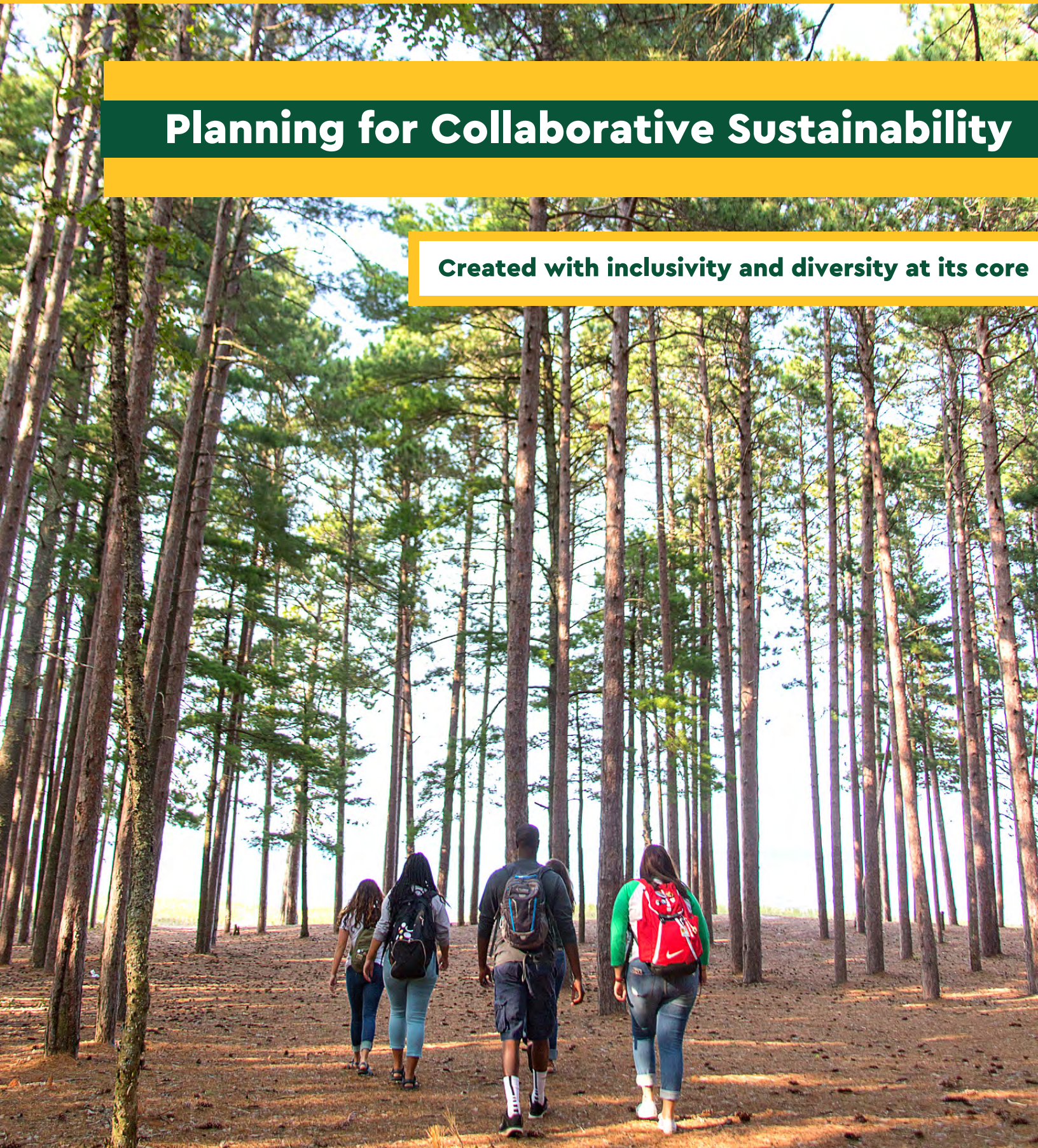




Northern 2030

Planning for Collaborative Sustainability

Created with inclusivity and diversity at its core



CONTENTS

3

**People, Place, & Land
Acknowledgement and NMU
Mission**

4

**Sustainability Advisory Council
Members and Co-Authors**

5

Introduction

6

Tracking Sustainability at NMU

7

**Comparing Northern's STARS
Report Scores**

8

**NMU vs. Peer Institutions STARS
Report Scores**

9

**NMU 2030 and the UN Sustainable
Development Goals**

10

Recommendations

11

Strive Towards Carbon Neutrality

13

Improve Waste & Recycling

15

Protect Fresh Water

17

Promote Education & Awareness

19

Build Local Partnerships

22

Directions Forward

23

Works Cited



PEOPLE, PLACE, & LAND Acknowledgement

Northern Michigan University occupies the ancestral and contemporary homelands of the Anishinaabeg, who make up the Three Fires Confederacy of Ojibwe, Odawa and Potawatomi peoples. We recognize that Anishinaabe people that have inhabited this land for thousands of years have practiced what is now known as "sustainability."

