

PROGRESS REPORT:



BUILDING A FULLY SUSTAINABLE FUTURE

2021-2022



UNIVERSITY OF MINNESOTA

Driven to Discover[®]

Crookston Duluth Morris Rochester Twin Cities

MPact 2025: MNtersections

We serve the state and impact the world.

Inspired by Minnesota to improve people and places at world-class levels.

Over the past year, the University reached significant milestones and built its capacity to realize the MPact 2025 goal to **Build a Fully Sustainable Future**. This report provides highlights of sustainability work, milestones, and accomplishments that are furthering our commitment to this critical issue for Minnesota and the World.

SUSTAINABILITY LEADERSHIP AND GOVERNANCE



Sustainability is relevant to every aspect of the institution. Achieving our aspirations requires us to work in new ways, to think in systems, and to integrate work across locations, functions, and units. In response we have created new sustainability committees at the system and campus levels. The committees will guide and accelerate our sustainability work, and provide leadership to development of climate action plans. In addition, we have created a new Chief Sustainability Officer position to provide strategic leadership across the system.

SUSTAINABLE DEVELOPMENT GOALS



[The Sustainable Development Goals](#) (SDG) Initiative brings together partners across the University to achieve MNtersections goals 3.1 (Health), 3.2 (Sustainability), and 3.3 (Natural Resources and Agro-Food Systems). Our work is aligned with SDGs 2 (Zero Hunger), 3 (Good Health and Well Being) and 13 (Climate Action), and includes collecting data to submit to Times Higher Education Impact Rankings, advancing strategic partnerships with state, national, and international partners, and fostering faculty and student collaboration and teams through SDG Innovation Impact Co-labs and targeted grant programs to respond to partner and societal needs.

PROGRESS CARD: Sustainability Leadership

We are committed to demonstrating state and worldwide leadership in sustainability and environmental research, teaching, and convening power. We measure our progress on this goal through the following metrics systems.

SUSTAINABILITY TRACKING, ASSESSMENT & RATING SYSTEM™



UNIVERSITY OF MINNESOTA
MORRIS

The University of Minnesota Morris [received a Gold rating on the Sustainability Tracking, Assessment & Rating System™ \(STARS\).](#)

Aligning with MPact 2025, each campus in the system will pursue a Gold rating on the STARS tool by 2025.

TIMES HIGHER EDUCATION IMPACT RANKINGS



In its inaugural submission, the University of Minnesota received a [Times Higher Education Impact Rankings](#) score of 80.4 out of 100.

The U of M ranked #16 in the world and #5 in the US for its work related to combating hunger and #2 in the US and tied for #57 in the world for its work related to promoting good health and well-being.

Highlights: Climate Change

The Intergovernmental Panel on Climate Change has identified the need for significant, sustained, and urgent emissions reductions by 2030 to avert the worst effects of global warming. Since 2008 the University has been a signatory to the Climate Leadership Commitments, is actively working to reduce emissions from campus to zero, and is integrating climate protection into its research, teaching, and outreach.

Twin Cities Campus Cuts Greenhouse Gas Emissions by Half Since 2008



The events of the past year have shown the risks of climate change to our planet, which will only continue unless sweeping change is made. It's more important than ever to take aggressive action to reduce emissions and make our communities more resilient to the impacts of climate change. As of 2020, the Twin Cities campus reached a 51% reduction in greenhouse gas emissions since 2008. This achievement comes one year ahead of the date for this milestone established in the campus' 2011 Climate Action Plan. The Twin Cities Sustainability Committee is beginning the process of developing a new Climate Action Plan for cutting the campus' remaining emissions. [Learn more](#)

