



Michigan Tech

Sustainability Listening Session Summary
Prepared by the Tech Forward Initiative on Sustainability & Resilience
February 2020

In January 2020, the Working Group for Michigan Tech's Tech Forward Initiative on Sustainability and Resilience hosted a Listening Session, with campus faculty, staff, and students as well as members of the broader local community invited to share their perspectives regarding how research, education, and the campus experience at Michigan Tech interfaces with sustainability. In each category, discussions were organized around the following questions: What's happening (in research/education/the campus experience) that should continue happening? What's happening that should stop happening? What's not happening that should start happening? The group then engaged in discussion of next steps, using a 6-month, 3-5 year, and 30-50-year time horizon. This document summarizes the major themes from the event.

The overarching theme of the event was "missing connections." Participants acknowledged that there are many faculty members across campus who are teaching and researching issues related to sustainability, and that there are many examples of positive activities associated with sustainability already happening at Michigan Tech (the Sustainable Futures Institute, the Tech Forward Initiative and the grants it recently awarded, Graduate Certificate in Sustainability, the BS major in Sustainability Science & Society, the Sustainability Demonstration House, the Alternative Energy and Green Campus Enterprises, and a course on Communities & Research were all mentioned explicitly). However, the activities related to sustainability in research, education, and the campus experience are all happening without central coordination or communication, and many participants expressed a desire to have more visibility and coordination associated with sustainability on campus.

Specific examples of action items in this domain include:

- Creating/enhancing an office or organizational unit dedicated to sustainability and developing a centralized or coordinated structure for sustainability activities
- Creating a searchable option for students to find courses related to sustainability
- Identifying Sustainability Coordinators or Advisors in all Departments who can communicate about sustainability activities
- Increasing digital and physical signage and educational materials about sustainability related campus activities (recycling, renewable energy, efficiency measures, procurement and dining services, etc.)
- Create communication tools for students, staff, and faculty to better understand how to maximize sustainability through their own behaviors on campus

Substantively, there were several key issues that dominated conversations in each domain. In education, there was a clearly expressed desire for a broader sustainability education at Michigan Tech. Several participants expressed that sustainability should be infused in the curriculum of all majors and degree programs, should be included as part of general education, and should perhaps

even be a required component of every graduate student research thesis or dissertation. This theme could be made actionable in several ways, for example:

- Orientation could include sustainability components, particularly related to making behavioral choices that align with sustainability goals when engaging in campus activities (including life in the residence halls and components such as managing thermal comfort, waste disposal, food services, etc.)
- General education could include sustainability as a learning goal. This would require activities in the Gen Ed office/council.
- Sustainability could be integrated into all degree programs. This would require engagement and integration with ABET and other accreditation processes.

Another substantive theme from the event may be classified as “waste reduction,” although this term must be inclusive of a comprehensive and holistic list of concerns, including but not limited to recycling and composting, elimination of single use plastics, and increasing vegan and plant-based food options on campus. While the recycling programs on campus have improved, participants were still unsure of what or how to recycle on campus, and many expressed concerns about a lack of visibility or effectiveness. However, this theme should not be limited to concerns about recycling. The broad vision of the discussion in this category included a net zero waste campus, composting all food waste and returning it to the local food system, and complete elimination of single use plastics. Action items in this domain include:

- Reduction and ultimate elimination of single use plastics through changes to dining services, purchasing, and culture across campus
- Establishing and meeting a series of iterative targets for recycling, waste reduction, and composting of organic waste on campus
- Prioritizing reduction and elimination of waste in purchasing decisions for dining services, residential services, facilities planning, etc.
- Increasing plant based, vegan, and locally sourced food options on campus while establishing and meeting targets for reduction of food waste

In research, participants noted the robust and active sustainability research programs on campus but also discussed the negative sustainability impacts of some research activities in terms of both substance (research on carbon intensive fuels and associated activities) and in terms of impacts (carbon impacts of research work). Some of the action items in the research domain include:

- Creating a carbon offset program for research related travel
- Using incentives on campus to promote and enhance visibility of research efforts to promote sustainability, such as internal research funding awards and internal recognition awards, by creating sustainability specific internal research awards and recognition
- Using research to enhance sustainability on campus and in the wider community

When asked about a vision for the future, participants agreed on a vision of Michigan Tech as a living laboratory for sustainability, prioritizing impacts of research for campus and the local community and making all investment decisions with sustainability in mind (i.e. divestment). These visions for the future include a net zero, zero waste, local and circular economy at Michigan Tech that benefits students, faculty, staff, and the local community through sustainability leadership in action. The comment summary generated during the conversations and discussion at this event are included below.

