

An Enduring and Expanding Commitment to Environmental Stewardship¹

A Gustavus Adolphus plan for a sustainable future²

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¹ Environmental stewardship—a term recognizing that humans can and should take explicit responsibility for the environment as stewards or caretakers of the natural world. While some take objection to this term because of its presumption of human dominance and control in the world, this term also recognizes responsibility to a wider community and ethical principles. As it is used here, its meaning overlaps to some extent with “sustainability” by referring to the broad scope of campus environmental initiatives intended to lead to greater campus sustainability while at the same time keeping the focus on the Gustavus community’s collective ethical responsibility in environmental matters.

² Sustainability—drawing from a formulation developed by the Brundtland Commission (WCED. (1987). Our Common Future. The World Commission on Economic Development, Oxford University Press, Oxford and New York.), the generally accepted formulation states that if we are environmentally sustainable, we can “meet the current needs...of people for food, clean water, clean air, shelter, and other basic resources without compromising the ability of future generations to meet their needs” (Miller, Jr, G. T. (2005). Sustaining the Earth, Seventh Edition. Thomson Learning, Inc, Pacific Grove, CA, USA).

An Enduring and Expanding Commitment to Environmental Stewardship

Summary of purpose, principles, and tactics

Guided by its core values of faith, justice, excellence, community, and service, Gustavus commits itself to a larger vision of environmental stewardship. By articulating the following principles and implementing the ensuing tactics, Gustavus will become an environmental stewardship leader, transforming its own campus and preparing students to lead such transformations elsewhere.

Gustavus Adolphus College Environmental Stewardship Principles

Principle 1: Environmental stewardship will be an embedded value.

Environmental stewardship will become an embedded Gustavus value that is implicit in our actions and explicit in our discussions. A recognition that intact and healthy ecosystems are necessary to human well-being, along with an understanding of how to protect and sustain those ecosystems, will be a hallmark of education at Gustavus.

Principle 2: Honest ecological accounting will guide Gustavus environmental stewardship

Gustavus will be accountable for its environmental performance through a system of environmental accounting and reporting. The material and social data that guides sustainability will be community property that can inform our decision-making.

Principle 3: Gustavus will cultivate an attitude of mindful consumption.

To foster conscious attention to human consumption, material use on the Gustavus campus will be examined in regard to the sustainability of the earth's supply, and the impact of the extraction, use and disposal of those materials, as well as with regard to issues of human health, justice, and equity.

Principle 4: Reducing Gustavus energy use and/or greenhouse gas emissions will be a priority focus.

Recognizing that abundant and inexpensive energy supplies have been the key to material prosperity and to the resultant environmental destruction, including the precipitous rise in greenhouse gases, Gustavus commits to reducing its energy consumption or mitigating its harmful effects through conservation, efficiency, and a shift to more benign energy sources that are more renewable and have lower greenhouse gas emissions.

Principle 5: Gustavus will lead in the search for more sustainable livelihoods.

The Gustavus community acknowledges that the prosperity supporting Gustavus' educational mission is built on an economic activities that can also damage earth's ecosystems. Hence, through its educational endeavors and physical operations, Gustavus will support the development of more sustainable economic models that meet the needs for human livelihood and environmental preservation.

Strategic Tactics for Making the Gustavus Adolphus Environmental Stewardship Principles a Reality

Tactic 1: Creating community conversations about the environment

Building on curricular and co-curricular events with environmental themes or connections to environmental themes, the Johnson Center for Environmental Innovation (JCEI) and the Center for Vocational Reflection (CVR) will work together develop events that encourage and enable a community conversation on environmental issues. This conversation will intentionally include all parts of our community: students, staff, faculty, administrators, and alumni.

Tactic 2: Presenting clear, public environmental performance reporting

Gustavus will gather the necessary data to provide a comprehensive insight into performance of the college, and regularly present that data in way that guides our environmental stewardship.

Tactic 3: Laying the foundations for an environmental stewardship curriculum

Gustavus will develop environmental emphases in its curriculum, first through faculty development and then through formal modifications to the curriculum. To enable the focused effort this will require, Gustavus will fund the release time and resources necessary for the task to rotating group of faculty and staff who advance their own understanding of environmental issues and share their learning with the community.

