

UNIVERSITY OF MINNESOTA

BOARD OF REGENTS

Facilities Committee

Thursday, October 8, 2009

10:00 – 11:45 a.m.

600 McNamara Alumni Center, West Committee Room

Committee Members

Steven Hunter, Chair
Dallas Bohnsack, Vice Chair
Clyde Allen
Anthony Baraga
Venora Hung
Dean Johnson

Student Representatives

Jennifer McCabe
Aditya Srinath

A G E N D A

1. Schematic Plans - Review/Action - K. O'Brien/J. Johnson/M. Perkins (pp. 2-12)
 - A. St. Paul Chilled Water Facility, Phase 4
 - B. Wind Turbines, Morris Campus
2. Capital Budget Amendment - Review/Action - K. O'Brien/F. Cerra (pp. 13-17)
 - A. Center for Magnetic Resonance Research
3. Real Estate Transaction - Review - K. O'Brien/S. Weinberg (pp. 18-21)
 - A. Purchase of 22,000 Square Feet at 2201 7th Street SE, Minneapolis
4. University Sustainability Goals - K. O'Brien/A. Short (pp. 22-88) REVISED
5. Consent Report - Review/Action - K. O'Brien (p. 89)
6. Information Items - K. O'Brien (pp. 90-91)



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: Schematic Plans

review review/action action discussion

Presenters: Vice President Kathleen O'Brien
Chancellor Jacqueline Johnson
Associate Vice President Michael Perkins

Purpose:

policy background/context oversight strategic positioning

In accordance with Board of Regents Policy: *Reservation and Delegation of Authority*, review and take action on the schematic plans for the following projects:

- A. St. Paul Chilled Water Facility, Phase 4, Twin Cities Campus;
- B. Wind Energy Conservation System Turbine Installation, West Central Research & Outreach Center, Morris and Morris Campus.

Outline of Key Points/Policy Issues:

The project schematic plans will be presented at the committee meeting. The attached project data sheet for each project addresses the basis for request, project scope, cost estimate, funding, and schedule. A map locating the projects at their respective locations is also attached.

St. Paul Chilled Water Facility, Phase 4, Twin Cities Campus

The St. Paul Chilled Water Project is a multi-phased project. Phase 1 constructed a chilled water plant 1518 Cleveland Avenue, installed a campus chilled water distribution system and connected 17 building to the distribution system. Phase 2 increased the operational efficiency of the 17 connected building by changing valves and coils. Phase 3 developed a new utility building adjacent the Continuing Education and Conference Center at 1890 Buford Avenue to house new electrical switchgear to serve the St. Paul campus including the added chilled water system. Phase 3 included the installation of the new electrical switchgear in the new building, electrical distribution system, and piping to connected the new utility building to the chilled water distribution system. Phase 4 includes the installation of water chillers and cooling towers in the new utility building to develop a second chilled water production plant on the St. Paul campus and connect it to the chilled water distribution system.

Wind Energy Conservation System Turbine Installation, West Central Research & Outreach Center, Morris and Morris Campus

The Wind Energy Conservation System Turbines to be installed are part of an overall master plan for the Morris Campus to achieve its goal of developing sustainable and renewable generating assets. One new turbine is planned to be installed at the West Central Research and Outreach Center (WCROC), Morris and one new turbine is planned to be installed on the Morris Campus, both in addition to the existing turbine at WCROC that was installed in 2005. This will increase the total wind energy generating assets of the Morris campus to 4.95MW. The electricity generated by these turbines is intended to provide power directly to the Morris campus whenever possible with any excess sold to Otter Tail Power Company in accordance with the final negotiated terms of the Power Purchase Agreement between the two parties.

Proceeding with the construction of this project is subject to the approval of the Financing Plan and Debt Issuance, which will be presented to the Board of Regents Finance Committee for action in November 2009.

Background Information:

St. Paul Chilled Water Facility, Phase 4, Twin Cities Campus

Funding for this project is provided from the 2009 Higher Education Asset Preservation and Replacement appropriation, which was included in the Fiscal Year 2010 Capital Budget approved by the Board of Regents in June 2009.

Wind Energy Conservation System Turbine Installation, West Central Research & Outreach Center, Morris and Morris Campus

Funding for this project was approved in June 2008 as a part of the Fiscal Year 2009 Capital Budget.

President's Recommendation for Action:

The President recommends approval of the schematic plans and of the appropriate administrative officers proceeding with the award of contracts for the development of construction documents and construction for the following projects:

- A. St. Paul Chilled Water Facility, Phase 4, Twin Cities Campus;
- B. Wind Energy Conservation System Turbine Installation, West Central Research & Outreach Center, Morris and Morris Campus.

**St. Paul Chilled Water Facility, Phase 4
Utility Building and Electric Switch Gear
Twin Cities Campus
Project No. 445-08-1766**

1. Basis for Request:

Project History – Phase 1, 2 and 3 work completed:

The challenge to replace obsolete, at risk, independent chillers in existing building on the St. Paul campus with a cost efficient and reliable system has lead to the development of central chilled water plants and the installation of a chilled water pipe distribution system through out the St. Paul campus.

Phase 1 of the project (a) installed four – 1,000 ton centrifugal chillers, four – 1,000 ton cooling towers, primary pumps, electrical switchgear, and an energy management system in a totally renovated building located at 1518 Cleveland Avenue; (b) extended an electrical power line from the Continuing Education & Conference Center electrical substation to 1518 Cleveland Avenue and (c) installed chilled water distribution piping through out the majority of the St. Paul campus.

Phase 2 of the project improved the chilled water delivery capability and efficiency in 17 building connected to the central chilled water loop in Phase 1 by replacing existing three-way valves with two-way valves and replacing existing cooling coils.

Phase 3 of the project involved the construction of the new two-level Fitch Avenue Utility Building adjacent to the existing Continuing Education and Conference Center electrical substation located at 1890 Buford Avenue. New electrical switch gear was installed in the building. Three electrical ductbanks were also installed. One ductbank accommodates an additional primary electrical feed from Xcel Energy. The other two ductbanks distribute electrical service to the St. Paul campus. The project also included the installation of under ground piping to connect this new facility to the campus chilled water distribution system.

Current - Phase 4 work:

In order to continue the development of the St. Paul campus chilled water system; new chillers, cooling tower and associated mechanical and electrical equipment are to be installed in the new two-level Fitch Avenue Utility Building.

2. Scope of Project:

Current – Phase 4 work:

This project is the 4th phase of a multi-phase plan to upgrade the chilled water and electrical utility infrastructure and delivery systems on the St. Paul campus. It consists primarily of installing one new 3,000 ton centrifugal chiller, a cooling tower with 6,000 tons of capacity and associated pumps, piping and electrical switch gear to operate the new chiller and tower. There is sufficient room within the Fitch Utility Building to house a second 3,000 ton centrifugal chiller when needed to satisfy future campus chilled water needs. The cooling tower has been sized to serve the needs of the future chiller.

Future Phases:

Subsequent Phases will include the installation of underground distribution piping to connect the balance of the buildings needing chilled water to the central chilled water loop, installation of piping connections to those building, installation of additional two-way valves to replace three-way valves, and installation of new replacement cooling coils. Subsequent phases will also include the installation of a second 3,000 ton centrifugal chiller in the Fitch Avenue Utility Building.

3. Environmental Issues:

There are no environmental impacts as all of the work associated with the Phase 4 project will be within the new Fitch Avenue Utility Building.

4. Cost Estimate - Phase 4 Work:

Construction Cost	\$7,100,000
Non Construction Cost	<u>600,000</u>
Total Project Cost	\$7,700,000

5. Capital Funding - Phase 4 Work:

2009 Higher Education Asset Preservation & Replacement Appn	<u>\$7,700,000</u>
Total Funding	\$7,700,000

6. Capital Budget Approvals:

Funding for this project is provided from the 2009 Higher Education Asset Preservation and Replacement appropriation, which was included in the Fiscal Year 2010 Capital Budget approval by the Board of Regents in June 2009.

7. Annual Operating and Maintenance Cost and Source of Revenue:

This project will have a significant positive impact on operating and maintenance costs. The central chilled water plant is consistent with the Minneapolis campus model that employs several centralized water plants to cool buildings within a defined district through a system of chilled water distribution pipes. The rationale for district chiller plant verses individual chillers is illustrated by comparing the operating and maintenance cost per ton-hour of cooling on the Minneapolis campus with the St. Paul campus. Prior to the completion of Phase I of this project, operating cost data shows that on an installed basis, it costs less than half as much to operate and maintain central cooling in Minneapolis verses the individual chiller in St. Paul. The installation of the new electrical switch gear will increase the reliability of electrical service on the St. Paul campus.

8. Time Schedule – Phase 4 Work:

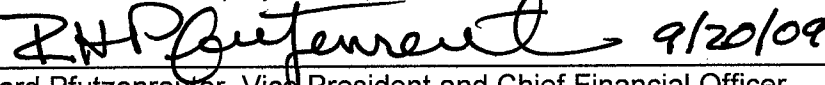
Begin construction	Fall 2009
Complete construction	Spring 2010

9. Engineer and Construction Manager:

Engineer: Sebesta Blomberg & Associates Inc., Roseville, Minnesota
Construction Manager: Adolfson and Peterson, Inc., Minneapolis, Minnesota

10. Recommendation:

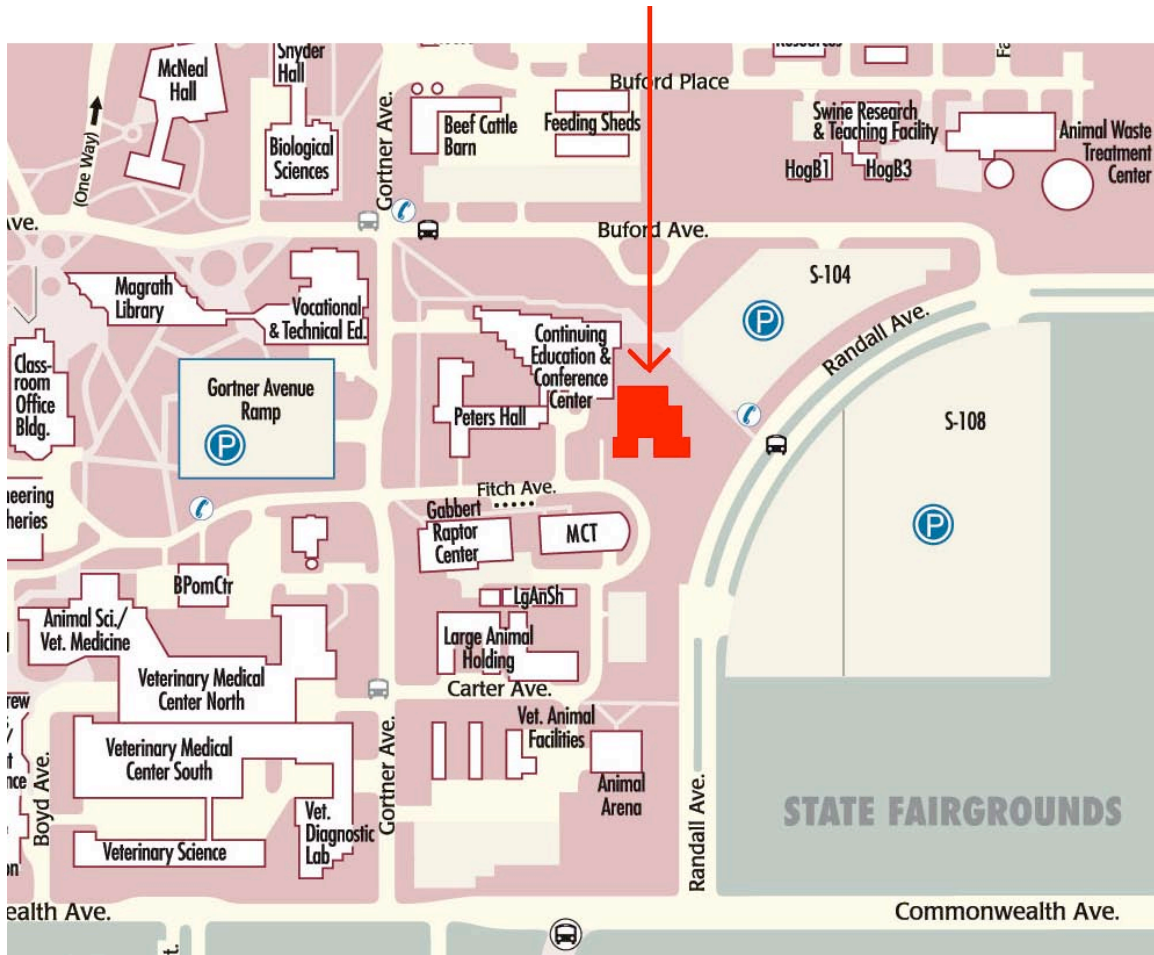
The above described project scope of work, cost, funding, and schedule is appropriate:

 9/20/09
Richard Pfitzenreuter, Vice President and Chief Financial Officer

 9/17/09
Kathleen O'Brien, Vice President for University Services

Utility Building

Twin Cities St. Paul Campus



**Wind Energy Conservation System Turbine Installation
West Central Research & Outreach Center, Morris Campus
Project Nos. 14-874-09-1371 & 04-700-09-1372**

1. Basis for Request:

Morris seeks two additional wind turbines on its campus for the following reasons:

- The additional turbines, combined with the existing turbine and with a series of other energy initiatives, are key components of Morris' goal to address its carbon footprint as it moves toward carbon neutrality and seeks to become a campus that produces more energy than it consumes.
- Morris' work toward achieving this goal has to date contributed to its growing national leadership edge and reputation in renewable energy, which in turn promotes student recruitment (as evidenced in a significant increase in new students this fall) and philanthropic giving (which saw a 26% increase FY 09 compared to FY 10, even in the face of an economic downturn and a decrease overall in giving for the University of Minnesota).
- This goal is tied directly to its role as an undergraduate focused, living and learning community and laboratory within the University of Minnesota system—a community in which the curriculum, the co-curriculum, and facilities come together in ways unduplicated at other college campuses across the country—what one of Morris' donors calls a “model community for the future.”
- Both of the new turbines are supported by Clean Renewable Energy Bonds, (CREBs) “no-interest” bonds awarded by and issued through the Internal Revenue Service: the CREBs, along with Morris' Energy Service Contract (ESCO) are part of the creative financial toolbox that Morris has created for its energy projects.
- One of the new turbines is supported by a CREB issued jointly to the University of Minnesota, Morris and to the Mille Lacs Band of Ojibwe Indians, a partnership that fosters the continued good relationships between the University of Minnesota and American Indian Tribes in the region. This partnership is an extension of the commitment the Morris campus has had to American Indians since its founding as an American Indian Boarding School and realized in the present in the form of a tuition waiver for qualified American Indian students.
- The turbines, along with the biomass plant at Morris, provide new revenue streams to support the ongoing fiscal stability of this campus--allowing it to use natural resources from the region to fill its energy needs. The partnerships Morris has formed here with other entities in the region and the ground laid for economic development in the new “green” economy” contribute to Morris' role in supporting the University of Minnesota's land grant mission. Given the decline in state support for higher education, a decline which is not likely to reverse and which has twice the impact on the Morris campus as it does on either Duluth or the Twin Cities, it is essential that Morris secure new revenue streams as a way of offsetting this decline.

Proceeding with the construction of this project is subject to the approval of the Financing Plan and Debt Issuance, which will be presented to the Board of Regents Finance Committee for action in November 2009.

2. Scope of Project:

The Wind Energy Conversion System (WECS) to be installed is part of an overall master plan for the University of Minnesota – Morris Campus to achieve its goal of developing sustainable and renewable energy generating assets. Two new Vestas V82 1.65 MW Wind Turbine Generators (WTGs) are proposed to be erected in addition to the existing

Vestas V82 1.65 MW WTG which was installed in 2005. This will increase the total wind energy generating assets of the Morris Campus to 4.95 MW.

The electricity generated by these WTGs is intended to provide power directly to the Morris Campus whenever possible, and any excess energy generated will be sold to Otter Tail Power Company in accordance with the final negotiated terms of a Power Purchase Agreement (PPA) between the two parties. The University of Minnesota will realize the benefit of the avoided cost of electricity it would otherwise need to purchase at retail rates for the energy consumed on campus and the revenue from the PPA terms sold to Otter Tail Power Company.

One of the new WTGs will be located approximately 1400-ft due south of the existing WTG at the West Central Research and Outreach Center (WCROC). The other WTG will be located on the north side of campus east of the Facilities Storage and the Recycle Center. Each WTG nacelle will be mounted on a tubular steel tower with an 80-meter (262-ft) hub height and three blades with an 82-meter (269-ft) rotor diameter.

A pad mounted electrical transformer will be located at the base of each WTG and an electrical collector system will be routed from the transformer at the electrical interconnect location for each WTG.

The WTG tower, nacelle, and blades will be painted white and an obstruction light will be mounted on the top of the nacelle in accordance with FAA, MN PUC, and MNDOT regulations.

3. Master Plan:

These projects are in compliance with the Master Plan for the University of Minnesota Morris and West Central Research and Outreach Center.

4. Environmental Issues:

Utility scale WTGs are tall structures which can potentially interfere with flight aviation and wireless communications signals. Each new WTG site has been studied and cleared of any potential FAA flight obstructions and FCC microwave beam interference.

Wind turbines generate audible noise during operation and idling. During operation, blades generate the most significant noise. Noise generated from the generators can be a concern if located within close enough proximity to any residential dwellings. The MN PUC, which has jurisdiction for LWECs projects (projects with a combined nameplate capacity of 5 MW or more), requires a minimum 500-ft setback from residential dwellings. The WTG must also meet Minnesota Noise Standards, Minnesota Rules Chapter 7030, at all residential receivers (homes); Residential noise standard NAC 1, L50 50 dBA during overnight hours.

