



2017-2018 Annual Report
Office of Sustainability
Division of Student Life

UMD
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Executive Summary (1 of 2)



We support student involvement and action in sustainability.

The addition of Sustainability Activities Coordinator, Jonna Korpi, increased our capacity to support student learning and engagement. We congratulated the first three graduates to earn the [Kirby Leadership Institute](#) certificate with a sustainability emphasis. Students were key partners in conducting [waste bin and trash audits](#), with results informing improvements in operations and better waste communication. Working on waste reduction provided opportunities through student coursework, student organizations, and internships. We hosted [SELFsustain 2018](#) at UMD, a U of MN systemwide student conference. Our volunteer list grew to over 75 students. We worked with students to expand solar energy production at UMD, along with supporting classroom learning through talks, tours, and projects.

We pursue energy projects and planning for a more resilient future.

We tripled [solar power production](#) on campus. We championed a 100-kW [Community Solar Garden purchase](#), sponsored by UMD Student Life. We identified funding for a Master Energy/Utility Plan – to focus on thermal loads, heating and cooling. We are studying the impacts of burning a renewable fuel oil in the heating plant. UMD will soon have a complete energy end-use analysis for all 3,000,000 square feet of our buildings, partnered with Minnesota Power and Energy Insights. We continue to work with internal and external parties to explore possibility for third party-financed solar on campus.

Executive Summary (2 of 2)



We guide and communicate sustainability progress at UMD.

Tracking and communicating progress on campus and in our community is a high priority. We track key metrics on energy, waste, food, transportation, and student learning and share at campus meetings, email updates, presentations to classes and committees, website and social media stories, and at various campus and community events. We work with Sustainability Committees to guide future priorities and implementation of education and operational progress. We also supported a keynote presentation at Building Green, featuring the HCAMS building sustainability considerations and green features.



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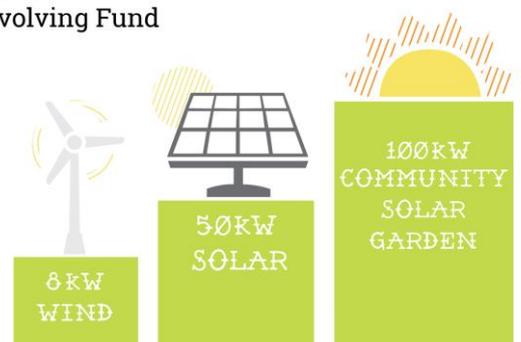
Fall Sustainability Updates

UMD celebrated Campus Sustainability Month in October with a variety of sustainability events, including a [campus clean-up](#), a [Go Green Women's Hockey Game](#), and [raising awareness about compostable products in the Food Court](#).

Read about UMD's progress to integrate sustainability into learning.

\$367,319

projects on energy efficiency funded through the Green Revolving Fund



Project Type	Capacity
WIND	8 kW
SOLAR	50 kW
COMMUNITY SOLAR GARDEN	100 kW

2017-2018

Guiding Statements



I. Vision

UMD Sustainability inspires learning, understanding, and action around sustainability across campus and in the community. Our communication efforts, project and program coordination, and involvement in operational changes provide visible demonstrations of the campus commitment to sustainability.

I. Values

II. Mission

Sustainability, Learning, Collaboration, Excellence, Connection

The UMD Office of Sustainability is committed to communicating, educating, and inspiring action to integrate sustainability into all aspects of campus life.

2017-2018 Goals



Sustainability Goal	Mapping to University Goals	Mapping to Student Life Goals
1. Connect sustainability with student learning opportunities	1, 5, 6	1, 2, 5
2. Clearly communicate progress and challenges in sustainability research, operations, and education	1, 6	1, 4, 6
3. Assist in community collaborations and campus partnerships related to sustainability.	1, 2, 4, 5	1, 2, 4
4. Provide leadership for campus sustainability efforts, support departments, faculty, and student groups.	1, 6	4, 5

Objective 1



Students will be connected with sustainability learning opportunities, whether integrated into existing programs, education, coursework and research, or through new initiatives