Traditionally, this is known as the seven generations philosophy that recognizes that our actions today will affect those seven generations into the future and that we must make decisions with our future descendants in mind. We recognize and commend Anishinaabe and other Indigenous peoples for their knowledge on how to care for this land. We hope to continue to cooperatively care for this land sustainably, much like Anishinaabe and other Indigenous peoples continue to do around the world.

NMU Mission

Northern Michigan University's distinctive academic and career programs are nurtured by exceptional teaching and extensive opportunities for scholarship, creativity and engagement. Our supportive, connected community empowers students, graduates, faculty and staff to contribute to a diverse and sustainable world.



Sustainability Advisory Council Members

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Introduction

NMU's mission statement ends by stating, "our supportive, connected community empowers students, graduates, faculty and staff to contribute to a diverse and sustainable world". This sustainability plan, which was developed based on information from campus surveys with students, faculty and staff, data from the STARS report, and student research on other institutions, aims to position our university to be at the forefront of sustainability practices.

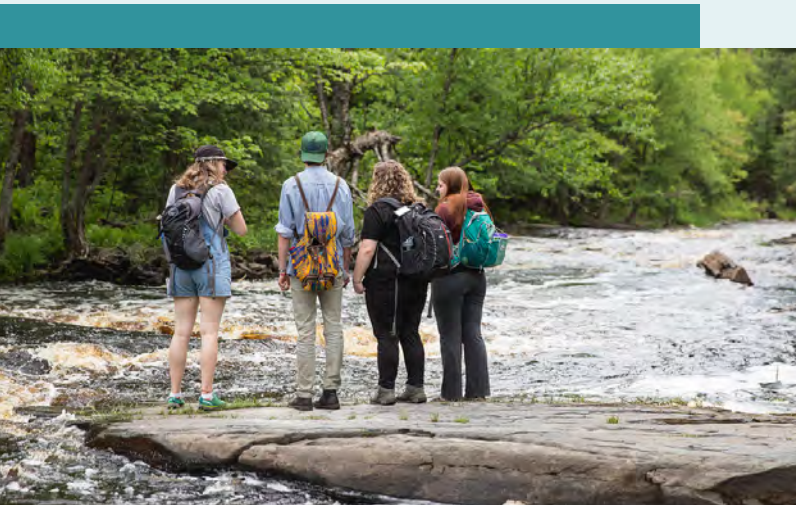
The five recommendations in this plan include:

- 1. Strive Toward Carbon Neutrality**
- 2. Improve Waste & Recycling**
- 3. Protect Fresh Water**
- 4. Promote Education & Awareness**
- 5. Build Local Partnerships**

Each of these goals will require collaboration across departments, colleges, and disciplines. These actions will help NMU plan for sustainability seven generations into the future as we learn from traditional Anishinaabe ideas and practices.



Implementing this sustainability plan would not only help with protecting our environment, but it would also financially benefit the university. Sustainability can impact enrollment rates, as twenty-first-century students seek to attend universities that demonstrate a commitment to sustainability. In the 2021 Princeton Review's College Hopes and Dreams survey of over fourteen thousand students, seventy-five percent stated that a college's commitment to the environment would affect their enrollment decision (The Princeton Review, 2021). A commitment to sustainability can also act as a tie-breaker in a student's choice between two similar universities (Guardian Sustainable Business, 2014). This plan will help NMU demonstrate its commitment to sustainability, which will have a positive impact on enrollment.





Tracking Sustainability at NMU

STARS Report: Sustainability Tracking, Assessment & Rating System



According to the 2020 STARS report, Northern experienced significant improvements in Academics and Engagement since 2017. Academics improved by 7% and campus engagement category improved by 22%. The progress in these categories was due to faculty offering more sustainability-related courses and student leadership through the EcoReps. These actions contributed significantly to NMU's silver rating.

Although there were areas of progress, there are many categories that Northern could improve upon. The Operations category has the most available points but the least number of points earned. Northern has LEED-certified buildings and has made great strides towards energy efficiency, but could improve in the sustainable operations and maintenance of these buildings. Northern is "not pursuing" or scored 0 points in 20 of the 67 assessed components. Some of these critical sustainability functions that NMU is not tracking include: greenhouse gas emissions accounting, clean and renewable energy, sustainable investment, waste minimization/diversion, sustainability literacy assessment, employee educator program, and assessing diversity and equity. This is not a complete list of all the categories being not pursued, but are areas where NMU could make strategic investments.

