

The Minnesota State Mankato Climate Action Plan

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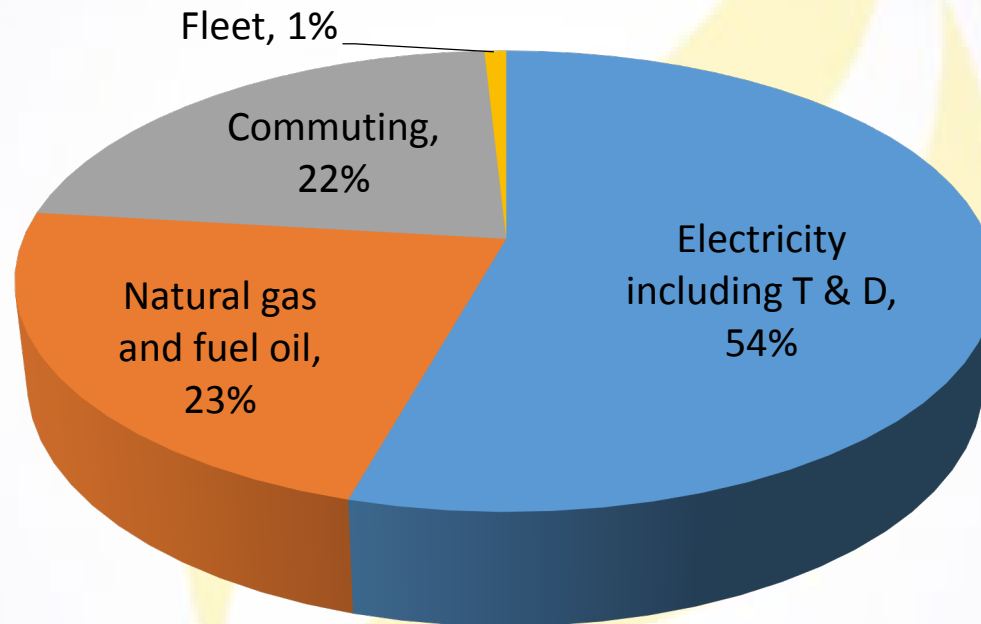
SE CERT Public Building Energy Efficiency Workshop
November 1, 2018

Carbon Footprint

- An accounting of all greenhouse gases emitted by the campus in a year, primarily from
 - Electricity
 - Natural gas for heat and hot water
 - Commuting
- Done by Sebesta
- Presented to the Environmental Committee on June 13, 2013

MSU,M's Carbon Footprint, baseline year FY2012

Greenhouse gas emissions by activity



Total greenhouse gas emissions = 48,630 metric tons of CO₂e
Calculated with the U of New Hampshire Campus Carbon Calculator v8

The Minnesota State University, Mankato Climate Action Plan (MSU-CAP)


A Climate Action Plan:

A set of strategies, action steps and goals to reduce the University's greenhouse gas emissions and make the University more sustainable

The MSU-CAP:

- An Environmental Committee initiative
- Funded with a Strategic Priority Initiative grant
- Consultant: Sebesta
- Partner: Urban and Regional Studies Institute
- Developed over the 2014-2015 academic year
- Approved by the Administration in 2016

Acknowledgments



Environmental Committee

- Karen Anderson
- Dan Elliott
- Ron Fields
- Michael Hanson
- Elizabeth Holcomb
- Erica Johnson
- Paul Prew
- Louis Schwartzkopf
- Gary Urban

Writing Team

- Loren Ahonen
- Michael Orange
- Miriam Porter
- Melissa Sonnek
- Louis Schwartzkopf

The MSU-CAP

- 25 strategies and 75 action steps arranged by category, with a general goal for each of the categories.