Tactic 4: Supporting the transition to more sustainable operations and infrastructure

Gustavus will transform its infrastructure and operations:

- a. By reducing its fossil fuel use and green house gas emissions to the greatest extent possible through monitoring, conservation and a shift to renewable energy sources.*
- b. By becoming more efficient with and conservative of material resources.*

To accomplish this, Gustavus will develop the necessary leadership structures and tactics through a process that invites community support and participation.

Tactic 5: Exploring and developing patterns of sustainable livelihood that support environmental stewardship

Through the facilitation of the Johnson Center for Environmental Innovation, Gustavus students, faculty and staff will work with community partners to explore and develop patterns of sustainable livelihood that support environmental stewardship.

Prologue

Gustavus Adolphus College strives to prepare students for “lives of leadership and service in society.” In considering the society that we hope our students will lead, we recognize that ecological literacy³, and the ability to develop and implement solutions to environmental challenges, will be critical assets for our graduates.

At the same time, we also recognize that achieving sustainability in our world will require more of Gustavus than helping students prepare for the future. As our students study global resource conflicts and learn about anthropogenic climate change, it is clear that the future is now and our hopes of a sustainable world begin with our own campus—Gustavus must simultaneously transform its own environmental status quo while preparing students to do the same elsewhere.

This presents a significant challenge along with a great opportunity. David Orr, an Oberlin College faculty member and nationally recognized leader of the campus sustainability movement has written:

The disorder of ecosystems reflects a prior disorder of the mind, making it a central concern to those institutions that purport to improve minds. In other words, the ecological crisis is in every way a crisis of education⁴.

While the physical operations of our campus reflect good financial stewardship by administration, faculty, staff, trustees and students (past and present), they also mirror the unsustainable patterns of our society at large. And if, as David Orr notes, these unsustainable patterns are caused not just by mere technical errors, but also by deeper flaws in our intellectual life, then the work before us falls squarely within the middle of our liberal arts mission. We must intertwine the transformation of our physical operations with a vigorous intellectual effort to understand the roots of and solutions to environmental challenges. Gustavus must become a living laboratory for the transformation to environmental sustainability that we expect our students to lead, a place where we not only our physical plant, but also a place where we examine the necessary changes in all aspects of life.

Because Gustavus recognizes and embraces the faith tradition from which it comes, we are an institution with the necessary resources for this transformation. Value discussions are a desirable hallmark of education at Gustavus, and seen as a vital part of the campus intellectual life. At the same time, we are nationally recognized for our science programs and thus our students and faculty can capably address the scientific issues embedded in

³ Ecological literacy—according to David Orr (see footnote 4), “an ecologically literate person would have at least a basic comprehension of ecology, human ecology, and the concepts of sustainability, as well as the wherewithal to solve problems.” Orr expands on that definition by noting that, consistent with liberal arts traditions, education is a conversation about the question of how we are to live. Hence, by Orr’s formulation, ecological literacy is having sufficient knowledge to answer the questions of “how we will live in light of the ecological fact that we are bound together in the community of life, one and indivisible.”

⁴ Orr, David. Forward. In Ecological Literacy: Educating Our Children for a Sustainable World. Michael K. Stone and Zenobia Barlow. Sierra Club Books: San Francisco. 2005.

most sustainability discussions. While the issues are challenging, Gustavus is well positioned to participate in and even lead others in becoming a more sustainable campus.

Five core values articulate Gustavus self-understanding. Within each core value are deep connections to environmental stewardship issues and if those connections are our focus, a strong environmental stewardship effort will strengthen the college commitment to those values:

Faith. Our faith calls us to stewardship of God's creation. A campus faith dialogue would be incomplete without discussions of environmental stewardship.

Justice. In a world where opportunities and resources are unequally distributed, questions about access to resources and sustaining their value into the future must be answered justly for all people in the world, now and in the future.

Excellence. A mark of true excellence is enduring value—short-term gains that deplete and damage resources will not last. Our excellence must be built on a foundation of environmental stewardship.

Community. Environmental sustainability is not a solo venture, but rather a cooperative venture that can enhance community. Our environmental stewardship responsibilities require us to work as a community and that community in turn will support environmental excellence.