Northern Michigan University has been tracking its sustainability performance since 2017, when it submitted its first Sustainability Tracking, Assessment and Rating (STARS) report to the Association for the Advancement of Sustainability in Higher Education (AASHE). That year, Northern received a bronze rating, and campus sustainability leaders used the STARS data and input from campus forums and surveys to prepare NMU's first sustainability plan. The plan aimed at improving NMU's sustainability performance by 2020. In February 2020 Northern submitted a second STARS report, which earned a silver rating. These reports are broken down into five categories: Academics, Engagement, Operations, Planning and Administration, and Innovation and Leadership.



2017



2020



Comparing Northern's STARS Report Scores 2017 → 2020



NMU earned a Silver Award in the AASHE's STARS inventory process. Where did NMU earn the most points? Academics, which includes curriculum and research, accounted for half of NMU's sustainability effort. Another major increase between 2017 and 2020 was in campus engagement with significant investment in the EcoReps student leadership program. NMU's complete STARS report is available at www.AASHE.org.

STARS CATEGORY	2017	2020
Curriculum	49% 19.41 / 40 points	55% 22.16 / 40 points
Research	74% 13.31 / 18 points	82% 14.77 / 18 points
Campus Engagement	48% 10 / 21 points	70% 14.74 / 21 points
Public Engagement	49% 9.79 / 20 points	55% 11.06 / 20 points
Air & Climate	4% .5 / 11 points	1.5% .17 / 11 points
Buildings	19% 1.5 / 8 points	20% 1.63 / 8 points
Energy	40% 4 / 10 points	35% 3.5 / 10 points
Food & Dining	17% 1.38 / 8 points	25% 2 / 8 points
Grounds	31% .93 / 3 points	24% .96 / 4 points
Purchasing	29% 1.76 / 6 points	48% 2.9 / 6 points
Transportation	28% 1.97 / 7 points	45% 3.13 / 7 points
Waste	14% 1.37 / 10 points	16.5% 1.65 / 10 points
Water	39% 2.32 / 6 points	71% 4.27 / 6 points
Coordination & Planning	25% 2 / 8 points	61% 5.5 / 9 points
Diversity & Affordability	56% 5.58 / 10 points	61% 6.11 / 10 points
Investment & Finance	0% 0 / 7 points	0% 0 / 7 points
Wellbeing & Work	51% 3.57 / 7 points	57% 3.97 / 7 points
Exemplary Practice	0% 0 / .5 points	0% 0 / .5 points
Innovation	50% 2 / 4 points	75% 1.5 / 2 points

Overall STARS
Ratings

2017

BRONZE

2020

SILVER










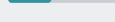









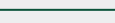

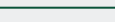

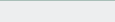





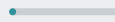

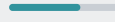
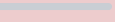
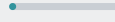

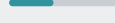
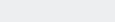
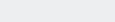
Comparing STARS reports

NMU versus Peer Institutions

2020



How does NMU compare to other institutions of similar size and scope in terms of sustainability performance? NMU is one of 245 institutions in the United States that has completed AASHE's STARS inventory. Forty-four of those are colleges and universities with enrollments between 5,000- 9,999. Areas where NMU earned lower scores than the peer institutions are indicated in red and higher scores than peer institutions are indicated in green.

STARS CATEGORY	NMU AVERAGE SCORE PERCENTAGE AND POSSIBLE POINTS EARNED	PEER INSTITUTIONS AVERAGE SCORE PERCENTAGE AND POSSIBLE POINTS EARNED
Curriculum	 49% 19.6 / 40 points	 39% 15.6 / 40 points
Research	 74% 13.32 / 18 points	 55% 9.9 / 18 points
Campus Engagement	 48% 10.08 / 21 points	 66% 13.86 / 21 points
Public Engagement	 48% 9.6 / 20 points	 52% 10.4 / 20 points
Air & Climate	 0.1% .5 / 11 points	 37% 4.07 / 11 points
Buildings	 19% 1.52 / 8 points	 31% 2.48 / 8 points
Energy	 40% 4 / 10 points	 33% 3.3 / 10 points
Food & Dining	 17% 1.36 / 8 points	 26% 2.08 / 8 points
Grounds	 31% .93 / 3 points	 51% 2.04 / 4 points
Purchasing	 29% 1.74 / 6 points	 60% 3.6 / 6 points
Transportation	 28% 1.96 / 7 points	 50% 3.5 / 7 points
Waste	 14% 1.4 / 10 points	 50% 5 / 10 points
Water	 39% 2.34 / 6 points	 47% 2.82 / 6 points
Coordination & Planning	 25% 2 / 8 points	 45% 4.05 / 9 points
Diversity & Affordability	 56% 5.6 / 10 points	 86% 8.6 / 10 points
Investment & Finance	 0% 0 / 7 points	 1% .07 / 7 points
Wellbeing & Work	 51% 3.57 / 7 points	 61% 4.27 / 7 points
Exemplary Practice	 0% 0 / .5 points	 4% .02 / .5 points
Innovation	 50% 2 / 4 points	 38% .76 / 2 points



NMU 2030 & the UN Sustainable Development Goals

Overview of Plan & Objectives

The core values of Northern are: community, opportunity, rigor, environment, inclusion, connection, and innovation. These values help align NMU with the United Nations Sustainable Development Goals (SDGs), which outline 17 key areas. The SDGs have been used by schools, cities, states and STARS as an organizing framework to achieve quality of life standards and to meet climate mitigation goals identified by the Intergovernmental Panel on Climate Change (IPCC 2018). As a major institution in the region, NMU should consider leading by example to implement these goals in projects and policies moving forward through the future.