Desired Outcome

Increase the number of students participating in sustainability learning opportunities

Action Steps

- Track the number of participants in tours, class presentations, volunteer hours, events, programs, and activities with a sustainability focus
- Gather participant feedback on involvement with sustainability opportunities

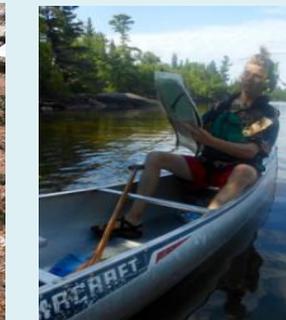
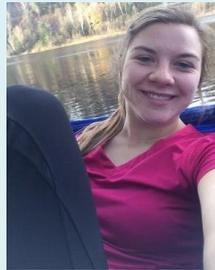
Results

- We increased the level of activity across campus this year through class visits, campus tours, working with student groups, and bringing together partners on and off campus.
- The addition of a Sustainability Activities Coordinator increased our capacity to serve and develop interns and student employees, and our volunteer list grew to over 75 students. The new position allowed the Director time to work on sustainability planning on energy and carbon reduction efforts.
- We developed a Sustainability Activities tracking spreadsheet to gauge the number of students involved in activities.

Our Students



Students arrive at UMD *activated* around sustainability. They expect green buildings, renewable energy, composting as a waste stream, and sustainability as part of decision-making at UMD.



Objective 2



Continue outreach activities to encourage sustainable actions and communicate sustainable changes from all areas around campus

Desired Outcome

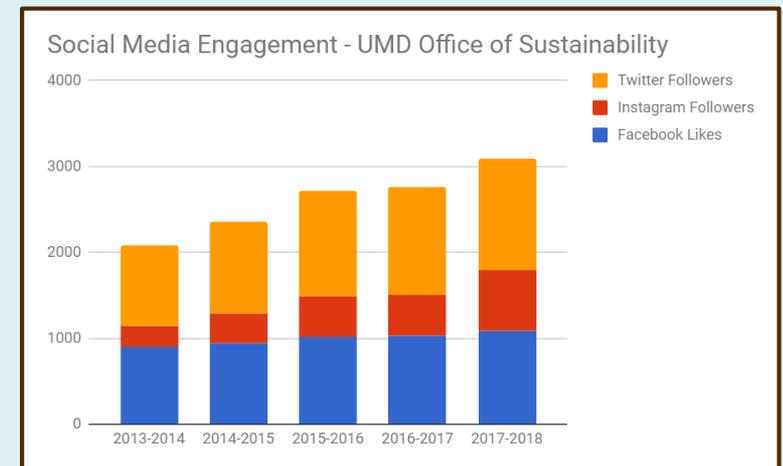
- Consistent and timely communication of sustainability news/activities to broad audiences
- Raise awareness and encourage action on sustainable topics

Action Steps

- Track key communication items, such as media stories, website updates, and social media engagement
- Host 1-3 outreach campaigns each semester, targeting specific actions/behaviors

Results

- Fall and Spring newsletters sent to UMDbiz
- 12 media stories (local television, the Bark, UMN-PR)
- 23 articles on the Sustainability news feed (109% increase over previous year)
- 58 outreach events targeting: waste reduction, campus sustainability efforts, and energy conservation
- Social media engagement steady



Objective 3



Partnerships with faculty, students, and community members on energy efficiency, conservation, and renewable energy projects continue or are created

Desired Outcome

- Energy Action Plan progress from 2010-2017 completed
- Involvement in community sustainability partnerships continue, including *Duluth Shines!* and collaboration with City of Duluth energy/planning staff.

Action Steps

- Work with Facilities Management leadership and administrative leadership to update Energy Action Plan

Results

- Funding has been identified for an Energy Master Plan, to be completed FY19, that will identify pathways to meet future campus energy demands while reducing greenhouse gas emissions.
- An Energy End-Use Analysis for campus is 70% complete.
- In the community, staff maintained membership/involvement on several local Board of Directors: Clean Energy Resources Team, Sustainable Twin Ports, and the NE Regional Sustainable Development Partnership.

