

SUSTAINABILITY MASTER PLAN

University of the South

INTRODUCTION

Although “sustainability” can be variously defined, we understand it to describe both a vision and a principle of behavior that would allow others--throughout the globe and in future generations—not only to endure, but to enjoy as high a standard of economic security, health, and cultural satisfaction as we enjoy today. To realize this vision, on behalf of the entire biosphere, requires learning to live within limits. It also requires learning about and respecting the sustaining potential of ecological systems.

As an institution devoted to learning and the dissemination of knowledge, the University of the South is well positioned to contribute to this global project of pursuing sustainability. Our College of Arts and Sciences already encourages students to synthesize ideas and, as sustainability demands, to recognize interconnections among diverse spheres of knowledge. Our School of Theology is equipped to dramatize the role that ethics and spiritual discernment must play in learning to live sustainably.

Accordingly, members of this University here affirm their commitment to building a community in which sustainability is seen as a way of life, both collectively and individually, and to encourage development of a curriculum in which sustainability, broadly defined, has a prominent place. We commit not only to continue our engagement in sustainable practices and education but also to seek best use of our extensive land-base on the Domain to offer a model demonstration of how students can be trained in the principles and practices of environmental stewardship. These goals are supported by two official measures approved in recent years:

- A 2008 addendum to the University’s 2004 Strategic Plan calls for Sewanee to become a national leader in teaching about the environment and in living and operating sustainably. More specifically, it calls for the “academic integration” of sustainability into the curriculum and for a Sustainability Master Plan to set goals and measure progress.
- Our institutional endorsement of the national Presidents’ Climate Commitment, signed by Vice-Chancellor Cunningham in 2007, includes a plan to reduce our carbon emissions to net zero, a challenging task for any institution to undertake.

Such statements coincide with positions articulated by the Episcopal Church, which affirms that “Our faith calls us to consider the impact of our present actions on future generations, other creatures and the earth.” The Church has likewise endorsed the United Nations’ Millennium Development Goals, one of which is to “ensure environmental sustainability.” Moreover, the University intends to educate students, as it declares in its own Purpose Statement, “to live with grace, integrity, and a reverent concern for the world.” And Sewanee is one of the nation’s few collegiate institutions, large or small, that possesses a Center for Religion and Environment in which questions linked to the spirituality of sustainability can be entertained.

To progress toward achieving the ambitious goals outlined in this Plan, we must imagine sustainability becoming so integral to the spirit of this institution that it permeates all aspects of

campus life, from individual behaviors to institutional decisions regarding greenhouse gas emissions, investment strategies, land management, and building design. Students, who often play a key role in defining Sewanee's identity and initiatives, can be expected to participate fully in such decision-making.

This Master Plan represents the ongoing work of many people at Sewanee, and has been reviewed by several different constituencies. As sustainability is by its nature interdisciplinary, responsibility for developing sustainable practice lies not with any single department or division but with every member and constitutive group within this campus community. Implementing the plan will require a broad range of skills, expertise, and interests. The Office of Environmental Stewardship sees its primary role as that of catalyzing and helping to inform actions undertaken by others. This office stands ready to encourage ongoing discussion about sustainability, and to help individuals and groups across campus discover for themselves how best to promote sustainability as part of what they do. Just as the pursuit of sustainability is an adaptive, dynamic process, so is this document. It represents not a definitive statement, but a starting-point for further exploration and dialogue. As social and ecological realities, technologies, and other contexts change over the coming years, so should actions taken in response to the goals set forth in this plan.

STRATEGIC GOALS

1. Complete the implementation of the 2008 Strategic Plan Addendum's call for excellence in sustainability and the study of the natural environment.
2. Commit to going beyond carbon neutrality and becoming a significant carbon absorber using a three-pronged approach:
 - a. Deep energy conservation
 - b. Extensive renewable energy generation
 - c. Evaluation of the potential for carbon sequestration in Domain forests.
3. Galvanize and transform the University and the community by launching and executing a "Sustain Sewanee" campaign –a mission to achieve a "Gold" rating from the Association for the Advancement of Sustainability in Higher Education (AASHE) as part of their STARS (Sustainability Tracking, Assessment & Rating System™) program by 2015.
4. Promote sustainability goals in all divisions of the University and in the career development and work expectations of all employees.
5. Promote sustainability throughout and beyond the curriculum to empower and facilitate a student body literate and focused on pressing issues of sustainable living.
6. Utilize the University's land base and its management to establish the University as an exemplar of responsible land stewardship both among universities and on the southern Cumberland Plateau
7. Critically reexamine the university's investment strategies, engaging in a dialog of how our investment portfolio can best reflect institutional values

OPERATIONAL GOALS

A. Energy and Carbon Neutrality

As per our commitment to become carbon neutral by 2016, Sewanee has dedicated itself to a multiple pronged strategy for responsible energy use and decreasing our carbon footprint. With an engaged community, increasing technical expertise, and bountiful carbon-offset resources, Sewanee can meet its affirmed goal of being a leader in energy conservation and generating awareness of climate change related issues.

1. Quantify and reduce greenhouse gas (GHG) emissions.
2. Conserve electricity and natural gas consumption in University facilities.
3. Install renewable energy systems.
4. Explore the potential of carbon sequestration and offset programs on and off the Domain.

