Climate Action Plan

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Minnesota State University, Mankato
President Richard Davenport and Cabinet

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An initiative of the Minnesota State University, Mankato
University-wide Environmental Standing Committee
in collaboration with consultant Sebesta

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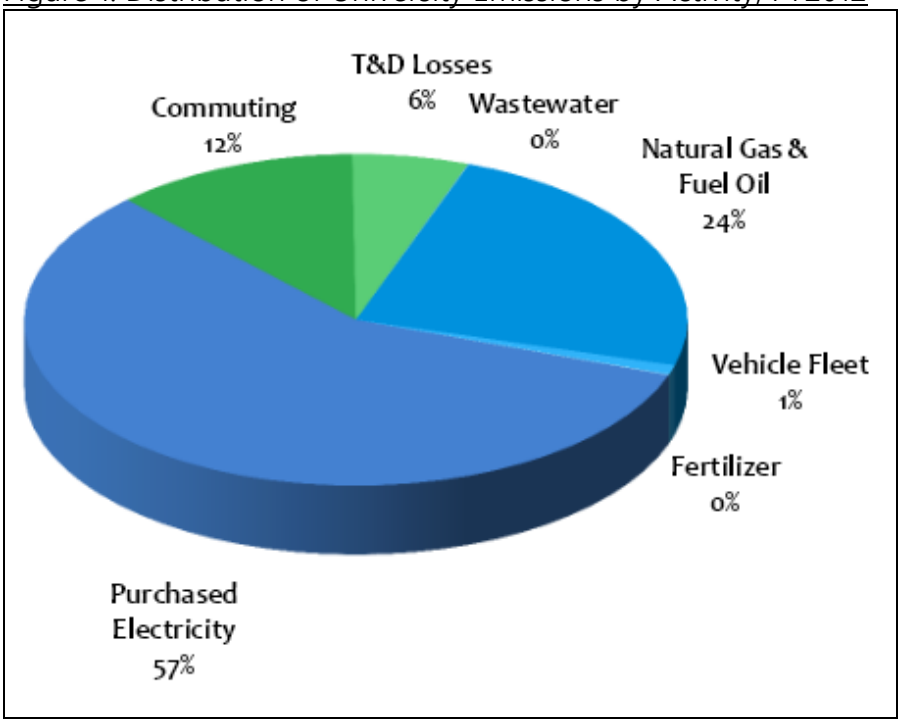
Executive Summary

The Minnesota State University, Mankato Climate Action Plan (MSU-CAP) is a direct attempt to control and reduce the future greenhouse gas (GHG) emissions of our campus community while at the same time making campus activities and operations more sustainable. It sets a goal of reducing campus GHG emissions by 2% per year and establishes a mechanism to determine if the goal is met. It contains three types of strategies and action steps in six different categories: *mitigating* strategies, in the Buildings/Energy and Transportation categories, which are the primary measures for reducing GHG emissions; *adaptive* strategies, in the Water, Waste, and Purchasing categories which have a small direct effect on GHG emissions but are equally important for sustainability; and *promotional* strategies, in the Education and Communications category. While many of the promotional strategies are less quantifiable than the others, they are intellectually and visually empowering to the campus community; these activities are crucial in creating and guiding a culture of sustainability and consciousness that help perpetuate the essential, quantifiable mitigation and adaptation steps.

The development of the MSU-CAP is an initiative of the University-wide Environmental Standing Committee (Environmental Committee) in partnership with the consulting firm Sebesta. The MSU-CAP addresses the 2010-2015 Strategic Priority "Create the Campus of the Future," in particular, the Action Item "Develop and implement a three-year plan to enhance a campus culture of energy conscious behavior and sustainable lifestyle." The MSU-CAP also advances other Strategic Objectives, including "Differentiate our University from competitors for students and for financial and political support" and "Build an ongoing, truthful and coherent story that will be told to prospective and current students, alumni/ae, donors and other friends of the University," both under the "Promote Global Solutions" Strategic Priority.

A necessary preliminary to the development of the MSU-CAP was the determination of the University's Carbon Footprint, an accounting of all the greenhouse gases that Minnesota State Mankato emits in one year. The contract to perform this service was awarded to Sebesta, who reported their findings in September 2013: for FY2012 they found total emissions of 45,938 MTCO2e (metric tons of carbon dioxide equivalent) and also determined a breakdown of emissions by activity, shown in Fig. 1.

Figure 1: Distribution of University Emissions by Activity, FY2012



In Figure 1, "T&D Losses" are transmission and distribution losses associated with purchased electricity. The figure shows that the three largest contributions to Minnesota State Mankato's emissions are electricity use, followed by the stationary combustion of natural gas and fuel oil for heat, and then by tailpipe emissions from automobiles and other vehicles for commuting. It clearly suggests that the best way to reduce emissions is to focus on these three activities. The FY2012 Carbon Footprint serves as a baseline; it will be updated annually to determine if the University is meeting its 2% per year reduction target.

Subsequent to the presentation of the Carbon Footprint report, the Environmental Committee applied for and received Strategic Priorities funding for a consultant to develop the MSU-CAP; the consultant contract was again awarded to Sebesta. The first step in the development of the Plan was a kick-off workshop in September 2014, facilitated by Sebesta, in which 70-80 individuals from the campus community as well as the greater Mankato community suggested actions to move the University toward sustainability. From this input and additional best practices Sebesta abstracted a list of strategies and action steps. A subcommittee of the Environmental Committee evaluated the strategies and

action steps on the basis of five criteria (implementation cost, potential cost savings, GHG savings, visibility, and difficulty), eliminated some and refined the list, then identified the offices and individuals on campus responsible for the implementation of each of the strategies and action steps. The list was then handed off to the writing team, who interviewed the individuals from the responsible offices, obtained buy-in, discussed feasibility, implementation, and necessary funding and resources, and further refined the list. The list of strategies and action steps that came out of the interview process constitutes the heart of the MSU-CAP. These strategies arranged by category are shown in Table 1. The strategies and action steps in this plan have been discussed, reviewed, and supported by the essential stakeholders.

Many of the action steps were identified as actions that are already taking place on campus; these are described as *ongoing* in the full MSU-CAP. Most were identified as short-term, requiring somewhere between an academic semester to a year or two for realization. There are, however, a small number of mid-term actions requiring a multi-year time horizon. The installation of renewable energy on campus, for example, is a mid-term action, given the complexity and planning associated with the task. The MSU-CAP is intended to be a living document and will be reviewed and revised regularly. Strategies and action steps may be dropped if ineffective or completed, or modified to improve their effectiveness, and new strategies and action steps may be added.

Another initiative currently in progress on campus, the Guaranteed Energy Savings Program (GESP), has aims that are similar but complementary to those of the MSU-CAP. As a result of the GESP, Minnesota State Mankato and the energy service company Ameresco have entered into an agreement to implement energy-saving and water-conserving measures in campus buildings. Because the energy-saving measures also reduce GHG emissions, they are included in the MSU-CAP, as are the Ameresco water-conserving measures. Because of the way in which the GESP project with Ameresco is financed, implementation of these measures requires no upfront capital costs from the University. In addition, no initial funding needs were identified as necessary by the stakeholders to carry out their action steps in the interview process; hence no funding is required to initiate the implementation of the MSU-CAP. Conversations have been initiated with University Advancement about setting up a Foundation Account for future initiatives undertaken within the scope of the MSU-CAP.

To summarize, the MSU-CAP is a strategic plan with short- and mid-term goals that documents past and current sustainability initiatives, identifies metrics for tracking

progress, and has a built-in method for plan review and revision. It will serve as a roadmap for using sustainability as a criterion for policy decisions; a guide for integrating sustainability into campus culture; and a tool for both internal communication and for external outreach. Minnesota State Mankato will realize many benefits from the adoption of the MSU-CAP: the University will save energy and money, conserve water, reduce waste production, and will be seen as a forward-thinking institution committed to addressing the critical issues of climate change and sustainability. As a tool for external communication, the MSU-CAP will aid recruitment and giving; as a guide for faculty and students, it will suggest research projects on real-world problems; and it will build community on the Minnesota State Mankato campus through the combined efforts of many individuals working toward a common end.

Table 1: MSU-CAP Strategies Arranged by Category

Buildings and Energy
Reduce Energy Use in Buildings by Implementing GESC Measures
Set High Energy Standards for Buildings
Consolidate Class/Event Schedules at Off Hours to Allow for Building Shutdown
Produce Renewable Energy on Campus
Transportation
Improve Alternative Transportation Infrastructure
Provide Incentives for Alternative Transportation
Make Fleet Vehicles More Efficient
Advocate for Quality Regional Transportation Options
Water
Reduce Building Water Use
Reduce Irrigation Water Use
Reduce Impact of Storm-Water Run Off
Waste
Encourage Recycling
Develop a Comprehensive Composting Program
Recycle Electronic Waste
Purchasing
Choose Environmentally Friendly Products, Use Minimal Packaging
Buy Local Products and Services
Work with Local Farmers to Purchase Food
Create Community Garden(s) on Campus
Education and Communication
Initiate Student Competitions Around Sustainability
Support Student-Led Sustainability Initiatives
Integrate Sustainability into the Curriculum
Create and Implement a 'Themed Year' around a Sustainability Topic
Increase Sustainability-Related Communication
Create an Environmental/Sustainability Living Learning Community
Create an Environmental/Sustainability First Year Experience Course

II: Introduction

A: Plan Background and Campus Context

President Richard Davenport authorized the creation of the University-wide Environmental Standing Committee (Environmental Committee) following a September 2011 review by the President's Cabinet after consultation through the Meet & Confer process with campus collective bargaining units and the Student Association. The Environmental Committee was given authority to advise the President and the University community on environmental and sustainability matters. As a university-wide standing committee, the Environmental Committee has membership from each professional bargaining unit on campus and the Minnesota State Student Association, giving faculty, staff and students representation on the Committee.