Service. Greater campus sustainability by itself will be a service to our world, but by developing models of sustainability and support for wider stewardship efforts that service will be enhanced.

The five principles outlined below are the principles that will guide Gustavus as it makes an explicit commitment to environmental stewardship. They are followed by five tactics that begin our efforts to live up to those principles. By articulating these principles and implementing the tactics, Gustavus will become an environmental stewardship leader, transforming its own campus and preparing students to lead such transformations elsewhere.

Gustavus Adolphus College Environmental Stewardship Principles

Principle 1: Environmental stewardship will be an embedded value.

Environmental stewardship will become an embedded Gustavus value that is implicit in our actions and explicit in our discussions. A recognition that intact and healthy ecosystems are necessary to human well-being, along with an understanding of how to protect and sustain those ecosystems, will be a hallmark of education at Gustavus.

Two core assumptions lie at the heart of the environmental challenges that the world faces. First, from our finite viewpoints, we see the world's resources as either limitless or as being quickly and instantaneously restored when consumed. Then, as the cumulative impact of the inaccurate first assumption becomes apparent in environmental degradation, we assume that we are powerless to affect a change in the current trajectory.

The challenge of these assumptions is eloquently illustrated by the tragedy of the commons. We each make a small individual contribution to environmental damage, the cost of which is borne by the whole community. Conversely, the benefits of any positive action are diffused and distributed to the whole community. We become paralyzed by the perception of insignificance.

With a faith and community values perspective that recognizes both individual freedom and responsibility in the community context, Gustavus can be a vocal leader as those damaging assumptions are rejected and transformed. But such leadership requires an open and conscious discussion of environmental values on campus, and a recognition that the resolution of such debates will call our current habits into question and lead to change.

An integral part of Gustavus environmental leadership will be to recognize the beauty of creation and our own natural affinity for that beauty. Environmental stewardship at Gustavus will not simply be about measuring energy use or recycling percentages, but also about cultivating a sense of wonder and joy as students, staff, and faculty collectively develop a Gustavus environmental ethic.

Principle 2: Honest ecological accounting will guide Gustavus environmental stewardship

Gustavus will be accountable for its environmental performance through a system of environmental accounting and reporting. The material and social data that guides sustainability will be community property that can inform our decision-making.

Given that we are not always able to envision the cumulative impact of our lives on the natural world, comprehensive environmental stewardship requires a consistent effort to monitor how we affect the world around us. Just as fiscal stewardship requires record keeping and reporting, environmental stewardship requires us to keep a system of environmental accounts and share that information.

Gustavus commits to collecting and reporting information about material and energy use on campus, and will seek an understanding of the wider impact of campus operations and Gustavus community activities. The Gustavus ecological accounting record will give us

an honest vision of how our choices affect the environment and will help guide our stewardship decisions.

As a community, Gustavus is part of an economic context where environmental stewardship is seen to be in conflict with good financial stewardship. The word “sustainability” reminds us, however, that ecological and financial stewardship are part of a whole. The long-term economic viability of Gustavus and the communities which surround us depends on the ecological services (e.g. clean air, clean water and biological activity) provided by our environment. Our environmental accounting will help us balance the short and long-term consequences of our decision-making.

Principle 3: Gustavus will cultivate an attitude of mindful consumption.

To foster conscious attention to human consumption, material use on the Gustavus campus will be examined in regard to the sustainability of the earth’s supply, and the impact of the extraction, use and disposal of those materials, as well as with regard to issues of human health, justice, and equity.

Gustavus students, staff, and faculty enjoy a level of material prosperity that has no recorded parallel in human history. Yet, from the religious tradition that formed Gustavus, we also know that material prosperity can be detrimental to spiritual and physical health. Further, as the earth’s population has surpassed 6 billion people and may peak at a level greater than 9 billion, we recognize that our material culture has damaged the earth and that this damage will increase as all the people of the earth aspire to a minimum level of material security.