B. Food

Through our self-operating dining program and Sewanee Farm initiative we have a unique opportunity to prioritize whole, fresh, local and/or organic foods; minimize food and energy waste in dining services and establish the dining hall and farm as places for learning about food, nutrition and sustainability.

1. Promote nutrition and sustainability as two key guiding principles for food purchasing and preparation policies at the University's dining facilities.
2. Optimize waste management, composting, and energy conservation within dining services.
3. Expand agriculture on campus and implement the Farm Plan.

C. Materials Management

At Sewanee we want to foster a climate of responsible consumption of material goods that focuses on sourcing of products, their use, reuse, and proper disposal with the long-term goal of achieving "cradle to cradle" usage of materials.

1. Make strategic purchasing decisions, assessing products' sustainability through social, economic, and environmental lenses.
2. Reduce consumption by departments, offices, and individuals in order to achieve institutional material efficiency.
3. Promote a culture of reusing and repurposing materials.
4. Improve the effectiveness of campus recycling.
5. Reduce weight and overall volume of solid waste leaving campus.
6. Reduce bottled water distribution and consumption.

D. Water

The University and the surrounding community is endowed with ample clean drinking water collected and stored in two rain-fed reservoirs with watersheds almost entirely within the jurisdiction of the University. It is of utmost importance that we maintain the quality of our water and focus on environmentally sound storm water management practices to minimize negative impacts on local and regional water.

1. Promote campus water conservation.
2. Implement effective stormwater management measures with all new campus construction.
3. Maintain and protect the integrity of the watersheds around Sewanee's three drinking-water reservoirs.

E. Transportation

Vehicles have a major presence on University grounds. Through these initiatives, we hope to reduce our vehicle use, total emissions, and raise awareness of the impact our community's transportation choices have upon the environment.

1. Reduce the carbon footprint of the University fleet.
2. Promote commuting practices and parking policies to reduce vehicle use on campus.
3. Support and incentivize walking and biking on campus.

F. Built Environment

More than 83% of Sewanee's greenhouse gas emissions result from existing structures, those newly constructed, and the maintenance of the surrounding landscape. The Built Environment also impacts the natural environment through chemical, noise, and light inputs. We seek to minimize these impacts through careful design, management and planning.

1. Design all new and renovated buildings using LEED or LEED equivalent standards.
2. Create a set of guidelines for environmentally-sensitive landscaping and pest management.
3. Create a policy codifying best practices for cleaning and utilization of buildings.
4. Incorporate smart growth and sustainability measures into all University land-use planning.

G. Natural Area Stewardship

Our land base is a defining feature of Sewanee and represents a strategic and integral part of the educational mission of the University. We seek to promote sustainable land stewardship through strategies of adaptive management that promote and protect ecological values including biodiversity and ecosystem services in the context of a working educational landscape.

1. Identify, map, and monitor ecological communities and rare species of the Domain and implement protection strategies as necessary.
2. Promote environmentally sensitive recreational use of the Domain.

3. Assess, monitor, and promote awareness of the unplanned exploitation of plant and animal species.
4. Manage deer population so as to mitigate impacts of overbrowse.
5. Limit the ecological impact of invasive species.
6. Demonstrate the sustainable harvest of wood products for inclusion in new construction projects to partially offset forest product use on campus.
7. Identify areas of the Domain as potential candidates for restoration projects or zones for intensive management activities.
8. Mitigate the effects of land use and management on the Domain's cultural resources.
9. Provide leadership on environmental stewardship and sustainability issues beyond the University.

H. Investment Management

The way an institution manages its endowment is a vehicle through which it can espouse and promote institutional values. We seek to engage in a University wide discussion about current investment holdings, their relationship to institutional values and how investment strategies may be rethought and redirected in the future with a focus on sustainability. A revolving fund is a key component to Sewanee's ability to afford and invest in capital intensive sustainability projects such as energy conservation and alternative energy production.

1. Engage the University in a discussion about socially responsible investment strategies
2. Establish a revolving fund to support energy conservation and other sustainability measures.

I. Student Activities and Engagement

At the heart of Sewanee's commitment to sustainability, are the opportunities for engagement that we provide students at the curricular and co-curricular levels. Sewanee's model for catalyzing sustainability efforts and tracking their success will be dependent on the sustained involvement of student leaders each year. Leadership on campus from a "green corps" of interns, undergraduate and post-baccalaureate fellows will be a key to this success.

1. Provide co-curricular student leadership opportunities relating to environmental stewardship and sustainability through the creation of undergraduate and post-baccalaureate fellowships
2. Improve sustainability literacy within the student body.
3. Work with relevant faculty groups to evaluate ways to integrate the study of sustainability into the curriculum at the course and or programmatic level. If appropriate, seek formal recognition of a course of study through a certificate or a minor in sustainability.
4. Work with the Sewanee Outreach Office and the Community Engaged Learning program to provide and support opportunities for students to engage in community level sustainability projects locally and abroad.
5. Incorporate an introduction to Sewanee's sustainability commitment into the new student orientation process.

POTENTIAL OPERATIONAL STRATEGIES

The following list represents a current collection of ideas for how the goals articulated above might be achieved. These suggestions, as well as any ideas later suggested as refinements or replacements, will undergo close evaluation before implementation. This evaluation will include a consideration of viability, cost-effectiveness, and consonance with overall University activities.