Through the University's charge to the Environmental Committee, as well as specific language in the University's Strategic Plan, it became necessary to consider our campus' role in the future of global climate change. Specifically, in the *Minnesota State University, Mankato Strategic Plan 2010-2015* (Strategic Plan)[1], strategic action step four requires that the University "Reinvigorate our physical home and build the campus of the future."[2] Creating a campus of the future inevitably involves questions of sustainability as the generally perceived goal of sustainable actions involves meeting the needs of current populations without degrading the ability of future generations to do the same. As such, addressing the inherent questions of sustainability for our campus is a clear requirement in the Campus of the Future section of the Strategic Plan, where Goal 1, Objectives A and B clearly delineate environmental actions needed:

Goal 1. Create a campus culture supporting energy efficiency, resource conservation and sustainability.

Objective A. Create a campus sustainability policy and support network.

1.Prepare a policy statement and implementation principles.

2.Maintain a campus Environmental Committee.

3.Maintain a utility metering and reporting system for benchmarking and measuring results.

4. Complete a "Carbon Footprint" analysis.

[1] Minnesota State University, Mankato Strategic Plan 2010-1015, http://www.mnsu.edu/strategicplan/strategicplan_goals.pdf

[2] Our Strategic Vision, *Strategic Plan 2010-2015*

5. Create a campus "Green Fund" for promotion of sustainability efforts.

Objective B. Develop a three-year plan to enhance a campus culture of energy conscious behavior and sustainable lifestyle.

1. Implement an awareness campaign to reduce "parasitic" electrical consumption – turn off computers, unplug chargers, turn off printers, etc.

2. Through the Environmental Committee, sponsor events and forums with a sustainability focus that also include opportunities to solicit community input.

3. Reduce paper use through technology – fewer mailings and posters.[3]

Objective B's premise is the creation of a document that would guide environmental consciousness and sustainability on campus. Addressing this objective would inevitably involve the creation of a climate action plan, defined as "a set of strategies and action steps for reducing the University's greenhouse gas (GHG) emissions."[4] In the contemporary higher education setting, such plans are becoming more commonplace as universities realize their obligation to both the local and global community.

As a first step toward the realization of a climate action plan, the University hired a consultant, Sebesta, to conduct a study of campus greenhouse gas (GHG) emissions. Their study, or carbon footprint, of campus GHG emissions in FY 2012 serves as a baseline against which the efficacy of a plan can be measured. Subsequently, the Environmental Committee wrote a proposal and received Strategic Priority funding to hire Sebesta to help with the development of the plan. After a thorough vetting by the Environmental Committee and Sebesta based on five criteria (implementation cost, potential cost savings, GHG savings, visibility, and difficulty), the Committee delivered a comprehensive list of strategies and action steps to the URBS 4/581 Sustainable Planning Writing Team for final compilation and writing. The product of the Writing Team's effort is this report, which will be submitted to the Environmental Committee and the University Administration for approval. Upon approval, the plan will be implemented. The plan is intended to be a living document; a section of the plan describes the process by which it can be updated.

The Minnesota State University, Mankato Climate Action Plan (MSU-CAP) is a direct attempt to mitigate and control the future GHG emissions of our campus community and to adapt to other sustainability challenges in a changing world. The collaborative nature of the process involved in reaching this point underlines the University's commitment to sustainability as well as its capacity for positive change. With that in mind, Minnesota State

[3] Campus of the Future, Strategic Plan 2010-2015, (emphasis added)

[4] A Climate Action Plan for MSU, M, Strategic Priority Funded Project Assessment Plan, 1.

has chosen to formulate its plan and reduction targets independently of third party climate commitments such as the American College and University Presidents' Climate Commitment (ACUPCC).[5] While at many universities the climate planning process has been the product and requirement of signing the ACUPCC, at Minnesota State University the process has been more organic, growing out of a campus-wide strategic vision.

The Minnesota State University Climate Action Plan (MSU-CAP) contains three types of strategies and action steps for reducing GHG emissions. *Mitigating* strategies, in the Building/Energy and Transportation categories, directly address GHG emissions; *adaptive* strategies, in the Water, Waste, and Purchasing categories, address other pressing sustainability issues, including water, food, and material consumption/resource depletion; and *promotional* strategies, in the Education and Communication category, which are less quantifiable but intellectually and visually empowering to the campus community. *Promotional* activities are crucial in creating and guiding a culture of sustainability and consciousness that help perpetuate the essential, quantifiable mitigation and adaptation steps.

While the MSU-CAP will be beneficial in regards to fulfilling university goals and policies, it also offers other tangible benefits to our campus community. The process of establishing a carbon footprint and subsequently creating and endorsing planned reductions to emissions through a climate action plan helps to position the University in the vanguard of higher education institutions. Given that other Minnesota State Colleges and Universities (MnSCU) institutions like St. Cloud State University, Bemidji State University, and Winona State University have created climate action plans, we are certainly not the first to create such a document, but in doing so make a significant statement about our campus and goals. Through forward thinking actions and plans, like the MSU-CAP, we show ourselves as a visionary campus in the state of Minnesota. As students begin to consider dimensions of sustainability in their college choices, as evidenced by new rankings in the *Princeton Review* and other sources, MSU opens itself to a student demographic that continues to grow across higher education. Not only does the MSU-CAP signify to environmentally focused students that MSU is relevant and active, it offers the potential to increase our media presence and delivers a new marketing tool. Finally, the MSU-CAP, and the associated development and implementation processes, mirror the motto of "Big Ideas, Real World Thinking" that we embrace here at MSU.

[5] American College and University Presidents' Climate Commitment, http://www.presidentsclimatecommitment.org

B: Institutional Profile

This section includes a brief summary of background pertaining to Minnesota State University, Mankato and context for this Climate Action Plan, including location, history, and demographics.

Location

The University is located in the south-central region of the state of Minnesota, approximately 75 miles from the Minneapolis-St. Paul metropolitan area. Mankato is a regional economic center for the rural communities in the region and has a population of approximately 50,000 people. The University's branch offices at 7700 France Avenue in Edina serve students in the Minneapolis-St. Paul metropolitan area with classes in more than 15 areas of study, including graduate education in business, educational leadership, nursing, and urban and regional studies. Although the University has a presence in the Twin Cities, this Plan addresses only activities at the core Mankato campus.

History

Minnesota State University was originally founded in 1868 and has undergone many formal name changes ranging from: Mankato Normal School (1868) to Mankato State University in 1975, and finally Minnesota State University, Mankato in 1998 when the campus decided to better describe the broad area from which its students and staff come.

Demographics

The University is home to just over 14,000 students, of which more than 900 are international students representing 90 countries, and to 2,000 faculty and staff. The University ranks 31st in overall campus diversity enrollment according to The Institute of International Education's Open Doors report (2014) with more than 1,700 students of color and a diverse faculty and staff.[6]

Community Support and Partnerships

The University supports over 5,000 jobs and has an estimated local economic impact of over $375 million.[7] The campus community often partners with many of the local

[6] Top 40 Master's Colleges & Universities Hosting International Students 2013/14, http://www.iie.org/Research-and-Publications/Open-Doors/Data/International-Students/Leading-Institutions-By-Institutional-Type/2013-14

[7] Minnesota State University, Mankato Facilities Master Plan, March 2009, https://www.mnsu.edu/planning/masterplan/masterplanpresentationMnSCU_032009.pdf

businesses and communities around the region. Impacts of such partnerships include but are not limited to: internships introducing young professionals into their area of study in an educational and practical way, research allowing students to further their knowledge in specific areas of interest, and campus technologies that help students to stay abreast of current technological trends.

C: The Guaranteed Energy Savings Program (GESP)

Governor Mark Dayton established the Minnesota Guaranteed Energy Savings Program (GESP), managed by the Minnesota Department of Commerce, Division of Energy Resources, by executive order in April 2011. The GESP provides technical, contractual and financial assistance to state agencies, local government units, school districts, and institutions of higher learning that wish to implement energy efficiency improvements through guaranteed energy savings performance contracts. A guaranteed energy savings contract (GESC) is an agreement between a state university (or any of the other public institutions listed above) and an approved energy service company (ESCO) in which the ESCO conducts an energy audit of the facilities of the university, establishes and implements a list of energy efficiency improvements agreed upon by the university and the ESCO, and finances the cost of the project with the money saved by the improvements. The university pays no money down; rather, it continues to pay the same amount as its energy costs before the improvements, and the ESCO takes as its payment the guaranteed savings resulting from the energy efficiency improvements. Renewable energy projects may also be financed with a GESC.