A wind turbine may shed accumulated ice due to both gravity and centrifugal force of the rotating blades. Ice throw from the turbine blades can be another concern if the WTG is located close to public roads or trails. The MN PUC requires a minimum setback of 250-ft from the edge of public road rights-of-way. Some turbine manufacturers recommend distances as great as 1.5 X (hub height + rotor diameter) from occupied structures and roads to mitigate ice throw hazards. The wind turbine can be remotely deactivated if personnel detect ice accumulation or certain meteorological criteria are programmed in the wind turbine controller.

Wind turbines can impact wildlife and vegetation during the construction and operation of the project. Tubular tower designs provide fewer potential bird nesting sites than open lattice tower designs. The collector lines will be placed underground to minimize the collision risks to birds, bats, and other wildlife. The U.S. Fish & Wildlife Service can provide assistance if deemed necessary in determining if these turbines will have any significant detrimental impacts to birds or bats and their associated migration corridors.

A wind turbine will cast a shadow on surrounding areas. In addition, the rotating blades can cause a strobe effect (i.e. shadow flickers). Shadow casting can be modeled to predict the duration and surface coverage of shadow casting and flickers during the annual solar cycle.

The wind turbine foundation will be placed with the top surface at least four feet below surface elevation. This will minimize any effects to runoff and soil erosion. The structure can also be completely removed down to the top surface of the footing upon decommissioning of the facility and the site grades restored to original condition.

5. Cost Estimate:

Construction Cost including the purchase of the Turbines	\$6,765,000
Non Construction Cost	<u>635,000</u>
Total Project Cost	\$7,400,000

6. Capital Funding:

Turbine at West Central Research & Outreach Center:	
University Issued CREB Bonds	\$1,800,000
University Bonds	1,800,000
Morris Administration	<u>100,000</u>
Total Turbine at West Central Research & Outreach Center	\$3,700,000
Turbine at Morris Campus	
University Issued CREB Bonds	\$1,800,000
Mille Lacs Band Of Ojibwe Issued CREB Bonds	1,800,000
Morris Administration	<u>100,000</u>
Total Turbine at Morris Campus	<u>3,700,000</u>
Project Grand Total	\$7,400,000
(Clean Renewable Energy Bonds = CREB Bonds)	

As noted above, the projected cost of the project is \$7,400,000. Of this amount, the University of Minnesota will issue \$3,600,000 of Clean Renewable Energy Bonds, \$1,800,000 of general obligation bonds and the University of Morris will contribute \$200,000 of operating resources. The Mille Lacs Band of Ojibwe will separately issue \$1,800,000 of Clean Renewable Energy Bonds and provide these funds to the University. The total University of Minnesota financial responsibility for the project amounts to \$5,600,000.

7. Capital Budget Approvals:

Funding for this project was approved in June 2008 as a part of the Fiscal year 2009 Capital Budget.

8. Annual Operating and Maintenance Cost and Source of Revenue:

Operating expenses and debt service for the first fifteen years of operating this facility are forecasted to average \$1,030,000 per year. The financing for this project is being structured to ensure that for the first fifteen years of operation the revenue produced from the sale of electricity is sufficient to offset the forecasted \$1,030,000 of operating expenses and debt services plus a small positive revenue margin. After fifteen years of operation the CREB Bonds will be paid off and the debt service will be significantly reduced providing for a larger positive revenue stream for the campus.

9. Time Schedule:

Complete Design	October 2009
Establish Construction Guaranteed Maximum Price	November 2009
Begin construction	November 2009
Complete construction	May 2010

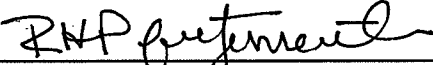
10. Architect and Construction Manager:

The Construction Manager at Risk project delivery method will be used to delivery this project.

Architect: Hammel Green and Abrahamson, Inc., Minneapolis
Construction Manager at Risk: To be determined.

11. Recommendation:


The above described project scope of work, cost, funding, and schedule is appropriate:

 9/28/09

Richard Pfitzenreuter, Vice President and Chief Financial Officer



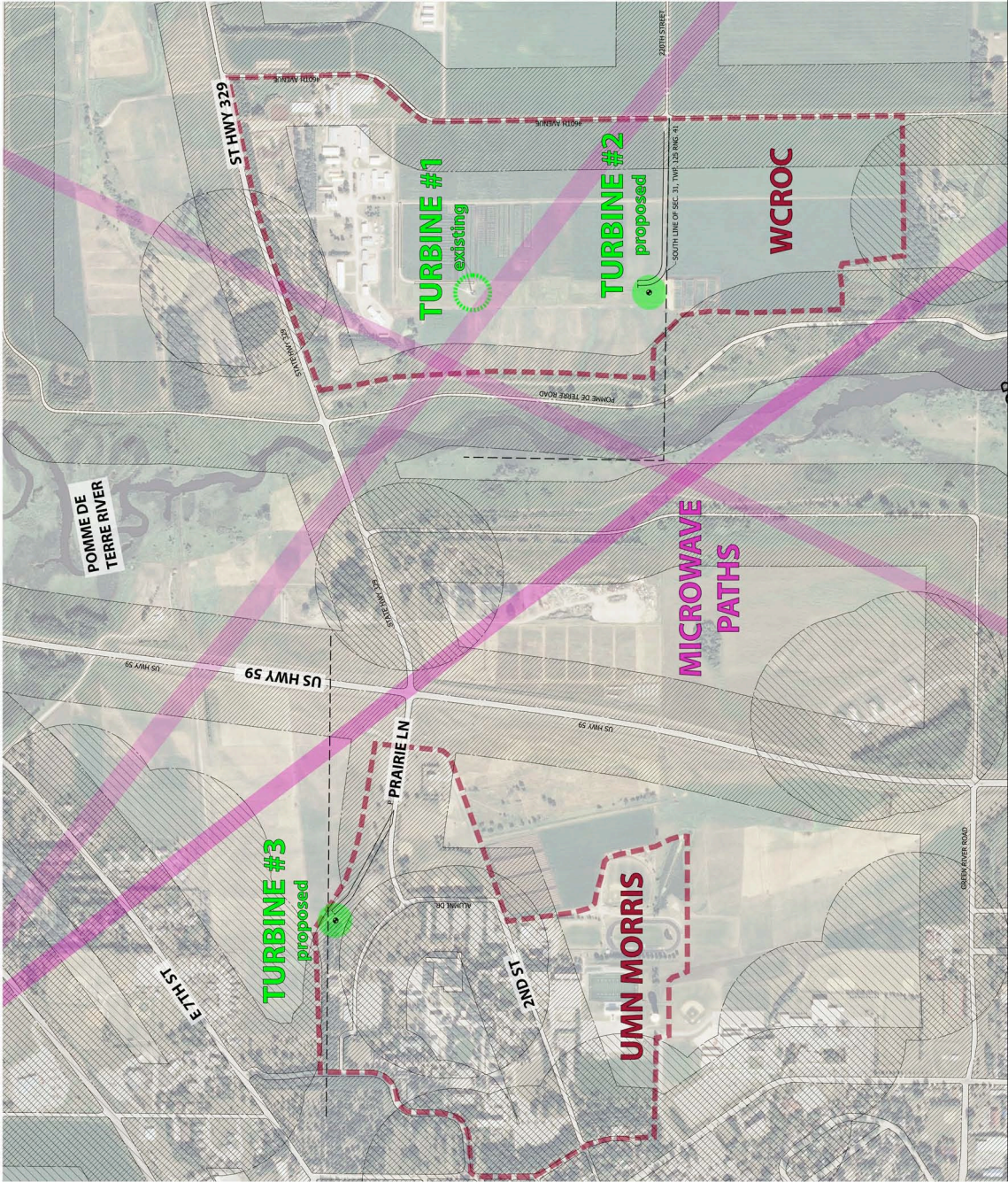
Jacqueline Johnson, Chancellor, Morris Campus

 9/28/09

Bernadette Fiske, Chief Financial Officer, University Services

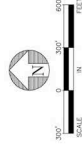
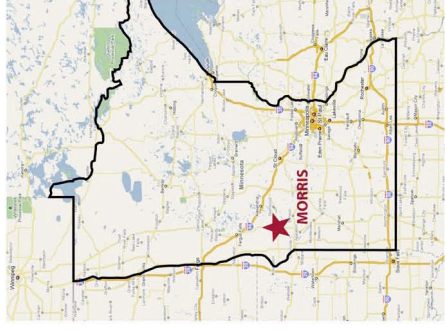
UNIVERSITY OF MINNESOTA – Wind Turbine Conversion System for Turbine Installation 2 & 3

West Central & Outreach Center Morris and Morris Campus



LEGEND

- - - - - APPROXIMATE PROPERTY LINE
-  EXISTING WIND TURBINE
-  WIND TURBINE MICROWAVE PATHS
-  PROPOSED WIND TURBINE
-  PROPOSED WIND TURBINE FOUNDATION
-  PROPOSED WIND TURBINE WIND TOWER
-  ST. CLOUD COUNTY INTERMEDIATE WIND ENERGY CONVERSION SYSTEM, JUNE 16, 2006
-  ST. CLOUD COUNTY INTERMEDIATE WIND ENERGY CONVERSION SYSTEM, JUNE 16, 2006
- 1. WIND TURBINE WIND TOWER
- 2. FOUNDATION HEIGHT



FOR GENERAL INFORMATION ONLY



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: Capital Budget Amendment

review review/action action discussion

Presenters: Vice President Kathleen O'Brien
Senior Vice President/Dean Frank Cerra

Purpose:

policy background/context oversight strategic positioning

In accordance with Board of Regents Policy: *Reservation and Delegation of Authority*, review and take action on the Capital Budget Amendment for the following project:

- Amend the Fiscal Year 2010 Capital Budget by \$646,500 to provide additional funding for the Center for Magnetic Resonance Research Renovation and Expansion, Twin Cities Campus.

Outline of Key Points/Policy Issues:

The attached project data sheet addresses the reason for the budget amendment and the project basis for request, scope of work, cost estimate, funding, and schedule. A map locating the project on the campus is also attached.

Center for Magnetic Resonance Research (CMRR) Renovation and Expansion

The CMRR is an interdepartmental and interdisciplinary research laboratory that provides state-of-the-art instrumentation, expertise, and infrastructure to carry out biomedical research utilizing the unique capabilities provided by ultra high-field magnetic resonance imaging and magnetic resonance spectroscopy methodology. The central aim of the research conducted in CMRR is to non-invasively obtain functional, physiological and biochemical information in intact biological systems, and use this capability to probe biological processes in health and disease. This CMRR renovation and expansion project will be the first building in the Biomedical Research Facility Program approved by the 2008 legislature.

CMRR recently received a \$500,000 grant for the purchase of an integral component of a 7.0 tesla magnet, which will be installed in the CMRR facility. Adding this grant funding to the project is the primary reason for this Capital Budget Amendment. In addition Energy Management is contributing \$101,500 to upgrade building system controls and Central Security is contributing \$45,000 for security upgrades.

Background Information:

Review/action is requested at this time as the timely purchase of the component of the magnet ensures the University will receive a \$500,000 discount on the purchase price.

The capital budget for this project was included as a part of the Fiscal Year 2009 Capital Budget approved by the Board of Regents in June 2008. Schematic plans for the projects were approved by the Board of Regents in March 2009.

President's Recommendation for Action:

The President recommends approval of amending the Fiscal Year 2010 Capital Budget by \$646,500 to provide additional funding for the Center for Magnetic Resonance Research Renovation and Expansion Project located on the Twin Cities Campus.

**Center for Magnetic Resonance Research (CMRR)
Renovation and Expansion
Twin Cities Campus
Project No. 01-180-08-1687 Capital Budget File #2967**

1. Basis for Request:

The Center for Magnetic Resonance Research (CMRR) Renovation and Expansion project includes state of the art equipment and instrumentation for research efforts in magnetic resonance imaging (MRI) and magnetic resonance spectroscopy (MRS). The Center has been awarded an instrumentation grant by the National Institutes of Health to be used for the purchase of a 16 channel radiofrequency transmit array ("Tx array") for the new 7 tesla magnet system purchased as part of the expansion.

The Tx Array produces electrical pulses which are transmitted to custom transmit coils. These transmit coils send signals through the human body which generate magnetic resonance signals. These signals are captured by custom receiving coils and an image is created. This particular piece of electronics is responsible for controlling electrical pulse amplitude, shape, phase and frequency. The resulting enhanced capabilities of the magnet can be harnessed to non-invasively obtain anatomical, biochemical and physiological information from the human body under normal and pathologies conditions (such as cancer, Alzheimer's, etc.). This Tx Array will be the first 16 channel Tx array to be deployed in the world and will provide significant enhanced research capabilities.

Also included in this request are upgrades to the existing 1997 facility for automated building controls and the security system.

2. Scope of Project:

The existing 40,800 gross square foot one-story freestanding CMRR is located at 2021 Sixth Street Southeast in the Biomedical Discovery District. The project includes new construction of a two story approximately 63,000 gross square feet addition and renovation of 7,920 square feet. This amendment includes two components:

- Purchase a 16 channel radiofrequency transmit array ("Tx array"). The Tx array is an integral component of the 7.0 tesla MRI system which will be purchased as part of the CMRR expansion. The Tx Array consists of 2 computers, 15 sequence controllers and 16 RF power monitoring units.
- Update the existing facility's automated building control system for heating and cooling and the security system.

3. Environmental Issues:

There are no environmental issues associated with this research support equipment amendment.

4. Cost Estimate:

	<u>Approved Budget</u>	<u>Amendment</u>	<u>Revised Total</u>
Construction Cost	\$28,513,000	\$146,500	\$28,659,500
Non Construction Cost	8,345,000		8,345,000
Imaging Equipment And Shielding:	<u>16,342,000</u>	<u>500,000</u>	<u>16,842,000</u>
Total Project Cost	<u>\$53,200,000</u>	<u>\$646,000</u>	<u>\$53,846,500</u>

5. Capital Funding:

	<u>Approved Budget</u>	<u>Amendment</u>	<u>Revised Total</u>
State of Minnesota Debt	\$39,900,000		\$39,900,000
University of Minnesota Debt	13,446,500		13,446,500
University of Minnesota Funds		\$146,500	146,500
National Institute of Health		<u>500,000</u>	<u>500,000</u>
Total Funding	<u>\$53,200,000</u>	<u>\$646,500</u>	<u>\$53,846,500</u>

6. Capital Budget Approvals:

- The project is included in the 2009 Capital Budget that was approved by the Board of Regents in June 2008.
- The Schematic Design was approved by the Board of Regents in March 2009.

7. Annual Operating and Maintenance Cost and Source of Revenue:

There is no change to the projected annual cost to operate and maintain the facility associated with this amendment.

8. Time Schedule:

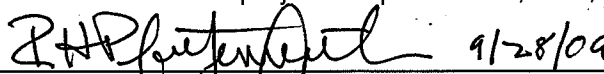
Complete construction	Fall 2010
Occupancy	Winter 2011

9. Architect / Construction Manager:

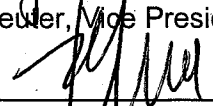
RSP Architects
M A Mortenson Construction

10. Recommendation:


The above described project scope of work, cost, funding, and schedule is appropriate:

 9/28/09

 Richard Pfitzenreuter, Vice President and Chief Financial Officer

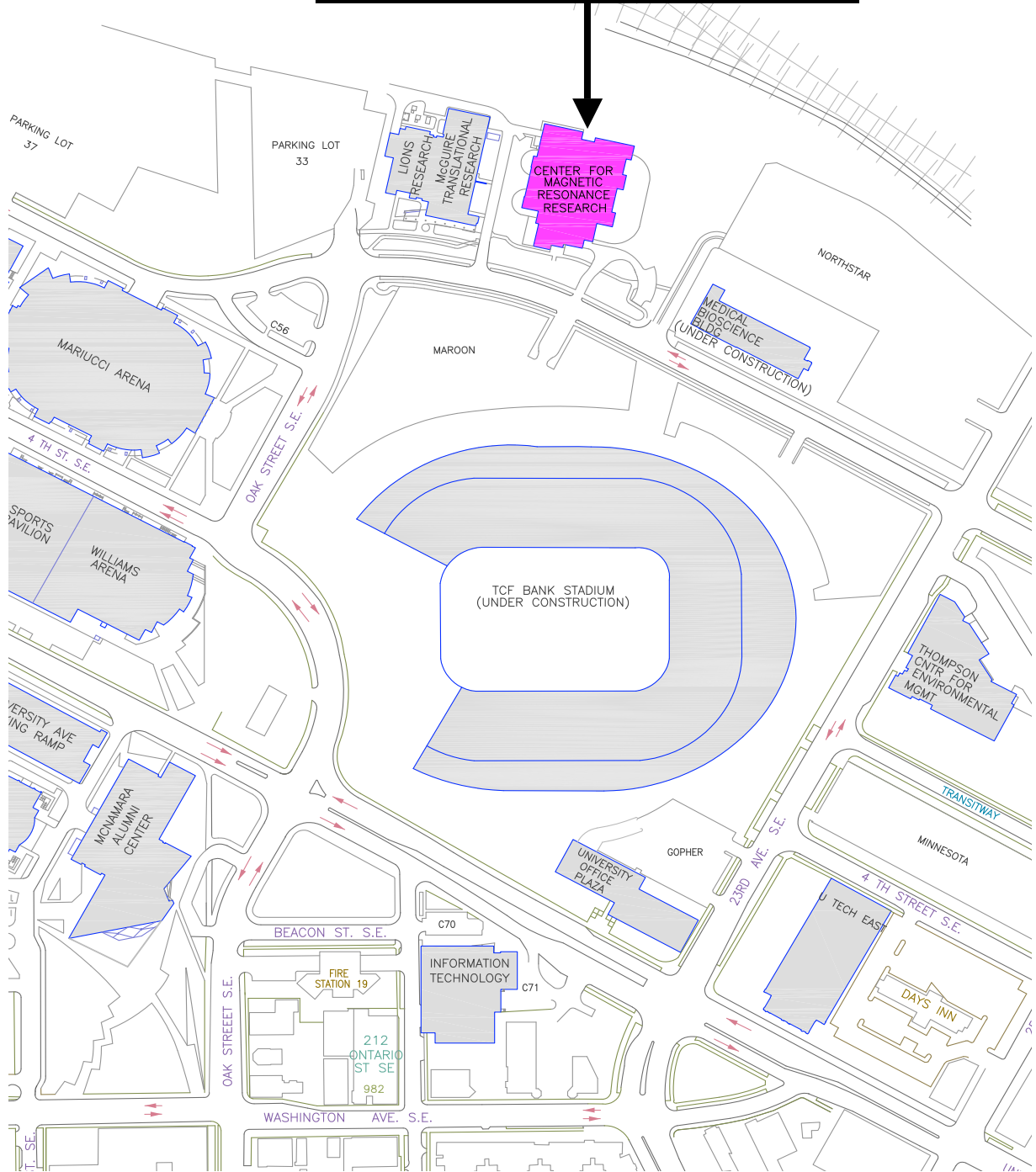
 9/25/09

 Frank Cerra, Senior Vice President Health Sciences and Dean

 9/28/09

 Bernadette Fiske, Chief Financial Officer, University Services

CENTER FOR MAGNETIC RESONANCE RESEARCH



Center for Magnetic Resonance Research Renovation, Twin Cities Campus



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: Real Estate Transaction

review **review/action** **action** **discussion**

Presenters: Vice President Kathleen O'Brien
Susan Carlson Weinberg, Director of Real Estate

Purpose:

policy **background/context** **oversight** **strategic positioning**

In accordance with Board of Regents Policy: *Reservation and Delegation of Authority*, review the following real estate transaction:

- A. Purchase of 22,000 Square Feet of Land at 2201-7th Street SE, Minneapolis (Twin Cities Campus)

Outline of Key Points/Policy Issues:

The details of this transaction and its financial impact are described in the transaction information pages immediately following this page.