Objective 4



Work with Housing & Residence Life to find ways to integrate sustainability into programs and outreach

Desired Outcome

- Host/support 1-2 sustainability-related programming events for hall residents
- Improve recycling rates and reduce landfill waste generation in the residence halls
- Benchmark Housing & Residence Life energy use

Action Steps

- Connect with housing staff to develop relationships and build programming
- Audit/assess current state of recycling/waste generation in the residence halls
- Outline action plan for improving recycling/waste system
- Hire/Supervise Energy End Use Analysis intern in energy data gathering

Results

- Key relationships were built among various levels of housing staff; sustainability is incorporated into 2018-2019 programming curriculum, including an EcoReps program.
- A waste audit was completed and a recycling improvement plan is in motion.
- An energy intern is completing data gathering and analysis on future lighting retrofits.

Objective 5



Continue investigation of multiple pathways to access renewable energy for campus

Desired Outcome

- Reduce greenhouse gas emissions

Action Steps

- Support investments in energy efficiency through use of Green Revolving Fund
- Investigate third-party financing for large scale energy projects
- Encourage utility companies to increase proportion of renewables in their power mix

Results

- In 2017-2018, UMD tripled on-campus solar production from installation of a 40 kW array on the Oakland Aspen apartment building. This project was student-led and student-funded, with contributions from the Green Revolving Fund and Housing & Residence Life.
- UMD Auxiliaries invested in a 100kW block of Community Solar, which went online in January 2018 and has already returned \$15,000 worth of solar electricity generation.
- The UMD Green Revolving Fund
 - Kathryn A. Martin Library lighting upgrades: \$15,000
 - Marshall Performing Arts Center - theater safety & high bay lighting: \$4,800
 - Griggs Conference Room - lighting and controls: \$6,000
 - Romano Gym - lighting and controls: \$63,700

Objective 6



Improve/increase tracking of campus progress on sustainability

Desired Outcome

- Set campus goals for waste diversion and solar generation
- Measure benchmark data for local, organic, and fair trade food purchases for 2019 campus STARS submission

Action Steps

- Track campus data on energy, greenhouse gas emissions, recycling, food, water, and transportation
- Lead Board of Regents update on sustainability for UMD
- Update gap analysis of current greenhouse gas emissions and campus goals for reduction

Results

- Goal for on-campus solar production proposed for 750 kW to Sustainability Committee, informed by National Renewable Energy Laboratory analysis
- Goal for waste diversion to be set in FY19 with Sustainability Committee on Operations (data is gathered, however more analysis needed)
- Benchmarking of local/organic/fair trade food purchases to be completed in FY19
- Board of Regents update on sustainability complete: see [2018 Sustainability Times](#)

Assessment Results



What assessments undertaken?

- Waste bin and trash audits

Results from assessments

- Assessments available at: z.umn.edu/lesswaste
- Audit of bins revealed needed operational improvements, many were immediately adopted by UMD Custodial
 - Bin consistency and placement, bag color, updated signs
- Results indicated a need for increased campus education on waste sorting - user behavior is a key component to reducing waste at UMD
 - We increased engagement activities by trash talking, tabling, and working on new posters, magnets, social media posts, and website improvements

Actions moving forward

- Creating new Recycling, Waste, and Composting posters: new brand; consistency. Feature new compostable items in Food Court.
- Recycling and Waste posters printed on magnets for students living in Housing & Residence Life to increase educational reach
- Watch Your Waste event in Superior Dining: near-zero waste venue!

2017-2018 Highlights



SUN Delegation triples solar on campus



- Group of nine interdisciplinary students
- Scholarships, travel, awards, internships
- Tripled solar production at UMD
 - 40 KW array project on Oakland apartment
 - More info at d.umn.edu/solar

Community Solar Garden



"Renewable energy is something that is extremely important to us," said UMD Chancellor, Lendley Black. UMD is one of the partners for the project. They have subscribed to the program supporting local renewable energy.

"We've made a commitment at UMD to reduce greenhouse gas emissions significantly by 2020," said Black.