The categories:

- ❑ Buildings and energy
 - ❑ Transportation
 - ❑ Water
 - ❑ Waste
 - ❑ Purchasing
 - ❑ Education and communication
- The MSU-CAP is more a *sustainability* plan than a *climate action plan*

www.mnsu.edu/greencampus

The MSU-CAP

Category: Buildings & Energy

Goal: Reduce greenhouse gas emissions from electricity, natural gas, and fuel oil use by employing both energy efficiency and renewable energy

Strategies:

1. Reduce energy use in buildings by implementing GESP measures ✓
2. Set high energy standards for new buildings (B3 guidelines) ✓
3. Consolidate class/event schedules at off hours to allow for building shutdown
4. Produce renewable energy on campus

The MSU-CAP

Category: Transportation

Goal: Reduce greenhouse gas emissions from commuting and from fleet vehicles

Strategies:

5. Improve alternative transportation infrastructure
 - Car share program ✓
 - Electric vehicle charging stations ✓
6. Provide incentives for alternative transportation
 - Green transportation fee ✓

The MSU-CAP

Category: Waste

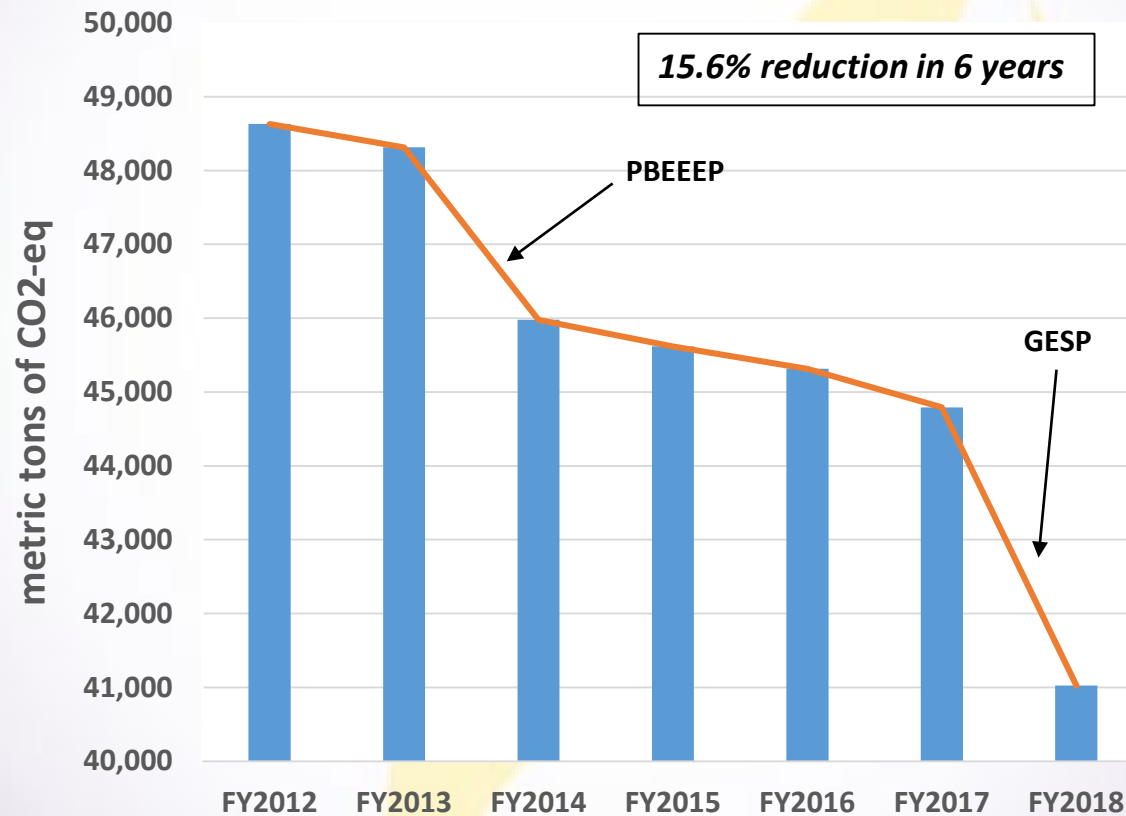
Goal: Reduce waste and encourage recycling

Strategies:

- 12. Encourage recycling
- 13. Develop a comprehensive composting program ✓
- 14. Recycle electronic waste ✓

