, it will take time for all relevant stakeholders to recognize STARS and for STARS to hone and revise its scoring guidelines. As a result, Wellesley will benefit from continued

participation in some of these other existing systems. Although our report focused on GRC and STARS, we kept in mind other common green ratings systems. Given the considerations mentioned above, we recommend participation in the following rating and rankings systems. Note that many systems, not listed, do not contact school administrators directly and instead conduct their own research drawing from other ratings systems, school websites, or media reports. For information and recommendations about STARS, see other report sections. Below we will address the rating systems that we did not specifically make recommendations about in other sections of the report.

Sierra Club “10 Cool Schools”

Because of its reach to a wide range of potential stakeholders, primarily environmentally-minded high school students, and the backing of the Sierra Club, we recommend participation in this ranking system by completing and returning its survey. Although we are unlikely to place in the top ten, the magazine began publishing the entire list of participating schools in 2009. Though the scoring guideline is not transparent, the information required to fill out the survey will be easily at hand given a complete STARS review.

The Princeton Review

The Princeton Review is one of the most highly recognized names to prospective students and their parents. The guide measures schools on a number of factors like campus life and incoming student qualifications. As of 2009, the guide included a “green” score. Based on a survey of schools including sustainability of campus life, how well the school is preparing students for employment in a green economy, and how environmentally responsible the school’s policies are, schools are given a score between 60 and 99. We recommend participation due to the potential media attention and the fact that it is so widely read, and Wellesley already participates in the rest of the information-gathering process for the *Princeton Review*. In April 2010, *Princeton Review* began publishing a free online book entitled *The Princeton Review’s Guide to 286 Green Colleges*. Published in coordination with the U.S. Green Building Council (USGBC) the guide gives half-page-long profiles of 286 “green schools.” The methodology for information gathering is unclear, but Wellesley is already included and its many green initiatives are highlighted in a very positive light.

The National Wildlife Foundation's Campus Report Card

We recommend participation in this meta-analysis of sustainability trends in higher education, as this report provides valuable information on a national scale. Unless we are identified for exemplary performance in a particular category, we will not be named specifically.

Improving Wellesley's performance in general

In order to do better on rating systems in general, Wellesley should increase the level of publicity on campus surrounding its environmental performance. Many rating systems ask for specific information that is often only known by a select few members on campus and may not be known by the person filling out the rating survey questionnaire. By making this information more publicly available and updating appropriate websites, Wellesley could ensure that all sustainable efforts are addressed and accurately represented in the appropriate context regarding their impact on campus.

APPENDICES

Appendix A

Calculations for Weighted Campus Users

Formula for Weighted Campus Users: Weighted campus users = $(1 \times \text{number of on-campus residents}) + (0.75 \times \text{number of nonresidential or commuter full-time students, faculty, and staff members}) + (0.5 \times \text{number of non-residential or commuter part-time students, faculty, and staff members})$

To determine the number of on-campus residents at Wellesley:

Total number of students at Wellesley ³⁶²	2,324
Percent of students living on campus ³⁶³	0.92
<i>Number of on-campus residents:</i>	2138.08
<i>Rounded to:</i>	2138*

*This number does not take into account the faculty and staff-members at Wellesley who live on campus. As this number is relatively small, I decided to disregard it in my calculations. However, a more accurate estimation would take faculty and staff-members living on campus into account.

To determine the number of non-residential or commuter full-time students, faculty, and staff members and the number of non-residential or commuter part-time students, faculty, and staff:

Percent part time students ³⁶⁴	0.0594
<i>Number of part time students:</i> (0.0594×2324)	138.0456
<i>Rounded to:</i>	138

Assuming that all part-time students live off-campus:

Number of on-campus full time students + number of part time students	2276.1256
<i>Number of full time students not living on campus</i> (total number of students – [on-campus full time students + part time students])	48
Total number of faculty and staff ³⁶⁵	1351*
<i>Number of full time staff</i> ³⁶⁶	773**
<i>Number of full time faculty</i> ³⁶⁷	248

³⁶² “Wellesley College,” *The Princeton Review*, <http://www.princetonreview.com/WellesleyCollege.aspx>(accessed: May 10, 2010).

³⁶³ “Wellesley College,” *The Princeton Review*.

³⁶⁴ “Wellesley College,” *The Princeton Review*.

³⁶⁵ “Wellesley College Directory,” *Wellesley College*, <http://www.wellesley.edu/Directory/>(accessed: April 8, 2010).

³⁶⁶ “Wellesley College cuts 80 non-faculty jobs,” *The Boston Globe*, http://www.boston.com/news/local/massachusetts/articles/2009/04/10/wellesley_college_cuts_80_non_faculty_jobs/(accessed: April 8, 2010).