<https://www.wdio.com/news/minnesota-power-solar-garden-/4656246/>

- UMD is anchor tenant for first Community Solar Garden in northern MN
Housing & Residence Life, Transportation & Parking, and Dining purchased a 100-kW block (10% of the solar array)
- Savings \$15k in first 6 months

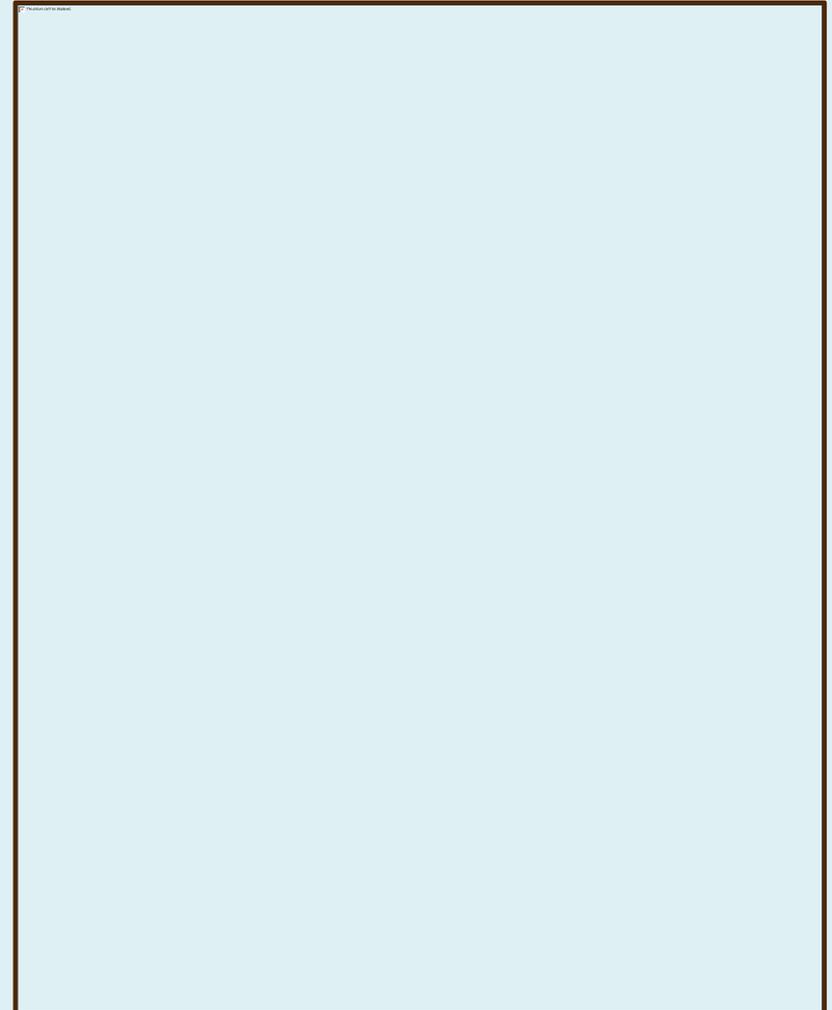
UMD hosts SELFsustain conference



Forty one students and five staff from across the UMN system came to UMD in March for the [Student Engagement & Leadership Forum for Sustainability 2018](#) conference.

This annual event brings together student leaders to share ideas, empower each other, and infuse energy into their ongoing sustainability projects. In Duluth, attendees participated in a campus sustainability tour, explored how culture and sustainability intertwine at the American Indian Community Housing Organization (AICHO), and tackled Grand Challenges together.

For the Office of Sustainability, this was a large-scale opportunity to bring diversity and inclusion into the sustainability conversation as well as provide a low-waste/nearly zero waste event for a group of 50 attendees, thanks to our partners in UMD Dining.



Waste Audits & Assessments



In 2017-18, students aimed to find out: What's in our Waste? By mapping bins and digging through trash, we now have a much clearer picture of how people are using our waste system and how we can make it better.



What did we learn?