For example, if the total cost of a project is $10 million and the total energy costs per year are $4 million before the project and $3.2 million after the project, then the University saves $800,000 a year in energy costs. These savings are paid to the ESCO over a 15-year period to pay off the $10 million project cost. The ESCO guarantees the savings. In the event that the savings are less than $800,000 in a year, the ESCO and not the university is responsible for making up the shortfall. If the savings are more than $800,000, the university keeps the difference. The energy usage and CO_2 emissions of the university drop significantly immediately after the energy efficiency measures are implemented, and the cost savings revert to the university after the 15 year period.

In spring of 2014 Facilities Management at Minnesota State Mankato issued an RFP for ESCO services. This resulted in a guaranteed energy savings contract (GESC) with

Ameresco and their embarking on a campus-wide energy audit. In January 2015 the MnSCU Board of Trustees approved MSU to enter into a contract with Ameresco to execute a package of options that would not exceed $12 million in cost or a 20-year repayment obligation. The agreed-upon implementation measures are a part of the Climate Action Plan and are described in the Buildings and Energy section of this report.

III: Carbon Footprint

The first step in reducing Minnesota State Mankato's GHG emissions is to have a quantitative understanding of the sources of the emissions. To this end, the University hired Sebesta to prepare a campus-wide carbon footprint, an accounting of all the greenhouse gases which the University emits in one year. The footprint obtained was for FY 2012 (July 1, 2011 – June 30, 2012) and established a baseline against which yearly updates to the footprint can be compared. The results are summarized in Table 2 below.

Table 2: University Greenhouse Gas Emissions Baseline, FY2012

Scope	Emission Type	$MTCO_2e$	Percent of Total
Scope 1	**Natural Gas & Fuel Oil (Stationary Combustion)**	10,974	23.91
	Vehicle Fleet (Mobile Combustion)	417	0.91
	Refrigerant	N/A	
	Fertilizer	35.3	0.08
Scope 2	**Purchased Electricity**	26,407	57.53
Scope 3	**Commuting***	5,490	11.96
	T&D Losses**	2,612	5.69
	Air Travel	N/A	
	Reimbursed miles	N/A	
	Solid Waste	-19	-0.04
	Wastewater	23	0.05
	Total	**45,938**	

*Commuting data were extrapolated from a campus-wide commuting survey.
**T&D Losses are transmission and distribution losses associated with purchased electricity.

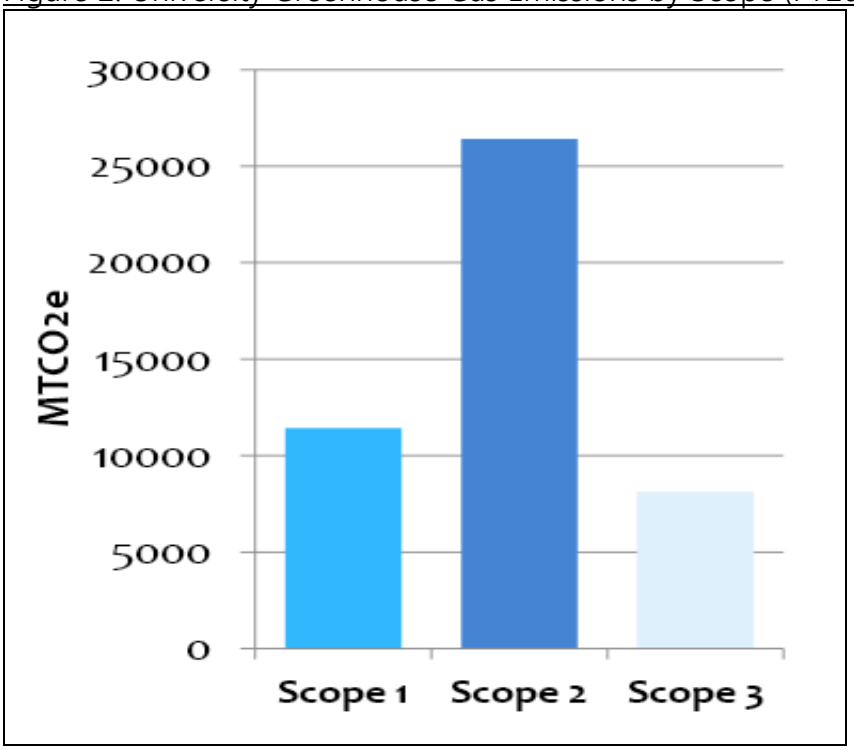
Table 2 shows that total GHG emissions were 45,938 $MTCO_2e$, where 1 $MTCO_2e$ = 1 metric ton of carbon dioxide equivalent. The greenhouse gases of carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) are aggregated and reported as carbon dioxide equivalents, a commonly used unit that combines greenhouse gases of differing impact on the earth's climate into one weighted unit. Carbon dioxide equivalents (CO_2e) are expressed in metric tons; one metric ton equals 1,000 kilograms, or 2,204.6 pounds.

Table 2 also shows that the major contributions to Minnesota State Mankato's GHG emissions were from the use of electricity (57.53% of the total, and 63.22% when transmission and distribution line losses are included), followed by the combustion of natural gas and fuel oil for heat (23.91%), then by tail-pipe emissions from cars and other

vehicles for commuting (11.96%); all other sources of GHG emissions represent about 1% of the total.

Scopes 1, 2, and 3 in Table 1 represent a way of classifying sources in order of the ability of the University to control them. By definition, Scope 1 emissions are from sources that are owned or controlled by the University (natural gas and fuel oil); Scope 2 emissions result from the generation of electricity, heat or steam purchased by the University; and Scope 3 emissions are from sources not owned or directly controlled by the University but related to University activities (commuting). Figure 1 shows the GHG emissions by scope for the University in FY2012.

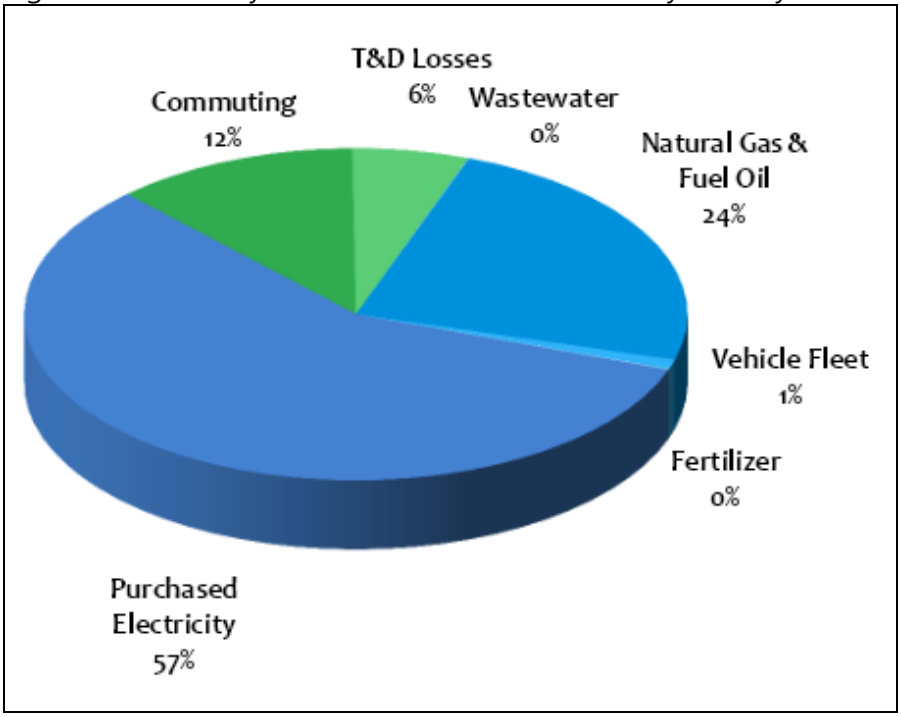
Figure 2: University Greenhouse Gas Emissions by Scope (FY2012)



The University has the most control over Scope 1 emissions, primarily from the combustion of natural gas and fuel oil. Scope 2 emissions are primarily from the use of electricity; the University can control its electricity use but has no control over the mix of fuels (coal, natural gas, nuclear, wind, solar, etc.) which the electric utility uses to produce the electricity, and has the least control over commuting, the primary source of Scope 3 emissions.