A. Energy and Carbon Neutrality

1. Quantify and reduce greenhouse gas (GHG) emissions.
 - a. At least every two years, inventory and report GHG emissions using the CleanAir-Cool Planet (CA-CP) method.
 - b. Update our Climate Action Plan annually and publicly post on AASHE website.
2. Conserve electricity and natural gas consumption in University facilities.
 - a. Reduce carbon emissions due to facility energy consumption by 10% (vs. a 2008 base year).
 - b. Reduce emissions an additional 15% by a deep energy conservation program employing less wasteful operating procedures, behaviors, and more efficient systems.
 - c. Evaluate prospective energy conservation and efficiency capital improvement projects on the basis of life-cycle cost/benefit analysis.
 - d. Develop a Sewanee-Plus Energy Conservation Manual that serves as a road map for detailed energy conservation planning.
 - e. Use the average Return on Investment (ROI) from the University's endowment investments as a benchmark for judging the desirability of energy conservation retrofits. Look favorably on projects that equal or exceed this ROI.
 - f. Establish an action-oriented facilities energy committee that meets frequently to guide ongoing implementation of energy conservation measures. Ex officio membership should include PPS mechanical supervisor, PPS electrical supervisor, director of sustainability integration, with other faculty, staff and student representatives.
 - g. Maintain a comprehensive utility bill database of historical and current energy usage (e.g. the Energy Watchdog system currently in use).
 - h. Upgrade building envelopes: insulation, weatherstripping, window replacements, door closers, etc. in accordance with the Sewanee-Plus Energy Conservation Manual.
 - i. Upgrade lighting systems: delamping, occupancy/daylighting controls, migration to more efficient lamps especially LEDs, dimming, etc. in accordance with the Sewanee-Plus Energy Conservation Manual.
 - j. Broadly implement HVAC controls strategies and policies: space temperature limits, unoccupied/shoulder season setback optimization, kitchen hood smoke sensing controls, etc. in accordance with the Sewanee-Plus Energy Conservation Manual.
 - k. When installing or replacing HVAC systems: select the most energy efficient systems/units consistent with performance and durability; especially look for an opportunity to install a geothermal well system to improve HVAC efficiency.
 - l. Establish a University policy for office and classroom computer hibernation.
 - m. Establish and keep current a database of all energy conservation projects, showing energy and cost savings and paybacks.
 - n. Conduct a study of vending machine use across campus with the goal of reducing the number of vending machines on campus. Part of the study should include retrofitting existing machines with motion-sensored lighting and other energy efficiency measures.
 - o. Measure and display data (in real time) of energy usage in University buildings to increase awareness and understanding and to incentivize energy conservation.

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3. Install renewable energy systems.
 - a. Conduct an independent comparative feasibility study, leading to a Campus Renewable Energy Plan, of solar (PV and thermal), wind, and biomass to determine the optimum blend for generating renewable energy on the Domain.
 - b. Using the Snowden PV system performance as a pilot, develop a master plan for the installation of additional solar PV systems for both individual buildings and larger installations (including a community solar farm allowing ownership participation by community members).
 - c. Evaluate the potential for reducing net carbon emissions using woody biomass for energy. Consider the pre-feasibility study completed by the Biomass Energy Resource Center.
 - d. Collect data on annual wind power potential in Sewanee and develop a master plan for the installation of wind energy generation systems over the next ten years.
 - e. Implement sufficient renewable energy generation to meet campus carbon net absorption goal.

4. Explore the potential of carbon sequestration and offset programs on and off the Domain.
 - a. Estimate the Domain's carbon stocks and sequestration rates and consider the verification, registration, and retirement of Domain based offsets.
 - b. Evaluate the feasibility of participating in carbon offset projects elsewhere (e.g. Haiti) with the vision of purchasing offsets from partner organizations.
 - c. Establish direct student involvement in offset programs by partnering Sewanee and Haitian students to monitor and evaluate offset generation.

B. Food

1. Establish nutrition and sustainability as two key guiding principles for food purchasing and preparation policies at the University's dining facilities.
 - a. Take a clear stand on the importance of nutrition and sustainability in its food services in the form of a policy statement.
 - b. Renegotiate/rebid food service contract or move to self-operation.
 - c. Increase the percentage of local, organic, and otherwise environmentally responsible food served in the dining hall to 20% and provide signage to inform students. Create a plan of specific increases over specific time. Build a strong relationship with local growers.
 - d. Consider ways for students with a deep interests in the intersections of food, agriculture, and sustainability to have the opportunity for arrangements affording them more control over their food, especially focusing on groups and communities.
 - e. Institutionalize student involvement in food purchasing decisions and educational activities related to nutrition and sustainability.

2. Optimize waste management, composting, and energy conservation within dining services.
 - a. Institutionalize delivery of compost from dining services and put to use in the student garden, campus planted areas, and Farm.
 - b. Monitor food composting activity to develop the best mechanism for encouraging aerobic decomposition.
 - c. Conduct educational campaigns on waste-reduction for diners to minimize food going to the landfill.
 - d. Work with dining services to create a sustainability module to be incorporated quarterly into dining hall staff training.
 - e. Critically review the culture of catered events on campus, looking for opportunities to reduce waste.
 - f. Explore how to reduce and capture waste for compost from all the University's food operations: McClurg, SoT, Globe, Pub, Stirling's, and catered events.
 - g. Examine the quantity and quality of waste oil from kitchens for potential biofuel uses.