We have an incredible opportunity to improve our waste system through:

- Education,
- Signage,
- Bin infrastructure improvements

[Click to Access the full report](#)

Left: Students pose with the sorted waste after an audit of Kirby Student Center and the Food Court. From 50 lbs of material (16 bags of trash and 2 bags of recycling), students sorted out:

28 lbs of Compost

or said another way, they found an opportunity to reduce landfill waste by 57% through education on sorting compost into the right bin.

Waste Baseline: Where are we?



UMD 2017 Material Streams, by ton

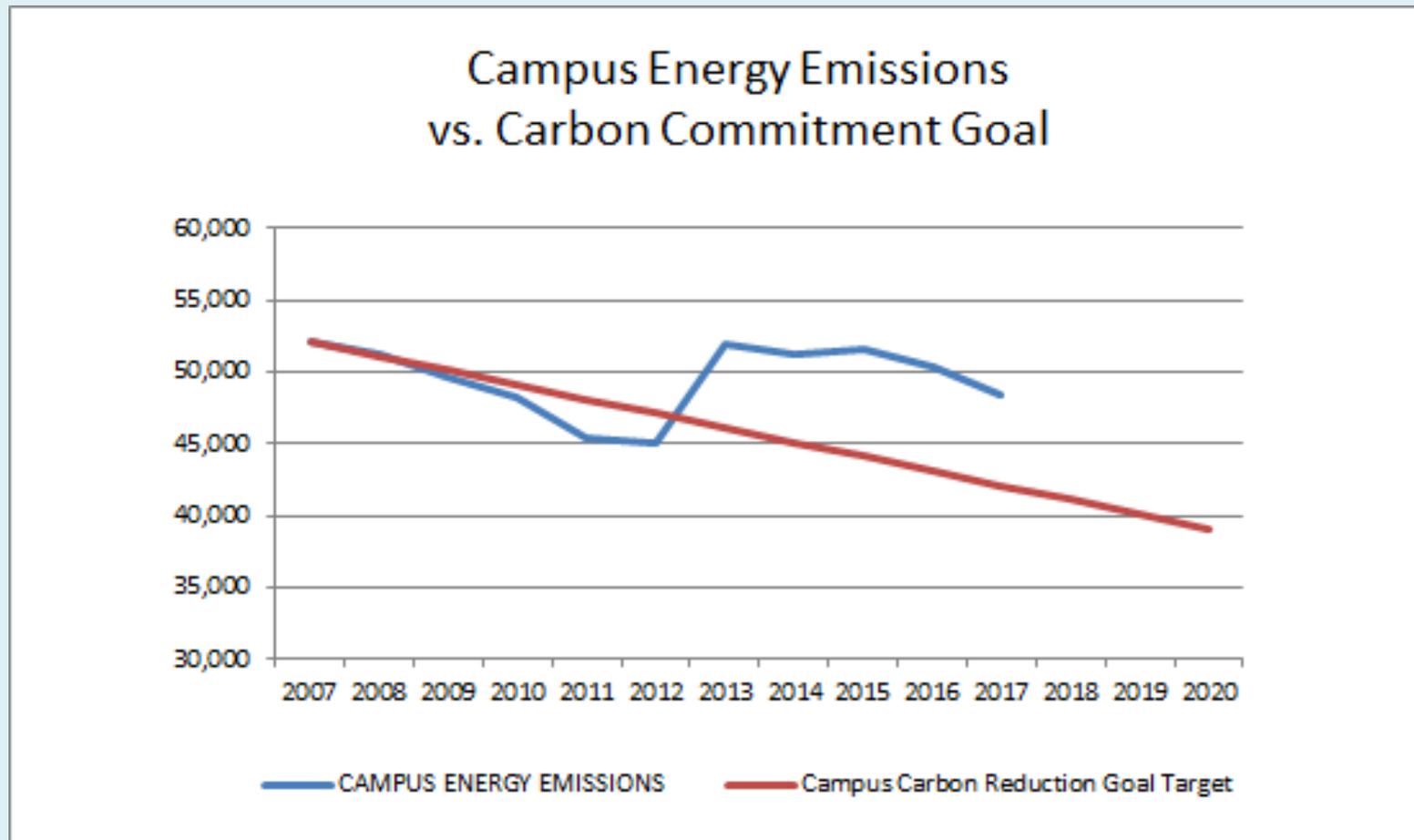


In 2017, UMD diverted 45% of material generated on campus from the landfill. In 2018, the Sustainability Operations Committee will use this data to set short and long term goals for reducing waste sent to the landfill and increasing our diversion of reusable, recyclable, and compostable material. Increased tracking of reused/donated material will also be initiated. Based on audit results, efforts will be focused primarily on increasing compost and recycling diversion across campus.

Greenhouse Gas Emissions



- Emissions remain steady despite enrollment & campus growth
- However, UMD is not on track to meet 2020 goal of 25% reduction in greenhouse gas emissions



UMD Energy Master Plan



- Support Campus Master Plan
- Address aging equipment and utilities
- Advance carbon reduction efforts

Energy Supply

- Combined Heat & Power
- Transition from Steam to Hot Water
- Renewable Fuel Oil
- Solar-PV
- Solar hot water
- Biomass
- Chilled water upgrades
- Geothermal
- Heat pumps
- Green tariffs
- Renewable Energy Credits

Energy Demand

- Energy conservation and efficiency
Green building standards (B3, LEED)
- Behavior change initiatives
- Energy end-use analysis for buildings
- Metering and monitoring
- Space utilization
- Green IT
- Fleet

- ✓ Which options can we evaluate and quantify?
- ✓ Which options should be included in our energy future?