Our material culture has not only afforded us comfortable lives—it has also supported and enabled the rich intellectual and cultural experience exemplified by Gustavus. Hence, we feel a tension when we discuss reducing our material impact—will reducing material consumption also mean reduced cultural and intellectual opportunities? A similar tension arises when this discussion crosses the divide between those who already enjoy this material culture (mostly in the so-called developed world) and those who still aspire to it (mostly in the so-called underdeveloped world)—does reducing material consumption close the door on the have-nots in the world?

The downstream side of consumption has been the accumulation of waste and the resultant pollution of the environment. Our discussion of the material culture will recognize that supply and waste questions are part of whole.

The Gustavus community will simultaneously attend to both the local benefits and global challenges of our material culture.

Principle 4: Reducing Gustavus energy use and/or greenhouse gas emissions will be a priority focus.

Recognizing that abundant and inexpensive energy supplies have been the key to material prosperity and to the resultant environmental destruction, including the precipitous rise in greenhouse gases, Gustavus commits to reducing its energy consumption or mitigating its harmful effects through conservation, efficiency, and a shift to more benign energy sources that are more renewable and have lower greenhouse gas emissions.

Gustavus Adolphus College is part of the most technologically advanced society that the earth has experienced. As that society developed on a foundation of fossil fuel consumption, we have noted the parallel environmental damage caused by the extraction and use of fossil fuels. Mining and drilling have despoiled land and water resources while pollution from these activities and the burning of fossil fuels have directly affected human health.

More recently, however, we have recognized that the greenhouse gases generated by fossil fuel use, including CO₂, the most abundant and seemingly the most benign of these gases, have been altering the global climate system in ways that are inherently unpredictable and potentially disruptive to human civilization.

Some analyses of our energy dependent culture present a stark either-or dilemma: either we abandon our fossil fuel use and the accompanying technology, or global climate change will irreversibly alter that civilization. Other analyses either discount the dire warnings or expect a more benign future based on expected technological developments that will mitigate climate change.

While the climate change debate has focused our attention on the green house gas issues, energy is also a focus because global economic growth, particularly in China and India, has put energy consumption on a par with our ability to extract the remaining resources. Hence, we are entering an era where global and local tensions over energy will increase.

The dual challenges of climate change and energy supply issues make energy consumption a focal point of sustainability discussions. Any response that is consistent with Gustavus core values leads to the conclusion that the college must address these challenges by a combination of reduced energy use and a shift to more renewable sources. Meeting this challenge will be the most difficult sustainability effort that this campus can attempt, but it will also be the most beneficial to the local and global community—short term success in this area will move Gustavus into a leadership role that will not only benefit the long-term physical operations of the campus, but will also enhance the educational program we offer our students. Additionally, our leadership can be a visible expression of our institutional vocation—contributing to the common good.

Principle 5: Gustavus will lead in the search for more sustainable livelihoods.

The Gustavus community acknowledges that the prosperity supporting Gustavus' educational mission is built on an economic activities that can also damage earth's ecosystems. Hence, through its educational endeavors and physical operations, Gustavus will support the development of more sustainable economic models that meet the needs for human livelihood and environmental preservation.

The modern environmental movement arose from the recognition that rising human population and resource consumption were simultaneously generating human prosperity and environmental degradation. As a result, environmental debates have generally been framed as an either-or choice between human prosperity and environmental preservation.

More recent developments, including the recognition that anthropogenic climate change is a real possibility, have shifted this polarized debate with the parallel recognitions that human well-being is dependent on the intact functioning of earth's ecosystems and that any practical environmental ethic enables a human place in the environment.

Shifting the debate from “humans or the environment” to “humans in the environment” refocuses our attention on a very important challenge: envisioning productive human economies that work in harmony with the environment, meeting short and long-term human needs without damaging the world in which we live. As a liberal arts college that focuses its attention on the topic, Gustavus become a leader in imagining business and economic models that make such harmony possible.

While there are current models that link economic potential to environmental preservation (“green” jobs in renewable energy and trading in carbon credits, for example), it is not yet clear how we can change the dominant mode of life most of our students face upon graduation: large ecological footprints characterized by high material consumption and energy use. The liberal arts and values foundations at Gustavus should be very supportive of the search for new economic patterns.