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- h. Research and perform cost-benefit analyses on equipment that could be used to optimize amount of compost and the effectiveness of the composting process for dining hall waste.
3. Expand agriculture on campus and implement the Farm Plan.
 - a. Appoint a University Farm Manager and convene a farm advisory committee.
 - b. Develop and enlarge the student organic garden in its present location. Purchase needed equipment and supplies.
 - c. Initiate infrastructure developments (including the renovation of the Old Dairy and the Old Barn) to establish a University Farm that produces both vegetables and animal products to be served in the dining hall.
 - d. Provide food preparation and preservation facilities to support the Farm operation that can be used by classes, student groups and Farm personnel.
 - e. Study Cheston Farm West as a place for sustainable livestock grazing and weigh alternative uses.
 - f. Initiate infrastructure development at Cheston Farm East to allow for continued use (either by the University Farm or by lessees).
 - g. Establish a farm apprenticeship program to provide educational opportunities in sustainable agriculture as well as practical experience on the farm during the regular academic year and the summer.
 - h. Continue to develop a summer internship program with the Cumberland Farmer's Market.
 - i. Integrate apprenticeship/internship program with residential life and with other sustainability efforts through a Sustainable Living Community "dorm."
 - j. Begin installation of edible landscaping projects in central campus with interpretive information.
 - k. Initiate Heirloom Seed Saving project in a designated garden space.
 - l. Develop an agroecology curriculum for the apprenticeship program and to facilitate visitation by a wide range of interested classes. Include demonstration level farm projects to enhance depth of education and the visitor experience.

C. Materials Management

1. Make strategic purchasing decisions, assessing products' sustainability through social, economic, and environmental lenses.
 - a. Establish an ad-hoc purchasing committee with key stakeholders such as Dining Services, athletics, PPS-Custodial, PPS-Grounds, PPS-Facilities, Print Services, and Auxiliary Services and Purchasing.
 - b. Identify current purchasers and their existing purchasing volumes and strategies.
 - c. Establish a Green Purchasing Policy with the goals of utilizing environmentally friendly products and services.
 - d. Encourage annual review of supply purchasing by departments prior to budget setting in the fall.
2. Reduce consumption by departments, offices, and individuals in order to achieve institutional material efficiency.
 - a. Beginning with paper, identify key materials for concentrated efforts in materials reduction and establish goals, working towards a comprehensive materials reduction plan.
 - b. Consider the establishment of printing quotas for students based on data about average semester printing figures, implementing financial disincentives when quotas are exceeded.
3. Promote a culture of reusing and repurposing materials.
 - a. Establish a reuse center for materials generated from deconstruction, remodeling, and new construction to be used by the University and the community.
 - b. Establish protocols for capturing reusable items from annual dorm move-out for distribution to local non-profits and thrift stores.

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- c. Collaborate with Hospitality Shop to improve visibility and use by students.
4. Improve the effectiveness of campus recycling.
 - a. Establish and maintain appropriate and adequate recycling bins at campus buildings and grounds.
 - b. Update guidelines for recycling and continue education efforts on recycling expectations for campus groups, departments, and individuals.
 - c. Establish protocol for recycling and composting at large campus-wide events including Greek events, sporting events, alumni events, and commencement.
 - d. Improve planning and execution of “zero-waste events,” ensuring that materials generated (especially compostable flatware, cups, and silverware) can be properly managed and disposed.
 - e. Conduct at least three large-scale, University-wide zero-waste events annually, with the long-term goal of institutionalizing zero-waste at all events.
 - f. Review existing policy on Electronic Waste Recycling (and other potentially hazardous items) with appropriate University offices to clarify present procedures and incorporate best practices.
 - g. Quantify recycling loads leaving campus by way of Franklin County Recycling.
5. Reduce weight and overall volume of solid waste leaving campus.
 - a. Establish protocol for measurement of solid waste utilizing available records and additional weight records.
 - b. Based on measurement data, set and work towards reasonable target goals for waste reduction through changes in materials purchasing and practices.
6. Reduce bottled water distribution and consumption.
 - a. Conduct study on feasibility of banning individual bottled water on campus, exploring possibilities including an independent campaign as well as third party assistance from groups such as Thinking Outside the Bottle.

D. Water

1. Promote campus water conservation.
 - a. Consider feasibility of wastewater reuse systems.
 - b. Consider feasibility of wetland filtration systems.
 - c. Maintain all water fixtures on campus (faucets, shower heads, urinals, toilet tanks/valves) at the lowest flows that provide acceptable service. Diligently monitor the market for new technological developments in this area.
 - d. Operate irrigation systems on athletic fields so as to minimize water usage.
2. Implement effective stormwater management measures with all new campus construction.
 - a. Identify specific existing locations where appropriate stormwater management systems such as rain gardens, pervious pavement, and bioswales could be installed and retrofitted.
 - b. Based on results of the study, install stormwater management systems such as rain gardens, pervious pavement, and bioswales where deemed appropriate.
 - c. Research the feasibility of green roofs on a retrofitted existing roof or new construction.
3. Maintain and protect the integrity of the watersheds around Sewanee’s three drinking-water reservoirs.
 - a. Protect water supply by maintaining land within watersheds as undeveloped, non-agricultural forestland, utilizing GIS to monitor land use in those watersheds.