As we look to the next decade of sustainable development for NMU, it is important to look at the previous recommendations outlined in the 2020 NMU sustainability plan. Those recommendations were 1) Institutionalize sustainability 2) Cultivate sustainability leadership 3) Invest in energy innovations 4) Promote sustainable transportation and 5) Purchase local foods, support local farms. Northern worked diligently to achieve these recommendations, and exceeded expectations in some. One goal was to purchase 10% of food from local farmers by 2020--that goal was achieved and surpassed. Another goal was to improve the biking infrastructure in and around campus to promote cleaner transportation. In 2017, Northern worked with the Noquemanon Trail Network to build a trailhead to connect campus to the North and South trails.



In 2019, NMU received a Bike-Friendly University award from the League of American Bicyclists for these efforts. In an effort to promote student-led sustainability projects, a new Green Fund was instituted which allows student organizations to help make decisions on campus.

NMU will use the momentum from previous achievements to continue their sustainable trend into the future. The recommendations moving forward include reduction of carbon emissions by striving toward carbon neutrality, encouraging more responsible consumption practices through improved waste and recycling efforts, preserving our local water supply with protection of freshwater, improving sustainability knowledge of students through education and awareness, and supporting the greater Marquette community by building local partnerships. These recommended actions build upon the previous recommendations and activities outlined in the 2020 Sustainability Plan, and seek to improve sustainable development efforts on campus.



SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD



Recommendations

**STRIVE
TOWARD CARBON
NEUTRALITY**



**IMPROVE WASTE
& RECYCLING
EFFORTS**



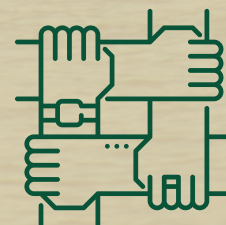
**PROTECT
FRESH WATER**



**PROMOTE
EDUCATION &
AWARENESS**



**BUILD LOCAL
PARTNERSHIPS**





STRIVE TOWARDS

CARBON NEUTRALITY

Limiting global warming to 1.5°C will require rapid and unprecedented changes in all aspects of society, but is necessary to avoid irreversible and devastating changes associated with climate change (IPCC 2018). In April 2021, President Erickson joined campus sustainability leaders in expressing a goal to work toward carbon neutrality by 2050. Energy innovations are essential to reaching this goal. To work toward the 2050 goal, NMU should create a Carbon Neutrality Task Force and set a benchmark of 50% carbon neutrality by 2030.

Energy Innovation goals for 2030:

- 1. Solar Investment (transition to at least 35% renewable energy by 2030)**
- 2. Improvement of infrastructure and energy efficiency in existing and future facilities on campus**
- 3. Replace 50% of NMU's current transportation fleet with hybrid/electric vehicles by 2030, with complete transition by 2050**

The first step in achieving carbon neutrality would be a transition to renewable energy alternatives. According to the Annual Utility Consumption Report, during the fiscal year 2019-2020, NMU's electricity consumption was approximately 25,788,759 kWh. This equates to \$3,200,000 annually, or approximately \$9,000 daily. The

average electricity rate in Marquette is typically 15 ¢/kWh. Solar energy typically costs around 7¢/kWh, which is significantly lower than the cost of electrical energy.

Investment in renewable energy would benefit Northern both financially, and environmentally.

Secondly, we suggest an improvement of energy infrastructure on campus.

Northern has made some big strides toward energy efficiency on campus already.



From the baseline years of 2010-2011 to 2018-19, NMU has reduced total source energy consumption per unit of floor area by 13.5%. But, the most sustainable way to promote clean energy on campus will be to continuously update building mechanics with energy efficient appliances. Older buildings should be the first to be fitted with clean energy appliances and green building techniques as they're scheduled to be renovated. New construction on campus should strive towards the high energy standards associated with LEED construction.



Our last plan included focused on sustainable transportation and improving the university's fleet. The 2030 goals related to clean and renewable energy plan should extend beyond facilities and to also address transportation. The STARS requirements for renewable energy vehicles include various hybrids, fully electric, and biofuel. Once renewable energy generation is established on campus, electric vehicles could be charged with electricity from the clean energy farm, and the biofuel can come from the dining facility, contributing to Northern's minimization of waste.



To achieve these goals, NMU should dedicate a Carbon Neutrality Task Force. Many other universities have already committed to or achieved carbon neutrality. This gives NMU many examples to learn from in our transition to a cleaner energy economy.