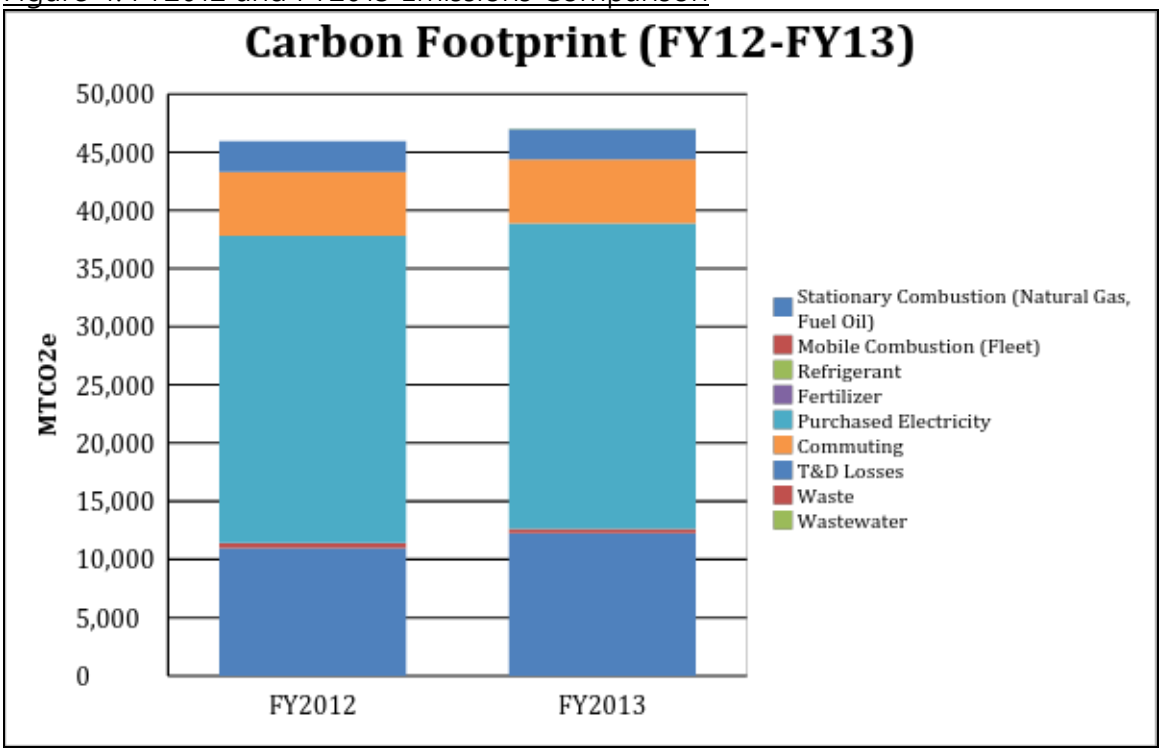
Figure 2 shows graphically the percentage of GHG emissions by activity, illustrating clearly the dominant role played by electricity (Purchased Electricity and T&D Losses), Natural Gas & Fuel Oil, and Commuting in the University's carbon footprint.

Figure 3: University Greenhouse Gas Emissions by Activity, FY2012



Following the FY2012 baseline study, the Environmental Committee produced an update for FY2013. A comparison of the FY2013 update and the FY2012 baseline is shown in Figure 3. Total GHG emissions in FY2013 were 47,006 $MTCO_2e$, 2% higher than in FY2012. This increase is entirely due to the increased emissions from the combustion of natural gas and fuel oil made necessary by the unusually harsh winter of FY2013. Emissions from other sources were essentially the same in FY2013 as in FY2012.

Figure 4: FY2012 and FY2013 Emissions Comparison



From the FY2012 baseline carbon footprint it is clear that there are three core actions that Minnesota State Mankato can take to reduce its greenhouse gas emissions:

- Reduce electrical consumption
- Reduce natural gas and fuel oil use for heating buildings
- Reduce commuting

From the comparison of the FY2012 baseline and the FY2013 update it is equally clear that if there is no concerted effort to reduce Minnesota State Mankato's emissions, the University's carbon footprint will remain unchanged.

The core actions are relatively easily distilled, but the strategies and action steps needed to fulfill them are inherently more complex. It is precisely these strategies and action steps that serve as the core of this plan. Updates to the footprint represent an essential step in the future of a living document like the MSU-CAP. As actions are implemented to reduce emissions, updates must be generated to track progress. Keeping accurate and up-to-date metrics are essential in quantifying change over time.

IV: Reduction Targets

For the MSU-CAP to be effective, it must have specifically delineated expectations as to what the implementation of the Plan will achieve. By choosing a quantified emissions reduction target, the actions within the plan have a consequential end goal. After examining other climate action plans, the Environmental Committee selected a reduction target of 2% annually from the baseline year FY2012, a reduction target that will set a pace of slow but steady improvement. This means that beginning with the FY2012 baseline as a starting point, each subsequent year would see a reduction of 2% from the previous year's total emissions; Table 3 depicts the targeted total emissions on a yearly basis to FY2025. It is important to note that although the reduction goals in Table 3 start with FY2013, the first year after the baseline year, the first improvements from the Plan will not be implemented until Summer and Fall 2015, which means that emissions reductions from the Plan will not appear until FY2016. Among these initial improvements, however, are the building energy-efficiency measures of the GESC with Ameresco, which are estimated to produce a yearly reduction of emissions of 5,129 $MTCO_2e$, or 11% of baseline (Table 4, Estimated Yearly GHG Reductions of GESC Measures). The GESC measures themselves thus constitute a significant reduction which will reduce yearly GHG emissions from the baseline to 40,809 $MTCO_2e$ and provide a "jump-start" to meeting the reduction targets. The ultimate goal for Minnesota State Mankato is continuous and consequential reductions to campus GHG emissions. If advances in technology or opportunities for funding become available in the future, for a solar development on campus, for example, then the University may wish to reassess its progress and examine the need for more aggressive goals.

Table 3: Reduction Targets by Year and Metric Ton

Fiscal Year	Target MTCO2e
2012 (Baseline)	45,938
2013	45,019
2014	44,119
2015	43,236
2016	42,372
2017	41,524
2018	40,694
2019	39,880
2020	39,082
2021	38,301
2022	37,535
2023	36,784
2024	36,048
2025	35,327

V: Strategies and Action Steps

These strategies and action steps are the result of a consultative process between the Environmental Committee and Sebesta. Having established the actions to be taken based on best practices and a campus visioning process, strategies were divided into six thematic categories: Buildings/Energy, Transportation, Water, Waste, Purchasing, and Education and Communication. Buildings/Energy and Transportation strategies are *mitigating* (producing direct and quantifiable reductions to GHG emissions); Water, Waste and Purchasing strategies are *adaptive* (producing small reductions to emissions, but nevertheless important for sustainability); and Education and Communication strategies are *promotional* (facilitating the overall plan). Each strategy has associated action steps, and each action step has a specific timeline. Most of the action steps are short-term and can be implemented within a period from an academic semester to two or three years. Other longer-term action steps require a multi-year time horizon. For example, the installation of renewable energy on campus is a mid-term action.

A. Buildings and Energy

Ongoing and Short-Term Climate Reduction Measures

The University's carbon footprint shows that 87% of its emissions are associated with energy use in buildings, 63% from the use of electricity, and 24% from the combustion of natural gas and fuel oil for heat. In general, there are two ways to reduce GHG emissions from energy: energy efficiency and renewable energy.

A significant increase in energy efficiency in campus buildings will result from measures to be implemented by Amereso in the summer and fall of this year as a direct result of their guaranteed energy saving contract (GESC) with the University. In the fall of 2014, as the first step of their GESC, Ameresco and subcontractors conducted a complete energy and water audit of 42 buildings on campus. They examined the lighting, HVAC systems, building envelopes, and the operation of the central heating plant, as well as water use on campus, both in buildings and for irrigation, and produced a list of recommendations for saving energy and conserving water. Facilities Management and the University Administration settled on a 15-year self-funding project that was approved by the MnSCU Board of Trustees in January 2015.
The residence halls were also a part of Ameresco's energy audit last fall. Residence Life received the list of recommendations from Ameresco but has chosen not to participate in

the GESC funding mechanism. They will be working to implement the recommendations with their own funds as they plan their projects in the coming years.

Energy-saving action steps in the GESC are listed below in Strategy 1; GESC action steps which conserve water are listed in the Water section. The action steps listed below represent the current options being considered by the University Administration, Facilities Management and Ameresco. The final list of action steps agreed on may be somewhat different. Estimated GHG reductions for each of these action steps are found in Table 4 below.

Table 4: Greenhouse Gas Reductions, Guaranteed Energy Savings Contract

Guaranteed Energy Savings Contract Measure	Estimated Yearly GHG Reductions ($MTCO_2e$)
LEDs	2,699
Building envelopes	80
Destratification fans	113
Building automatic controls	855
Central heating plant	527
Steam traps	76
Fume and kitchen hoods	798
TOTAL	5,149

Strategy 1: Reduce energy use in buildings by implementing GESC measures

Action Steps:

1.1 – Replace existing T8 fluorescent light bulbs with LEDs.

T8 fluorescent light bulbs are used in every building on campus. Replacing the existing T8 light bulbs and ballasts with more efficient lighting will produce the biggest cost and energy savings and the largest GHG reductions of all the GESC measures.