Budget



New era of supported student involvement, carryforward will be addressed as we figure out levels of support needed for campus activities and staffing needs.

Resources/Revenue	2016-2017 Actual	2017-2018 Budget	2017-2018 Actual	2018-2019 Budget
Prior Year Carryforward	6,906.91	5,000.00	20,281.32	4,000.00
Student Service Fee	106,200.00	44,700.00	44,700.00	38,250.00
Student Life	30,000.00	30,000.00	36,000.00	30,000.00
Transportation & Sustainability Fee	41,400.00	38,000.00	41,400.00	39,000.00
Facilities Management	37,242.99	37,563.23	38,369.70	38,314.49
Other	1,360.00	0	161.82	0
Total Revenue	223,109.90	155,263.23	180,912.84	149,564.49
Payroll Expenses				
Payroll – Staff	56,514.12	95,422.77	86,144.58	97,808.34
Payroll – Students	21,587.23	27,000.00	17,098.00	18,500.00
Fringe Benefits	17,971.66	19,956.58	27,062.74	20,455.50
Total Payroll Expense	96,073.01	142,379.36	130,305.32	136,763.84
Operating Expenses				
Office Supplies	464.25	200.00	5,578.38	200.00
Food & Provisions	329.88	800.00	1,102.63	800.00
Uniforms/Clothing	0	500.00	814.00	500.00
Printing/Photocopying	225.47	1,200.00	309.48	500.00
Memberships/Licenses	1,670.00	2,000.00	1,670.00	2,000.00
Other Services	0	100.00	0	100.00
Travel & conferences	1,350.35	4,000.00	9,149.13	4,000.00
Programs	300.84	500.00	1,022.49	500.00
Ads/Promotion/Awards	1,064.93	1,700.00	361.82	1,700.00
Other: Enterprise Assessment	849.85	500.00	1,193.59	600.00
Other: BWW Water Bottles	500.00	0	0	500.00
Other: Oakland Solar Project	100,000.00	0	0	0
Other: Space Rental	0	250.00	100.00	250.00
Total Operating Expense	106,755.57	12,750.00	21,301.52	11,650.00
TOTAL EXPENSES	202,828.58	155,129.36	151,606.84	148,413.84
ENDING BALANCE	20,281.32	133.87	29,306.00	1,150.66

Student Action Drives Change!



Our support for students helps drive sustainable change at UMD.

We continue to connect students with leadership and learning opportunities, along with helping to make their campus a more sustainable place to live, work, and study.