University to Host New Midwest USGS Climate Center



The University of Minnesota will host a new partnership of higher education and natural resource institutions dedicated to advancing actionable science in response to the climate crisis in the Midwest. The Midwest Climate Adaptation Science Center will be housed at the Institute on the Environment (IonE) in close collaboration with the College of Food, Agricultural, and Natural Resource Sciences (CFANS); Extension; and the Natural Resources Research Institute (NRRI). The national CASC program is designed to generate research, data sets, and tools that natural and cultural resource managers can use to help ecosystems and communities effectively respond to a changing climate. [Learn more](#)

Morris Installs New 240 kW Solar Photovoltaic Field



During Homecoming 2021, the University of Minnesota Morris celebrated the installation of a new 240kW solar PV field. The project is a collaboration between Morris, West Central Research and Outreach Center (WCROC), and Otter Tail Power Company. The solar field is installed in a WCROC pasture where cows can rest under the shade of the solar panels. This fusion of renewable energy and agriculture is an evolving field, called *agrivoltaics*. This system will generate about 300,000 kWh annually for the next 20 years and represents about 20% of the campus' winter electrical load. [Learn more](#)

Visualizing Climate Change Through Filmmaking



In August 2021, University of Minnesota Duluth Professor Olaf Kuhlke received a Sustainable Development Goals (SDG) fund grant from the University of Minnesota Global Programs and Strategy Alliance to expand his original project initiative *Our People, Our Climate*. The groundbreaking documentary film focuses on the visualization of climate change in Arctic locations, and began in early 2020. The film was screened in Glasgow during the annual meeting of the UN Framework Convention on Climate Change (UNFCCC) - COP26. "The Arctic is warming up twice as fast as the rest of the world. It's literally our indicator of what's to come for the rest of the world," stated Kuhlke. [Learn more](#)

Highlights: Clean Water

Water is one of Minnesota's most precious resources and is sacred to indigenous communities across the state. Unfortunately, many water resources, including those in Minnesota, are imperiled. Through operational improvements in campus facilities, scholarship, and engagement, we are advancing water stewardship across the state and beyond.

Climate Clues from the World's Oldest Ice



University researchers are leading the search for 1.5-million-year-old Antarctic ice to transform our understanding of Earth's climate. They are key collaborators in COLDEX, a new National Science Foundation funded center that will drive climate system discovery and build climate literacy. The University of Minnesota's contributions to the project include the Rapid Access Ice Drill (RAID), co-developed by Duluth Professor John Goodge, and Twin Cities Assistant Professor Heidi Roop, serving as Director of Knowledge Transfer. COLDEX aims to discover and recover some of the oldest ice on the planet which will shed light on the long-term rhythms of Earth's climate system. [Learn more](#)

Wetland Restoration Protects Against Agricultural Runoff



University of Minnesota researchers, along with colleagues from other institutions, found that wetland restoration and construction along waterways are the most cost-effective way to reduce nitrate and sediment loads in large streams and rivers. The research relied on computer modeling to examine the Le Sueur River Basin in southern Minnesota, a watershed subject to runoff from intense agricultural production of corn and soybeans. As excess pollution travels downstream, it causes hypoxic areas called dead zones. The team found restored wetlands were most effective because they enhance removal of excess nutrients by vegetation and microbes and lower peak stream flows. [Learn more](#)

Morris Project Supports Conservation Work in Stevens County



Extending the leadership of the West Central Minnesota We Are Water partnership, Southwest RSDP and the University of Minnesota Morris were approached by the Stevens County Soil and Water Conservation District to help them better assess the knowledge and attitudes of landowners and farmers in the county. University of Minnesota Morris Associate Professor Roger Rose and his students did an in-class service learning project to develop a survey. In 2021, Professor Rose worked with a student intern to send out the survey, collect, and analyze the results. The survey results were shared with the Stevens SWCD and are being used to help inform communications and engagement strategies. [Learn more](#)