³⁶⁷ Wellesley College Annual Report 2008-2009, 16.

Number of part time faculty and staff (total number of faculty and staff – [number of full time faculty + number of full time staff])

330

*To calculate the total number of faculty and staff, I used the Wellesley College Directory to find the number of faculty and staff members in each academic and administrative department. I then added up these numbers, yielding a total of 1351 faculty and staff members.

**To calculate the number of full-time staff members, I found in the Boston Globe article “Wellesley College cuts 80 non-faculty jobs” (published April 10, 2009) that Wellesley had 853 full-time staff members at the beginning of 2009 and cut 80 positions at the end of the 2008-2009 school year. Thus, I estimate the current number of full-time staff members to be 773 (853-80).

To calculate weighted campus users:

Number of on campus residents	2138
Number of non-residential full time students, faculty, and staff	1,069
Number of non-residential part time students, faculty, and staff	468.0456
Weighted campus users	3173.6786
<i>Rounded to:</i>	3174

Appendix B

Gross Building Square Footage

2,462,855 sq.ft.*

*Buildings Up for LEED Certification (Alumnae Hall and Wang Campus Center) not included

Calculations for Gross Building Square Footage

Total Square Footage on Campus**	258661
Buildings Up for Certification (Not Included in STARS Square Footage)	
<i>Alumnae Hall</i>	81106
<i>Wang Campus Center</i>	38700
Total Square Footage for STARS	2462855

**2007 Wellesley College Comprehensive Facilities Plan

Building List *

BUILDING	sqf
39-41 Service Drive	3,300
Aconia	5,700
Alumnae Hall	38,700
Bates Hall	66,300
Beebe Hall	43,900
Boathouse	6,500
Casanova Hall	57,100
Cedar Lodge	6,100
Cervantes	3,800
Cheever House	19,800
Child Study Center	5,500
Claffin Hall	57,400
Clapp Library	204,100
Continuing Education Office	2,000
Davis Museum	63,000
Distribution Center	30,900
Donner House	10,800
Fiske House	11,200
Founders Hall	64,200
Freeman Hall	42,200
French House - Carriage	3,100
French House - Main	7,700
Gray House	3,600
Green Hall	99,300
Grounds & Motor Pool Facility	28,000
Hallowell House	17,000
Harambee House	3,900
Homestead	6,500
Horton House	20,900
Jewett Art Center	86,600
Keehane Sports Center	158,100
Lake House	27,700
Margaret Ferguson Greenhouses	7,185
McAfee Hall	50,900
Munger Hall	52,400
Nahoiden House	7,600
Orchard Apts	2,300
Pendleton Hall East	60,495
Pendleton Hall West	46,932
Physical Plant	49,800
Pomeroy Hall	57,000
President's Residence	11,645
Edgeway Apartments	9,800
Schneider Center	36,100

BUILDING	GSF
Science Center	289,300
Severance Hall	55,900
Shafer Hall	45,800
Shakespeare	3,500
Shepherd House	16,100
Simpson Hall	30,400
Slater International Cnter	4,400
Stone Center	10,576
Stone Davis Hall	79,200
Tau Zeta Epsilon	3,200
Tower Court East	52,251
Tower Court West	58,517
Waban House	3,000
Weaver House	12,600
Wellesley College Club	28,700
Wellesley Community Children's Center	8,525
Weston Terrace	12,000
Whitin Observatory	8,300
Zeta Alpha House	2,700
Subtotals--Buildings in Study	2,321,426
Houghton Memorial Chapel	20,328
Davis Parking Garage	135,000
Police Headquarters	4,000
Trade Shops Building	20,000
Golf House	801
Wang Campus Center	81,106
Subtotals--Buildings Not in Study	261,235
Total GSF and NSF--All Bldgs	2,582,661

Appendix C

Assumptions and Calculations for STARS Charts

Academics

Percentage of Students with Eco Reps

*Eco Reps in All Residence Halls

Total Number of Dorm
Residents³⁶⁸

Dorm

Caz	160
Pom	160
Beebe	135
Shafer	145
Munger	157
Bates	130
Freeman	130
McAfee	140
Tower	300
Severance	165
Clafin	140
Stone-Davis	245
Total	2007

**2007 is about 80% of all
Students**

Calculations for Sustainability Courses

over 1,000 courses³⁶⁹

26 focused courses (ES courses)

18 related courses

<http://www.wellesley.edu/admission/pdf/SSstudent.pdf>

<http://www.wellesley.edu/environmentalstudies/Curriculum/courses.html>

13 departments out of 51

Offer Sustainability Courses

³⁶⁸ "Residential Life," *Wellesley College*, <http://www.wellesley.edu/ResLife/> (accessed: April 20, 2010).