NOTES ON EDUCATION:	What's happening that should?	What's happening that shouldn't?	Responsibility	What should start happening?	Responsibility
	FACULTY:	Students (and faculty and staff and community) don't know about options for sustainability education	Coordinator, SFI, Advisors	Communicate with incoming students about sustainability efforts before they buy all the stuff that they buy that mini fridge and disposable dishes.	Residential Education, Housing
	Lots of faculty want to teach sustainability, so we have the capacity	Not coordination for steering students	Coordinator	Our community does not know what we are teaching.	Coordinator
	Excellent, forward-thinking profs in the engineering department.	Sustainability is not part of every course -- Sustainability education is too concentrated in one area, it should spread among more than one discipline. Could be part of the gen ed requirements.	Gen Ed Council	Empower university to connect w community	Coordinator
	Many professors and programs have some sustainability focus	Lack of sustainability programming in ME	ME Dept.	Better communication between parties of interest:	Coordinator
	EDUCATIONAL PROGRAMMING:	Should shift discussion away from whether or not climate change is happening, and more towards how to address it.	Coordinator, University Admin., Gen Ed Council	sustainability aspects integrated throughout the entire curriculum. sprinkle sustainability everywhere!!!! educate us (we are the future industry) to incorporate sustainability in all enterprises. we need an environment that makes us feel safe shaping conversation around sustainability.	Gen Ed Council
	Graduate certificate in sustainability/SFI courses (5)	Climate change denial professors, fundamentally bad science	Coordinator, University Admin., Gen Ed Council	K12 teacher institute. Continuing Education in Sustainability	RISE / CSEO
	k-12 outreach programs are involving sustainability- center for environmental and science outreach	Lack of education in some majors across campus. Stigmas around learning sustainability such as placing political connotations to sustainability.	Coordinator, University Admin., Gen Ed Council	Wads recycling, why weren't there enough bins.	Facilities, Housing
	sustainability classes are open to everyone regardless of your background/discipline	A lot of circular thinking with sustainability	Coordinator, University Admin., Gen Ed Council	GSG voted to ban plastics without knowing there was a composter, need more communication	Coordinator
	Life cycle assessment tool in these courses is helpful and practical (2)	back with facts and numbers rather than "feelings" - don't say "we should recycle everything"	Coordinator, University Admin., Gen Ed Council	Applying learning through community engagement; become leaders in sustainable education in this area.	Gen Ed Council, Pavis Honors College
	Degree programs in social sciences - Sustainability Society and Society (2)	There isn't enough focus on implementing learning, more application to sustainability.	Coordinator, University Admin., Gen Ed Council	Coordination across disciplines	Coordinator
	Enterprises (Green Campus, Alternative Energy) and enterprise design projects (4)	We don't want to 'count' token efforts. There needs to be real learning outcomes.	Coordinator, University Admin., Gen Ed Council	No effort to infuse throughout curriculum	Gen Ed Council, Coordinator
	Work in social sciences helping communities develop solar power in L'Anse	Some faculty are trying to "check a box" and incorporate sustainability into their courses when the class isn't even focused on sustainability.	Coordinator, University Admin., Gen Ed Council	Modules Or introductory courses	Gen Ed Council
	Class: communities in research	My definition of sustainability might not agree with other disciplines or scientific reality.	Coordinator, University Admin., Gen Ed Council	Collaboration	Coordinator
	EDUCATIONAL OPPORTUNITIES:	Amount of credits needed to complete certificate is perhaps a deterrent to completion.	SFI, Provost, Grad School	Stop silo of sustainability education	Coordinator, University Admin., Gen Ed Council
	Giving students an opportunity to solve real world problems.	Need to build graduate programs from different certificates.	SFI, Provost, Grad School	Engagement across campus units	Coordinator, University Admin., Gen Ed Council
	World Water Day	Very large barrier to credits needs to stop.	Gen Ed Council	Class on sustainability that all students have to take	Coordinator, University Admin., Gen Ed Council
	suitable courses in each domain (though need to search them out)	AEE & GCE are exclusive to engineers and needs to be opened to more diverse opportunities and involvement across disciplines.	Gen Ed Council	No student should graduate without it	Coordinator, University Admin., Gen Ed Council
	Lake Superior Day	need more opportunities/platforms for students to address sustainability	Gen Ed Council, Pavis Honors College	Courses on green certification schemes like LEED	Facilities, Coordinator
	opportunities to reach out and engage with community	grad students currently can't work with enterprises	Gen Ed Council	Certification opportunities	Gen Ed Council, Coordinator