Background Information:

The Board of Regents Policy: *Reservation and Delegation of Authority* states that "The Board of Regents reserves to itself authority to approve the purchase or sale of real property having a value greater than \$250,000 or larger than ten (10) acres" and all "leases of real property, easements and other interests in real property if the initial term amount to be paid by or to the University exceeds \$250,000, consistent with Board policies."

President's Recommendation for Action:

The President recommends approval of the following real estate transaction:

- A. Purchase of 22,000 Square Feet of Land at 2201-7th Street SE, Minneapolis (Twin Cities Campus)

**PURCHASE OF 22,000 SQUARE FEET OF LAND
AT 2201-7TH STREET SE, MINNEAPOLIS
(TWIN CITIES CAMPUS)**

1. Recommended Action

The President recommends that the appropriate administrative officers receive authorization to execute the appropriate documents providing for the purchase of approximately 22,000 square feet of land at 2201-7th Street SE, Minneapolis.

2. Location and Description of the Property

The subject property is located east and north and contiguous to other University-owned property, including the long-narrow strip of land totaling 1.394 acres purchased in June, 2009 from the Union Pacific Railroad Company. The subject 22,000 square foot parcel at 2201-7th Street SE consists of vacant land.

The legal description of the property:

Part of Auditor's Subdivision No. 88, Minneapolis, Hennepin County, Minnesota.

3. Basis for Request

This property is required for the Center for Magnetic Resonance Research (CMMR) Expansion and Renovation Project, the first project to be constructed as a part of the Biomedical Research Facilities Program approved by the 2008 legislature. This additional land will allow for the necessary service drive on the north and east sides of the CMRR facility expansion and for utility infrastructure.

4. Details of Transaction

The owner of the property is the Union Pacific Railroad Company.

The price will be \$23.00 per square foot, which is the same price per square foot the University paid for the adjacent parcel purchased from the Union Pacific Railroad in June, 2009. The University will be completing a boundary survey which will determine the parcel size and final purchase price. Based on the current estimated parcel size of 22,000 square feet, the purchase price would be \$506,000.

Closing is expected to occur on or before January 31, 2010. The University will pay cash at closing.

5. Use of Property

The property will provide the necessary land for the planned service drive on the north and east sides of the Center for Magnetic Resonance Research Expansion and Renovation Project, as well as for utility infrastructure.

6. Environmental

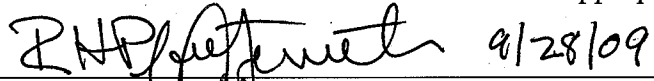
The University will be completing its environmental due diligence to confirm the property is in acceptable environmental condition prior to close.

7. Source of Funding

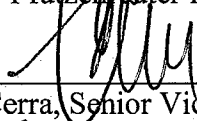
The purchase of the property will be funded as follows: one-half from the Center for Magnetic Resonance Research Expansion and Renovation Project funds; and one-half from the Biomedical Research Facilities Program fund.

8. Recommendations


The above-described real estate transaction is appropriate:

 9/28/09

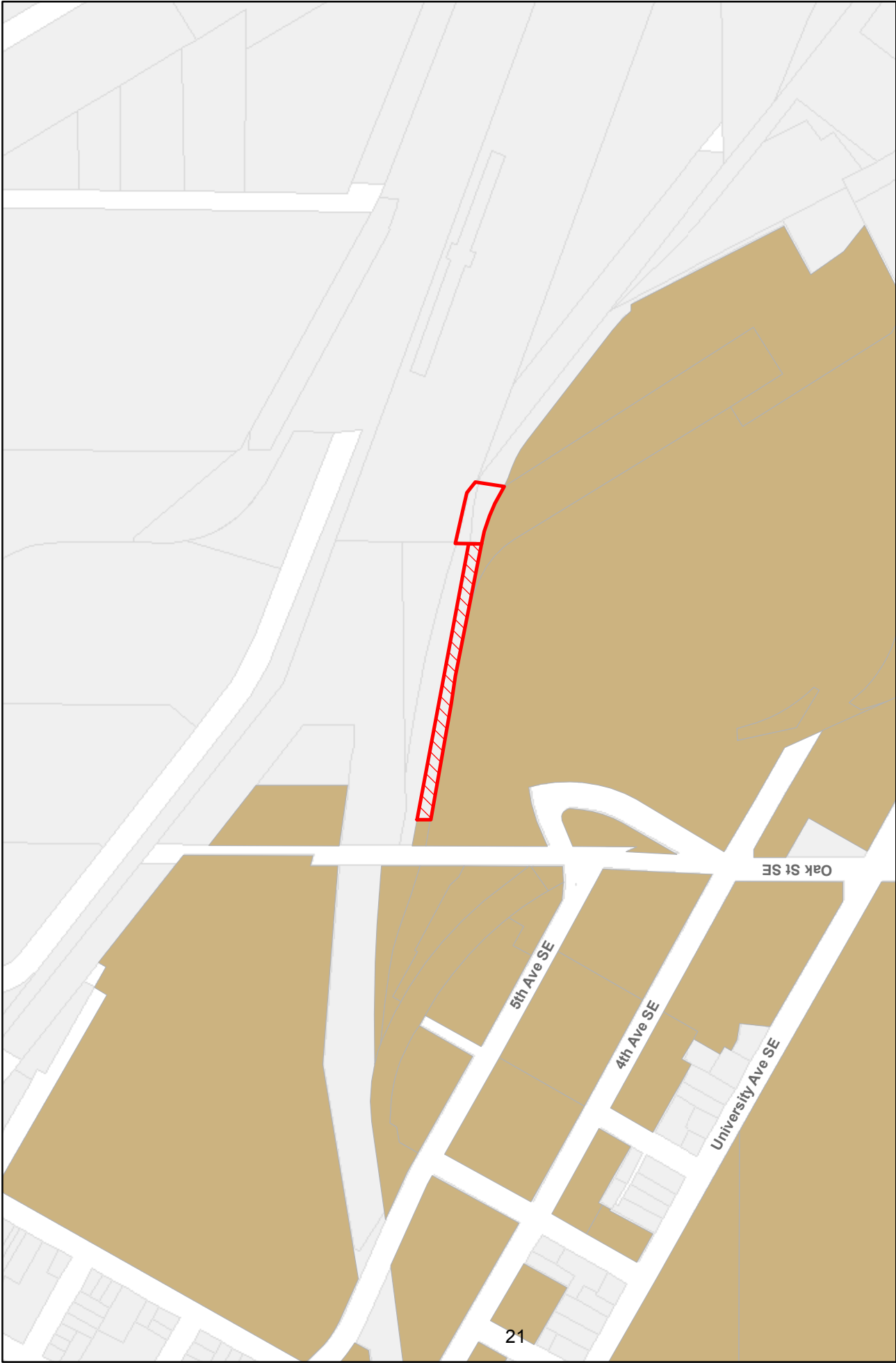
Richard H. Pfutzenreuter III, Vice President and CFO

 9/25/09

Frank B. Cerra, Senior Vice President for Health Sciences and Dean




 9/28/09

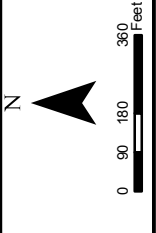
Bernadette Fiske, Chief Financial Officer, University Services



**Real Estate Office
University of Minnesota**

**Purchase of 22,000 Square Feet of
Land from Union Pacific Railroad**

-  Union Pacific Parcel
-  UP Parcel Purchased 6/16/09
-  Other University Property



This map is intended to be used for planning purposes only and should not be relied upon where a survey is required.
Base Data: Real Estate Office
MetroGIS, MNDNR, MNDOT



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: University Sustainability Goals

review review/action action discussion

Presenters: Vice President Kathleen O'Brien
Amy Short, Sustainability Coordinator, University Services

Note: Chancellors or other campus representatives will present for approximately 5 minutes each on their campus sustainability committees and key areas of focus so far.

Purpose:

policy background/context oversight strategic positioning

Present the Summary Report from the University Sustainability Goals and Outcomes Committee detailing their Proposed Goals, Measures and Strategies.

The University's Sustainability Goals and Outcomes Committee (USGOC), was charged by President Bruininks to propose goals to advance the sustainability efforts of the University system. The committee was co-chaired by Kathleen O'Brien and Deborah Swackhamer, Charles M. Denny Chair of Science, Technology, and Public Policy, Humphrey Institute of Public Affairs; Professor, Environmental Health Sciences, School of Public Health; Co-director, Water Resources Center and consisted of faculty, staff and students, with representatives from all campuses. Committee, work team membership, and reviewers combined numbered about 50 individuals. Campus consultations were held in April 2009 with approximately 300 attendees. An estimated 90 comments were received informally and through the Sustainability and U website. The goals were, for the most part, received with tremendous enthusiasm and resonated with attendees. The goals and desired outcomes and measures in the report thus reflect the collective work of the committee refined by input from the University community.

Outline of Key Points/Policy Issues:

Committee work teams formed in Fall 2008 were aligned with the Guiding Principles of the Board of Regents *Policy on Sustainability and Energy Efficiency*: Leadership, Modeling, Operational Improvements, Energy Efficiency, Research, and Education and Outreach.

Themes that Surfaced across Work teams – Through this process, a few key goals seemed to rise above and represent the overall spirit and intent of the work teams:

1. **Leadership.** As a large public research land-grant university, the University of Minnesota will strive to be a leader in sustainability and energy efficiency.
2. **Engagement.** The pursuit of sustainability will actively engage all dimensions of the University, and the University will promote activism and engagement related to sustainability.

3. **Communication.** Transparent and abundant communication will help build awareness of the what, why, and how of sustainability throughout the University of Minnesota community. The University will encourage communication, marketing, and transparency to build awareness and participation.
4. **Policies.** Uniform policies will help departments and programs adopt best practices for sustainability. The University will establish policies that make best practices (energy, purchasing, etc.) the most desirable choice for all departments.
5. **Culture Change.** The University of Minnesota community will undergo a fundamental culture change as sustainability is integrated through our programs and practices. The University will nurture a culture that views sustainability as an integral component of all we do.
6. **Community Impact.** The University of Minnesota's pursuit of sustainability will enhance awareness and adoption of sustainable practices in the broader community. The University will create mechanisms for measuring impacts on campus and beyond. (How does our work change the world?)
7. **Integration.** The University of Minnesota will integrate sustainability into operation and financial decisions, teaching, research, and outreach.
8. **Living Laboratory.** The University of Minnesota will serve as a living laboratory as we integrate sustainability across operations, education, research, and outreach.

Leadership Modeling Goals

- Be a national leader and pioneering model for sustainability and energy efficient operations among large public research land-grant institutions.
- Actively advance the transition to a sustainable world economy through research, teaching, outreach, and operations.
- Inspire and influence the community, nation and world through innovative sustainable research and practices.
- Make significant continuous achievements toward sustainability goals and commitments.
- Embrace an organizational culture and individual decisions that support an inclusive, engaged, active and sustainable healthy community.
- Meet all regulatory requirements and advance future regulations and policies through technical review, academic study and practical experience.

Operational Improvement Goals

- Plan, program, design, construct and operate University facilities throughout their life cycle to provide restorative impacts to natural environments and a healthy indoor environment for the University community.
- Integrate environmental with economic and social priorities in purchasing and contracting decisions.
- Use lower impact transportation alternatives that increase fuel efficiency, provide more sustainable fuel options and help reduce the miles traveled on campus, to campus, and as part of the University enterprise.
- Manage resources for their highest end use by reducing consumption, minimizing waste, and strongly supporting the reuse and highest value recycling of unwanted materials.

Energy Efficiency Goals

- Our overarching goal is to be recognized as a national leader in pursuit of sustainability, climate neutrality and the energy efficient operations of our campuses. We will reduce energy use, increase energy efficiency, increase renewable and low-carbon footprint energy inputs, measure our carbon footprint and meet our commitments, such as ACUPCC milestones and Chicago Climate Exchange (CCX) requirements.
- Reduce Energy use.

- Engage the University of Minnesota community in energy conservation.
- Pursue climate neutrality and the energy efficient operations across the University.
- Adopt energy-related financial policies which enable the University to be socially, environmentally and fiscally informed.
- Contribute to the development of progressive state and federal energy policies..

Research Work Goals

To advance sustainability

- Nurture cross-disciplinary collaboration and sharing of ideas and perspectives within and beyond the University.
- Promote civically engaged, socially informed, and community responsive research and scholarship.
- Instill sustainability principles in the research culture of the University; all levels of University leadership should embrace sustainability as a core pillar of the University's mission.
- Eliminate institutional barrier and disincentives to interdisciplinary and collaborative sustainability research.
- Transform the University into a learning laboratory for sustainability.

Education and Research Goals

- Capture the land-grant mission: Sustainability is part of the education of each and every University student.
- Integrate service-learning into the undergraduate and graduate experience, linking students, faculty, University of Minnesota Extension, and community partners.
- Create and implement curricula and educational programs that address the interface of environmental, social and economic domains.
- Provide sustainability education to all people of the state (working professionals, trades, farmers, etc.) through outreach programs.
- Develop outreach programs for sustainability education of working professionals in the public and private sector.

Communication Goals

- Create opportunity for dialogue to discuss global and local sustainability challenges, opportunities available, and the work of the University to advance sustainability.
- Develop and implement marketing/promotion efforts to engage those who may not be aware of sustainability –focused education, outreach and research opportunities.
- Develop and maintain transparent data management information system to enable decisions, utilizing environmental, economic and social factors.

The initial Summary Report from the Sustainability Goals and Outcomes Committee detailing their Proposed Goals, Measures and Strategies is attached.

Background Information:

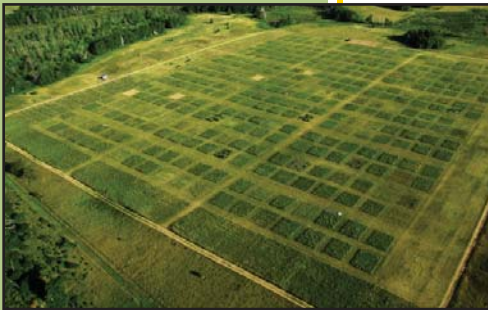
Refer to the Board of Regents Policy: *Sustainability and Energy Efficiency* adopted July 9, 2004.

http://www1.umn.edu/regents/policies/administrative/Sustain_Energy_Efficiency.pdf



University of Minnesota **Systemwide Sustainability**

Goals • Outcomes • Measures • Process





UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

University of Minnesota
Systemwide Sustainability

Goals • Outcomes • Measures • Process

September 2009



The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; to the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation, and the world. The University's threefold mission of research and discovery, teaching and learning, and outreach and public service is carried out on multiple campuses and throughout the state.

University of Minnesota Systemwide Sustainability

Goals, Outcomes, Measures, Process

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 - E. American College & University Presidents’ Climate Commitment Text
 - F. AASHE Sustainability Tracking, Assessment & Rating System (STARS)
 - G. Links to Additional University of Minnesota Sustainability-Related Resources

University of Minnesota Board of Regents Policy on Sustainability and Energy Efficiency

Adopted July 9, 2004

Commitment:

Sustainability is a continuous effort integrating environmental, social, and economic goals through design, planning, and operational organization to meet current needs without compromising the ability of future generations to meet their own needs. Sustainability requires the collective actions of the University of Minnesota community and shall be guided by the balanced use of all resources, within budgetary constraints. The University is committed to incorporating sustainability into its teaching, research, and outreach and the operations that support them.

Guiding Principles:

- Leadership
- Modeling
- Operational Improvements
- Energy Efficiency
- Research
- Education and Outreach

Implementation:

- Goals
- Policies
- Procedures
- Objectives
- Targets
- Indicators
- Measures of Success
- Progress Reports

Board of Regents Policy on Sustainability and Energy Efficiency is found in Appendix A

Sustainability Goals and Outcomes Committee Charge

Summary of Charge from President Robert H. Bruininks
April 2, 2008

Facilitate implementation of the Board of Regents policy by

- Recommending University-wide sustainability goals aligning to the policy guiding principles: leadership, modeling, operational improvements, energy efficiency, research, and education and outreach
- Drafting performance measures and appropriate mechanisms for measuring and reporting progress both in operational units and across the University as a whole
- Supporting each campus's development of campus-wide, ongoing sustainability committees to ensure implementation of the Regents policy.