E. Transportation

1. Reduce the carbon footprint of the University fleet.
 - a. Reduce the overall carbon emissions by University fleet vehicles by 10% per year, ultimately reaching a 50% reduction.
 - b. Inventory the current carbon emissions by the institution's fleet by vehicle type.
 - c. Increase the efficiency of the fleet by downsizing and substituting lower carbon-emitting vehicles to reduce emissions.
 - d. Reduce total miles driven by fleet vehicles.
 - e. Convert at least one vehicle to biodiesel from fuel sources on campus (fry oil, biomass waste, etc).
 - f. Diversify University motor pool vehicle types per 2012 Provost Motor Pool Assessment.
 - g. Convert all motor pool vehicles to synthetic oil.
 - h. Consider including non-motorized vehicles, especially bikes, in the campus motor pool.

2. Promote commuting practices and parking policies to reduce vehicle use on campus.
 - a. Use surveys to determine the current practices of student vehicular commuting and isolate potentials for more sustainable commuting practices.
 - b. Incentivize carpooling and other measures to reduce student vehicular commuting by 50%.
 - c. Use surveys to determine employees' primary methods for commuting including by vehicle (determining number of vehicle occupants), motorcycle/scooter/moped, bicycle, or other means.
 - d. Develop promotional materials to encourage sustainable commuting among faculty and staff.
 - e. Creative incentivized system for students to not bring vehicles to campus with the goal of reducing the number of student vehicles.
 - f. Limit the construction of new parking lots through incentives for not bringing vehicles and promotion of existing periphery parking lots.
 - g. Incentivize the use of high efficiency, compact, and otherwise environmentally responsible vehicles by providing more convenient spaces for those vehicles.
 - h. Explore opportunities with ZipCar (or similar) to establish a workable car-share program on campus.
 - i. Investigate student ride sharing program.
 - j. Implement and enforce a no-idling policy for university vehicles and visiting busses (as resolved by the Sewanee Community Council).
 - k. Study how to reduce carbon emissions from University business air, bus, and van travel.

3. Support and incentivize walking and biking on campus.
 - a. Create a focus group of concerned parties from within the university and the broader community to discuss and determine the needs of the Sewanee biking community.
 - b. Plan for a connected system of bike lanes, bike paths, and bike racks throughout and between the major focus zones of Sewanee based on focus group recommendations.
 - c. Formalize and construct a trail from the School of Theology to the Town.
 - d. Construct secure indoor bike storage, shower facilities, and lockers for bicycle commuters in at least one building.
 - e. Research the feasibility of a bike-sharing program.

F. Built Environment

1. Design all new and renovated buildings using LEED or LEED equivalent standards.
 - a. Design all new and renovated buildings (for projects over \$200,000 construction budget) to minimum LEED silver equivalent and to LEED gold equivalent when reasonably achievable.
 - b. Design at least one building to LEED platinum equivalent.

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- c. Design all new and renovated buildings to standards established in a published *“Sewanee Green-Plus Building Standards.”*
 - d. Assess noise and light pollution and mitigate through changes in design and practices.
2. Create a set of guidelines for environmentally-sensitive landscaping and pest management.
 - a. Sustainably maintain landscaping without sacrificing aesthetic and practical values by Create an explicit set of guidelines for landscaping and pest management with a particular focus on issues relating to chemical use and watershed protection, water conservation and controlling exotic species.
 - b. Create an ongoing education program for groundskeepers and maintenance personnel for best practices.
 - c. Increase town and campus urban canopy coverage and diversity, giving preference to native species over exotics.
 - d. Calculate and reduce total GHG emissions resulting from landscaping practices
 - e. Create GIS map of landscape assets and practices—turf area, agricultural area, mowing frequency, irrigation zones, and zones of chemical application.
 - f. Reduce mowed areas by 25 % and consider additional reductions in mowed areas and frequencies.
 - g. Strategically plant trees and shrubs to increase the energy efficiency of buildings.
 - h. Provide the most environmentally sound snow and ice removal practices by implementing sand-only policies for steps and high risk areas, brush or blow only policies for sidewalks, and by working with Franklin County to reduce salt use on roads during winter weather events.
 - i. Eliminate purchased mulch and utilize the organic waste collected from groundskeeping (leaves, grass clippings, woods chips from fallen trees) to be converted into compost and mulch.
 - j. Golf Course
 - i. Develop a maintenance and management plan for the golf course that ensures the course will be maintained in an exemplary and sustainable fashion – with a particular focus on its impact on the water quality of the surrounding watersheds.
 - ii. Join a voluntary environmental stewardship program such as the Audubon Sanctuary Program run by jointly by the USGA and National Audubon Society.
 - iii. Provide ongoing training for groundskeepers through integrated pest management classes provided by organizations such as the Audubon Society or the Golf Course Superintendents Association of America (GCSAA).
 - i. Document and reduce sedimentation and runoff from equestrian center pastures and facilities and increase effectiveness of pasture management to reduce needs for outside feed and pasture inputs.
 3. Create a policy codifying best practices for cleaning and utilization of buildings.
 - a. Schedule the use of spaces to maximize utilization ratios including the concentration of summer programs in residence halls to allow whole buildings to be empty.
 4. Incorporate smart growth and sustainability measures into all University land-use planning.
 - a. Incorporate into future campus planning measures, language that demonstrates how the University will prevent degradation of ecological values in all areas of growth and development (e.g. new buildings, increase in student body size, parking lots, roads, etc.) and by doing so create a model of sustainable growth management.
 - b. Promote mixed-use design to encourage increased community interaction and pedestrian use.
 - c. Any plan (campus, downtown, residential, or otherwise) must be held accountable for meeting the University’s overall sustainability goals and objectives.