The Carbon Footprint, Updated through FY2018

MSU,M carbon footprint, weather-normalized



How MSU,M reduced its carbon footprint by 15.6% in six years

- PBEEEP: 2.9% (1,393 metric tons of CO₂e)
- GESP: 9.1% (4,434 metric tons of CO₂e)
- Changes in commuting patterns: 2.8% (1,372 metric tons of CO₂e)

PBEEEP = Public Building Enhanced Energy Efficiency Program

GESP = Guaranteed Energy Savings Program



Providing a quality education for 150 years

Reduced carbon footprint by **6.8%** since 2012

Reduced waste in the new dining center by **92%**



15,000+ Students representing **48** states **97** countries

4,657

Dental procedures performed by students for community members



Top **8%** in the country for undergraduate research



2017 Kennedy Center

#1 musical theatre actor

2016-17 **1** National championship
6 Conference championships
7 Coaches of the year

23:1 Student to faculty ratio

150 years old on October 8, 2018

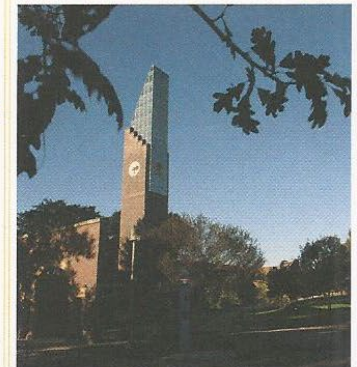
\$8,164



3rd lowest tuition & fees for any Minnesota public 4-year university



Only aviation bachelor's degree in Minnesota



University Advancement mailing Fall 2017

The Public Building Energy Efficiency Enhancement Program (PBEEEP)

- Administered by the State of Minnesota
- Brought to campus by Facilities Management (Ron Fields, Asst Vice Pres and Paul Corcoran, Planning & Construction Dir)
- PBEEEP projects were implemented at the end of Fall Semester 2012
- Cost to the University = \$13,000 after federal stimulus funds and utility rebates
- Savings to the University = \$119,000 a year in reduced costs for heating and electricity

The Guaranteed Energy Savings Program (GESP)

- Administered by the State of Minnesota
- Brought to campus by Facilities Management (Ron Fields and Paul Corcoran)
- Implementation essentially complete by August 2017

The takeaway

- MSU,M reduced its carbon footprint by 15.6% in six years, primarily because of PBEEEP, GESP, and changes in commuting patterns.
- The MSU-CAP provides a framework for thinking about sustainability at MSU,M.

University Dining Center

- Serves more than 3,000 students
- 49,075 sq. ft.
- Opened to students on January 9, 2017

Energy Efficiency Measures

- Heat recovery from equipment to heat water
- Light sensors to adjust inside light to ambient conditions
- Triple glazed windows
- Fins on the outside to cool in the summer, heat in the winter



University Dining Center Composting Program

- An initiative of Residence Life (Cindy Janney, Director and Rich Wheeler, Asst Director for Environment)
- 80,000 pounds of food waste was collected for composting in 2017
- Dining hall waste was reduced by 92% in 2017

Electric Vehicle Charging Stations

An initiative of Facilities Services (David Cowan, Director)

ELECTRIC VEHICLES - "PLUG IN AND SAVE"

Student Body President Abdulrahmane Abdul-Aziz recently caught up with the Utility Plant's Keith Snow to learn more about the newly installed Electric Vehicle (EV) Charging stations.

Keith is one of the first to use the new charging stations, dubbed "Sparky 1" and "Sparky 2". These charging stations are located in Lot 11A.

It only takes 2-3 hours to fully charge (at \$1 per hour) an all-electric vehicle, and Keith is notified via text when his vehicle is fully charged!



- Installed Fall 2017
- In Lot 11a west of the Student Union and across the street from Julia Sears
- Contact David Cowan, Director of Facilities Services, 389-6931, for more information

MSU Reporter, November 14, 2017

Weather-normalization of carbon footprints

Weather dependence of MSU,M fuel consumption for heat