University of Minnesota Sustainability Goals and Outcomes Committee

The University of Minnesota Sustainability Goals and Outcomes Committee was established by University of Minnesota President Robert Bruininks in spring 2008 to guide implementation of the Board of Regents policy by recommending goals and performance measures and supporting development of sustainability committees on each campus. The committee included students, faculty, and staff from four University campuses. Work teams formed in fall 2008 aligned with the policy's guiding principles. The structure and composition of the committee and work teams is shown in Appendix B. Over six months, the work teams developed data-driven goals and desired outcomes and measures for each guiding principle. Appendix B. Work team members are also noted in the Acknowledgments.

Co-Chairs

Kathleen O'Brien, Vice President, University Services

Deborah Swackhamer, Charles M. Denny Chair of Science, Technology, and Public Policy, Humphrey Institute of Public Affairs; Professor, Division of Environmental Health Sciences, School of Public Health; Co-director, Water Resources Center, UMTC

Committee Members

Jay Bell, Professor, Department of Soil, Water, and Climate and Associate Dean, Academic Programs and Faculty Affairs, College of Food, Agricultural and Natural Resource Sciences, UMTC

Leslie Bowman, Executive Director, University Dining Services, Contract Administration, UMTC

David DeMuth, Associate Professor, Department of Math, Science and Technology, UMC

Jim Dudley, Director of Central Services, Facilities Management, UMTC

Kris Johnson, Ph.D. Graduate Student, Conservation Biology Program, UMTC

Anne Kapuscinski, Professor, Department of Fisheries, Wildlife and Conservation Biology and Director, Institute for Social, Economic, and Ecological Sustainability, UMTC*

John King, Director, Facilities Management, UMD

Holly Lahd, Undergraduate Student, Department of Applied Economics, UMTC

Scott Lanyon, Professor and Head, Department of Ecology, Evolution, and Behavior, UMTC

Allen Levine, Dean and Professor, College of Food, Agricultural and Natural Resource Sciences, UMTC

Jerome Malmquist, Director of Energy Management, Facilities Management, UMTC

Julian Marshall, Assistant Professor, Department of Civil Engineering, UMTC

Lance Neckar, Professor, Department of Landscape Architecture, UMTC

Andrew Phelan, Assistant Director, Environmental Health and Safety, UMTC

Stephen Polasky, Professor, Department of Applied Economics, UMTC

Lowell Rasmussen, Vice Chancellor, Finance & Facilities, UMM

Brian Swanson, Budget Officer, Office of Budget and Finance, UMTC

Elizabeth Wilson, Assistant Professor, Humphrey Institute of Public Affairs, UMTC

Staff

Amy Short, Sustainability Coordinator, University Services

Mindy Granley, Sustainability Coordinator, UMD

Beth Mercer-Taylor, Sustainability Education Coordinator

* Currently Professor of Environmental Studies and Sherman Fairchild Professor of Sustainability Science, Dartmouth

The test of the University's mettle—and our merit as a top three public research university—will lie in how boldly we take up the challenge in this committee report and how thoroughly we implement its recommendations.

Preface

To reach our goal of becoming a top three public research university, the University of Minnesota must act in ways that bring transformational change and achieve transcendent results in response to vitally important problems. When we have done what few other universities have accomplished, and overcome obstacles that few others have scaled, we will have reached our goal. Top three universities don't aspire to their ranking. We do everything we can to make a difference in the world, and the rankings follow.

The work of the students, faculty, and staff in the University Sustainability Goals and Outcomes Committee exemplifies that idea. The committee's work teams have laid out a series of inspirational goals, achievable recommendations, and measurable outcomes that will transform the University of Minnesota and transcend anything done by our peers. The test of the University's mettle—and our merit as a top three public—will lie in how boldly we take up the challenge in this committee report and how thoroughly we implement its recommendations.

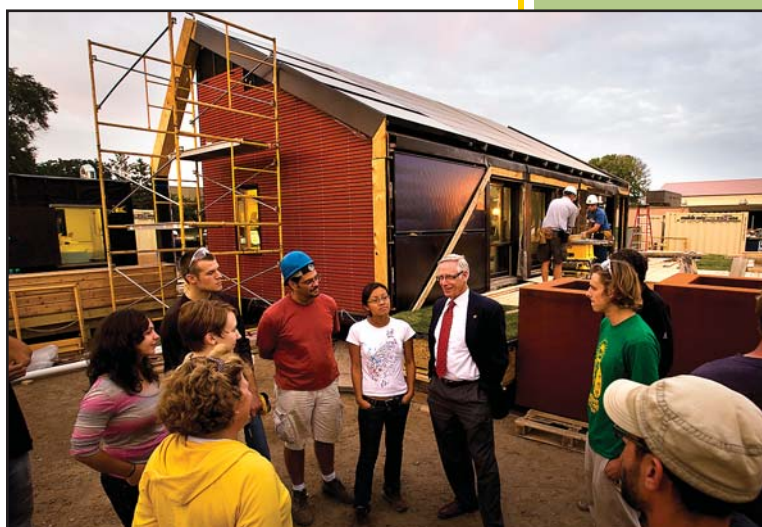
The current financial crisis might make this challenge seem too daunting, but not when we consider the core of the committee's recommendations. Achieving a truly sustainable University of Minnesota will require not a lot of additional investment as much as a fundamental change in campus culture. That change will need to extend from the individual behavior of students, faculty, and staff for whom resource use remains largely an externality hidden from view and someone else's responsibility, to the collective action of the institution, in which decisions often get made without factoring in their environmental effects.

The report outlines several ways of achieving this cultural change within the University of Minnesota. The change begins with the engagement of everyone at the University, at every level—students, faculty, and staff—in almost everything we do on a daily basis, with the right incentives in place to move sustainable behavior from being an exception to the norm. This change in culture will also require the support of the institution's leadership not only in emphasizing the importance of sustainability, but also in attending to the environmental, economic, and social implications of every major decision. Finally, the change will demand our

attending to what, when, and how successes get communicated, using pervasive—and paperless—forms of new media as much as possible.

Behind all of the recommendations in this report lies a shift away from thinking of sustainability as an unavoidable cost to seeing it as an unsurpassable investment in the future of the University. Every dollar spent on improving our collective environmental footprint leverages far more in return by strengthening the resiliency and resolve of this community to do what no other university our size has done. And every step taken to enhance the campus ecosystem moves us several steps further toward a more robust academic ecology. In that sense, this report of the University Sustainability Goals and Outcomes Committee represents not only the conclusions of a sizable group of committed colleagues, but also the commencement of our truly becoming a top three public research university.

Thomas Fisher
Dean, College of Design



Going to the Mall

President Robert Bruininks joins students from a wide variety of majors at the University of Minnesota who have collaborated to build a house powered entirely by the sun. The effort of some 150 University students is part of the 2009 international Solar Decathlon competition in Washington, D.C.



Executive Summary

In July 2004, the University of Minnesota Board of Regents adopted its *Policy on Sustainability and Energy Efficiency*. The policy defines sustainability as “a continuous effort integrating environmental, social, and economic goals through design, planning, and operational organization to meet current needs without compromising the ability of future generations to meet their own needs.” It commits the University of Minnesota to incorporate sustainability into teaching, research, outreach, and operations under the direction of six guiding principles:

- Leadership
- Modeling
- Operational Improvements
- Energy Efficiency
- Research
- Education and Outreach

Soon after this sustainability and energy policy was adopted, the University of Minnesota began a strategic planning process. The resulting plan, *Transforming the U*, called for transformative change, better use of resources, exceptional innovation, and a commitment to “measure what we value and then act accordingly.” Through this process, the University of Minnesota established the goal of becoming one of the top three public research universities in the world.

In the context of the Board of Regents *Policy on Sustainability and Energy Efficiency* and *Transforming the U*, in April 2008 University of Minnesota President Robert H. Bruininks established a 10-member University of Minnesota Sustainability Goals and Outcomes Committee. Composed of faculty, staff, and students, the committee was charged with 1) facilitating implementation of the Board of Regents policy by recommending goals and performance measures for each guiding principle, and 2) supporting development of sustainability committees on each campus. This report is a summary of the committee’s activities and recommendations.

To carry out its charge, the University of Minnesota Sustainability Goals and Outcomes Committee created five work teams focused around the six guiding principles (leadership and modeling were considered together). Over the next six months, the

work teams gathered background information about existing sustainability-related activities at the University, researched best practices from other higher education institutions, familiarized themselves with metrics recommended by the Association for the Advancement of Sustainability in Higher Education (AASHE), and brought their personal and professional knowledge and expertise to bear on the question at hand. In the end, the work groups produced 27 sustainability goals and 74 desired outcomes and measures, along with extensive contextual information and recommendations for next steps.

The committee as a whole reviewed the work team reports and consolidated ideas contained in the reports by bringing together similar goals and objectives to increase robustness and reduce redundancy. The committee chairs and sustainability coordinator further synthesized the work by incorporating comments from campus consultations held in April 2009 and other meetings within the University community during the year. The goals and desired outcomes and measures reported in this report thus reflect the collective work of the committee refined by input from the University community.

Through this process, a few key goals seemed to rise above and represent the overall spirit and intent of the work teams (highlighted on the next page).

These high-level goals and related themes note actions essential to successfully incorporating stewardship for the future into current endeavors as the University of Minnesota carries out its threefold mission of research and discovery, teaching and learning, and outreach and public service on multiple campuses and beyond.

Just as sustainability must be integrated into the University's three-part mission, sustainability must be integrated into the operations that support this mission. We must create a systemwide culture and an enduring ethic of sustainability when developing our policies and procedures and when making day-to-day decisions about our operations. These are important and sound operational practices to ensure environmentally effective development, building management, and transportation decisions; environmentally wise purchasing; and the management of resources for their highest end use and not as waste.



High-Level Goals

The following high-level goals are distilled from the 27 work team goals and reflect key themes that repeatedly surfaced in the work teams' reports.

1. Leadership

As a large public research land-grant university, the University of Minnesota will strive to be a leader in sustainability and energy efficiency.

2. Living Laboratory

The University of Minnesota will serve as a living laboratory as we integrate sustainability across operations, education, research, and outreach.

3. Engagement

The pursuit of sustainability will actively engage all dimensions of the University, and the University will promote activism and engagement related to sustainability.

4. Communication

Transparent and abundant communication will help build awareness of the what, why, and how of sustainability throughout the University of Minnesota community. The University will encourage communication, marketing, and transparency to build awareness and participation.

5. Policies

Uniform policies will help departments and programs adopt best practices for sustainability. The University will establish policies that make best practices (energy, purchasing, etc.) the most desirable choice for all departments.

6. Culture Change

The University of Minnesota community will undergo a fundamental culture change as sustainability is integrated through our programs and practices. The University will nurture a culture that views sustainability as an integral component of all we do.

7. Community Impact

The University of Minnesota's pursuit of sustainability will enhance awareness and adoption of sustainable practices in the broader community. The University will create mechanisms for measuring impacts on campus and beyond. (How does our work change the world?)

8. Integration

The University of Minnesota will integrate sustainability into operational and financial decisions, teaching, research, and outreach.

The important relationship between energy management and our success in advancing sustainability was recognized in the Board of Regents policy through a separate guiding principle on energy efficiency. With respect to operations, we have incorporated, and are committed to continue to incorporate, well-managed and innovative energy programs into our efforts. The University of Minnesota is already widely recognized for innovative renewable energy research and for bringing that knowledge to bear through University of Minnesota Extension and globally through other outreach programs.

Where did we start? Where do we want to go? Where are we now?

Progress toward any goal benefits from the ability to periodically assess position and make midcourse corrections as needed to keep on track. Progress reports as we work to achieve the goals delineated here will ensure transparency and allow us to identify what's working well and, alternatively, what might benefit from a new approach. A sustainability information system will help us compile and analyze data to guide next steps and direct resources to best uses. Institutional structures are also recommended for implementing the plan and reporting. Because of the unique opportunities and constraints present on each campus, campus chancellors will establish campus committees to determine which goals and outcomes are most appropriate for their campus's circumstances, to set corresponding objectives and targets, and to provide reports of progress. A University Sustainability Steering Committee with representation from all campuses will be charged by President Bruininks to oversee implementation at the system level. Cross-campus work groups will be formed when needed to address topics that impact all campuses, to share best practices, to help leverage resources efficiently, and to determine where enterprise solutions are necessary.

The recommendation is also made for the campus committees to report annually on their progress to the systemwide steering committee. The steering committee will integrate inputs and prepare a synthesis report for the Board of Regents in the fall of each year. Appropriate infrastructure and measures will be developed to facilitate the reporting process. This process must reflect the flexibility of this living process. Goals and objectives will be revisited in 5 to 10 years and will be updated based on progress, lessons learned, mandates, and aspirations.

Living Laboratory

A common theme among University Sustainability Goals and Outcomes Committee members was that the University of Minnesota should serve as a "living laboratory" for sustainability. As a living laboratory, the University provides opportunities to develop, test, and share with others novel approaches as sustainability is integrated into teaching, research, outreach, and practice.

Goals

Leadership and Modeling

- Goal 1: Be a national leader and pioneering model for sustainability and energy efficient operations among large public research land-grant institutions
- Goal 2: Actively advance the transition to a sustainable world economy through research, teaching, outreach, and operations
- Goal 3: Inspire and influence the community, nation, and world through innovative sustainable research and practices
- Goal 4: Make significant continuous achievements toward sustainability goals and commitments
- Goal 5: Embrace an organizational culture and individual decisions that support an inclusive, engaged, active, and sustainable healthy community
- Goal 6: Meet all regulatory requirements and support the development of future regulations and policies through technical review, academic study, and practical experience

Operational Improvements

- Goal 1: Plan, program, design, construct, and operate University of Minnesota facilities throughout their life cycle to provide restorative impacts to the natural environment and a healthy indoor environment for the University community
- Goal 2: Integrate environmental, economic, and social priorities into purchasing and contract decisions
- Goal 3: Use lower impact transportation alternatives that increase fuel efficiency, provide more sustainable fuel options, and help reduce the miles traveled on campus, to campus, and as part of the University of Minnesota enterprise
- Goal 4: Manage resources for their highest end use by reducing consumption, minimizing waste, and strongly supporting the reuse and highest value recycling of unwanted materials

Energy Efficiency

- Goal 1: Reduce energy use
- Goal 2: Engage the University of Minnesota community in energy conservation
- Goal 3: Pursue climate neutrality and energy efficient operations across the University of Minnesota
- Goal 4: Adopt energy-related financial policies which enable the University of Minnesota to be socially, environmentally, and fiscally informed
- Goal 5: Contribute to the development of progressive state and federal energy policies

Research

- Goal 1: To advance sustainability, nurture cross-disciplinary collaboration and sharing of ideas and perspectives within and beyond the University
- Goal 2: To advance sustainability, promote civically engaged, socially informed, and community responsive research and scholarship
- Goal 3: To advance sustainability, instill sustainability principles in the research culture of the University of Minnesota; all levels of University leadership should embrace sustainability as a core pillar of the University's mission
- Goal 4: To advance sustainability, eliminate institutional barriers and disincentives to interdisciplinary and collaborative sustainability research
- Goal 5: To advance sustainability, transform the University of Minnesota into a living laboratory for sustainability

Education and Outreach

- Goal 1: Capture the land-grant mission: Sustainability is part of the educational or campus experience of each and every University of Minnesota student
- Goal 2: Integrate service learning into the undergraduate and graduate experience, linking students, faculty, University of Minnesota Extension, and community partners
- Goal 3: Create and implement curricula and educational programs that address the interface of environment, society, and economy
- Goal 4: Develop outreach programs for sustainability education of working professionals in the public and private sector

Communication

- Goal 1: Create opportunity for dialogue to discuss global and local sustainability challenges, opportunities available, and the work of the University to advance sustainability
- Goal 2: Develop and implement marketing/promotion efforts to engage those who may not be aware of sustainability-focused education, outreach, and research opportunities
- Goal 3: Develop and maintain a transparent data management information system to enable decisions utilizing environmental, economic, and social factors

Introduction

As one of the nation's largest land-grant universities, the University of Minnesota has the potential for many and diverse impacts on our environment, society, and economy. In a world with growing population, limited resources, and increasing awareness of the implications of our actions, the need to be deliberate about minimizing our negative impacts and cultivating positive ones is more compelling than ever.

This report focuses on a strategic effort to do just that.

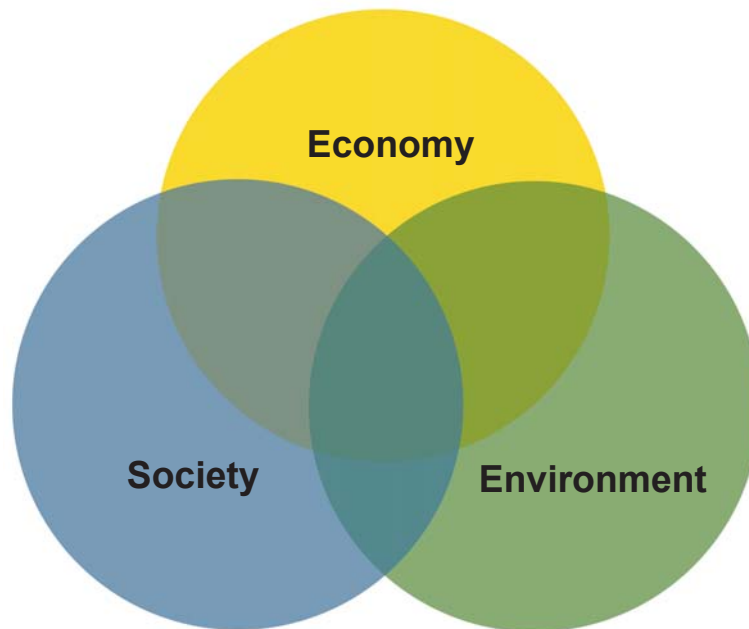
Making decisions that take future generations into account is not a new concept. In the 1980s, convened by the United Nations, the World Commission on Environment and Development (more commonly known as the Brundtland Commission) called for a global commitment to “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Since then, the concept of sustainable development has gradually spread around the world, influencing activities from the construction of sports stadiums in Australia to the management of fisheries off the coast of Newfoundland, and pretty much everything in between. Wherever it arises, the pursuit of sustainability carries with it a call to make the well-being of the social, economic, and biophysical systems of our planet paramount as we pursue more resilient and desirable conditions.