G. Natural Area Stewardship

1. Identify, map, and monitor ecological communities and rare species of the Domain and implement protection strategies as necessary.
 - a. Identify and map the ecological communities of the Domain to provide a baseline understanding of communities to guide Domain stewardship.
 - b. Establish long-term monitoring plots within each ecological community on the Domain.
 - c. Perform surveys to identify rare, endangered, or threatened species and rare and exceptional habitat.
 - d. Identify, monitor, and report on indicator species and other variables of forest ecology for ecosystem function and success in management for biodiversity.
 - e. Include specific language on how to promote species and habitats of concern in future land management plans and decisions.
 - f. Establish a management plan for utility corridors in conjunction with utility companies agreeable to both parties that balances ecological values with economically feasible maintenance of utilities. This involves the university taking a more significant role in managing utility corridors.
2. Promote environmentally sensitive recreational use of the Domain.
 - a. Evaluate and make accessible rules and regulations for recreational use relative to protecting ecological values and ensure accessibility to the public.
 - b. Education on sustainable use and responsible recreation incorporated into new student orientation programming.
3. Assess, monitor, and promote awareness of the unplanned exploitation of plant and animal species.
 - a. Assess and subsequently monitor the impact of exploitation on plant and animal species, focusing on quantifiable impacts like road mortality and wildflower poaching.
 - b. Maintain and promote awareness of these issues in Messenger and on OESS website.
4. Manage deer population so as to mitigate impacts of overbrowse.
 - a. Reduce deer populations across the Domain to state recognized densities for our region and maintain balanced sex ratio and age classes through judicious use of hunting.
 - b. Document changes in plant communities as indicators of the ecological effects of deer browse across the Domain.
5. Limit the ecological impact of invasive species.
 - a. Complete an exotic species report assessing notable exotic plant and animal species, their distribution across the Domain, and the potential extent of their threat to ecological values. Report also should delineate an eradication plan for each species.
 - b. Continue to maintain GIS database of exotic species control across the Domain quantifying successes and areas for improvement.
6. Demonstrate the sustainable harvest of wood products for inclusion in new construction projects to partially offset forest product use on campus.
 - a. Assess the ecological implications for using forest ecosystems on the Domain for the purposes of carbon sequestration as outlined in the “Energy and Carbon Neutrality” section.
 - b. Assess feasibility and consequences of offsetting pulp and paper consumption with Domain harvests.
 - c. Establish baseline percentage of Domain harvested woods for inclusion in new construction projects.
7. Identify areas of the Domain as potential candidates for restoration projects or zones for intensive management activities.

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- a. Identify areas of the Domain as potential candidates for restoration projects and consider these areas as zones for intensive management activities (pine plantations, borrow pits, logging roads, etc.) and establish criteria for successful and sustainable restoration.
 - b. On a project by project basis, evaluate potential use of Domain resources for quarrying and mining. In instances when Domain resources are not used, consider the sustainability implications of sources utilized for materials.
8. Mitigate the effects of land use and management on the Domain's cultural resources.
- a. Include in Freshman Orientation a brief talk about the cultural history of the region and the importance of protection followed by brief discussion in small groups of what it means to be a steward of these resources on the Domain (this can include cultural as well as natural resources).
 - b. Meet with all Outing Program (SOP) leaders at the start of the school year to present the same talk and discussion.
 - c. All ground disturbance activities proposed on the Domain must go through a proposal process through the DSC.
 - d. Inventory the existing archaeological collections so that we can meet our obligations as a "federal museum" and we can facilitate student/faculty research.
 - e. Develop interdisciplinary collaborative projects addressing research questions on the Domain that are directly related to environmental reconstruction and human land use.
 - f. Pursue external funding for these undergraduate research projects following initial pilot studies like those formally or informally underway at King Farm, the Cook Site and surrounding area.
 - g. Integrate the history and prehistory of the Domain into courses across the curriculum including History, Literature, Biology, Anthropology, Environmental Studies, etc.
 - h. Conduct needed data recovery projects as either class projects or during the Summer Archaeological Field School. Planning and notifying the University Archaeologist is essential for this to be carried out and construction schedules not to be affected.
9. Provide leadership on environmental stewardship and sustainability issues beyond the University.
- a. Work with other conservation organizations to connect the Domain to other protected areas in the region, focusing particularly on natural areas on the Cumberland Plateau.
 - b. Develop a comprehensive GIS for the South Cumberland Region.
 - c. Hold a series of expert meetings to develop criteria for future conditions in each focal area as laid out by "Cumberland Voices."
 - d. Provide training and support to conservation professionals, land managers, and local stakeholders for application of information and tools.
 - e. Hold meetings, workshops, and field events to promote sustainable land management and the conservation of ecological values. Use the Domain to promote exemplary land stewardship within the region.

H. Investment Management

1. Engage the University in a discussion about socially responsible investment strategies.
 - a. Increase transparency of the endowment to make university investment holdings publicly available.
 - b. Establish a permanent committee on investor responsibility composed of students, faculty and administrators to facilitate dialog about investment strategies.
 - c. Evaluate University holdings in stocks and assets and their relationship to our institutional commitment to the environment and other values.
 - d. Develop guidelines for evaluating investments with a sustainability lens.