Timeline: Summer and Fall 2015

1.2 – Reduce air infiltration through building envelopes.
Ameresco's energy audit shows that 26 of 42 buildings on campus have excessive air leakage. Ameresco will reduce infiltration in these buildings, primarily by weather-stripping and sealing exterior and interior doors and sealing roof vents. Typical energy and cost savings in a building are expected to be in the range from 10% to 25%. An additional advantage of this action step is that the improvements will eliminate drafts in these buildings.
Timeline: Summer and Fall 2015

1.3 – Install destratification fans in spaces with high ceilings.
In interior spaces with high ceilings heated air rises to the top, leaving occupants at floor level cooler. In winter months, destratification fans mix the air and move warmer air to occupied space, reducing cost and energy use and improving occupants' comfort. Ameresco will install destratification fans in 11 spaces: in the Centennial Student Union, Ford Hall, Highland Center, Myers Field House, Otto Recreation Center, Performing Arts main atrium, Shellberg Gym, Bresnan Arena, Taylor Center, Wiecking Center, and the Wigley Administration Building.
Timeline: Summer and Fall 2015

1.4 – Optimize building automation controls and standardize set points across campus.
Ameresco will expand the existing campus Energy Management System and Building Automation Controls Systems, optimize air flows in the campus HVAC system, expand the use of CO_2 sensors in buildings to maintain indoor air quality and prevent excessive outside air ventilation, and investigate strategies to reduce the waste of reheating energy from the steam plant during the summer cooling months. Facilities Management will maintain standard winter and summer space set points for temperature and humidity created for state buildings by a Governor's Executive Order.
Timeline: Summer and Fall 2015

1.5 – Renovate boilers and the central heating plant.
Ameresco will replace the obsolete combustion controls and burner management system on boiler #4 and replace or upgrade the obsolescent features of the central heating plant control system. Replacing the existing burner on boiler #3 and adding a new feedwater economizer is under consideration.
Timeline: Summer and Fall 2015

1.6 – Replace bad steam traps in the campus steam system.
Steam traps in a steam system discharge condensate and non-condensable gases with negligible loss of steam. They are necessary to prevent damage and to maintain efficiency. Ameresco's energy audit found that 11 of the 397 steam traps in the operational part of the campus steam system had failed. Facilities Management acted on this finding right away and has replaced these 11 steam traps.
Timeline: Completed

1.7 – Renovate fume hoods in Trafton and Ford and kitchen hoods in the Centennial Student Union.
Ameresco will install new Auto Sash controllers on 18 fume hoods in Trafton which will close the hood sash automatically when the operator is not present in front of the fume cupboard; recommission the fume hoods in Ford; and install demand control ventilation systems on the five kitchen hoods in the Student Union. This renovation will reduce airflow through the hoods, which will reduce energy use and costs in these buildings.
Timeline: Summer and Fall 2015

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management

Strategy 2: Set high energy standards for new buildings and retrofitting projects for existing buildings

Action Steps:
2.1 – Follow Minnesota B3 guidelines
The University is currently following the Sustainable Building 2030 Energy Standards[8] of the State's B3 Program for all current building construction and renovation projects. These State standards call for a 70% reduction in building energy use for new buildings and successively greater reductions until net zero energy use is reached in 2030. The University will continue to comply with these State standards for future projects. They were used in the design of the Preska Residence Community and the new Clinical Sciences Building, and will be used in the design of the new Dining Building.
Timeline: Ongoing

[8] B3 Program Sustainable Building 2030 Energy Standards, http://www.b3mn.org/2030energystandard/index.html

2.2 – Use "passive" methods such as day lighting, natural ventilation, shading, orientation, etc., to maximize energy efficient design.
These methods are incorporated into the design of new buildings as a matter of course using the State of Minnesota's Energy Design Assistance program. The new Clinical Sciences Building design benefitted greatly from this program, and it is being used in the design of the new Dining Building, scheduled for completion by January 2017. Currently, all new buildings on campus make use of it.
Timeline: Ongoing

2.3 – Use life-cycle costing or ROI (return on investment) to evaluate design options.
Life cycle costing and ROI are currently considerations in new construction projects and major renovations, and will continue to be.
Timeline: Ongoing

2.4 – Evaluate new building products and techniques for their ability to conserve energy.
Facilities Management will participate in the establishment of guidelines by the MnSCU system for the design and construction of high-performance buildings. Facilities Management will review and evaluate new building products and techniques as they are made known in the professional literature, by trade groups, and by the Departments of Construction Management and Mechanical and Civil Engineering for possible inclusion in the design and construction of new buildings.
Timeline: Ongoing

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Paul Corcoran, Planning & Construction Director
Richard Wheeler, Assistant Director of Residential Life for Environment

Mid-Term Climate Reduction Measures

Energy savings from the GESC with Ameresco will be immediate. There are also two mid-term strategies which can result in significant reduction of GHG emissions but which will require considerable groundwork and planning.

Strategy 3: Consolidate classes and events at off-hours (nights, weekends, summer) to be able to shut down buildings.

Building occupancy data suggest that significant energy and cost savings would be realized if classes and events were held in fewer buildings during off-hours, so fewer buildings would need to be heated in the winter or air-conditioned in the summer.

Consolidating classes and events, however, is a complex undertaking that would require lengthy discussions, coordination, and planning among the Faculty Association and other bargaining units, the Events Scheduling Office in the Student Union, Facilities Management, and other stakeholders.

Action Steps:
3.1 – Organize and hold discussions among all stakeholders about the consolidation of classes and events during off hours; the goal of the discussions will be recommendations as to how classes and events can be consolidated.
Timeline: 2015-2016 Academic Year

3.2 – Obtain campus-wide approval and implement recommendations coming from the discussions.
Timeline: After 2015-2016 Academic Year

Responsible parties:
Ron Fields, Assistant Vice-President for Facilities Management, and other stakeholders

Strategy 4: Produce renewable energy on campus

Action Steps:
4.1 – Consider options for the production of renewable energy.
Facilities Management will continue to look for viable ways to introduce renewable energy on campus. All options, including wind, photovoltaic, solar thermal, biomass, and geothermal will be explored. Constraints are that rooftops are for the most part unavailable and there is limited land suitable for renewable energy projects. Proper constraints for solar panels were designed and incorporated into the roof system of the new Clinical Sciences building, however. Possible financing mechanisms will also be considered.
Timeline: 2015-2016 Academic Year

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Paul Corcoran, Planning & Construction Director

B: Transportation

In the Transportation category, commuting is the third largest source of GHG emissions, accounting for 12% of the total in the baseline year FY2012; the vehicle fleet accounts for less than 1% of the total. Commuting emissions are Scope 3, which means that although the University is accountable for them, they are generated off campus and are not under the University's direct control. Reducing them is therefore a challenge. Action steps for attacking the commuting emissions challenge are of two types: improving the infrastructure on campus to make alternative modes of transportation more inviting (adequate number of bike racks, bus shelters, etc.); and offering incentives or programs to commuters to encourage the use of alternative means of transportation (reducing the price of parking permits for carpoolers, instituting a ride share program, etc.).

Minnesota State Mankato has already been very successful in using an incentive approach to increase bus ridership. In 2011-2012 the University instituted a Green Transportation Fee: students were assessed a small fee of 75 cents per credit hour (subsequently increased to 85 cents per credit hour), and the money collected was used to pay the City of Mankato for the operation costs of the city bus routes serving the campus. In return, students, faculty and staff could ride city buses at no charge on presenting their Mavcard, making riding the bus both easier and less expensive. In 2012-2013, the first year this new policy was in effect, ridership on the Minnesota State Mankato bus routes increased by 79% over the previous year; in 2013-2014, the increase was 104% over 2011-2012. Two additional bus routes were added in 2012-2013 to accommodate the increase.

Strategy 5: Improve alternative transportation infrastructure

Action Steps:

5.1 – Maintain an adequate number of bike racks

The campus currently has twelve bike racks, dispersed throughout campus at strategic locations. Groundskeeping crews and the Director of Facilities Management are continually monitoring the usage and the condition of the bike racks to assess whether more are needed and will continue to do so.

Timeline: Ongoing

Responsible Parties:

David Cowan, Director of Facilities Services

Groundskeeping Crews

5.2 – Maintain the existing bus shelters while monitoring the need for more bus shelters as bus ridership increases.
Bus ridership on Mankato bus routes serving the campus has more than doubled since the implementation of the Green Transportation Fee, which makes it possible for students, faculty and staff to ride city buses for free upon presentation of their Mavcard. Three new bus shelters have been built within the last two years to accommodate the rapidly increasing ridership, bringing the total to five. All the bus shelters are enclosed and offer shelter from wind, rain and snow; recently heat has been added in the wintertime. The Director of Facilities Services will continue to maintain the current shelters while monitoring the need for more as the campus and ridership grow.
Timeline: Ongoing

Responsible Party:
David Cowan, Director of Facilities Services

5.3 – Evaluate the success of the Zip-Car car-share program.
As of Fall 2014, MSU switched providers for the car-share program and brought two ZipCars onto campus. The ZipCars are available to approved students, faculty and staff for a period from an hour to a weekend; an individual can apply to be approved at the ZipCar website. The MSSA will evaluate the success of the program to determine whether to continue it or not.
Timeline: 2015-2016 academic year

Responsible Party:
Minnesota State Student Association (MSSA) President, or delegate