Perhaps nowhere has the summons to sustainability been more compelling than on college and university campuses. Directly impacting millions of individuals each year, indirectly touching the lives of many more, institutions of higher education are recognized internationally as thought leaders and change agents, providing not only research and education to advance knowledge and practice, but also life-altering influences on individuals just moving into adulthood.

Momentum-building measures such as the framing of the international Talloires and Lüneburg declarations, development of the American College & University Presidents' Climate Commitment (ACUPCC), and establishment of the Association for the Advancement of Sustainability in Higher Education (AASHE) have underscored the essential role educational institutions can play in shaping a thriving future. Around the world, hundreds of colleges and universities are working to advance sustainability

Perhaps nowhere has the summons to sustainability been more compelling than on college and university campuses.

in teaching, research, outreach, and operations. However, few academic institutions as large and diverse as the University of Minnesota are attempting to weave sustainability goals across all campuses and integrate them through all four dimensions of teaching, research, outreach, and operations.



What is Sustainability?

The modern definition of sustainability is derived from the definition of sustainable development set forth in the 1987 report of the United Nations' World Commission on Environment and Development titled *Our Common Future*—also known as the Brundtland Report:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs," in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

Since then, the concept has evolved to take on the shape of three interlinked spheres of environment, society, and economy (sometimes referred to as "triple bottom line" or "people, planet, and profit") when making decisions for the common good. In its *Policy on Sustainability and Energy Efficiency*, which set the stage for this report, the University of Minnesota Board of Regents defined sustainability as follows:

Sustainability is a continuous effort integrating environmental, social, and economic goals through design, planning, and operational organization to meet current needs without compromising the ability of future generations to meet their own needs.

As a land-grant university, the University of Minnesota is grounded in the principle of valuing the natural, economic, and social systems that sustain us. Through our 158-year history, we have sought to strike the balance that keeps all three thriving.

Much of this work has focused on environmental stewardship in teaching, research, and student activities. In establishing a field station at Lake Itasca in 1909, the University set the stage for research and educational programs focused on benefiting from natural resources while protecting the ability of future generations to do the same. In the 1930s that same field station inspired University of Minnesota undergraduate Raymond Lindeman, whose later studies at the University's internationally renowned Cedar Creek Ecosystem Science Reserve help shaped the field of modern ecology. The Duluth campus is a model for stormwater management and that operational practice has its roots intertwined with the longstanding Sea Grant program, which was proposed as a concept in 1963 by Athelstan Spilhaus, then dean of the Institute of Technology at the University of Minnesota. On the first Earth Day 40 years ago, Twin Cities campus students planned to mark the event by presenting a Declaration of Interdependence and an Environmental Bill of Rights, and hold a mock award ceremony outside Northrop auditorium for local polluters.

Integration of sustainability into campus operations has been, and continues to be, a multifaceted effort. Recycling programs were developed in 1984. A systemwide waste abatement policy adopted in 1992 helped lay the groundwork for an operations culture that values and seeks sustainability. Today we are working to create a systemwide culture of sustainability when developing our operational policies and procedures and when making day-to-day decisions about our operations. We also seek to manifest an ethic of sustainability in environmentally effective development, building management, and transportation decisions; environmentally wise purchasing; and the management of resources for their highest end use and not as waste.

Outreach efforts have long been strong as well. In the 1930s, University of Minnesota Extension 4-H programs began holding conservation camps to train future leaders. Since the 1980s Extension has played a pivotal role in assisting counties as they develop, implement, and enhance waste management and recycling plans, creating easily accessible opportunities for citizens around the state to reduce their ecological footprint. And the Regional Sustainable Development Partnerships, formed 1998, foster resilient communities and strengthen citizen ties to University resources.

Numerous efforts on individual campuses, such as the launching of a major sustainability initiative on the Morris campus in 2000 culminating in the signing of the ACUPCC, and restoration of the Sarita Wetland on the Twin Cities St. Paul campus, have helped build momentum and positioned the University of Minnesota as a leader in grass-roots campus sustainability efforts.

In 2002, a group of interdisciplinary faculty, the Commission on Environmental Science and Policy, brought sustainability to the forefront as an organizing principle when it called on the University of Minnesota, as a major landowner and building operator as well as a land-grant institution, to recognize that environmental science and policy are potentially the largest single unifying subjects across a broad spectrum of administrative units and faculty. The commission report recommended leveraging the broad spectrum of University resources in pursuit of solutions to the complex interdisciplinary environmental problems facing our world. At all campuses, growing interest by students, faculty, and staff in ensuring their University had a positive impact on the environment created a need for better definition and communication about University research strengths and operations. Responding to this thought and action, then-Executive Vice President and Provost Robert Bruininks asked Vice President Kathleen O'Brien and then-Vice Provost Al Sullivan to lead a group of students, staff, and faculty in drafting a policy that would define the path to a sustainable future for the University.

In 2004, in follow-up to and affirmation of this group's work, the University of Minnesota Board of Regents adopted its Sustainability and Energy Efficiency policy.



Soon after this sustainability and energy policy was adopted, the University of Minnesota began a strategic planning process. The resulting plan, *Transforming the U*, called for transformative change, better use of resources, exceptional innovation, and a commitment to “measure what we value and then act accordingly.” Through this process, the University of Minnesota established the goal of becoming one of the top three

Board of Regents Policy on Sustainability and Energy Efficiency: Guiding Principles

The Board of Regents policy affirmed that the University of Minnesota is committed to incorporating sustainability into teaching, research, outreach, and operations in the context of the six guiding principles of the policy:

1. Leadership

Through excellence in environmental education, research, outreach, and stewardship, the University shall strive to be a world leader by promoting and demonstrating sustainability and energy efficiency and by producing leaders and informed citizens.

2. Modeling

The University shall strive to be a model in the application of sustainability principles to guide campus operations by: (a) meeting and aspiring to exceed all applicable regulatory requirements; (b) preventing pollution at its source; (c) reducing emissions to the environment; and (d) encouraging the use of a life-cycle cost framework.

3. Operational Improvements

The University shall undertake a continuous improvement process that seeks to meet the operational performance targets, goals, and objectives designed to achieve sustainability.

4. Energy Efficiency

The University shall undertake a process to increase energy efficiency, reduce dependence on non-renewable energy, and encourage the development of energy alternatives through research and innovation.

5. Research

The University shall (a) promote innovative, high visibility research projects focused on sustainability and energy efficiency to inform campus operations as a whole as well as the broader community; and (b) promote collaborative projects that include faculty research undertaken in partnership with operations staff, students, public entities, community organizations, and industry.

6. Education and Outreach

The University shall promote educational and outreach activities that are linked to operational improvements and innovation principles.

public research universities in the world. The process also emphasized the importance of interdisciplinary education and inquiry—an approach that is the foundation of sustainability. Informed by the work of the Commission on Environmental Science and Policy, and recognizing the strength and value of the University’s environmental

This report calls for the University of Minnesota, in the context of our commitment to become one of the top three public research universities, to weave sustainability through all we are and all we do.

leadership, the strategic planning process led to the formation of the Institute on the Environment to drive interdisciplinary solutions to complex environmental problems. Integration of sustainability concepts into campus master plans has been completed or is underway.

In the context of the Board of Regents *Policy on Sustainability and Energy Efficiency* and *Transforming the U* and signing the American College & University Presidents' Climate Commitment for the University system, in January 2008 University of Minnesota President Robert Bruininks named Vice President Kathleen O'Brien to lead sustainability efforts and implementation of the policy across the University. In April, he established the University of Minnesota Sustainability Goals and Outcomes Committee to guide implementation of the Board of Regents policy by recommending goals and performance measures and supporting development of sustainability committees on each campus. Co-chaired by O'Brien and Deborah Swackhamer, professor of environmental health sciences, co-director of the Water Resources Center, and Charles M. Denny, Jr., chair for science, technology, and public policy at the Humphrey Institute of Public Affairs, the committee included students, faculty, and staff from four University of Minnesota campuses. Work teams formed in fall 2008 aligned with the policy's guiding principles (Appendix B). Over the next six months, the work teams and committee, guided by input from the broader University community, developed data-driven goals and desired outcomes and measures for each guiding principle.

This document is the committee's report and recommendations.

First and foremost, the committee and this report recognize and celebrate the sustainability-promoting activities that have already taken place on every University of Minnesota campus. These activities, originating with and advanced by students, faculty, and staff as well as administration, have earned the University the highest grade of the Big Ten institutions in the Sustainable Endowment Institute's 2008 report card as well as a "greenness" rating of 91 out of 100 in Princeton Review's *Best 368 Colleges*.

But this report also moves beyond celebrating existing successes. It proposes goals and outcomes to meet the Board of Regents policy, and adds specific strategies for implementation and for measuring success. The committee and work teams identify what challenges need to be addressed, and provide a vision of where we want to go, how we will get there, and how we will know (and tell others) how we're doing. Ulti-

mately, it calls for the University of Minnesota to weave sustainability through all we are and all we do as part of our transformation to become one of the top three public research universities. It invites students, faculty, and staff to work together across campuses and across disciplines to make the University of Minnesota a nationally renowned leader in ensuring that our actions to meet our needs today also protect and sustain the ability of future generations to meet their needs.

The University of Minnesota takes pride in being founded on and grounded in traditional Minnesota values of respect, hard work, education, equal opportunity, innovation, and leadership. Nowhere could these values be more profitably applied than in our commitment to pursue a vision in which sustainability is the organizing principle for all of our endeavors and a key yardstick against which we measure our success. There is much work to do as we move forward, driven by data and a sense of service to the broader community, to create change locally that we believe will ultimately have global significance. But we take pride in having the opportunity to lead the way. Our hope is that this commitment will serve as a lens to focus past successes, current efforts, and newly emerging initiatives into a strong beam of sustainability-promoting education, innovation, and action that will light the way to a brighter, more sustainable future, not only for the University of Minnesota but for peer institutions around the world.

Emphasis: Energy

The Board of Regents acknowledged the important relationship between energy management and our success in advancing sustainability by including in its policy a separate guiding principle on energy efficiency. With respect to operations, we have incorporated, and are committed to continue to incorporate, well-managed and innovative energy programs into our efforts. Solutions for individual campuses depend upon their unique settings and size. What they all have in common is a commitment to take positive steps toward achieving climate neutrality through a setting-appropriate mix of reducing fossil fuel use through energy conservation and deployment of renewable energy sources. This helps us shrink our system's carbon footprint in a cost effective manner and reduce our dependence on non-renewable energy.

The University of Minnesota is already widely recognized for innovative renewable energy research and for bringing that knowledge to bear through University of Minnesota Extension and globally through other outreach programs. These efforts will increase in scope and impact as we strive to lead the way to a more sustainable energy future.



Goals, Desired Outcomes, Measures

What specific goals should the University of Minnesota strive for in the pursuit of sustainability?

How will we know when we achieve them?

In response to these questions, five work teams, organized according to the Board of Regents policy's six guiding principles, developed 27 sustainability goals and 74 desired outcomes and measures. As the work team reports were reviewed together, a few high-level goals seemed to rise above to represent the overall spirit and intent of the work teams:

1. Leadership

As a large public research land-grant university, the University of Minnesota will strive to be a leader in sustainability and energy efficiency.

2. Living Laboratory

The University of Minnesota will serve as a living laboratory as we integrate sustainability across operations, education, research, and outreach.

3. Engagement

The pursuit of sustainability will actively engage all dimensions of the University of Minnesota, and the University will promote activism and engagement related to sustainability.

4. Communication

Transparent and abundant communication will help build awareness of the what, why, and how of sustainability throughout the University of Minnesota community. The University will encourage communication, marketing, and transparency to build awareness and participation.

5. Policies

Uniform policies will help departments and programs adopt best practices for sustainability. The University will establish policies that make best practices (energy, purchasing, etc.) the most desirable choice for all departments.

6. Culture Change

The University of Minnesota community will undergo a fundamental culture change as sustainability is integrated through our programs and practices. The University will nurture a culture that views sustainability as an integral component of all we do.

7. Community Impact

The University of Minnesota's pursuit of sustainability will enhance awareness and adoption of sustainable practices in the broader community. The University will create mechanisms for measuring impacts on campus and beyond. (How does our work change the world?)

8. Integration

The University of Minnesota will integrate sustainability into operational and financial decisions, teaching, research, and outreach.

These high-level goals and related themes woven into the work products of the teams note actions essential to our success as the University of Minnesota carries out its threefold mission of research and discovery, teaching and learning, and outreach and public service on multiple campuses and beyond. As a living laboratory, the University provides opportunities to develop, test, and disseminate novel approaches as sustainability is integrated.

The following sections summarize the goals and desired outcomes and measures proposed by each work group. Viewed in whole, the committee and work teams recognized the importance of taking an integrated and comprehensive approach to sustainability to ensure the vitality and longevity of our University, and underscored the importance for the University to play a key role in finding solutions to complex global issues. Some of the work teams' original objectives have been consolidated, bringing together similar goals and objectives to increase robustness and reduce redundancy.

Measures will continue to be developed, refined, and advanced as we make progress toward these goals and desired outcomes and measures, learn from our efforts, and adapt our activities to make the best progress possible at all times and under all circumstances in our quest to become a truly sustainable university.

Reach for the STARS

The Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment, & Rating System (STARS) is a standardized tool being used by campuses across North America to assess institutional sustainability as an important step toward enhancing it. University Sustainability Goals and Outcomes Committee work teams were encouraged to consult this inter-institutional framework in developing their own goals and objectives. In many cases, the teams referenced the alignment of goals and objectives developed here with specific STARS criteria.



Leadership and Modeling

Board of Regents Policy Guiding Principle 1:

Through excellence in environmental education, research, outreach, and stewardship, the University shall strive to be a world leader by promoting and demonstrating sustainability and energy efficiency and by producing leaders and informed citizens.

Board of Regents Policy Guiding Principle 2:

The University shall strive to be a model in the application of sustainability principles to guide campus operations by: (a) meeting and aspiring to exceed all applicable regulatory requirements; (b) preventing pollution at its source; (c) reducing emission to the environment; and (d) encouraging the use of a life-cycle cost framework.

As a major land-grant university with socially responsible facilities management and world-class environment and natural resources education, research, and outreach programs, the University of Minnesota has the opportunity to be a leader and role model in the transition to a more sustainable society. Through example and through the network of relationships formed by our students, faculty, and staff, choices we make can set the pace for local, national, and global communities. For this to happen, however, we must first, in Gandhi's words, "be the change we wish to see"—a living laboratory and model in which sustainability is woven through all we are and all we do.

Our vision in the areas of leadership and modeling is that the University will lead the way in making sustainability an organizing principle for all human activity. Experiences here will make sustainability real and relevant to students, staff, and faculty. Our education, research, outreach, and operations will be recognized for innovation and for encouraging entrepreneurial endeavors in sustainability. Our campus community will understand how we measure sustainability, how the University is performing, the complex challenges we face, and the actions we take together to address them. Long-term life-cycle concepts will be integral to operational decisions. Students, staff, and faculty will be leaders and informed citizens who understand the impact of their choices and replicate sustainable practices learned at the University in our communities and families.

The following goals and objectives provide a framework for moving toward this vision of sustainability leadership and modeling, and for assessing our progress as we do.

Leadership and Modeling Goal 1

Be a national leader and pioneering model for sustainability and energy efficient operations among large public research land-grant institutions

Desired Outcomes and Measures

- a. The University graduates the largest number of green leaders
 - i. Students graduate with community experience related to sustainability
 - ii. Students are more aware of sustainability issues and behave in a more sustainable manner than before they came to the University
- b. The University undergoes external sustainability assessments, and peer review, recognition, and rankings show progress toward sustainability (for example, the University of Minnesota has achieved a top ranking in reports on green campuses)

Academic institutions around the world that model sustainable practices are seedbeds for a sustainable future. Because of their large size and broad mission, this effort is both exceptionally challenging and exceptionally compelling for land-grant universities.

Rooted in a track record of outstanding environment-related programs, impelled by existing sustainability efforts at all five campuses, and nurtured by a culture that values social responsibility and hard work, the University of Minnesota is superbly positioned to show the way to integrating sustainability into the fabric of land-grant university culture. Doing so will require transforming existing systems, integrating input across disciplines, and working with many and diverse external partners. Change may not always come quickly, but it will come steady and strong as we lead in a way that provides solid footing for those who follow.



Green Groundbreaking

Crookston students Chris Waltz, Marshall Johnson, and Erick Elgin broke ground in more ways than one last fall when they sank a shovel at the site of a new student apartment complex at the University of Minnesota, Crookston. These students led the way for the University of Minnesota's first LEED®-certified residence facility, Evergreen Hall. Unique green building materials and energy efficiency create a more sustainable Homecoming for students in 2009.

Leadership and Modeling Goal 2

Actively advance the transition to a sustainable world economy through research, teaching, outreach, and operations

Desired Outcomes and Measures

- a. Financial, academic, and operational planning and decisions take a long-term life-cycle view and integrate environment, economy, social equity—also known as the “triple bottom line”
- b. More research and education focuses on a green economy
 - i. The University of Minnesota is aligned with the Minnesota Green Jobs Investment Initiative and the new federal energy economy and green jobs programs
- c. By including sustainability, celebrations and events model transformative activities

Sustainability spans three spheres: economy, environment, and society. Many institutions have made progress on one or more of these in one or more program areas. For meaningful results, the University of Minnesota must bring these spheres of sustainability together in an integrated, integral way that interconnects all campuses and endeavors, from socially responsible investing to extending results of environmental research to communities that can implement them on the ground.