- e. Facilitate institution-level discussion about the implications of investment holdings in fossil fuels and other potentially environmentally or socially problematic industries.
2. Establish a revolving fund to support energy conservation and other sustainability measures.
 - a. Establish a Phase I revolving fund with \$150,000 seed money to support an annual competition of sustainability projects submitted broadly by all stakeholder groups.
 - b. Establish a larger, Phase II revolving fund for funding more capital intensive projects. Roll 100% of savings back into the fund to be used for further investment in deeper energy conservation and renewable energy investments until long-term carbon emissions and energy goals are met.

I. Student Activities and Engagement

1. Provide co-curricular student leadership opportunities relating to environmental stewardship and sustainability through the creation of undergraduate and post-baccalaureate fellowships.
 - a. Permanently fund fellowships.
 - b. Work with students to establish a board of student sustainability leaders that to run programming, the revolving fund, and other facets of sustainability life on campus.
 - c. Identify, promote and seek funding for internship opportunities in all facets of sustainability both on and off campus.
2. Improve sustainability literacy within the student body.
 - a. Generate and conduct a survey to assess and track student awareness of and engagement with sustainability issues on an ongoing basis, engaging students by cohort.
 - b. Use data from a sustainability survey to better inform a system of incentives encouraging sustainability literacy and quantifiable changes in behaviors across the student body.
 - c. Develop and seek funding for a year-round speaker series highlighting local, regional and global sustainability issues and efforts.
3. Work with relevant faculty groups to evaluate ways to integrate the study of sustainability into the curriculum at the course and or programmatic level. If appropriate, seek formal recognition of a course of study through a certificate or a minor in sustainability.
 - a. Develop and launch certificate program.
 - b. Develop an Introduction to Sustainability course to serve as the foundation for the certificate program.
 - c. Identify sustainability-related and sustainability-focused courses, isolating learning objectives within existing courses in each department.
 - d. Facilitate the development of learning objectives in courses where previously not present.
 - e. Incorporate sustainability education into first-year programming through a sustainability module, guaranteeing exposure to every student.
 - f. Incorporate the development and implementation of this plan into the curriculum through class projects, individual research and as a case study in the process of sustainability policy-making.
4. Work with the Sewanee Outreach Office and the Community Engaged Learning program to provide and support opportunities for students to engage in community level sustainability projects locally and abroad.
 - a. Work with key players on campus to develop the interface of sustainability and community engagement.
 - b. Implement a program to offset our emissions by implementing projects that reduce GHG emissions in the local community, e.g. the Utility Conservation Program offered through the Outreach Office.

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- c. Host seminars, workshops, and presentations on energy conservation and sustainability targeting surrounding community and local schools.
 - d. Maintain and promote Sustainability-themed outreach trips (Costa Rica, Jamaica, and Haiti) and explore potential for expanding sustainability focus.
 - e. Establish direct student involvement and create learning opportunities through offset programs by partnering Sewanee and Haitian students to monitor and evaluate offset generation.
 - f. Host a community charrette about sustainability to foster a meaningful dialogue between the University and the surrounding community.
 - g. Continue to support and provide a location for the Cumberland Farmer's Market.
 - h. Make an effort to place community members on various working groups of the Sustainability Committee to ensure grassroots and community-focused input.
 - i. Integrate sustainability outreach into opportunities for Canale and Bonner scholars
 - j. Establish Home Construction workshop and Builder consortium for local architects, contractors, etc. to promote green building practices.
 - k. Establish regional programming for agricultural practitioners to meet, to plan and to train based on the academic program and Farm. The dining hall serves a similar function to chefs.
5. Incorporate an introduction to Sewanee's sustainability commitment into the new student orientation process.
 - a. Continue to be a mandatory part of Freshman Orientation, encouraging sustainability literacy and defining how students can immediately become part of sustainability at Sewanee.
 6. Additional engagement strategies to consider:
 - a. Run a Sustainability film series.
 - b. Continue and improve our Green Pledge dinner, increasing attendance by 25% in next 5 years.
 - c. Utilize pre-existing Greek system framework to promote recycling and other sustainability initiatives as a vehicle to change existing campus social culture.
 - d. Promote and increase number of sustainability-related dorm activities and programming.
 - e. Continue and improve dorm energy competitions.
 - f. Continue to support, promote, and provide resources for the Forestry and Geology Club, Sewanee Green Action, Responsible Investment Club, EarthKeepers, Team Compost, Natural History Society, and other student organizations related to sustainability currently in operation or that may arise in the future.
 - g. Promote co-curricular engagement in the student residential experience by supporting sustainability-oriented theme housing.
 - h. Establish an annual sustainability-themed Spring Break or Fall Break trip.
 - i. Expand existing relationships with the Sewanee Outing Program and Outreach Office through shared trips and outreach opportunities with a sustainability focus.
 - j. Continue to support and promote cosponsoring and cooperation between on-campus sustainability clubs and initiatives with ally organizations.
 - k. Support and promote cosponsoring and cooperation between on-campus sustainability clubs and initiatives with ally off-campus organizations and peer institutions.
 - l. Continue to promote dialogue between different sustainability-related student groups while also establishing an engaging educational experience (currently Green Convene).
 - m. Create a more involved, engaged and incentivized way to promote the Environmental Residents program.
 - n. Create a Green Office Certificate program following guidelines outlined by the Alliance to Save Energy.
 - o. Promote and expand alumni network for internships and job opportunities for current and graduating student.