5.4 – Reevaluate the need for electric vehicle (EV) charging stations as demand increases.
There has been only one request for an EV charging station on campus. The University has therefore decided that it is not advantageous or monetarily effective to install one at the present time. An important issue during discussion of a charging station was whether users would be required to pay a fee. If the University receives more requests the need will be reevaluated.
Timeline: Ongoing

Responsible Party:
Ron Fields, Assistant Vice President of Facilities Management

Strategy 6: Provide incentives for alternative transportation

Action Steps:
6.1 – Designate preferred parking or reduced pricing for carpools.
Reduced prices for parking permits for car poolers were tried approximately seven years ago. Student, faculty and staff could sign up for a permit if they signed a carpooling agreement. During the initial stages of this pilot project, individuals abided by the rules of the agreement. As time went on, actual carpooling declined. Often a car with one occupant would park in a designated carpool-parking place, as revealed by video camera footage. The Director of Facilities Services will reconsider the implementation of this program.
Timeline: 2015-2016 academic year

Responsible Party:
David Cowan, Director of Facilities Services

6.2 -- Assess the cost of parking permits in campus parking lots
Facilities Services assesses the need to increase parking fees annually, and every year hosts a hearing on parking, open to the public, to discuss its proposals. The hearing for the current academic year was held on March 4, 2015. The proposal is to have a 3% increase for the next five years (2015-2020). Parking fees are a means to address some of the major repairs that are needed for the larger parking lots; they can also serve to encourage bus ridership and other alternative means of commuting.
Timeline: Ongoing

Responsible Party:
David Cowan, Director of Facilities Services

6.3 -- Encourage carpooling to/from major cities to campus
A significant number of students, faculty and staff commute to campus from cities in the Twin Cities area and elsewhere. Recently the Office of New Student and Family Programs expressed an interest in participating in a conversation about starting a ride share program; ride-share boards/plans/etc. is a very common question this office receives from

family members of students. The Environmental Committee and other interested parties will explore setting up a ride-share program in the next academic year.
Timeline: 2015-2016 academic year

Responsible Parties:
Environmental Committee
Office of New Student and Family Programs
MSSA

Strategy 7: Make fleet vehicles more efficient

Action Step:
7.1 -- Facilities Management has a policy of considering mileage standards and other measures of sustainability whenever new fleet vehicles are purchased; this policy will continue.
Timeline: Ongoing

Responsible Party:
Ron Fields, Assistant Vice President of Facilities Management

Strategy 8: Advocate for quality regional transportation options

Action Step:
8.1 -- Work with the City of Mankato to increase bicycle and pedestrian infrastructure connecting the campus to other areas within the city.
The City of Mankato is now and has been working on implementing their Complete Streets initiative. This means that every time a road or sidewalk has work performed on it, the planning team must take into account implementing a better and more connected bike trail and/or sidewalk system. Facilities Management will work with the City of Mankato to align their goals for pedestrian-friendly and bike-friendly routes to campus.
Timeline: Ongoing

Responsible Parties:
Ron Fields, Assistant Vice President for Facilities Management
City of Mankato

C: Water

Water is a vital resource that must be used sustainably. Both the quality and quantity of water in Minnesota are becoming increasingly important concerns.

Strategy 9: Reduce building water use

Action Steps:
9.1 – Update and standardize existing buildings to low-flow water fixtures.
Approximately 80% of the current fixtures on campus are low-flow; Ameresco will convert the remaining fixtures in non-residential buildings. They will also recommission toilets and urinals; install flow controls on sinks; and install low-flow showerheads. Residence Life is also taking part in this effort. As facilities are remodeled or new facilities built, low-flow plumbing fixtures are installed. This started with new buildings when the Sears Residence Community was built and continued with Preska and now with the new Dining Building.
Timeline: Summer and Fall 2015 & ongoing

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Carlos Zaleski, Plumber Supervisor, Physical Plant
Richard Wheeler, Assistant Director of Residential Life for Environment

Strategy 10: Reduce irrigation water use

Most of the irrigation on campus is south of Stadium Road. Replacing or retrofitting existing irrigation equipment is expensive, and conflicting priorities exist: safe, plush playing fields against saving water.

Action Steps:
10.1 – Develop a strategy for irrigating the playing fields of "not plush but alive."
Timeline: 2015-2016 academic year

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Bruce Leivermann, Grounds Supervisor, Physical Plant

10.2 – Continue the existing landscape planning standards
Several years ago Facilities Planning & Construction developed and is now using landscape planning standards which involved cutting back on some annuals and adding low-maintenance, low-water requirement perennials to reduce somewhat the amount of irrigation required on campus. Use of these standards will continue.
Timeline: Ongoing

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Paul Corcoran, Planning & Construction Director

Strategy 11: Reduce the impact of storm-water runoff

MSU is required by the Minnesota Pollution Control Agency and the City of Mankato to manage the quality and quantity of its storm-water runoff; to control pollution from sources such as parking lot and construction site runoff, and to control the quantity to keep from overwhelming the City of Mankato's storm water sewer. It has recently become a requirement for MSU to have its own Municipal Separate Storm Sewer System (MS4) plan.

Action Steps:
11.1 – MSU will continue to abide by the storm-water requirements of the MPCA and the City of Mankato.
Timeline: Ongoing

11.2 – Facilities Planning & Construction will develop and implement an MS4 storm-water management plan for the MSU campus.
Timeline: Summer and Fall 2015

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Paul Corcoran, Planning & Construction Director

D: Waste

Since sustainability is defined as meeting the needs of the present generation without degrading the ability of future generations to meet their needs also, waste is a sustainability issue. Some waste reduction measures, such as side-by-side trash and recycling containers, are highly visible on campus and remind us to pay attention to the Earth's resources; they remind us of the importance of reducing our material consumption and reusing and recycling what we can. Strategies in this category are all conceptually related to recycling.

Strategy 12: Encourage recycling

Action Steps:
12.1 – Improve waste and recycling infrastructure
Facilities Management and Residential Life will inventory existing waste / recycling receptacles on campus, identify standardized infrastructure to create a consistent program, and, as budget allows, update infrastructure and education campus-wide.
Timeline: 2015-2016 academic year and ongoing

Responsible Parties:
Jason McCue, Building Services Manager
Richard Wheeler, Assistant Director of Residential Life for Environment

12.2 – Reduce plastic bottle waste.
To encourage the reuse of plastic water bottles, approximately 20 refillable bottle stations were added to the existing inventory of water fountains over the past year. More will be added in the future as budget allows. (Cost is a factor: water fountains with refillable water stations are double the cost of standard water fountains.)
Timeline: Ongoing

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management

Strategy 13: Develop a comprehensive composting program

Action Steps:
13.1 – Implement a collection site for food waste on campus and identify a disposal site for composting.
The new dining facility to replace Carkoski Commons is being designed to accommodate the collection of food waste for composting. Facilities Management, Residential Life, the

Centennial Student Union, and Sodexo are working with LJP, the MSU waste/recycling hauler and processor, and Full Circle Organics to explore a plan for disposal. The new facility will open in January 2017.
Timeline: Fall 2015 through Fall 2016

Responsible Parties:
Ron Fields, Assistant Vice-President for Facilities Management
Richard Wheeler, Assistant Director of Residential Life for Environment

Strategy 14: Recycle electronic waste

Action Steps:
14.1 – Continue the current electronic waste recycling program
The Office of Environmental Health Safety and Risk Management oversees the recycling of electronic equipment on campus. All computers are recycled through a contract with Green Tech, and money from the metals reclaimed from the recycled computers is paid back to the University. The electronics recycling program will be evaluated periodically.
Timeline: Ongoing

Responsible Parties:
Chandler Holland, Director of Environmental Health, Safety and Risk Management
Richard Wheeler, Assistant Director of Residential Life for Environment

E: Purchasing

University purchasing functions in a relatively complex, department-based system where decisions are made by independent authorities that may have limited crossover to other departments. This creates a dynamic where purchasing priorities can be distinctly different based on the goals and needs of various departments. Further, in many circumstances, the University operates under MnSCU superstructure and policy in regards to purchasing. These system-wide purchasing agreements have the potential to limit institutional control over some purchasing decisions and conditions that may affect MSU-CAP goals and future sustainability plans. With that in mind, there still appear to be potential opportunities, and interest, in codifying purchasing policies where applicable. Also, although the term remains undefined, the goal of purchasing local goods is favored by many university purchasers.

Though not directly a product of purchasing, community gardens fall into this category for the purposes of this plan because they have the potential to impact purchasing decisions on campus related to food systems and general sustainability.

Strategy 15: Choose environmentally friendly products; use minimal packaging

Facilities Management, and specifically Building Services under the direction of Jason McCue, has already taken significant steps towards creating more environmentally friendly and emissions conscious operations on campus. Some examples of current activities are include frequent polishing of terrazzo surfaces to defer waxing; testing less caustic wax and floor covering products; machine-washing and reusing mop heads, using 3M Cleaned Green products and their associated chemical mixing/dispensation systems; measuring, monitoring, and properly coding paper towel dispenser systems to limit waste. Ongoing initiatives such as these indicate department-wide engagement with sustainability concepts that will be crucial for implementing the MSU-CAP.