Great Green Games

How small is your carbon footprint? Current technology allows us to estimate carbon emissions produced by each unit across the University of Minnesota. Online software makes it possible for individuals to calculate their personal impact as well. Why not make reducing our carbon footprint fun by making it a friendly competition—one department, dorm, class, or ad hoc team against another? “Great Green Games” in which participants race for the smallest footprint and learn how they can reduce their impact on the environment will also help the University ratchet its carbon reduction goals at the same time.

Leadership and Modeling Goal 3

Inspire and influence the community, nation, and world through innovative sustainable research and practices

Desired Outcomes and Measures

- a. Institutional efforts support community, social ethic, and economic transitions toward a sustainable community
- b. The University of Minnesota demonstrates that sustainable practices work, save money, and improve the community
- c. The University of Minnesota measures innovation and provides recognition for leaders and achievements in sustainability

This goal aligns closely with the mission of the University of Minnesota's Institute on the Environment. As with the first two Leadership and Modeling goals, many of the elements are found in other institutions and on individual University of Minnesota campuses. The next step is to bring these together into a way of being that is embedded in our culture.



Cornercopia is a student-driven and -run certified organic farm located on the Twin Cities St. Paul campus. Fruits and vegetables grown there are sold at the campus farmers' market. The farm is used for internships and classes.

Leadership and Modeling Goal 4

Make significant continuous achievements toward sustainability goals and commitments

Desired Outcomes and Measures

- a. The University reviews sustainability goals, assesses progress annually, and reports on progress

The University of Minnesota has made solid progress toward sustainability goals and commitments. There is a close tie between achieving the University's social, economic, and environmental sustainability goals and its top-three-public-research-university strategy. Awareness of progress to date is also important if the University is to successfully compete for external funding and attract premier research and students. The challenge for a leading institution like the University of Minnesota is to bring these all together into a synergistic whole.

Leadership and Modeling Goal 5

Embrace an organizational culture and individual decisions that support an inclusive, engaged, active, and sustainable healthy community

Desired Outcomes and Measures

- a. Communication goals are met to ensure transparency about sustainable practices
- b. Incentive rewards support sustainable choices
- c. The University measures social shifts related to sustainability

There is evidence that the campus community is embracing change. On the University of Minnesota Twin Cities campus, the Sustainability Studies Minor, started in 2006, is available to all majors. It currently enrolls 268 students from 17 majors in the core classes and is growing. A number of student groups focus on sustainability and co-sponsor campus events. More than 3,500 individuals and 160 University of Minnesota units have pledged to conserve energy as part of the University's new "It All Adds Up" energy conservation campaign. This campaign is being rolled out initially on the Twin Cities campus and eventually will be available for all campuses.

Some departments have formed green teams; that structure could be institutionalized so they can share tools and best practices. Organizational culture changes are difficult and require key concepts to penetrate into budget decisions and permeate our process

for recognizing and rewarding individual and department performance related to these goals. As we work to weave sustainability through our campuses, it will be important to remember the broad scope of sustainability and link community, social justice, and economic initiatives to sustainability goals and efforts.

Leadership and Modeling Goal 6

Meet all regulatory requirements and support the development of future regulations and policies through technical review, academic study, and practical experience

Desired Outcomes and Measures

- a. University operations track and assess applicable regulatory requirements
- b. University forums provide regular exchange of ideas and knowledge between academic, operations, and community sustainability leaders in policy areas of interest

Operations at an institution as diverse as the University of Minnesota must meet numerous regulations and standards in areas such as environmental health and safety and energy use. These are tracked through University Health and Safety and in departments impacted. This goal affirms the University of Minnesota’s commitment to operate in compliance with applicable regulations. This goal was part of a policy that preceded—and is now replaced by—the Board of Regents Sustainability and Energy Efficiency Policy.

The University of Minnesota is also involved in development of regulations and policies. For example, the University of Minnesota’s Center for Sustainable Building Research provided input to the B3 Minnesota Sustainable Building Guidelines (B3-MSBG) and is guiding development and implementation of performance standards for Minnesota 2030, the amendment to B3 that requires new public buildings to move toward carbon neutrality by 2030. The Humphrey Institute of Public Affairs is a leader in shaping the future of public policy—from urban planning to energy, from clean water to social justice. Establishing a process for the exchange of ideas and knowledge among academic, operations, and community sustainability leaders will facilitate practical and creative input to developing policy and regulations founded in principles of sustainability.



Operational Improvements

Board of Regents Policy Guiding Principle 3:

The University shall undertake a continuous improvement process that seeks to meet the operational performance targets, goals, and objectives designed to achieve sustainability.

An overarching goal for University of Minnesota sustainability initiatives is to create a systemwide culture of sustainability when developing our operational policies and procedures and when making day-to-day decisions about our operations. We seek to manifest an ethic of sustainability in environmentally effective development, building management, and transportation decisions; environmentally wise purchasing; and the management of resources for their highest end use and not as waste.

The University has long incorporated strong environmental management practices into its operations for social, economic, and environmental reasons. Going forward, the University will model an ethic of sustainability, demonstrate sustainability principles in all aspects of business and operations, and build an infrastructure that is embedded in all three spheres of a strong environment, strong society, and strong economy. In addition to meeting its purpose—“to make the University work”—areas of operation will serve as a classroom, a model, and a living laboratory for sustainability in education, outreach, and research.

Operational Improvements Goal 1

Plan, program, design, construct, and operate University of Minnesota facilities throughout their life cycle to provide restorative impacts to the natural environment and a healthy indoor environment for the University community

Desired Outcomes and Measures

Energy and lighting impacts

- a. Operating energy from buildings is reduced
- b. Greenhouse gas emissions from buildings are reduced
- c. Heat island impacts are reduced
- d. Night sky radiation is reduced

Water resource impacts

- e. Potable water use is reduced
- f. Wastewater is reduced
- g. Stormwater is managed to reduce runoff quantity, rate, and pollution

Building materials, design, and usage

- h. Life-cycle impacts of building materials are optimized
- i. Our indoor environments are healthy
- j. Total campus square footage is optimized
- k. Construction waste is recycled

Grounds and siting

- l. Pervious surface use is increased
- m. Flora and fauna biodiversity is maximized on building sites
- n. Soil conservation is maximized



Rah! Rah! Rah!

In September 2009, the new TCF Bank Stadium was awarded LEED © Silver Certification and became the first certified collegiate or professional football stadium. Features include an extensive stormwater system to filter rain water before it drains into the Mississippi River. Steel was 90 percent recycled and fabricated primarily in Minnesota. Almost all of the construction waste was recycled.

Strategic building planning and design, construction, and operation of indoor and outdoor environments are key to achieving long-term facilities sustainability. Minnesota Sustainable Building Guidelines already apply to University of Minnesota state-bonded buildings. These standards incorporate many of the Minnesota 2030 program elements listed here. To continue to succeed in meeting more stringent guidelines in this area requires a financial model and funding source that allow us to designate money up front for features that provide real savings over the lifetime of each building and system.

The University of Minnesota is fortunate to have a wealth of academic and operational expertise that provides the tools for minimizing adverse impacts on the natural environment and indoor environmental health. With institutional commitment and dedicated resources to make it happen, we can lead the way.

Operational Improvements Goal 2

Integrate environmental, economic, and social priorities into purchasing and contract decisions

Desired Outcomes and Measures

- a. An environmentally preferable purchasing (EPP) policy is developed and implemented with criteria that align with social and economic criteria currently used by University of Minnesota buyers
- b. Sustainability is part of the University of Minnesota vendor code of conduct

Identifying and tracking environmentally preferable purchasing (EPP) takes time up front, but pays back in the long run in all three spheres of sustainability. Purchasing Services has a sustainability policy that outlines preferred environmental and energy efficient attributes for products purchased. Achieving this goal requires campus- or institutional-level consensus or interaction to evaluate, prioritize, and target EPP products and services. It also requires coordination with existing vendor code of conduct initiatives and interaction with the University Senate Committee on Social Concerns.

Operational Improvements Goal 3

Use lower impact transportation alternatives that increase fuel efficiency, provide more sustainable fuel options, and help reduce the miles traveled on campus, to campus, and as part of the University of Minnesota enterprise

Desired Outcomes and Measures

- a. Alternative transportation is increasingly available and use of mass transit is increasingly encouraged
- b. Everyone on campus has a wide array of transportation options; safety and convenience for all modes of travel, including walking and bicycling, has increased
- c. Housing alternatives for students, faculty, and staff near campus have been encouraged
- d. Meeting and distance learning technologies are supported
- e. Proper maintenance of fleet and operations vehicles, purchase of fuel efficient or alternatively fueled vehicles, and access to technology to reduce unnecessary travel has increased campus fleet efficiency

Because of differences in needs and circumstances between rural and urban settings, campuses need leeway to set their own targets and strategies in the area of transportation. In any case, fleet vehicle maintenance and operation will be an important part of enhancing vehicle efficiency, as will replacement of retiring fleet vehicles with hybrid or other high miles-per-gallon vehicles.

Operational Improvements Goal 4

Manage resources for their highest end use by reducing consumption, minimizing waste, and strongly supporting the reuse and highest value recycling of unwanted materials

Desired Outcomes and Measures

- a. Informed purchasing and resource-use decisions reduce consumption of materials
 - i. Fewer goods and services are purchased by University operations
- b. Rethinking waste-producing processes reduces waste
- c. Reuse of existing resources by individuals and by institutional reuse programs is supported
- d. Recycling of a wide range of materials is supported

Waste management procedures are well established, with recycling rates of 20 to 47 percent depending on the campus; improvements will require rethinking and reorganizing how we define and handle waste. As campuses and waste-handling needs grow, we will need to change product use and supply chain management. Infrastructure and staff commitments are needed to support waste reduction and waste diversion targets and to cope with food operation impact.

Purchases of fewer goods will help reduce operational waste and inefficient work practices, and allow us to do more with the resources we do have in support of the University's critical research, teaching, and outreach missions.



Fleet Feat

In 2009, the University of Minnesota fleet was named one of the 100 best fleets in North America by Government Fleet magazine—for the fifth year in a row. Among the criteria for the award: good stewardship of human, capital, and natural resources. The University of Minnesota was one of only two universities to make the list.

Energy Efficiency

Board of Regents Policy Guiding Principle 4:

The University shall undertake a process to increase energy efficiency, reduce dependence on non-renewable energy, and encourage the development of energy alternatives through research and innovation.

With fossil fuels a finite resource and global climate change raising the specter of major alterations in Earth's ability to support life as we know it, reducing the use of fossil fuels is integral to shaping a sustainable future.

Each University of Minnesota campus has its own unique combination of strengths and opportunities for enhancing the sustainability of our energy infrastructure. Our overarching goal is to be recognized as a national leader in the pursuit of sustainability, climate neutrality, and the energy efficient operations of our campuses. To achieve this, we will create a comprehensive energy plan for the University of Minnesota that takes into account the unique characteristics of each campus while maximizing efficiency of energy use and identifying a path to climate neutrality. Each campus may have different options based upon circumstances.

Actively engaging our campus communities in energy conservation and integration of energy efficiency into our operations are critical aspects of the system energy plan. Recognizing the importance of research investments, as a land-grant university, model, and mentor, we continue our commitment to conduct renewable energy research through the Initiative for Renewable Energy and the Environment and other research areas and contribute to the development of progressive energy policy.

In summary, we will reduce energy use, increase energy efficiency, increase renewable and low-carbon-footprint energy inputs, measure our carbon footprint, meet American College & University Presidents' Climate Commitment (ACUPCC) milestones, and meet Chicago Climate Exchange (CCX) requirements.

Climate Neutrality:

The state in which we have no net greenhouse gas emissions from specific sources, achieved by reducing greenhouse gas emissions as much as possible and then using offsets or other measures to mitigate the remaining emissions.

—ACUPCC definition



Art from Energy

When the winter wind blows cold over the Pomme de Terre River it brings warmth to the University of Minnesota Morris, thanks to the 1.65 MW turbine operated by the adjacent West Central Research and Outreach Center. Alumna Leah Stevermer '09 celebrated the renewable-energy icon that represents a leadership commitment to climate neutrality with this original art for UMM's 2007 holiday card.

Energy Efficiency Goal 1

Reduce energy use

Desired Outcomes and Measures

- a. Energy use is 5 percent below FY2008 levels by the end of 2010
- b. Each campus has unique long-term energy goals and energy plan by 2010

These activities support the Board of Regents Sustainability and Energy Efficiency Policy and our commitment to achieve climate neutrality (and meet ACUPCC milestones). They also provide a real opportunity for immediate savings during current economic times.

Energy Efficiency Goal 2

Engage the University of Minnesota community in energy conservation

Desired Outcomes and Measures

- a. Low carbon instructional delivery programs are evaluated by measuring the credit hours per carbon input

Energy conservation is everybody's business. Communication is vital to ensure building energy use is measured and considered in everyday decisions. Kiosks inform occupants about ways to reduce energy consumption. Awareness-building displays with up-to-date performance data and kudos for successes provide motivation for behavior change. Transparency regarding carbon inputs to various educational delivery options helps users make informed choices that minimize their environmental impact.

Campus, Energized

A 1.65 MW wind turbine provides power to most campus buildings at the University of Minnesota Morris. Campus sustainability leaders are now working on developing a biomass reactor in collaboration with the West Central Research and Outreach Center that can use farm crop byproducts to generate steam for heating and cooling. Two additional wind turbine projects are in the works, one near WCROC, and the other as a collaborative effort with the Mille Lacs Band of Ojibwe on the UMM campus. UMM has received wide recognition, including an American Council on Renewable Energy (ACORE) Campus Excellence Award, for its sustainability efforts.

Energy Efficiency Goal 3

Pursue climate neutrality and energy efficient operations across the University of Minnesota

Desired Outcomes and Measures

- a. University carbon reduction and renewable energy commitments and requirements are met
 - i. ACUPCC goals are met, including developing a comprehensive plan to achieve climate neutrality, inventorying greenhouse gas emissions, and establishing an action plan for becoming climate neutral with short-term and interim goals
 - ii. The CCX requirement to reduce CO₂ 6 percent below baseline by 2010 is met
 - iii. State and federal goals, including Minnesota's 25-percent-by-2025 renewable energy standard, are met
- b. By the end of 2010, a University-wide energy master plan has been created that identifies the most effective approach and strategy toward improving energy efficiency of campus buildings and infrastructure and reducing campus carbon footprint, including establishing an energy working committee to review current master plans and develop recommendations on how to migrate to a more comprehensive energy master plan
- c. Common auditable measures for energy consumption across all campuses and energy standards have been established, with all buildings metered by 2012, norms for each campus, and a data warehouse for all energy data

The University of Minnesota should commit to pursuing the desired outcomes and measures applicable to the individual campus. Success should be measured by external assessments, tracking against program milestones, and tracking our own performance for meeting institutional commitments. The feasibility of climate neutrality has not yet been fully evaluated for the University of Minnesota system and may rely on future technological and regulatory advances.



Showtime

Energy Showcase events give Energy Management staff the opportunity to explain energy efficiency recommissioning projects and get input from people who work in University of Minnesota Twin Cities buildings. The "It All Adds Up" campaign includes an energy conservation pledge for students, staff, and departments. Student volunteers from the Energy Efficiency Student Alliance measure energy use in offices to encourage people to think about their energy use and power down.

To meet ACUPCC goals, each campus has chosen to meet two interim tangible measures and has submitted a greenhouse gas inventory. These are documented on the ACUPCC reporting site. The University should include interim targets and consider public institution needs in addressing appropriate use of off-campus offsets.

With respect to the energy master plan, the University of Minnesota should incorporate a carbon-neutral goal and timelines into master plans; develop an energy balance matrix that establishes plans for incorporating onsite renewable or low-carbon fuel sources for each campus by 2012; ensure work aligns with the ACUPCC climate action plan; and work with Capital Planning and Project Management to establish energy standards that use a cost-of-energy matrix to drive investment strategies (different returns on investment based on different energy costs and efficiencies).

Energy Efficiency Goal 4

Adopt energy-related financial policies which enable the University of Minnesota to be socially, environmentally, and fiscally informed

Desired Outcomes and Measures

- a. The University of Minnesota measures CO₂ in cost-benefit analyses and assigns a value to CO₂ tied to an aggressive world CO₂ index
- b. The University has adopted minimum and recommended carbon reduction techniques to be incorporated in new and recommissioned building projects with ROI (return on investment) calculations up to 15 years

Historically, the price consumers pay for energy has not adequately factored in the environmental and social costs of producing, transporting, and using it, or the deferred cost of dealing with the long-term consequences of environmental impacts. By including CO₂ in cost-benefit analyses and energy efficiency in assessments of return on investment, we will strive to internalize these costs and optimize the outcomes for all three spheres of sustainability, rather than emphasizing raw economic considerations while not acknowledging or quantifying potential environmental and social consequences.

Energy Efficiency Goal 5

Contribute to the development of progressive state and federal energy policies

Desired Outcomes and Measures

- a. A legislative briefing group has been established to discuss pending or future energy-related legislative initiatives with University of Minnesota legislative relations staff
- b. The University of Minnesota will demonstrate how to utilize state resources such as Higher Education Asset Preservation and Replacement (HEAPR) funding to enhance energy efficiency, reduce carbon, and work toward sustainability goals

The University of Minnesota has a well-earned reputation as a recognized leader in energy-related research and a stellar force in bringing state-of-the-art science to bear on public policy decisions. By positioning ourselves as a leader in energy policy development at the state and federal level, we can bring these two areas of expertise to bear together on the goal of enhancing sustainability in higher education as well as in other sectors that are key players in our state's and nation's economies and valued contributors to our renowned quality of life.

Sustainable State

As Minnesota works to become more sustainable, policy makers frequently turn to the University for advice. The 2008 *Statewide Conservation and Preservation Plan*, prepared under the leadership of Deb Swackhamer, professor in the Humphrey Institute and School of Public Health, distilled expert insights of more than 75 faculty into a set of comprehensive recommendations to sustain the state's natural resources. *Governance Options for Carbon Cap and Trade Revenue*, developed by Humphrey Institute faculty Steve Kelley and Elizabeth Wilson and colleagues in 2009, is helping the Minnesota Department of Commerce prepare for strategies in carbon market-based efforts to mitigate global warming.