Strategic Tactics for Making the Gustavus Adolphus Environmental Stewardship Principles a Reality

The following tactics are the “first steps” in our institutional commitment to our environmental stewardship principles. They are intended to lay the groundwork for future changes or to enhance the effectiveness of present efforts. Most importantly, they will enable the Gustavus community to learn and grow in its understanding of environmental stewardship and become a leader in environmental stewardship.

Tactic 1: Creating community conversations about the environment

Building on curricular and co-curricular events with environmental themes or connections to environmental themes, the Johnson Center for Environmental Innovation (JCEI) and the Center for Vocational Reflection (CVR) will work together develop events that encourage and enable a community conversation on environmental issues. This

conversation will intentionally include all parts of our community: students, staff, faculty, administrators, and alumni.

At a time when the adjective “green”, meaning something good for or attentive to the environment, seems to be a part of every media broadcast and commercial, it is also apparent that there are many different impressions of what environmental stewardship means. For some the focus is on limited, but effective steps like recycling and reduced packaging. Others argue clearly that our environmental situation is more dire, particularly in regards to climate change, and we must respond with revolutionary changes that reduce our dependence on fossil fuels. And for others, the discussion is not complete without an acknowledgement of social justice and a recognition that a healthy environment requires that we address those injustices.

A backdrop to these differing views is the growing scientific understanding of the world’s environmental systems and the magnitude of human effects on the environment. As we ponder the affects of individual actions upon the environment, the global implications of those actions are also apparent.

As we seek to respond to the environmental realities, there is a strong need for our entire community to find common ground amidst the many competing voices and agree on the most important steps to take. Hence, the first strategic environmental initiative is intended to foster a conversation that can lead to that consensus, and/or enable effective action even when the consensus is not yet clear..

This initiative is founded on the following observations:

1. Many of the varied and dynamic opportunities (speakers, workshops, the Nobel Conference, the MayDay Peace Conference) we offer our students touch on or address environmental issues. But they also take place in a competitive arena where the next upcoming speaker distracts attention from focused reflection.
2. If, as outlined in the principles above, we want to prepare students to be environmental citizens and leaders by modeling environmental stewardship in our campus operations, our environmental reflections must be inclusive of the whole community.
3. A significant aspect of vocational reflection is a realization of ethical responsibility to both human communities and to the environment in which those communities live. The community conversation is about seeking our environmental vocation.

In terms of resources, this effort will primarily require a commitment of priority. There may be a need to bring in speakers on specific topics or someone with specific expertise in facilitating conversations on environmental topics, but Gustavus already offers many speakers and events that focus on environmental themes. The task for the JCEI and CVR is to ensure that we use those opportunities well in fostering the necessary community conversation, and ensuring that the conversation takes place between all parts of our community. Hence, while the primary financial resource necessary for this tactic is full financial support for the JCEI and the CVR, the most necessary resource will be the commitment of time in the midst of many competing efforts. Where appropriate, this

conversation can and should be extended to include alumni and other natural constituencies of the college.

Although supportive of all the Gustavus environmental principles listed above, this tactic will particularly support making environmental stewardship an embedded value, the cultivation of an attitude of mindful consumption, and the search for sustainable livelihoods.

Tactic 2: Presenting clear, public environmental performance reporting

Gustavus will gather the necessary data to provide a comprehensive insight into performance of the college, and regularly present that data in way that guides our environmental stewardship.

The entire environmental stewardship initiative depends on our entire community developing ways to reduce our impact on the environment in a way that makes our community more sustainable. To accomplish that, and to demonstrate how to do it for our students, data reflecting the campus environmental performance must be visible for reflection and response.

The kind of information we need to make visible includes the obvious measures like energy use and recycling data, for example, and less obvious measures like the source of our paper and food and the off-sites impacts of those materials.

This tactic will require 1) identification of what should be reported; 2) collecting that data or creating systems to collect that data; and 3) creating system for reporting that information. In some cases (electricity, for instance) we are well on our way to accomplishing, but in other areas there is considerable work to be done—reporting on the impacts of transportation from commuting and from college activities.

Besides an easily accessible web reporting system for this data, the effort envisioned here could easily be used for an annual “state of the college” environmental report to keep community focus on the over arching goals. Additionally, this effort will help us with our ongoing commitments under the American College and University Presidents Climate Commitment.