Crookston Implements Water Stewardship Initiatives



In the summer of 2021 the University of Minnesota Crookston experienced a drought and as a result implemented a number of water saving strategies including setting irrigation to assure only 1 inch of water/week, increasing mower cutting deck 3 inches, and adding mulching around trees. In addition, Crookston has implemented a water bottle program called Fill it Forward in which students, faculty, and staff receive rewards for utilizing reusable water bottles. [Learn more](#)

Highlights: Land Ecosystems

Sustainable use of and relationship with terrestrial ecosystems is critical to our future prosperity. The Earth's biodiversity is declining at an alarming rate, agriculture has significant land use and emissions impacts, and human encroachment on wild areas can be a factor in zoonotic diseases. The University is partnering with businesses and communities to develop and deploy solutions to these challenges.

Morris Achieves One Million Pounds of Compost



For the past decade, the University of Minnesota Morris has managed an on-site cold-weather compost system that was built by campus. Visitors from around the region and state have visited to learn more about how the process works. Food scraps are collected from several locations, including dining halls and residence halls. Organics from the Morris Area School District are also collected. A new grinding system was installed to help reduce the volume and weight of the organics collected. In 2021, Morris reached a new milestone – one million pounds of organics recycled by Facilities Management on campus. The composted material is eventually used as a soil amendment around campus. [Learn more](#)

Crookston's Student Wildlife Society Clears 35 Acres of Bushland Habitat



The University of Minnesota Crookston's Student Chapter of The Wildlife Society along with faculty, staff, and other students cleared over 35 acres of bushland habitat in the Palmville Wildlife Management Area (WMA) in Roseau County. Natural Resource student David Dunblazier said his classes at Crookston have heavy lab components in which students get to take what is learned in the classroom and actually experience it, while learning the skills they need in their career while applying their habitat management knowledge and benefiting wildlife like Sharp-tailed Grouse. [Learn more](#)

Trees for a Warming Climate



The University of Minnesota Duluth hosted a presentation about a long-term tree planting project that will help farmers in northern Minnesota grow climate-smart trees for restoration. The research group discussed the preliminary steps in the process: seed collection, cleaning, planting, transplantation, and taking seedling measurements. This grant-financed collaboration, the Forest Assisted Migration Project, is led by Professor Julie Etterson. The project is an effort to provide the types of tree seedlings northern forests will need to survive in a warmer climate. [Learn more](#)

University of Minnesota Researchers Develop New Tool to Help Farmers Make Crop Input Decisions



Reducing greenhouse gas emissions and nitrogen water pollution from agriculture are top environmental priorities in the U.S. A new tool developed by a University of Minnesota research team allows farmers to create a budget balance sheet of any nitrogen reduction plans and see the economic and environmental cost, return, and margins, all customized to fields under their management. With this information, farmers can make more informed decisions on nitrogen mitigation that not only saves them money, but also significantly reduces pollutants to the environment. [Learn more](#)

Highlights: Equity and Partnerships

Sustainability is about more than the environment. The wellbeing of people and communities is central to the work of sustainability, and data shows that people of color and the poor are more likely to be subject to environmental harms. Equity, inclusion, and anti-racism is vital to the University's sustainability work.

Transdisciplinary Collaboration on Indigenous Culture and the Environment



Photo by Vern Northrup

In 2021, faculty at the University of Minnesota Crookston, Duluth, and Twin Cities received an IAS grant entitled Transdisciplinary Engagements with Indigenous Thinkers. The hope of this group of faculty is that the University is transformed in the ways it does natural science, social science, engineering, arts, and humanities work in University contexts. Through a Learning Community and by engaging several Indigenous knowledge experts across a range of disciplines, the University will advance educational and disciplinary practices that embrace Indigenous knowledge.

[Learn more](#)

Morris Awarded \$1.5M for Native American Student Success



The University of Minnesota Morris is a Native American Serving Non-Tribal Institution, a federal designation. The Native American student population is currently 28%. In 2021, the University of Minnesota Morris was awarded \$1.5 million from the United States Department of Education to support Native American student success. This program builds on the Native American Student Success (NASS) program that was launched in 2015. Morris has been recognized nationally as an institution that supports Indigenous culture and sustainability.