Action Steps:
15.1 – Continue demonstrating and testing new environmentally friendly products for efficacy when and where applicable.
Timeline: Ongoing

15.2 – Whenever possible, consider purchasing and utilizing products that offer reduced packaging, ease of recycling, and/or shorter shipping distance.
Timeline: Fiscal Year 2016 and beyond

15.3 – Review existing University and MnSCU contracts to quantify availability of green/environmentally friendly products.
Timeline: Fall 2015

15.4 – Continue using 3M Cleaned Green Program products. When purchasing new or alternative products, utilize Green Seal Certified products when cost effective.
Timeline: Fiscal Year 2016 and beyond; ongoing

15.5 – Continue phasing out the use of aerosol cans in routine general maintenance and custodial use.
Timeline: Fiscal Year 2016 and beyond; ongoing

15.6 – Consider the possibility of coordinating with Printing Services to establish a paper inventory on campus. Such an inventory would require defining paper sources, the minimum amount of recycled content in purchased products, total campus paper use, per capita use, and if possible estimate amount of paper recycled post use.
Timeline: Fiscal Year 2016

Responsible Parties:
Jason McCue – Building Services Manager, Facilities Management
Mark Parsley – Building Services Foreman, Residential Life

Strategy 16: Buy local products and services

The University currently purchases an estimated $5 million dollars in local goods and services, which equals just over 12% of total purchases.

Action Steps:
16.1 – Establish a definitional standard of what constitutes "local purchases" for practical purposes.
Timeline: Fall 2015

16.2 – Continue demonstrating and testing new local products when and where applicable.
Timeline: Ongoing

16.3 – Establish a baseline of current local purchasing in the 2015 fiscal year. This will involve reviewing purchasing histories and communicating with vendors/suppliers about orders to quantify the amount of local/regional products and services utilized with current practices in various departments. This effort must also include determining the most effective metric (total dollar amount or percentage of goods) for this task.
Timeline: Fall 2015

16.4 – Review existing University and MnSCU contracts to define and delineate manufacturers that fit local definition. This would allow for subsequent expansion of purchasing through these manufacturers when and where cost effective.
Timeline: Fall 2015

16.5 – Consider the costs and benefits of developing a University-wide purchasing policy.
Timeline: 2016 Fiscal Year

16.6 – Explore opportunities to work in conjunction with other state universities to re-examine MnSCU purchasing agreements.
Timeline: Open-ended

Responsible Parties:
Jason McCue – Building Services Manager, Facilities Management
Mark Parsley – Building Services Foreman, Residential Life
Rick Straka – Vice President for Finance and Administration

Strategy 17: Work with local farmers to purchase food

On-campus dining is facilitated through Sodexo Dining Services. Through their contract with the University, Sodexo provides for student dining needs not only at Carkoski Commons and other institutional venues (Chet's Place, etc.) but also through nationally branded dining options (Taco Bell, Chic-fil-A, Einstein Bros. Bagels) in both the Centennial Student Union and Highland Center. Purchasing rules and standards differ between the Sodexo and nationally branded eateries, creating problems in terms of uniform purchasing goals and policies. However, Sodexo Dining Services is already working towards consequential environmental/sustainability goals through current practices.

At Carkoski Commons (the main student dining hall) Sodexo has already made significant changes to their dining protocol to reduce food and packaging waste. In this regard, two initiatives are most noteworthy. The first action has been to eliminate trays in the dining hall, which reduced the amount of food waste generated by students utilizing the Carkoski dining area. Given that over 600,000 meals are served at Carkoski during the academic year alone reducing waste in this setting is exceedingly valuable. Sodexo has also partnered with Residence Life on another crucial waste reduction measure, the implementation of a rent and return system for Ecotainer, which are reusable plastic containers used for take-out meals. While current metrics of waste reduction are not available, anecdotal evidence suggests it is significant.

Aside from these waste reduction initiatives, Sodexo currently works within its existing contracts to purchase limited amounts of local goods. Bix Produce Company, LLC based in St. Paul is a regional vendor that works to incorporate local growers and suppliers into their distribution network.

Action Steps:

17.1 – Establish a definitional standard of what constitutes "local purchases" for practical purposes.
Timeline: Fall 2015

17.2 – Establish a baseline of current local purchasing in the 2014 fiscal year. This will involve reviewing purchasing histories and communicating with vendors about orders to quantify the amount of local/regional produce being utilized with current practices
Timeline: Fall 2015

17.3 – Review producer/farmer sources that exist within current vendor networks to explore viability of expanding local purchasing.
Timeline: Fall 2015

17.4 - Consider the possibilities of expanded local purchasing when cost effective. Start of fall term coincides well with regional growing seasons, potentially allowing for seasonal fluctuation in purchasing local produce.
Timeline: Fall 2015

17.5 – Explore the option of partnering with Minnesota Valley Action Council (MVAC) Food Hub. This will involve better defining MVAC's goals for the program and how they might fit with Sodexo/University needs and realities.
Timeline: Fall 2015

17.6 – Explore the opportunity of creating periodic "Local Nights" in Carkoski Commons. Local Nights would offer meals, or significant components of meals (like salad bars, etc.) comprised of local goods. With success, Local Nights could be replicated when seasonally viable. If marketed accurately and properly, this offers an excellent educational and promotional opportunity for both Sodexo and the CAP rollout process.
Timeline: Fall 2015

17.7 – Continue the progression of expanding Ecotainer product use in Sodexo branded convenience stores (C-Stores) on campus.
Timeline: Ongoing

Responsible Parties:
Karilynn Doffing, General Manager, University Dining Services

Strategy 18: Create community gardens on campus with ties to curriculum as well as the campus food system

Given their visual presence, community gardens can be useful in promoting campus-wide sustainability while also serving as an environmental consciousness-raising tool for the campus community. Further, if food from a community garden can be incorporated into meals at special events, or used in conjunction with community outreach programs like Campus Kitchen, it will elevate the profile of the garden project. A community garden also reinforces notions of locality that support sustainability, particularly in regards to local economies and food systems

Action Steps:
18.1 – Establish Campus Kitchen community garden
Construct the Campus Kitchen garden across from campus at the Crossroads Campus Lutheran Ministry on the corner of Maywood and Dillon. Use the garden protocol developed for the Campus Kitchen community garden by CO-Bank Rural Hunger Fellow, Mara Soupir, as a model for future community gardens on campus.
Timeline: Ongoing

18.2 – Create a community garden group
Find and cultivate like-minded individuals across campus departments who would be interested in the implementation of community gardens.
Timeline: Fall 2015 semester

18.3 – Identify potential site(s) for campus community garden
The community garden group, along with Facilities Management, will review and approve a site for a community garden. The group will fence the area, or at least till the ground, and provide some signage indicating a future garden.
Timeline: Fall 2015 semester

18.4 – Plant community garden
Try to have garden plot ready for 2016 growing season
Timeline: Spring 2016

18.5 – Examine the possibility of reinvigorating the currently defunct Campus Kitchen curriculum
Previously, Campus Kitchen had an associated curriculum and classroom/kitchen space in the former Gage Towers. Finding a departmental home and reintroducing the Campus Kitchen curriculum poses an opportunity to expand future garden projects on campus.

Timeline: 2015-16 Academic Year

Responsible Parties:
Karen Anderson, Interim Assistant Director of Community Engagement, and members of forthcoming community garden group in conjunction with Facilities Management.

F: Education and Communication

While the direct goal of the MSU-CAP is to reduce GHG emissions, there are activities associated with the plan that have little tangible impact on emissions. At first read, many of these activities may seem conceptually out of place, but they are crucial to the acceptance and implementation of the plan across the campus. For change to arise, the campus community needs to be thoroughly educated on and aware of the potential of a climate action plan. Implementation of the following strategies and action steps will help foster campus-wide engagement with the plan and realization of the desired outcomes.

Strategy 19: Initiate student competitions around sustainability issues (waste, water, energy, etc.)

Action Steps:
19.1 – Organize the parties necessary (likely Facilities Management, Residence Life, and the Environmental Committee) to sponsor student sustainability competitions.
Timeline: Fall 2015

19.2 – Determine which categories of sustainability would be most effective for a competition. Further, determine if this category would be easily quantifiable for contest comparisons
Timeline: Fall 2015

19.3 – Create a test competition to be implemented after the MSU-CAP is adopted. Dependent on success, the approach could be replicated for subsequent competitions.
Timeline: Spring 2015

19.4 – Continue, and maximize, participation in RecycleMania, a national competition among colleges and universities based on different measures of recycling efficacy.
Timeline: Spring 2015 and beyond

19.5 – Consider how sustainability competitions could be tied to the concept of "Themed Years" as elaborated on in Strategy 22.
Timeline: Fall 2015

Responsible Party:
Environmental Committee

Strategy 20: Support student-led sustainability initiatives including clubs, projects, etc.

Action Steps:
20.1 – Help facilitate a campus culture that fosters, establishes, and helps sustainability-centered groups and organizations.
Timeline: Ongoing

Responsible Party:
Environmental Committee

Strategy 21: Integrate sustainability into the curriculum (create a sustainability degree, required coursework in sustainability to graduate, experiential learning, research projects.)