Building on pre-existing data collection and reporting activities, the JCEI has begun very preliminary steps in this effort. To realize the full potential of this tactic additional personnel and financial resources will be required:

- a. Although in most cases, once the reporting requirements are established, data collection and publication will become a routine function, articulating those requirements and developing the reporting systems will require a temporary allocation of personnel time from the Finance Office, from the Physical Plant staff, and from Gustavus Technology Services. A very rough estimate would be that the total staff allocation would be equivalent to 1 staff person for 12 months, with a minor ongoing commitment from these departments to maintain the reporting system.
- b. To allow automatic, regular up-to-date reporting of data, particularly in the utility arena, there will be the need for additional monitoring hardware. Although the needs in this area will not be clear until the full reporting regime is established, past experience

with creating our electricity monitoring systems suggests \$100,000 might be necessary with a full thermal energy (steam and hot water) reporting system taking the lion's share of this amount.

The reporting effort outlined here will enable efficient and accurate participation in developing systems that attempt to assess or rate sustainability and environmental performance across institutions.

Packaged together, a. and b. could take the form of a \$200,000 gift request for support for campus environmental initiatives. Given magnitude of our utility bills (nearly \$3 million dollars including water and sewer charges), we can anticipate that this effort will help us capture savings from conservation.

This tactic directly addresses the honest ecological accounting principle outlined above and by providing rapid, visible feedback on our performance, will support the priority effort to reduce greenhouse gas emissions and move to cleaner energy sources.

Tactic 3: Laying the foundations for an environmental stewardship curriculum

Gustavus will develop environmental emphases in its curriculum, first through faculty development and then through formal modifications to the curriculum. To enable the focused effort this will require, Gustavus will fund the release time and resources necessary for the task to rotating group of faculty and staff who advance their own understanding of environmental issues and share their learning with the community.

While the premise of this sustainability plan is that how the Gustavus campus functions will be the most powerful environmental curriculum element we can offer, that “course offering” needs to be supported by curricular and co-curricular programs. That support can be provided in part by a faculty and staff development effort that equips all Gustavus faculty and staff to support the transition to a more sustainable campus and to develop the learning culture where environmental stewardship is a prominent consideration. Hence, that faculty and staff development effort is the foundation for incorporating environmental stewardship into the curriculum.

During the discussions of the faculty and staff contributing to the development of this document, there was clear recognition that this infusion of environmental thinking across the campus would have a powerful influence on our community. But a number of voices in that discussion also felt we needed a stronger statement—if environmental stewardship is central part of a Gustavus education, then it should have a clearly delineated place in the educational program of every student. The conversation noted two important goals for such a curriculum requirement:

- a. Inspiring students to recognize the powerful connection that each and everyone of us has to natural world, while rejuvenating the sense of awe that should accompany that connection.
- b. Empowering students to recognize that, although the world they are inheriting comes with some staggering environmental problems, they have the capacity and agency for positive change.

Formulating the necessary curricular initiative, however, will require us to overcome the challenges faced by all curricular initiatives: an initiative that is merely another requirement becomes an additive burden that expands student graduation requirements and stretches faculty resources. And the alternative—recognizing that this curricular imperative has an urgency that trumps other initiatives and reprioritizing resources accordingly—will only take place after careful discussions.

Recognizing that the faculty and staff development effort, combined with the community conversations of Tactic 1, will be very supportive of the necessary discussions, no curricular prescription is offered here. Rather, the priority is making sure that faculty and staff have adequate time and financial resources for the task.

As a part of this effort, the working group members focused on curriculum envisioned a standing group of faculty and staff (with rotating membership) given the time and resources to advance their own environmental understanding and serve as resources (including public presentations) on environmental topics for the rest of the community. The ongoing efforts of that group, and the wider campus conversations on environmental stewardship, would build the foundations for the necessary curricular changes.

In terms of resources, this is a bold undertaking. If we are asking faculty and staff to rethink how environmental stewardship fits within the learning community of Gustavus, we need to provide the necessary time and resources for learning and developing new educational initiatives founded on that learning. Hence, we need to seek endowment funds on the order of \$5 million to provide the time (course release or summer funding) and development resources.