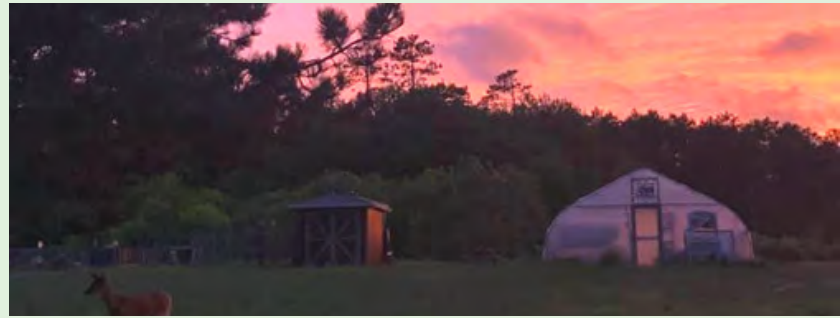




IMPROVE

WASTE & RECYCLING

Although NMU made progress in waste and recycling efforts between 2017 and 2020, improving waste diversion efforts has the potential to greatly increase Northern's overall sustainability performance. Our recommendations aim to build upon the successes of the past by focusing on basic metrics and innovating solutions to managing office and electronic waste as well as organic waste on campus.



As reported in the 2020 STARS report, NMU diverted 65% of new construction and demolition materials—approximately 9,141 tons—from the landfill or incinerator through recycling, donation and/or other forms of recovery. In 2018-19, 99% of all electronics purchased through the university were EPEAT Gold registered and/or third party certified at the highest achievable level under a multi-attribute sustainability standard. These were important first steps in tracking NMU's waste and recycling efforts, but there is more work to be done.



Waste & Recycling goals for 2030:

- 1. Implement waste & waste diversion tracking systems to provide baseline metrics on recycling rates as well as electronic, organic and office waste**
- 2. Increase institutional recycling rates by 10%**
- 3. Reduce institutional waste by 10%**
- 4. Implement composting systems on campus and create dining alternatives**

NMU's 2020 STARS report indicates that the university is not pursuing or scores a zero in two out of three waste categories. Northern relies heavily on Waste Management for waste collection and does not track waste rates or waste diversion on a regular basis. By working with Waste Management to track waste, NMU can create a baseline that can be used to assess and reduce waste in the future years.





Student and faculty leaders on campus have also worked with 906 Recycling to promote waste reduction and recycling efforts in the broader community. These efforts might be aligned to help NMU create better systems of waste tracking, which is an essential first step in achieving waste reduction and recycling goals. To keep track of data on the purchasing, use, disposal and recycling of electronics, a detailed inventory of institutional-level electronic spending could be created.

Once NMU has a system in place to track office and electronic waste, we recommend a 10% increase in recycling and 10% decrease in waste from a baseline year. One of the ways waste could be reduced is by implementing an accessible compost system on campus. According to the EPA, in 2018 more food reached landfills and combustion facilities than any other single material. Organic wastes from food represented 24 percent of total landfilled material (UN Food and Agriculture Organization 2021).



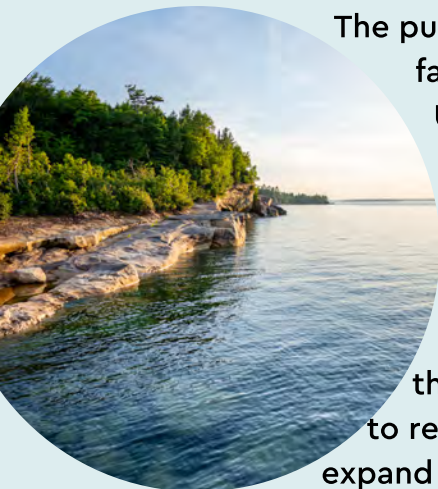
Much of the waste that NMU produces comes from dining halls through food waste and compostable takeout boxes. On average, NMU has handed out over 6,000 compostable takeout boxes per day, at a cost of over \$91,000 in 2020-2021 according to Executive Chef Alden Griffus from NMU Dining Services. To reduce waste in the dining halls and to save money, NMU could invest in a reusable takeout system. Alternatively, if NMU continues with the current compostable boxes, the university could invest in an industrial composting system, or work with 906 Recycling, in order to ensure that the current boxes are actually broken down and composted. As an educational institution, Northern should also focus on promoting knowledge and awareness of what can and cannot be recycled, providing easily accessible and understandable posters and informational workshops on how to recycle on campus.