[Learn more](#)

Duluth Creates Tribal Resource and Environmental Stewardship Scholarship



The University of Minnesota Duluth established the Wells Fargo Tribal Resource and Environmental Stewardship Scholarship in 2021 to encourage the recruitment of American Indian/Alaska Native students to the Master of Tribal Resource and Environmental Stewardship (MTRES) program. Five students will receive the \$5,000 award to support the development of professionals to address water, energy, and food security issues. The MTRES program educates students on environmental initiatives from an Indigenous perspective which prioritizes sustaining tribal lands and water for future generations.

[Learn more](#)

Project Advances Energy and Equity in the Twin Cities



Last fall, the Institute on the Environment and Robert J. Jones Urban Research and Outreach-Engagement Center hosted “Energy and Equity in the Twin Cities,” a four-part workshop that aimed to create pathways to energy justice via cross-sector collaborations. Participants worked to establish a shared understanding of energy justice and the actions required to build it. They also developed grant projects that address different aspects of energy justice in the Twin Cities, with five recipients awarded up to \$10,000 in funding.

[Learn more](#)

Highlights: Student Success

As demonstrated in the examples above, many students are pursuing degrees, conducting research, and participating in projects related to sustainability. They are also deeply passionate about sustainability and are using their collective voice to champion swifter and bolder action on and off campus.

MSA Pushes for Environmental Justice Liberal Education Requirement



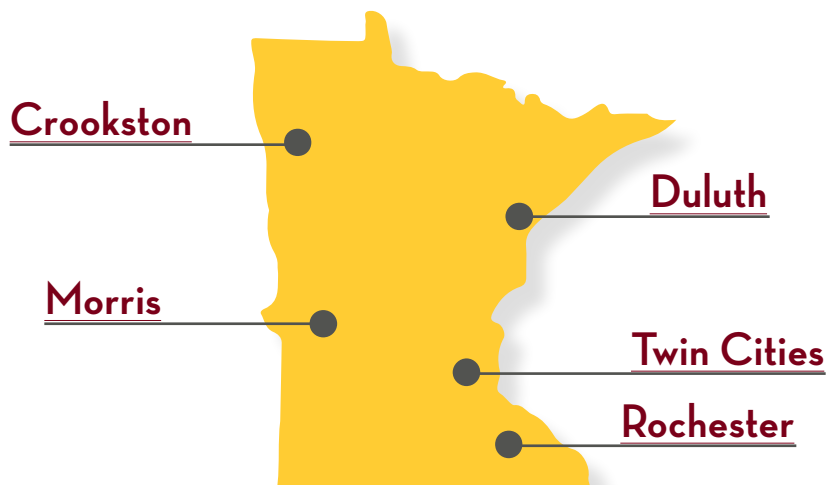
In November, the Environmental Accountability Committee of the Minnesota Student Association (MSA) sent a letter to the Council on Liberal Education to change the environmental liberal education requirement to an environmental justice requirement. The purpose of the environmental justice liberal education requirement is to help students become diverse leaders in society after their graduation. [Learn more](#)

Students Awarded EnergyTech Prize for Lithium Ion Battery Recycling Plan



A team of six Twin Cities students who created a business plan for recycling lithium ion batteries (used in electric vehicles) was selected as the Northern Plains Regional Winner in the EnergyTech University Prize competition, organized by the Department of Energy's Office of Technology Transition and announced by Grid Catalyst. The students are enrolled in the Pathways to Renewable Energy course co-taught by Beth Mercer-Taylor and Professor Uwe Kortshagen. The team earned \$2,500 for their mechanochemical process for recovering lithium, cobalt, and other components of spent batteries and will now receive mentoring and resources from the Department of Energy before competing nationally. [Learn more](#)

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