While this may seem like an extravagant undertaking, this commitment reflects the magnitude of the change that society needs to make to achieve sustainability. Furthermore, this kind of commitment will not only benefit our environmental initiatives, but will encourage a saner, more reflective campus intellectual environment. No doubt, many faculty and staff members who have strong environmental commitments have noted that work load pressures encourage unsustainable work habits—we will be at cross-purposes if we do not allow space for the change we seek.

The ultimate development of this curriculum effort presumes that the existing physical facilities (laboratories, equipment and classrooms) are adequate for the effort. One facility in particular, the Linnaeus Arboretum, is a distinctive symbol of our stewardship commitments as well as a valuable laboratory. As we seek to develop this environmental curriculum effort, an additional \$2.5 million should be raised to fully endow this facility.

This curriculum development tactic addresses none of the Gustavus environmental principles directly, but will ultimately be supportive of all of them. In particular, this tactic is necessary if our curriculum is more fully address mindful consumption and sustainable livelihoods—considering these issues truly represents a rethinking of business as usual for our students.

Tactic 4: Supporting the transition to more sustainable operations and infrastructure

Gustavus will transform its infrastructure and operations:

- a. By reducing its fossil fuel use and green house gas emissions to the greatest extent possible through monitoring, conservation and a shift to renewable energy sources.*
- b. By becoming more efficient with and conservative of material resources.*

To accomplish this, Gustavus will develop the necessary leadership structures and tactics through a process that invites community support and participation.

Relative to developing a campus-wide environmental stewardship mindset or a comprehensive environmental curriculum initiative, meeting objective standards of energy reduction or increased waste recycling seems like a refreshingly concrete task. But the necessary changes, particularly with regards to energy use, are not only daunting, but also vital to the goal of modeling the environmental future we want our students to lead.

In the working group deliberations focused on this tactic, there was need to set our sights on some initial targets to focus our efforts. The following are “starter” goals intended to direct us in the right direction—they will need to be modified as we proceed:

- i. A 50% reduction in greenhouse gas emissions by 2015 and with a 100% reduction by 2030.
- ii. A 50% reduction in municipal water use by 2030.
- iii. 100% recycling or reuse of waste materials by 2030.
- iv. Concurrent with i-iii, develop a purchasing policy that supports these goals and avoids shifting environmental impacts off campus.
- v. Planning all new infrastructure and facilities improvements with these goals in mind.

In terms of specific steps, a concerted effort is already underway in some areas. A draft report dealing with our energy use and greenhouse gas emissions has already been submitted to the Board of Trustees. The *Energy Use and Greenhouse Gas Emission Reduction Plan* is attached to this report. It gives a current picture of our energy use, outlines one strategy that will make a significant greenhouse gas emission reduction (wind turbines), and directs our attention to conservation and renewable energy investments that might have the most impact. We have also incorporated energy reduction and other environmental goals into the planning process of the new academic building.

In terms of material reuse and recycling, Gustavus already has good procedures for tracking waste and recycling, and a good history of diverting waste from the landfill. At the same time, we need to investigate purchasing approaches to reduce waste generation and improve the end use of materials diverted from the landfill—currently much of our

waste is used a refuse derived fuel—an improvement over land fills , but probably not the best possible end to our material cycle.

Setting goals is relatively easy. Developing the most effective approaches to achieve those goals requires a persistent effort. In some cases the change is relatively easy—the recent adoption of an Energy Star purchasing policy being one example. By contrast, the conversion to lower water use plumbing fixtures on campus takes more time if our staff does the conversion while other routine tasks compete for their time. In deliberating the necessary transformation, the working group members who focused on infrastructure and operations recognized the need for a comprehensive strategy that priorities the actions with the most value and gets them done expeditiously, even if that requires seeking outside help.

Hence, the most important tactical step is to form a small action group charged with a)refining and modifying the goals listed above; b)establishing a priority list of actions; and c)allocating internal resources to accomplish those actions or seeking outside support if internal resources cannot expedite priority tasks. This action group will also support the director of the JCEI in developing our greenhouse gas inventory and reduction plan under the American College and University Presidents Climate Commitment.

An integral part of the action group effort will also be determining the financial resources necessary and seeking funding approaches, while simultaneously reaching out to the whole campus community for support and cooperation.