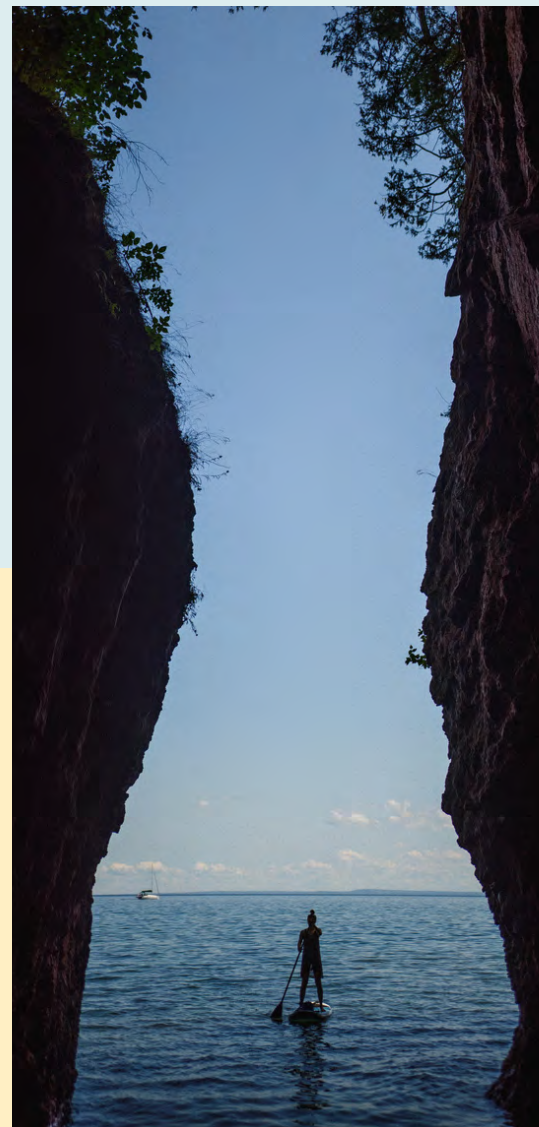


PROTECT

FRESH WATER



The pull of Lake Superior draws many students, faculty and staff to Northern Michigan University. As Native American Studies Professor April Lindala said "Lake Superior is not a resource. It is thee source." As such, we are compelled to protect the water and surrounding lands that sustain us. To do so, we recommend that Northern Michigan University continue to reduce water usage on campus and to expand stormwater management efforts.



Fresh Water goals for 2030:

- 1. Reduce water usage by 30% by replacing water fixtures with more efficient technologies such as waterless urinals and increasing the number of dual flush toilets**
- 2. Expand stormwater management efforts by increasing the number of permeable pavements, vegetative swales, and other examples of green infrastructure on campus**

Water Usage

From the baseline year 2010-2011 to 2018-19, NMU reduced potable water use per unit of floor area by 32%. Over that same time period, we also reduced water use for vegetated grounds by nearly 30%. These percentages were up from 14% and 15.6% in 2017, indicating that NMU has reduced building and landscaping water use substantially over the past 10 years. We recommend that NMU continues to improve waste usage by another 30% by 2030. This goal would not only raise our STARS report rating even higher, it would also save the university thousands of dollars every year. In 2019-2020, Northern used 15,156,740 gallons of water. The price of water in Marquette was \$.02/gallon and NMU paid about \$303,134.80. A waterless urinal has the ability to reduce water usage by 40,000 gallons each year (Bristow et al. 2006). If NMU added 20 waterless urinals, it could save about 800,000 gallons/year and reduce the university's water bill by ~5%.



Storm Water Management

Currently, NMU has five stormwater detention ponds on the main campus and an additional six around the recreation complex. The water collected in these detention ponds percolates into the ground and keeps pollutants from running off into Lake Superior (EPA 2021). While these stormwater mitigation efforts are a good first step, Northern Michigan University should strive to expand green infrastructure and learn from exemplary institutions such as Loyola University, which has a perfect stormwater management STARS score. Situated on the shores of Lake Michigan, Loyola uses permeable pavers, rain gardens, native plants, and green roofs to collect 19 million gallons of rainwater each year, which it then treats and uses to water campus grounds (Loyola University 2021). NMU can look to other Great Lakes colleges and universities for creative and innovative water initiatives, and should strive to be a leader in freshwater conservation in the region.





PROMOTE

EDUCATION & AWARENESS



"Education is the primary agent of transformation towards sustainable development, increasing people's capacities to transform their visions for society into reality. Education not only provides scientific and technical skills, but it also provides the motivation, justification, and social support for pursuing and applying them."

- George Newman, Yale University

Education & Awareness goals for 2030:

1. Implement a new general education "additional requirement," much like the World Cultures requirement, that requires students to take at least one course that is either focused on sustainability or inclusive of sustainability.
2. Develop certificate programs in sustainability.
3. Provide an educational training program to faculty about integrating sustainability into their curriculum across all disciplines.
4. Incorporate sustainability in new student orientation and tours.