“Our commitment to excellence is already at work in our corridors. The problems of the 21st century require an interdisciplinary approach to solve—but the strength of that approach will be rooted in departments and disciplines of distinction.”

*—President
Robert H. Bruininks*

Research

Board of Regents Policy Guiding Principle 5:

The University shall (a) promote innovative, high visibility research projects focused on sustainability and energy efficiency to inform campus operations as a whole as well as the broader community; and (b) promote collaborative projects that include faculty research undertaken in partnership with operations staff, students, public entities, community organizations, and industry.

With its solid track record and exceptional faculty and student resources, the University of Minnesota has a golden opportunity to lead the way in addressing the complex sustainability challenges of the 21st century through research. Ensuring sufficient energy, healthy food, and clean water in the face of climate change, population growth, and increased consumption requires research that addresses environmental, economic, and social perspectives. In particular, sustainability research should seek to identify the critical interactions and feedbacks between human and natural systems, and to understand the ways in which these processes affect long-term sustainability. The University of Minnesota should increase its institutional capacity to conduct applied interdisciplinary sustainability research, and nurture an academic and individual culture that places a high value on research and action for sustainability.

Sustainability research is inherently interdisciplinary. The University of Minnesota has a unique capacity to conduct rigorous, interdisciplinary, civically engaged sustainability research for several reasons. First, we have broad and deep research expertise in numerous fields relevant to sustainability. Second, we are an international leader in interdisciplinary research, with over 300 centers, initiatives, and programs of interdisciplinary research that already generate a large body of publications on critical sustainability topics. Third, as a land-grant institution, the University can leverage a strong tradition of collaboration across the state to create living laboratories in which to pursue sustainability solutions.

Research Goal 1

To advance sustainability, nurture cross-disciplinary collaboration and sharing of ideas and perspectives within and beyond the University

Desired Outcomes and Measures

- a. Publication of peer-reviewed collaborative research publications addressing

interdisciplinary sustainability issues and involving researchers from multiple colleges, departments, and units has increased

- b. The University has hosted a premier interdisciplinary sustainability research symposium
- c. An online “knowledge map” of people and projects related to sustainability research has been inventoried and created
- d. Researchers partner with University Services and with sustainability education efforts to use campus facilities for case studies of sustainability issues

Sustainability research is inherently interdisciplinary and complex because sustainability challenges occur at the interface of human and ecological systems and involve trade-offs among environmental, economic, and social benefits. The University of Minnesota is an international leader in interdisciplinary research and continues to reduce barriers to interdisciplinary collaboration. Further efforts in this regard will likely enhance the quality and quantity of sustainability research.

E x 3 = Synergy

Hundreds of business people, policy makers, scientists, and others come together each November at E3, the Midwest’s premier energy, economic, and environmental conference. Hosted by the University’s Initiative for Renewable Energy and the Environment, a signature program of the Institute on the Environment, the annual event provides a window into new technologies and markets, as well as abundant opportunities to build new collaborations among sectors and disciplines.

Research Goal 2

To advance sustainability, promote civically engaged, socially informed, and community responsive research and scholarship

Desired Outcomes and Measures

- a. The sustainability focus and efforts of research and outreach centers, University of Minnesota Extension offices, Regional Sustainable Development Partnerships, and other outreach and public engagement arms of the University of Minnesota have increased to gain input and participation from citizens
- b. Diverse cultures and socioeconomic groups within the Twin Cities and across Minnesota are increasingly engaged around sustainability issues
- c. Connections and partnerships between the Office of Public Engagement and Office of Research have increased

The University of Minnesota should renew and expand its land-grant mission with regard to sustainability and continue to conduct research that is informed by, embedded in, and applicable to the sustainability issues, concerns, and aspirations of the citizens of Minnesota.

Research Goal 3

To advance sustainability, instill sustainability principles in the research culture of the University of Minnesota; all levels of University leadership should embrace sustainability as a core pillar of the University's mission

Desired Outcomes and Measures

- a. A long-term sustainability research committee is established and supported to enhance sustainability research
- b. An upper-level administration office for sustainability is established
- c. The number and profile of research projects, symposia, peer-reviewed publications, graduate theses, and external grants related to sustainability have increased

All levels of University of Minnesota leadership should embrace sustainability as a core pillar of the University's mission. Sustainability research should become a key component of the intellectual identity of the University of Minnesota through creation of a faculty committee and/or upper-level administrative office, and of the University's research "brand" through communications, marketing, and public relations materials.

Research Goal 4

To advance sustainability, eliminate institutional barriers and disincentives to interdisciplinary and collaborative sustainability research

Desired Outcomes and Measures

- a. Sustainability is a significant criterion for hiring faculty in relevant departments, and sustainability research and teaching are recognized as positive criteria for performance evaluation in tenure review



Piecing the Puzzle

As renewable energy technologies go mainstream, how will we put all of the puzzle pieces together to create an integrated, reliable source of heating, cooling, and electrical power? Researchers at the University of Minnesota Rochester and Rochester Public Utilities have been developing answers with a collaborative research project known as the Hybrid Energy Systems Study (HESS). To date the partnership has produced a patent as well as a systems study on combining fuel cells and geothermal heat pump technologies.

- b. Research standards for sustainability have been adopted, and research projects are evaluated according to their relevance to and impact on sustainability
- c. New programs train the next generation of sustainability researchers by facilitating and funding undergraduate and graduate research and discussion focused on sustainability

Traditional academic structures and organization can present barriers to cross-disciplinary research and collaboration. In cooperation with existing efforts to reduce barriers to interdisciplinary research, the University of Minnesota should encourage amendment or revision of collegiate and departmental incentives, structures, and funding to stimulate and reward innovative sustainability research.

Research Goal 5

To advance sustainability, transform the University of Minnesota into a living laboratory for sustainability

Desired Outcomes and Measures

- a. Publication of peer-reviewed collaborative research related to sustainability issues in urban, exurban, rural, terrestrial, and aquatic socio-ecological systems across Minnesota and around the world has increased
- b. The use of University property for sustainability research and education is coordinated through standing committees at all major campuses and centers

The University of Minnesota has an established research presence in multiple settings around the state and can capitalize on this diversity of geographic, socioeconomic, and ecological settings to address sustainability questions in a variety of living laboratories. The Twin Cities campus, coordinate campuses, research and outreach centers, University of Minnesota Extension offices, UMore Park, and other excellent research centers all provide unique opportunities to explore and address sustainability challenges within a spectrum of socio-ecological contexts and in partnership with a wide range of citizens and stakeholders.

Creating a Sustainable Community

Sustainable development is front and center as the University moves forward on planning and development of UMore Park, a 5,000-acre site in Dakota County, over the next 25 to 30 years. Guided by the Regents principles for the property, the UMore Park Steering Committee has shaped a vision that includes social sustainability (community gathering space, emphasis on community engagement), economic sustainability (quality schools, workplaces, and shopping areas), and environmental sustainability (earth-friendly landscaping, energy-efficient homes, focus on renewable energy) as integral drivers of the design.



Education and Outreach

Board of Regents Policy Guiding Principle 6:

The University shall promote educational and outreach activities that are linked to operational improvements and innovation principles.

A weaving metaphor informed the efforts of the education and outreach work team. Each fiber has unique character; it is in the weaving, the interconnections, that a rich and strong fabric emerges. In the same way, each academic discipline has its own unique strengths. Our vision is that together University of Minnesota disciplines weave sustainability through the education of every University of Minnesota student. Community members bring their wisdom, truths, and hopes to the process. System-wide initiatives, implementation flexibility, and complementary thought and action guide us as we integrate education, outreach, and community/partner involvement. Together we create a future in which generations to come have options, opportunities, and resilience to thrive.

Education and Outreach Goal 1

Capture the land-grant mission: Sustainability is part of the educational or campus experience of each and every University of Minnesota student

Desired Outcomes and Measures

- a. Systemwide initiatives are created that include academic and operational sustainability internships
- b. A systemwide summit is held by 2010 for students, faculty, University of Minnesota Extension, community partners, etc.
- c. Graduate and undergraduate sustainability-related minors on multiple campuses and first-year and graduate sustainability seminars are established by 2010
- d. For residents, sustainability is an explicit aspect of living in student housing and being on campus

The University of Minnesota has already made laudable progress toward this goal. On the Twin Cities campus, University Dining Services employs student interns to educate customers on organic recycling and other sustainability initiatives, and Housing & Residential Life employs a student sustainability education coordinator. The

Sustainable Agriculture minor offers an academic undergraduate or graduate student internship, and two new internships are planned for the Sustainability Studies minor. The Sustainability Studies Minor currently serves around 300 undergraduates. On the Duluth campus, the Center for Sustainable Development offers internships; the Environmental Studies Program mandates a 120-hour internship for graduation; the Center for Environmental Education mandates a 600-hour internship for graduation; and Facilities Management offers stormwater internships.

The desire is to develop internships that span the University system and include experiences on each campus as well as offer an opportunity to include community outreach. Creating new academic internships would require faculty time and strengthened relationships with business and community partners. Collaboration between academia and operations is needed to develop joint opportunities, such as an academic internship that requires hands-on experience in operations at the University or with community partners.



Education and Outreach Goal 2

Integrate service learning into the undergraduate and graduate experience, linking students, faculty, University of Minnesota Extension, and community partners

Desired Outcomes and Measures

- a. Service-learning and undergraduate research projects related to sustainability are extended by 2012; student assignments are linked to University of Minnesota operational needs

- b. The sustainability focus of service learning projects increases each year to reach 25 percent by 2020; research and outreach centers are used for service learning
- c. Undergraduate research projects and applied research projects that address sustainability challenges increase each year to reach 25 percent by 2020
- d. By 2012, service-learning relationships with organizations are identified and formalized, building especially on the experience of the Regional Sustainable Development Partnerships, service-learning coordinators, and faculty

A number of University of Minnesota units already match students and faculty with community-based service-learning opportunities. Many have supported sustainability-related projects in past years. Existing formal service-learning and individual projects that focus on sustainability can be readily identified, as can undergraduate research projects. Specific targets may need to be modified depending on the findings.

A formal arrangement for bringing sustainability-focused projects to the attention of faculty and service-learning coordinators could be valuable. Systemwide, an annual summit creates a venue for shared learning across campuses, while University of Minnesota Extension provides a connection to the broader community. The Regional Sustainable Development Partnerships engage directly with community projects; full implementation of the partnership program to cover all of greater Minnesota should be supported.

Targeted funds available through the Office of Public Engagement, the Center for Urban and Regional Affairs, and the Undergraduate Research Opportunities Program could encourage a focus on sustainability. Clean Energy Resource Teams, the Minnesota Institute for Sustainable Agriculture, and Regional Sustainable Development Partnerships all prioritize sustainability.

Students'-Eye View

How does sustainability stack up at the University of Minnesota Duluth? Anthropology professor David Syring gave students in his spring 2009 senior seminar a worldview-expanding task: Spend the semester evaluating various aspects of campus sustainability. The students formed four teams around four themes: waste management, alternative transportation, satisfaction with green construction, and bottled water use. Final reports were posted to the Internet—so people around the world can emulate their approach and benefit from their insights.

Education and Outreach Goal 3

Create and implement curricula and educational programs that address the interface of environment, society, and economy

Desired Outcomes and Measures

- a. Capacity is in place for creating and implementing sustainability-focused curricula and educational programs
- b. Each campus has an assigned academic sustainability coordinator

This goal includes not only developing courses on sustainability, but also helping interested faculty and other educators integrate sustainability content into existing educational programs.

Academic sustainability coordinators on each campus will develop a plan for implementing education and outreach recommendations. These individuals would also collaborate with community partners, such as the Regional Sustainable Development Partnerships, and seek input from students. University of Minnesota administration could provide training workshops and sustainability postdoctoral positions and professorships, making resources and materials available to interested educators through the sustainability Web site and other venues.

Education and Outreach Goal 4

Develop outreach programs for sustainability education of working professionals in the public and private sector

Desired Outcomes and Measures

- a. By 2010, existing University of Minnesota sustainability-related training programs are catalogued, a needs assessment has been conducted to determine what training and certificate programs would be most effective, and programs are prioritized
- b. First education programs for working professionals are established with program completion by first cohorts (e.g., certificates) by 2011
- c. A mechanism is in place for fostering interaction among past participants and connecting them with current students interested in internship opportunities

Bringing knowledge to the wider community is an important part of the University of Minnesota's mission. Training and programs exist in numerous fields that strongly align with sustainability, including forestry, environmental education, gardening, agriculture, and stormwater.

A team of University experts should assess the need for new outreach programming, taking into account the need for training; the social, environmental, and economic benefits training would provide; and the ability of the University of Minnesota to provide the training. Program development should involve a variety of parties, with University of Minnesota Extension and College of Continuing Education playing key roles. The Office for Public Engagement should also be included in the implementation.



Local Foods

Environmentally, economically, and socially sound food production is a cornerstone of sustainability. The Pride of the Prairie Local Foods Initiative, established in 2001, is a collaborative effort of the University of Minnesota (the Morris campus, West Central Regional Sustainable Development Partnership, West Central Research and Outreach Center, and University of Minnesota Extension), and partners to bring local food to campus, support sustainable agriculture, and forge educational links with local food producers. Localfoods.umn.edu, a resource of the Minnesota Regional Sustainable Development Partnerships and Local Foods Partnership (a project of the Northwest Regional Sustainable Development Partnership), provides a one-stop Web site to strengthen local food economies.

Communication

Communication was identified by each work team and in feedback during campus consultations as a critical element both for engaging the community and for raising awareness. In synthesizing the goals outlined by work teams, the committee noted several key goals and outcomes that aligned under the common theme of communication. These goals have been brought together under this separate section to provide opportunities for confluence of thought and action.

Communication Goal 1

Create opportunity for dialogue to discuss global and local sustainability challenges, opportunities available, and the work of the University to advance sustainability

Desired Outcomes and Measures

- a. Communication tools and tracking systems make data related to sustainable practices available to the University community
 - i. Building energy use is measured and kiosks inform occupants about ways to reduce energy consumption
 - ii. Operational priorities and policies are communicated
 - iii. Operational priorities for resource management and waste reduction are communicated throughout the University of Minnesota to maximize success
 - iv. Success is monitored for meeting operational goals and to provide feedback (to waste producers, for example)
 - v. Systems for tracking University travel are supported
- b. Communication and reporting is provided throughout the University and to Resource Responsibility Centers (RRCs) to ensure awareness of policies, priorities, and results of performance metrics discussed in this report

The goals and activities to achieve them have an extraordinarily broad impact, rippling through every aspect of what the University of Minnesota is and does. As a result, in order to maximize engagement and increase awareness of the integration of sustainability into University of Minnesota culture, committee members and sustainability leaders at all campuses identified the need for the president to lead initial communication about this sustainability goals, outcomes, and measures report and the



importance of integrating sustainability into teaching, research, outreach, and operations systemwide. Ongoing marketing, promotion, and two-way communication will be crucial if we are to successfully engage students, faculty, and staff across all campuses, programs, and realms of interest in embracing sustainability as a fundamental and integral way of being for ourselves, our institution, and ultimately our world. The outcomes in this section also address specific operational priorities for providing useful information to individuals, vendors, and others (such as campus waste producers or energy users) to ensure they are informed about their impacts and successes.

Communication Goal 2

Develop and implement marketing/promotion efforts to engage those who may not be aware of sustainability-focused education, outreach, and research opportunities

Desired Outcomes and Measures

- a. By 2010, marketing plan and staff are designated to publicize and help implement goals
- b. By 2010, a listserv and database of sustainability resources and opportunities have been developed

The University of Minnesota has already publicly promoted many of its sustainability efforts. However, an aggressive and dedicated marketing strategy is needed to engage those who are not aware of the sustainability-focused education, outreach, and research opportunities and to strengthen implementation in the context of the University's overarching social, economic, environmental, and top-three-public-research-university strategies. Good marketing and promotion will be crucial if we are to successfully compete with other research institutions for funding and attract premier research and students.

Various programs, departments, and initiatives develop strong communication platforms, but linking these through a central communications portal will provide a useful tool to individuals seeking information about the University's work. The listserv and database could be built up through contributions from interested parties who would volunteer to locate and identify sustainability-focused resources and opportunities.

Communication Goal 3

Develop and maintain a transparent data management information system to enable decisions utilizing environmental, economic, and social factors

Desired Outcomes and Measures

- a. Select performance metrics discussed in this report are measured and reported on an annual basis for each campus
- b. Select performance metrics discussed in this report are measured and reported on an annual basis for each Resource Responsibility Center (RRC)
- c. Information generated by a sustainability information system is incorporated into annual performance evaluations and budget decision making

Where did we start? Where do we want to go? Where are we now? How shall we proceed? Progress toward any goal benefits from the ability to periodically assess position and make midcourse corrections as needed to keep on track. Annual progress reports will allow campuses and RRCs to identify what's working well and, alternatively, what might benefit from a new approach. A sustainability information system will allow us to readily compile and analyze data to guide next steps and guide resources to best uses. Transparency ensures accountability and gives the many individuals involved in pursuing sustainability a sense of ownership and empowerment that will motivate further action.



“Let us put our minds together and see what life we can make for our children.”

—Tatanka-lyotanka, “Sitting Bull,”
Hunkpapa Lakota Chief and Holy Man



Implementation and Reporting

In the spring of 2009, forums were held at all campuses to present the proposed sustainability goals and outcomes to students, staff, and faculty. Approximately 300 people attended the forums and an estimated 90 comments were received informally and online. The goals were, for the most part, received with tremendous enthusiasm, and they resonated with the attendees. There was an eagerness to move forward with implementation. Suggestions during and after the forums showed a sense of ownership and interest in incorporating sustainability concepts into individual areas of responsibility. While recognizing the lofty and long-term nature of many of the goals, individuals had many suggestions for tactics and targets to move forward in a practical manner to implement them.