Calculations for Number of Students in Sustainability Learning Outcome Majors

3 Departments with Sustainability Learning Outcome in Dept. Description

Environmental Studies, Geosciences, Biological Sciences

Major	% of Total Students
Environmental Studies	2%
Geosciences	Less than 1%
Biological Sciences	6%
Total Percentage of Students in Sustainability Focused Majors	About 9%

Buildings/Institutional Commitments

Calculations for buildings operated and maintained in accordance with sustainable operations and maintenance guidelines and policies

Building in Accordance	Sq Footage
Science Center	289300
Chapel	20328
Davis Museum	63000
Lake House	27700
Stone Davis	79200
Pendleton East	60495
Total sq footage	540023

Dining/Food

Calculations for Amount Spent on Food Percentages

Annual food Budget **\$4,800,000**

Type of Sustainable Food	Amount Spent	Percent of Total Budget
grown locally	\$200,100	
processed locally	\$750,000	
organic	\$50,000	
total	1,000,100	21%

Waste and Recycling

Calculations for Percentage Recovered and Recycled Waste

1,784 tons of waste generated on campus include recycling and compost

24.5% of waste is composted if we compost all yard waste

2009 recycled 392,538 lbs = 196.3 tons

11% of waste stream recycled

2009 total percentage recovered

waste

35.5% (24.5% + 11%)

2006 total waste = 1,839 tons

2006 recycled 360,975 lbs = 180.5 tons

2006 total percentage waste stream recycled 10%

Waste Reduction Per Campus User

$[(1,839 \text{ tons}/2913) - (1784 \text{ tons}/3174)] / (1,839 \text{ tons}/2913) = 0.1096$

$100 \times 0.1096 = 10.96$

11% waste reduction per campus user

Appendix D

GRC Indicator Credit Breakdown for each Category

Category	Regular Credit (%)	Extra Credit (%)
<i>Administration</i>		
Sustainability Policies	30	5
Advisory Council	25	
Sustainability Staff	25	10
Office or Department	5	
Website	5	
Green Purchasing	10	
<i>Climate</i>		
GHG Emissions Inventory	10	5
Commitment to GHG Emissions Reduction	15	5
Realized GHG Emissions Reduction	20	10
Energy Efficiency	20	
Energy Conservation	10	2.5
Renewable Energy Generation	15	10
Renewable Energy Purchase	10	7.5
On-site Combustion		15
<i>Food and Recycling</i>		
Locally Grown and Produced Food	20	10
Organic and Sustainably Produced Food	20	10
Fair Trade Products	5	2.5
Dishware and Eco-friendly Incentives	10	
Food Composting and Waste Diversion	15	
Recycling of Traditional Materials	15	2.5
Recycling of Electronic Waste	5	2.5
Composting (Aside from Dining Facilities)	5	
Source Reduction	5	
<i>Green Building</i>		
Green Building Policy	20	10
Green Building Standards	40	20
Renovation and Retrofits	40	32.5
<i>Student Involvement</i>		
Residential Communities	10	
New Student Orientation	10	5
Internships/Outreach Opportunities	30	20
Student Organizations	35	7.5
Sustainability Challenges and Competitions	15	7.5
<i>Transportation</i>		
Campus Motor Fleet	12.5	12.5
Local Transportation Alternatives	37.5	5
Bicycle Program	15	5
Car-Sharing Program	15	10

Planning	20	10
<i>Endowment Transparency</i>		
Investment Holdings	40	
Proxy Voting Record	30	
Accessibility	30	
<i>Investment Priorities</i>		
Renewable Energy and Sustainable Investment	30	
Community Involvement	30	
On-Campus Sustainability Projects		30
Donor Fund Option		20
Optimizing Investment Return	40	
<i>Shareholder Engagement</i>		
Proxy Vote Decisions	40	
Stakeholder Involvement	30	
School Community Input	10	
Sustainability Voting Record	20	

Appendix E

Contacts for More Information and Future Data Collection

Regarding	Person to Contact	Position
Physical Plant, Miscellaneous Sustainability Questions	Patrick Willoughby	Sustainability Director
Purchasing	Christopher Card	IS Purchasing Specialist
Purchasing	Tom Kane	Director of Purchasing & Office Support Services
Housing & Transportation	Peter Eastment	Director of Housing & Transportation
Housing	Kris Niendorf	Director of Residential & Campus Life
Motor Pool	John Olmsted	Manager of Landscape & Motor Pool Operations
Finance and Administration	Donna Ng	Associate Vice President for Finance
Diversity	Elena Creef	Associate Professor - Women's and Gender Studies
Institutional Research	Annick Mansfield	Research Analyst
Payroll	Juanita Brown	Payroll Manager
Human Resources	Eva Bedrick	Benefits Coordinator

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