We propose that NMU adopt these four different initiatives that contribute to the education and awareness of sustainability on campus. The first way NMU can promote sustainability is through the general education program. A sustainability general education requirement could be implemented in the same way the World Cultures requirement is now. Out of all of the general education courses currently offered at NMU, 44 of them meet the World Cultures requirement. This allows students to choose from a variety of courses, while still learning World Cultures. Incorporating sustainability in courses outside of the environmental department will be a way to make sustainability intriguing for all students by giving them the chance to choose a

course that relates to their major or interests. Requiring every student to take a course that has sustainability integrated into the curriculum allows students to have a better understanding of what it means and how to incorporate it into their future careers.

According to the NMU's STARS data for 2020, at the undergraduate level there are 31 sustainability-focused courses offered, with 143 sustainability-inclusive courses offered at the undergraduate level. Of these 31 sustainability-focused courses, only six appear in the



General Education Program. These courses include: BI210: Principles of Ecology, PR332: Corporate Social Responsibility, GC101: Intro to Environmental Science, GC300: Regional Studies: World Cultures, HL322: International Health Issues, and NAS342: Indigenous Environmental Movements. Because of staffing limitations, GC269: Intro to Sustainability is not included in the General Education Program. Of the 143 sustainability-inclusive courses offered, 37 appear in the General Education Program. Being that there are only six sustainability focused courses within this program and 37 sustainability-inclusive courses within the program, there is a chance that every student ends up taking one of these courses. Creating an "additional requirement" for students that requires them to take at least one sustainability-focused course would be the second sub-actionable step of our first goal.

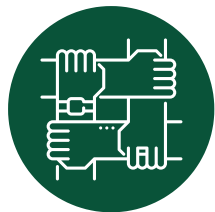
Our second recommendation is to create a certificate program--or programs--in sustainability. A certificate program, normally around 20 credits, allows students in every discipline to add a certification on top of their academic degree. Faculty from different departments have been discussing ideas for sustainability certificates since 2016, and the idea of micro-credential programs or certificates in sustainability was identified in April 2021 as part of President Erickson's Strategic Initiative on Collaborative Sustainability for the post-pandemic era (Erickson 2021).

Our third recommendation is to develop a training program for faculty to prepare them to incorporate sustainability into their courses. Conversations with numerous faculty members reveal their willingness and excitement to incorporate sustainability into their curriculum "if only they knew how." Providing a training program fixes this problem by providing faculty with training and education, and concrete examples of ways to incorporate sustainability. Developing this training program also allows NMU to target where sustainability curriculum is the most needed. We can analyze which disciplines have the greatest impact on the environment and discipline-specific sustainability training will be heavily developed there.



Lastly, we recommend that all incoming students are required to engage in sustainability workshops or lessons as part of their orientation or campus tour experience. In order to achieve the goal of promoting sustainability at NMU through education and awareness, it is crucial to introduce incoming students to sustainable education as they will be able to carry that introductory knowledge with them throughout their academic careers. This can be achieved through activities such as a sustainability skit from orientation staff or a tour of the dining service's composting and food waste system among many other ways to educate students on sustainability. EcoReps and other sustainability-based groups can aid in educating incoming students at orientation or during campus tours.





BUILD

LOCAL PARTNERSHIPS

Cultivating partnerships across campus and between Northern Michigan University and organizations within the surrounding Marquette area that focus on sustainability can help to make our community more resilient during uncertain environmental and economic times. Specifically, we recommend:



Local Partnerships goals for 2030:

- 1. Create a Sustainability Hub for INnovation and Environment (SHINE) to help NMU cultivate relationships with sustainability-related organizations in the region, and to facilitate sustainability work across campus.**
- 2. Increase local food purchasing on-campus to 18-20%**

Since 2016, members of the Sustainability Advisory Council have been advocating for Northern to create a center--or hub--for sustainability on campus and in the community. The idea gained traction when the proposal for SHINE (Sustainability Hub for INnovation and Environment) rose to the top of the campus-wide Big ideas campaign in 2019-2020. In April 2021, President Erickson identified new strategic initiatives for the post-pandemic era--one of which was "collaborative sustainability," and the creation of an interdisciplinary hub to improve Northern's research, action and reputation as a regional leader in sustainability (Erickson 2021).



SHINE would be a physical space for learning and collaborating on sustainability initiatives. Students would work with faculty members and NMU's Sustainability Director and Coordinator to develop partnerships on campus and throughout the region. Sustainability-focused groups on campus, such as EcoReps, would collaborate with other groups such as Black Student Union and the Native American Student Association, helping to make Northern more intersectional in its approach to sustainability.

Between 2018-2020, EcoReps created and coordinated sustainability programming that reached over 4,800 students, which is 62% of the entire student body. More than 40 EcoReps worked an average of 3600 hours per year as part of Northern's student sustainability peer-to-peer education program. The EcoReps worked with faculty mentors to organize campus-wide programming such as Mend it Monday, Clothing Swaps, Bike Tune-ups, Sustainability Week, Bike Week, and residence hall workshops. They also carried out collaborative projects with community partners such as Goodwill, local food providers, the Ice Climbing Festival, and represented the program at various on and off-campus events such as the Fresh Coast Film Fest, Climate March, Local Food Festival, and more.