Action Steps:
21.1 – Compile and publish a comprehensive listing of courses related to sustainability and the environment within current MSU course catalog.
Timeline: Ongoing

21.2 – Consider potential ties to educational components of community garden project. Specifically, determine if there is a need or desire for re-invigorating the defunct Campus Kitchen curriculum.
Timeline: 2015-16 Academic Year

21.3 – Consider the plausibility of re-defining the course offerings that fall under the General Education (GE) category of People and Environment. In doing so, the GE category could be more effectively utilized as a way of incorporating sustainability into required curriculum. However, it is important to note this would require near monumental effort from the curriculum committee and other parties.
Timeline: 2015-16 Academic Year and Beyond

21.4 – Explore the opportunity of creating a sustainability sub-category in the Undergraduate Research Conference. This would create opportunities for cross-disciplinary study and allow the University to showcase successful student campaigns.
Timeline: 2015-16 Academic Year

21.5 – Examine the possibility of creating a graduation requirement that includes an environmental or sustainability awareness event.
Timeline: 2016-17 Academic Year

21.6 – If Action Step 21.5 is deemed untenable, consider the alternative of requiring a Service Learning project as part of graduation requirements. Doing this effectively might require developing an incentive structure for professors to use and develop Experiential/Service Learning.
Timeline: 2016-17 Academic Year

Responsible Parties:
Environmental Committee
Paul Prew – Associate Professor of Sociology and Corrections

Strategy 22: Create a "Themed Year" around a sustainability topic (water, energy, etc.) and the associated extra-curricular activities to support the theme.

Action Steps:
22.1 – Create a subcommittee of the Environmental Committee charged with developing and defining the concept of environmental/sustainability "Themed Years"
Timeline: Fall 2015

22.2 – Foster connections across campus with programs like Common Read (CR) to promote "Themed Year" concept. Particularly in 2015, as the CR will be The Good Food Revolution. CR is undergoing a sponsorship transition and will subsequently be an outgrowth of Library Services, led by the Chair of the Library Outreach Committee, Monika Antonelli.
Timeline: Fall 2015 and beyond

22.3 – Develop an effective rollout campaign for the MSU-CAP featuring speakers, campus activities, and opportunities for campus community engagement with the document.
Timeline: 2015-16 Academic Year

22.4 – Create a "Themed Year" cycle that allows for sub-themes and subsequent years of more subtle emphasis before re-invigorating the Themed Year in conjunction with the MSU-CAP re-evaluation.
Timeline: 2015-16 Academic Year

Responsible Party:
Environmental Committee

Strategy 23: Increase sustainability-related communication

Action Steps:
23.1 – Work to better utilize and publicize the University's Green Campus website.
Timeline: Fall 2015

23.2 – Establish how the campus community receives and synthesizes information. With a better understanding of these delivery modes, partnerships with existing promotional outlets like the Campus Newsletter will be more effective.
Timeline: Fall 2015

23.3 – Consider the implementation of a separate, sustainability E-Newsletter. This is contingent upon finding that the campus community interfaces well with digital communication.
Timeline: Fall 2015

23.4 – Create Environmental Tip Sheets derived from best practices on other campuses. These Tip Sheets could then be distributed digitally and in hardcopy for use amongst the campus community.
Timeline: Fall 2015

Responsible Parties:
Environmental Committee
Paul Prew – Associate Professor of Sociology and Corrections

Strategy 24: Create an Environment/Sustainability Living Learning Community

Traditionally at the University, Living Learning Communities (LLC) have provided an opportunity for students of a similar major, or group of majors, to extend their learning opportunities outside of the classroom. Concentrating academically like-minded students into a housing community creates opportunities for extended academic dialogue, additional informal research, and interpersonal networking within an academic peer group. Living Learning Communities are usually organized around major, but on going dialogue

within Academic Affairs indicates the possibility of rethinking the conceptual foundation to better include "themed" communities, that is, communities that may blend specific majors and programs. An example of such a community would be a sustainability community.

While Living Learning will have a new director as of July 1, 2015, Dr. Ginger Zierdt has suggested that an ongoing partnership with the office of Undergraduate Education would be a practical step during this transitional period.

Action Steps:
24.1 – Find and solidify potential interested parties in sponsoring a Sustainability Living Learning Community. This entails networking connections within Environmental Science, Biology, and other related academic programs as well as non-academic entities like the Environmental Committee.
Timeline: 2015-16 Academic Year

24.2 – Help said individual(s) establish a viable Academic Core for the LLC. This would involve defining and delineating course offerings from the list being developed by the Environmental Committee and Paul Prew.
Timeline: 2015-16 Academic Year

24.3 – When possible, fulfill the annual call for the creation of a new LLC. Generally this is a process that occurs in October of each academic year.
Timeline: As possible.

Responsible Parties:
Environmental Committee
Ginger Zierdt – Interim Assistant Vice President for Undergraduate Education

Strategy 25: Create a First Year Experience seminar course in sustainability.

Given that there is a seemingly growing environmental awareness/sustainability demographic within college-bound students, the opportunity presented by a First Year Experience course targeting such students would be valuable to the university. With First Year Experience serving as a tool in the recruitment and retention of students this poses an opportunity to further engage more students in an intellectually stimulating collegiate setting.

25.1 – Work in conjunction with Director of New Student and Family Programs, on the possibility of cultivating the necessary faculty/staff to teach a sustainability-related First Year Experience course.
Timeline: 2015-16 Academic Year

Responsible Parties:
Environmental Committee
Ginger Zierdt – Interim Assistant Vice President for Undergraduate Education
Director of New Student and Family Programs

VI: Implementing and Updating the Plan

A: Stakeholder Engagement

Facilitating stakeholder engagement with the MSU-CAP is essential to the full and proper implementation of the plan. Without acceptance, buy-in, and advocacy for the plan from responsible parties and offices, advancing the plan across campus will be difficult. In light of this, the following individuals are recognized as active participants and advocates for the plan to ensure a successful rollout process as well as the long-term viability of the plan.

Essential Stakeholders:

Environmental Committee
Karen Anderson – Interim Assistant Director of Community Engagement
Kent Clark – Vice President for University Advancement
Paul Corcoran – Director MSU Planning & Construction
David Cowan – Director of Facilities Services
Richard Davenport – Minnesota State University, Mankato President
Karilynn Doffing – General Manager, University Dining Services
MSSA (President or designee)
Doug Fenske – Director of Printing Services
Ron Fields – Assistant Vice President for Facilities Management
Chandler Holland – Environmental Health and Safety & Risk Management Director
Cindy Janney – Director for Residence Life
Bruce Leivermann – Grounds Supervisor, Physical Plant
Jason McCue – Director of Building Services
Mark Parsley – Building Services Foreman, Residential Life
Paul Prew – Associate Professor of Sociology and Corrections
President's Cabinet
Nicole Stock - Director of New Student and Family Programs
Richard Straka – Vice President for Finance & Administration
Richard Wheeler – Assistant Director of Residential Life for Environment
Carlos Zaleski – Plumber Supervisor, Physical Plant
Ginger Zierdt – Interim Assistant Vice President for Undergraduate Education

Throughout the 2015-2016 academic year, the Environmental Committee will be sponsoring an aggressive rollout campaign to emphasize the MSU-CAP and its implementation on campus. The previously mentioned offices and individuals will be

involved in this rollout to varying degrees, and their general support and engagement with the MSU-CAP will profoundly impact plan efficacy throughout implementation.

B: Funding Strategies

The MSU-CAP will not have any upfront capital costs. The Plan, however, is a living document and as it develops projects furthering the goal of sustainability on campus which require funding may suggest themselves. At present there is no direct funding mechanism to implement sustainability projects on campus. By developing a consistent funding source, future sustainability projects and Environmental Committee initiatives stand a better chance of gaining the footing needed for institutionalization and continuation.

The first step in creating an institutionalized funding source would be establishing an account with the Minnesota State University Foundation. This account could be named so as to be easily associated with campus sustainability, creating another opportunity to market the MSU-CAP and future campus initiatives. The Foundation has expressed preliminary willingness in being an active partner in establishing such an account.

Another potential source of funding is a Green Fee. Popular on many campuses, Green Fees are often generated to fund sustainability measures. These fees are assessed in a variety of fashions, but common constructions include: student fees charged by the credit hour, parking fees, building rental fees, and percentages of annual utility savings generated by emissions projects. Creating a Green Rental Fee for outside organizations utilizing campus facilities could be a lucrative opportunity for the University. Finally, there may be opportunities to pursue grant funding through the State of Minnesota or other regional sources.

C. Updating the Plan

The MSU-CAP is intended to be a living document. Action steps may be completed or may prove to be ineffective; members of the campus community may suggest new action steps or strategies; or the availability of new technologies or opportunities for funding may make new action steps or strategies viable. The Environmental Committee will periodically review and revise the Plan, to bring it into line with new developments. The Carbon Footprint will be updated annually, and the Environmental Committee will use the updates

to evaluate the success of the mitigating action steps and strategies; other criteria will be used to assess the success of adaptive and promotional action steps and strategies.