In considering the composition of this action group, the working group considered options ranging from elected positions (good for getting broad representation and “buy-in”) to appointment by the Administrative Council (to ensure decision-making knowledge authority at the table). By position, the following individuals should be included:

Vice-President for Finance

Director of Physical Plant

Director of the Johnson Center for Environmental Innovation

Additionally, representation should be sought from the faculty, administrative professionals and other staff, students and the community. A working group suggests that the administrative council appoint the following representatives or to seek representatives from the appropriate bodies (Faculty Senate, Student Senate):

One faculty member

One administrative professional (with possible additional representation from the Advancement office staff

One staff member (representing the vital service functions on campus like custodial or dining service staff)

One student

One community member (possibly from the city utility)

Obviously, the action group's ongoing deliberations will determine the financial resources necessary for these efforts. There are, however, a set of actions/projects that are either underway or could be started in short order with a large potential impact:

- a. The acquisition of wind turbines (currently stalled by lack of available wind turbines). \$6.5 million.
- b. Energy conservation retrofits (lighting, controls, windows, and air conditioning). \$2 million⁵. In this area, the action group should investigate implementing an internal energy conservation investment fund for projects with demonstrated financial payback. The savings from initial projects would go back into the fund for investment in other projects. The intent would be to accelerate the adoption of energy and material efficiency.
- c. The upfront costs of the new academic building that enable it to achieve future energy savings. \$3 million (rough estimate). This effort can guide future new construction and renovations on campus.
- d. Research and exploration of other renewable energy sources for the campus. \$100K.

The main thrust of this tactic will be making greenhouse gas emission and energy reduction a priority. The success of this effort will also show a commitment to mindful consumption and to demonstrating how institutions can maintain themselves and the economic vitality they represent in sustainable ways.

Tactic 5: Exploring and developing patterns of sustainable livelihood that support environmental stewardship

Through the facilitation of the Johnson Center for Environmental Innovation, Gustavus students, faculty and staff will work with community partners to explore and develop patterns of sustainable livelihood that support environmental stewardship.

Although our immediate environmental stewardship approach is premised on modeling sustainable patterns in campus operations and infrastructure, we recognize that the wider economy that supports Gustavus is built on the unsustainable foundations of high material throughput and cheap fossil fuel energy. Gustavus Adolphus will not be a truly sustainable campus until those patterns change. Our students will not be able to lead sustainable transformations in their communities without new patterns of sustainable economic activity and living that extend beyond the campus.

Our current course offerings include many opportunities for service learning with community partners, but many of these are focused on supporting social service agencies and government programs. We also have many internship opportunities for students to learn how businesses function and to develop their skills in that arena. The tactic proposed here will develop opportunities to create new economic and business approaches that help our society steward the environment and support human livelihood.

⁵ The initial expenditures in this area would probably be for engineering analysis. This analysis would likely cause this rough estimate to be revised.

To do this, the JCEI will need to create opportunities for students to work on the entrepreneurial interface between our sustainability aspirations and existing economic structures⁶. As these are exploratory efforts to be tested in the context of our communities, a particular task of the JCEI will be creating the arrangements enabling our faculty, staff, and students to explore these endeavors with community partners as part of their education at Gustavus.

These might involve new methods for the deployment of distributed, renewable energy generation; or business plans that turn waste streams into usable products. The JCEI will directly provide the structure for some of these efforts, while providing support for other such partnerships connected to Gustavus.

The primary resource needed for this effort will be the ongoing endowment for the JCEI to provide the support for these projects. Assuming the ongoing success of multiple concurrent initiatives, future needs may include staff support. Hence, an ultimate endowment level of \$4 million will be necessary.

This tactic directly addresses the search for sustainable livelihood, but will also provide a learning opportunities for students that expand and enrich our environmental curriculum.

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⁶ For one articulation of this approach see the social business aspirations outlined by Muhammad Yunus in Creating a World Without Poverty: Social Business and the Future of Capitalism. Public Affairs, Perseus Books: Philadelphia, PA. 2007

sustainability. His approach is ardently “communitarian”—he argues that the struggle for sustainability and stewarding the environment will be won or lost in local communities.

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