The University Sustainability Goals and Outcomes Committee work teams did a tremendous job of being visionary—of looking forward with a goal of weaving sustainability concepts into the very fiber of our University. While not included in the charge to the committee, this implementation section supports that visionary future thinking while establishing a framework for moving forward. It is important to provide a perspective for next steps—recognizing implementation will be addressed with more thoroughness by the University Sustainability Steering Committee and campus standing sustainability committees.

Communication Counts

A key implementation step is communicating this work broadly. During feedback sessions, one concern was for highly visible administrative support to align this effort with the University's community fully—and in the way needed to successfully implement the Board of Regents *Policy on Sustainability and Energy Efficiency*.

Goals Forward

The breadth of the 8 high-level and 27 work team goals, existing ability to measure outcomes, and complexity of implementation will result in some goals moving forward quickly while others may warrant additional designation of resources and even institutional changes before real progress can begin. The committee recognized the University will face barriers and challenges on this journey toward sustainability. That said, we must take on this challenge and embrace significant transformations in our personal choices, our institutional commitments, and the needed breakthroughs that will come from our research. This process for sustainability is vital for our University to thrive and inspire.

Institutionwide goals are presented here. Recognizing their unique circumstances, resources, strengths, and challenges, each campus must be empowered to achieve these institutional goals. It is hoped that campuses will use the high-level goals as guideposts as they select from the work team goals, objectives, and measures those on which to focus first. We have seen the passion and enthusiasm at all levels for becoming a premier sustainable university; we have every confidence that campuses will strive to reach for the stars, to pursue not just low-hanging fruit, but fat fruit—things that really make a difference for their campus, the University, and the entire planet.



Students and instructors at the University of Minnesota find ways to integrate sustainability into education and curriculum in both undergraduate and graduate programs. Crookston's environmental landscaping students present as part of a seminar class.

Structure

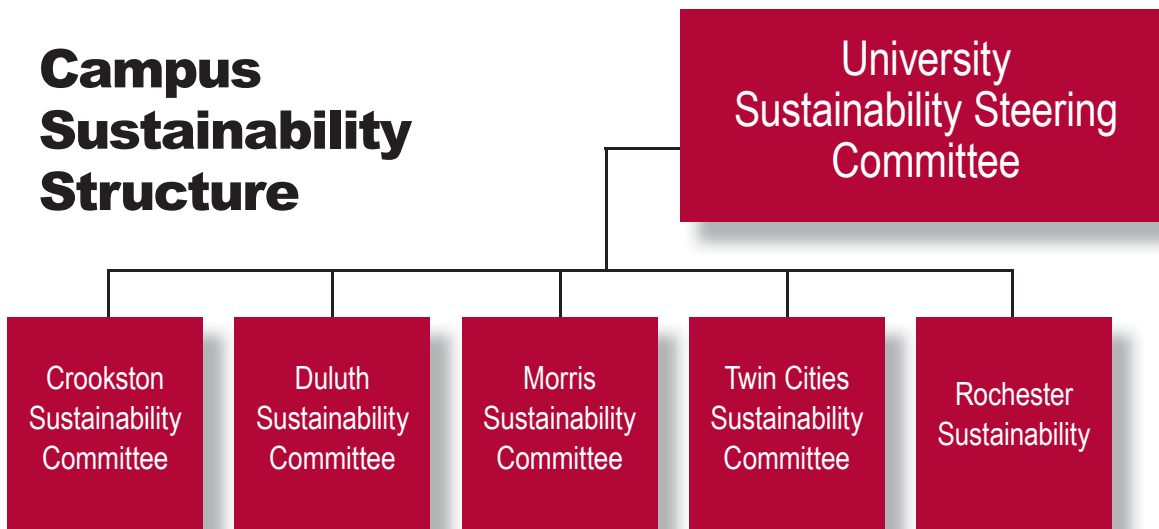
Sustainability committees at each campus will work in an ongoing way to implement the committee goals. Using the proposed outcomes and measures, a set of objectives and targets that are tailored to the campus will be developed through the campus sustainability committees and reported on to the University Sustainability Steering Committee. Each campus committee will also satisfy the institutional structure of the ACUPCC commitments. The structure will include cross-campus work groups to address topics that impact all campuses and to share best practices. This will also help leverage resources efficiently and determine where enterprise solutions are necessary.

Sustainability-supporting work groups and initiatives may have a short-term focus or be of a strategic, long-term nature (e.g., the Regional Sustainable Development Partnerships). There are also topics where focus is needed to meet the requirements of more than one commitment and may require a fast track—for example, meeting the milestones of the ACUPCC. Complexity of ideas and lack of current measurement systems may create the need for us to take a slower course.

Below is a proposed structure that represents the strategy, assessment, and reporting organization for our University sustainability program. Accountability for the outcomes is at each campus. The University Sustainability Steering Committee will have representation from each campus and include representation from students, faculty, and staff in the key areas integral to sustainability efforts. This committee will be charged by President Bruininks.

Campus sustainability committees will be formed and charged by the chancellors of the campus and will develop work plans with defined initiatives and targets and assess and report what metrics are currently tracked and reported. The University Sustainability Steering Committee will oversee systemwide priorities and progress. The systemwide committee will ensure a reporting system is in place. Campus committees will provide a contact to help facilitate communications with the University Sustainability Steering Committee. It is important for the committees to represent key areas/programs/initiatives for each campus and to include student, faculty, and staff representation.

Campus Sustainability Structure



Examples of possible cross-University campus teams:

- Communication
- Regional Sustainable Development Partnerships programs – local foods, Clean Energy Resource Teams
- Energy planning, programs, and issues team
- Others?

The work of the campus and University committees will be completed through various work teams and task groups—which may be campus specific or, in some cases, may span campuses to provide opportunities to share and create systemwide solutions.

Reporting

Reporting will be carried out on an annual basis for key representative metrics. Each campus sustainability committee will share its progress toward sustainability goals with the University Sustainability Steering Committee, which will summarize and synthesize the reports in the context of these goals and present the results to the Board of Regents. Additional metrics may be added as a more comprehensive measurement system is developed.

Acknowledgments

Leadership and Modeling

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Members:

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Arne Kildegaard, Associate Professor, Economics/Management, UMM

Kevin Linderman, Associate Professor, Carlson School of Management, UMTC

Matt Norris, Undergraduate Student, Carlson School of Management, UMTC

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Members:

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Mindy Granley, Sustainability Coordinator, UMD

Holly Lahd, Undergraduate Student, Department of Applied Economics, UMTC

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Energy Efficiency

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Jim Green, Assistant Director, Facilities Management, UMTC

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Tim Norton, Director, Facilities and Operations, UMC

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Jim Dudley, Director of Central Services, Facilities Management

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Anne Kapuscinski, Professor, Department of Fisheries, Wildlife and Conservation Biology and Director, Institute for Social, Economic, and Ecological Sustainability, UMTC*

* Currently Professor of Environmental Studies and Sherman Fairchild Professor of Sustainability Science, Dartmouth

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Grant Anderson, Coordinator of Residential Life Staffing, UMTC

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Matt Kaplan, Ph.D. Candidate, Former Executive Vice President, Council of Graduate Students, UMTC

Linda Kingery, Executive Director, Northwest Minnesota Regional Sustainable Development Partnership

Bethanie Kloecker, Undergraduate Student, Landscape Architecture, UMTC

Karen Mumford, Assistant Professor, Biology/Environmental Studies, UMM

Jesse Schomberg, Coastal Communities and Land Use Planning Extension Educator, UMD

Staff:

Brea Lambert, Program Associate, Auxiliary Services Administration, UMTC



Campus Consultations

The committee would like to thank all who attended the campus forums or commented on the University of Minnesota Sustainability Goals and Outcomes Committee Initial Summary Report online. We are grateful as well to the sustainability coordinators and to the individuals on each campus who helped organize the forums.

We appreciate the thoughtful input gained through meetings and forums held during the year to review the progress of the University Sustainability Goals and Outcomes Committee and gather information or input:

- 11/25/2008 Review of endowments, foundation, and process for proxy review, Associate VP and Chief Investment Officer S. Mason
 - 01/16/2009 Community Advisors sustainability training – Housing and Residential Life
 - 01/22/2009 University Services Leadership Team
 - 02/24/2009 Campus Sustainability Forum and Energy Panel, cosponsored event, University Services, Sustainability Studies Minor, and student groups (AEC, MESC, MPIRG, EcoWatch)
 - 02/26/2009 Vice President for Research, T. Mulcahy
 - 04/07/2009 President Bruininks' senior vice presidents meeting
 - 04/21/2009 Senate Committee on Finance and Planning
 - 05/12/2009 Office of Student Affairs, Vice Provost for Student Affairs G. Rinehart, Chief of Staff A. Whyte, Assistant Director of Student Activities M. Sweet
 - 05/26/2009 University of Minnesota Foundation President and CEO S. Goldstein
 - 06/17/2009 University of Minnesota Extension Dean and Director B. Durgan and Associate Dean G. Cuomo
 - 07/22/2009 Institute on the Environment Director J. Foley
 - 08/05/2009 Regional Sustainable Development Partnerships Statewide Coordinating Committee annual meeting
 - 08/30/2009 Orientation and First-Year Program training for Welcome Week leader training
- Campus Consultations on Proposed Goals
- 04/20/2009 Morris
 - 04/24/2009 Crookston
 - 04/27/2009 Twin Cities
 - 04/28/2009 Twin Cities
 - 04/28/2009 Duluth

Finally, thank you to every member of the University of Minnesota community who takes this policy, these principles, and these goals to heart, and helps make them an integral part of what we as an institution are and strive to become.

Appendices

Note: In the spirit of sustainability, a list of appendices and electronic links to materials is included here. Information is available at

<http://www.uservices.umn.edu/sustainableU/index.html> - or by clicking on the links if you are viewing this report electronically. If you don't have Internet access, you may request more information by calling University of Minnesota, University Services at 612-624-3557.

Appendix A.

Board of Regents *Policy on Sustainability and Energy Efficiency*

http://www1.umn.edu/regents/policies/administrative/Sustain_Energy_Efficiency.pdf

(See also on page 63)

Appendix B.

Sustainability Goals and Outcomes Committee Resources

<http://www.uservices.umn.edu/sustainableU/index.html>

Appendix C.

University Sustainability Goals and Outcomes Committee Work Team Reports

<http://www.uservices.umn.edu/sustainableU/index.html>

Appendix D.

Final Report of the University of Minnesota Commission on Environmental Science and Policy: Building on our Strengths: Our Opportunity in Environmental Science and Policy

<http://www.uservices.umn.edu/sustainableU/index.html>

Appendix E.

American College & University Presidents' Climate Commitment Text

<http://www.presidentsclimatecommitment.org/about/commitment>

Appendix F.

AASHE Sustainability Tracking, Assessment & Rating System (STARS)

<http://www.aashe.org/stars/index.php>

Appendix G.

Links to Additional University of Minnesota Sustainability-Related Resources

(continued on p.62)

Sustainability and U

<http://www.uservices.umn.edu/sustainableU/index.html>

University of Minnesota, Crookston Sustainability

<http://www3.crk.umn.edu/committees/sustainability/>

University of Minnesota Duluth Sustainability

<http://www.d.umn.edu/sustain/>

UMM: A Green Campus

<http://www.morris.umn.edu/greencampus/>

University of Minnesota Sustainability

<http://www.uservices.umn.edu/sustainableU/index.html>

Institute on the Environment

<http://environment.umn.edu>

Regional Sustainable Development Partnerships

<http://www.regionalpartnerships.umn.edu/>

It All Adds Up

<http://www1.umn.edu/italladdsup/index.php>

University of Minnesota Purchasing Services Sustainability Policy

<http://purchasing.umn.edu/policy/sustain.html>



Appendix A



Administrative
SUSTAINABILITY AND ENERGY EFFICIENCY
Adopted: July 9, 2004
Supersedes: (See end of policy)

University Of Minnesota Board Of Regents Policy

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SUSTAINABILITY AND ENERGY EFFICIENCY

SECTION I. COMMITMENT.

Sustainability is a continuous effort integrating environmental, social, and economic goals through design, planning, and operational organization to meet current needs without compromising the ability of future generations to meet their own needs. Sustainability requires the collective actions of the University of Minnesota (University) community and shall be guided by the balanced use of all resources, within budgetary constraints. The University is committed to incorporating sustainability into its teaching, research, and outreach and the operations that support them.

SECTION II. GUIDING PRINCIPLES.

Subd. 1. Leadership. Through excellence in environmental education, research, outreach, and stewardship, the University shall strive to be a world leader by promoting and demonstrating sustainability and energy efficiency and by producing leaders and informed citizens.

Subd. 2. Modeling. The University shall strive to be a model in the application of sustainability principles to guide campus operations by:

- (a) meeting and aspiring to exceed all applicable regulatory requirements;
- (b) preventing pollution at its source;
- (c) reducing emissions to the environment; and
- (d) encouraging the use of a life-cycle cost framework.

Subd. 3. Operational Improvements. The University shall undertake a continuous improvement process that seeks to meet the operational performance targets, goals, and objectives designed to achieve sustainability.

Subd. 4. Energy Efficiency. The University shall undertake a process to increase energy efficiency, reduce dependence on non-renewable energy, and encourage the development of energy alternatives through research and innovation.



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Subd. 5. Research. The University shall (a) promote innovative, high visibility research projects focused on sustainability and energy efficiency to inform campus operations as a whole as well as the broader community; and (b) promote collaborative projects that include faculty research undertaken in partnership with operations staff, students, public entities, community organizations, and industry.

Subd. 6. Education and Outreach. The University shall promote educational and outreach activities that are linked to operational improvements and innovation principles.

SECTION III. IMPLEMENTATION.

Subd. 1. Administration. The University shall have sustainability goals that inform administrative policies and procedures in the areas of planning, decision-making, execution, assessment, reporting, and alignment. These policies and procedures shall rely on scientific analysis and support the efforts described in subds. 2-4 of this section.

Subd. 2. Operations. Each University campus shall develop specific sustainability objectives and targets in the areas of:

- (a) physical planning and development, including buildings and infrastructure;
- (b) operations;
- (c) transportation;
- (d) purchasing; and
- (e) waste management and abatement.

Subd. 3. Accountability. The president or delegate shall develop indicators and measures of success in the implementation of the principles outlined in this policy in consultation with appropriate faculty, staff, students, and experts in the broader community.

Subd. 4. Reporting. The president or delegate shall report to the Board annually on progress toward established targets and standards, using this information to identify opportunities for subsequent improvement.

SUPERSEDES: POLLUTION PREVENTION AND WASTE ABATEMENT
DATED JUNE 12, 1992.

Equal Opportunity

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status or sexual orientation.

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- Certified as LEED® Gold – UMD's Labovitz School of Business and Economics with Lake Superior in distance – Brett Groehler
- Vegetables – University Relations Image Library
- Mississippi River and rowers – Ryan Rogers
- Wind Turbine at West Central Research and Outreach Center, Morris – David Hansen

Page photos

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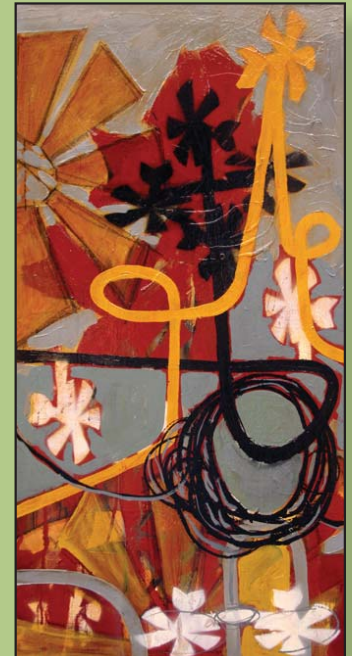
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**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: Consent Report

review review/action action discussion

Presenters: Vice President Kathleen O'Brien

Purpose:

policy background/context oversight strategic positioning

There are no consent items for the October Facilities Committee meeting.

Outline of Key Points/Policy Issues:

Background Information:



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS**

Facilities Committee

October 8, 2009

Agenda Item: Information Items

review review/action action discussion

Presenters: Vice President Kathleen O'Brien

Purpose:

policy background/context oversight strategic positioning

To update the Board of Regents regarding the following information items:

- Update: Amendments to Leases with University Gateway Corporation
- Potential Capital Budget Amendment for Review/Action: Lions Research Laboratory Remodeling

Outline of Key Points/Policy Issues:

Update: Amendments to Leases with University Gateway Corporation

The University will be amending three of its leases with the University Gateway Corporation in conjunction with its outdoor sale of wine and beer on a part of the Gateway Plaza adjacent to the McNamara Alumni Center on the days of home Gopher football games and its construction of a four-story addition.

The land lease to the University Gateway Corporation for the McNamara Alumni Center (MAC) will be amended to include additional land on the south side of the MAC for outdoor wine and beer sales on the days of home Gopher football games.

The University's leases for office space and storage space in the McNamara Alumni Center will be amended to fix the current base rent through the period of September 30, 2024. The University will continue to pay increases in operating costs. The University will exercise the first two five-year renewals on the office lease, continuing the lease through September 30, 2024. The storage lease will continue through September 30, 2014 with successive five-year renewal options thereafter.

Potential Capital Budget Amendment for Review/Action: Lions Research Laboratory Remodeling

The Academic Health Center/Medical School is in the process of recruiting a faculty member that has significant potential for advancing research in neuro modulation and therapeutic approaches to movement disorders. If the Academic Health Center/Medical School is successful in securing this recruit, appropriate research space will need to be developed to house the program. Preliminary plans include the remodeling of space on the 1st and 4th floors of the Lion's Research Building located at 2001 – 6th Street SE, which is adjacent to the McGuire Translation Research Facility north of the TCF Stadium. The anticipated price for this remodeling project will require the Board of Regent act on a capital budget amendment that identifies the funding for the project.

Due to the lack of Board of Regents Facilities Committee meetings in November 2009 and January 2010, it is anticipated the capital budget amendment will be brought to the Board of Regents for review/action either in December 2009 or February 2010.

Background Information:

Information items are intended to provide the Board of Regents with information needed for them to provide their oversight responsibilities.