In addition to the impressive work by NMU's student sustainability leaders, faculty members have also demonstrated leadership in sustainability-related research and community outreach efforts. Nearly 25% of all tenure/tenure-track faculty reported doing sustainability research. Since 2017 NMU scholars have brought in roughly \$596,000 in external funding from the National Science Foundation and other prestigious entities for sustainability scholarship. Faculty have also worked to develop new interdisciplinary programs such as the Indoor Agriculture program and the Sustainable Business & Enterprise Creation major. SHINE could help take these efforts to the next level by serving as a hub for collaboration between researchers and community partners in the region. SHINE could help facilitate public outreach programs and serve as a space where anyone would be welcome to learn and engage in local solutions to global environmental challenges.

A couple of strategic partnerships that would enhance Northern Michigan University's sustainability leadership in the region would be working with the City of Marquette and MarqTran and the Marquette Food Co-op. The City of Marquette is currently working to improve public transit options, and Northern is a key stakeholder in that process. A typical passenger vehicle produces around 4.6 metric tons of CO₂ per year, and with around 9,000 students and employees, we estimate at least 41,400 metric tons of CO₂ are being omitted each year by NMU employees and students. A 2020 survey of transportation habits found that 53% of students get to campus by walking, cycling, or other non-motorized means, but only 9% of NMU's employees use these modes of transportation. Working with the City of Marquette and MarqTran to improve pedestrian and cycling infrastructure and public transit options would benefit students and employees, while helping the city achieve goals identified in Marquette's Community Master Plan and reducing carbon emissions.



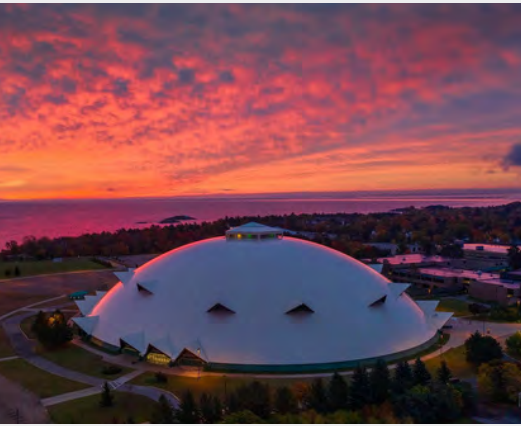
Since 2017, NMU has partnered with the Noquemanon Trail Network to help connect campus with trail systems in the area. Northern worked with the NTN to ensure that students have free access to these award-winning trails. A similar partnership with the Marquette Food Co-op could involve discounted memberships for NMU students so they can support local businesses and our local food system. Working with the Marquette Food Co-op and the UP Food Exchange could enhance learning and economic opportunities for the new Indoor Agriculture program, the Decolonizing Diet Project, and new research on food traditions in the Great Lakes region.



In addition to the goal of creating a Sustainability Hub for INnovation and Environment (SHINE) to promote collaborative sustainability, we recommend that NMU continue to grow the portion of local food served in its dining facilities. In 2018, \$368,820, or 10.3% of the NMU Dining budget, was spent on food sourced locally. In 2019, that number grew to \$406,800, or 11.3% of the department's budget. NMU Dining procures all shelled eggs on campus from BSB Farms, a local, family owned farm. Fish is purchased from Thill's, a local fishery, and beef and pork from SuperiorAngus/Superior Home Farm, also located in the Upper Peninsula of Michigan. Additionally, NMU Dining purchases whole animals from the Marquette County fair each year, works with the UP Food Exchange, and helps local establishments like the Room at the Inn with usable excess food waste.

A goal for Northern Michigan University is to partner with more food producers and distributors, like Partridge Creek Farms or the Marquette Food Co-op, to provide 18-20% of local foods for students and faculty by 2030. Investing in our local food system would not only provide healthier options for people who eat at NMU's facilities, but it would also support the local economy and decrease NMU's carbon footprint.





Directions Forward

According to a small campus-wide survey on sustainability priorities conducted by EcoReps in October 2020 (n=85), respondents' top priorities were climate action, affordable and clean energy, and responsible consumption and production (EcoReps Survey 2020). The results of this small survey were supported by research on other institutions' sustainability plans and international development work. The UN's Sustainable Development goals cover a wide range of topics from women's rights to fresh water to renewable energy. But world leaders and NMU students alike recognize that climate action is the most urgent. The actions outlined in this 2030 Sustainability Plan call for collaboration between different groups on campus and in the community. Together, we can help address the threat of climate change while providing new educational and economic opportunities for future generations of sustainability leaders.

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