Communications and Support

1. Develop tools and strategies for conveying a sustainability message to and beyond the University community.
2. The Greening of Admissions: partner with admissions staff to convey a message of sustainability to prospective students.
3. Create an annual training program for admissions counselors, educating them and updating them on current sustainability measures and distribute FAQ sheets as continuing reminders of sustainability efforts.
4. Feature sustainability more prominently in admissions publications.
5. Make sustainability a part of prospective students' first experiences of Sewanee, creating sustainability-oriented programming for prospective student preview weekends.
6. Create a sustainability kiosk—a display presenting information to independent visitors and serving as a reminder to tour guides, admissions counselors, current students, etc.—to be displayed in Spencer Hall, but eventually to move to a new student center.
7. Develop a website for the Office of Environmental Stewardship and Sustainability as a location to consolidate, promote, and present campus sustainability efforts and stories.
8. Promoting Sewanee's sustainability efforts:
 - a. Participate in Sustainability surveys not as a means to prove our sustainability but to avoid unnecessarily low rankings.
 - b. Use existing resources within the community (Mountain Messenger, Sewanee Purple, public forums) to promote sustainability efforts and communicate possibilities for individual efforts.
 - c. Connect publications to sustainability. Domain and Sewanee specific publications (like the Flora of the Domain, butterfly guidebook, hiking guides, Domain Management Plan) that relate to sustainability efforts should be branded as connecting to sustainability efforts.
 - d. Use special events like Earth Day and Arbor Day as an avenue for OESS to promote sustainability to a larger audience.
9. Found a Sewanee Sustainability Affiliates Association—an organization comprised of faculty, staff, alumni, and other Sewanee affiliates—for the purpose of networking professionals with similar interests and as a means to connect and empower students seeking to enter sustainability-related fields.
10. Use existing and develop new avenues of communication to highlight the unique sustainability efforts going on at Sewanee, especially our approach to becoming a net carbon absorber.
11. Develop a documentary featuring the past work of Sewanee's Landscape Analysis Lab in promoting sustainable forest management and conservation on the South Cumberland Plateau.
12. Produce an annual "Sustainability Progress Dashboard" presenting progress in the implementation of this master plan and describing new and ongoing sustainability initiatives.
13. Develop a plan to identify staffing needs necessary to implement and support this Sustainability Master Plan.
14. Raise funds for sustainability space on campus as guided by University Strategic Plan and Master Plan goals.

RELATED OPERATIONAL GOALS AND STRATEGIES THAT CAN CONTRIBUTE TO OUR STARS STRATEGIC GOAL

Human Resources

While the student body is a transient presence on Sewanee's campus, the faculty and staff serve in positions of longevity and thus have an on-going impact on the continued spirit of sustainability of Sewanee. The proper functioning and well-being of Sewanee's human systems are a central pillar to the effort a creating a more sustainable campus.

1. Strengthen community, foster an atmosphere of respect in the workplace, expand the presence of sustainability in the employee experience, and offer ongoing support and training through Human Resources initiatives.
2. Sustainable Compensation:
 - a. Conduct an evaluation of current employee compensation, focusing on fairness of wages and how these compare to prevailing wages.
 - b. Independent Assessment performed by faculty and staff on a regular basis evaluating local cost of living.
 - c. Based on evaluation, restructure any wages that do not meet standards for the local cost of living.
 - d. Offer a retirement package featuring sustainable investment options.
3. Employee Satisfaction:
 - a. Conduct a survey of employee satisfaction every five years.
 - b. Continue to provide child care to university employees, creating a system of subsidies to increase availability to all employees.
 - c. Evaluate current status and research ways to expand and develop an employee wellness program.
4. Employee Orientation, Professional Development, and Policies:
 - a. Develop a sustainability module for employee orientation focused on continuing dialogue and fostering interest and engagement.
 - b. Provide training opportunities for staff interested in promoting and developing new sustainability efforts within their division.
 - c. Build sustainability objectives into the career development and work expectations for all employees.
 - d. Build sustainability goals and accountability into all departments and divisions.

Diversity and Affordability

For us to be able to live sustainably, we must promote well-being amongst all people that will afford them a standard of living adequate to focus on sustainability and provide equal access to sustainability education. Hence, it is important that we as an institution provide the adequate resources and programming to promote enhanced diversity in both the student body and faculty and staff.

1. Work with an array of campus programs and organizations to promote and support a diverse campus (students, faculty, administration, etc.), providing equal opportunities to people from a range of racial, socio-economic, and other personal backgrounds.
2. Staff Support:
 - a. Evaluate the need for an expansion of staff in the Office of Multicultural Affairs, adding more positions as deemed necessary.
 - b. Conduct an annual diversity survey focused on campus stakeholders' personal experience.
3. Diversity Programming:
 - a. Keep record of and promote to student body peer mentoring, counseling, support, and affinity groups.
 - b. Evaluate the current status of academic support for students from diverse backgrounds

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- c. Facilitate the creation of support, affinity, and mentoring groups for any group not represented in current support network.
- d. Promote and develop a more diverse faculty, not only at Sewanee, but throughout higher education.
- e. Create a teaching fellowship for graduates from underrepresented groups seeking careers in higher education.

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Given the many contributions from students, faculty, staff, alumni, and community members who participated in this effort, this document truly reflects the sustainability commitment of the entire Sewanee community. The following individuals are acknowledged for their direct involvement in the development of this document:

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