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	Speakers - there are many sustainability related speakers that come to campus and there is support for bringing these speakers to campus	No implementation of the tech enterprise or of sustainable research projects	Gen Ed Council	Better intergration of sustainability concepts and their application in different classes and among disciplines	Gen Ed Council, Coordinator
	In the community we are getting the information we need from the university during projects between the community and academia.			We should include a module in new student orientation about sustainability	Gen Ed Council, Coordinator
	There are a number of sustainability-related classes. Climate change is not a debate in courses, it is an assumption.			Students want to get engaged in sustainability but they dont always have the avenues to do so. More opportunities needed to become in engaged.	Gen Ed Council, Coordinator
				A good understanding of what is happening.	Gen Ed Council, Coordinator
				Including sustainability even in courses that aren't specifically sustainability related. ex. chemistry courses. different solvents etc can be environmentally benign or toxic.	Gen Ed Council, Coordinator
				Include sustainability especially in introductory undergrad courses such as physics for people who will not go on to have a focus on sustainability, they should still get the basics.	Gen Ed Council, Coordinator
				Sustainability should be in every class. It is important in every aspect.	Gen Ed Council, Coordinator
				Common sustainability programming across all majors, how it relates to your major, etc.	Gen Ed Council, Coordinator
				Similar to other comments about making sure sustainability is across all of the curriculum and institution. ALSO: more campus / education opportunities. and ALSO at orientation, have a blurb about sustainability issues, here's how/why you should recycle, carpool, etc... encourage more interdisciplinary thesis products. Sustainability certifications, LEED etc. should do more community outreach, two way street	Gen Ed Council, Coordinator
				Sustainability being incorporated into classes in ME, EE, etc. that is specific to their fields.	Gen Ed Council, Coordinator
				incorporating facilities professionals into sustainability education	Gen Ed Council, Coordinator
				Consider diversity of candidates. Admissions and support for underrepresented or non traditional students. Support for these students once they are on campus.	Gen Ed Council, Coordinator
				Better coordination between courses that have aspects of sustainability	Gen Ed Council, Coordinator
				More schoolwide awareness of sustainable forums and programs	Gen Ed Council, Coordinator
				Every engineering degree program should have an aspect/class/research project in sustainability	Gen Ed Council, Coordinator
				fund sustainable research	VPR

NOTES ON RESEARCH:	What's happening that should?	What's happening that shouldn't?	Responsibility	What should start?	Responsibility
	sustainability demonstration house (2)	Research silos (3). Need to communicate and collaborate on more transdisciplinary and convergent projects (3)	SFI, Coordinator, MTU Incentive Structure	Remove barriers to collaboration and shared resources (2), integrate NSF "convergence" research idea where possible	VPR, Administration, MTU Incentive Structure
	grants given by s&r initiative are great (3)	Research in areas or topics or industries that isn't taking sustainability and the environment into account (5).	All	Every grad degree has thesis component on the sust implications of their research! (3)	Graduate School
	SFI existence is great (2)	Sustainability research is not communicated to other departments. We need to stop working on aspects of sustainability without getting perspectives from other disciplines.	Coordinator	Research that focuses on or involves the local community itself (4) or campus as a living lab, don't try to outspend big universities, focus on what we have here. Every single piece of research should focus on being a leader HERE instead.	All, behavior change
	SFI should continue existing and those people need to be available	Some areas are sorely lacking is sustainability thinking (4th industrial revolution stuff) we can't turn a blind eye to larger ramifications of this stuff! Human-centered technology should be the focus	Tech Forward Coordination	Need for a centralized sustainability energies in the university so that there can be communication between parties (2)	Coordinator
	Enterprises, AEE, GCE, CPM, (4)	Stop ignoring carbon footprint of research activities. (2)	All	Zero-waste and net zero energy focus, all over the place! big interest in waste / rural economy sustainability - less emphasis on huge centralized supply chains,	ALL, behavior change
	Alternative materials research	Stop excluding the economic aspect of sustainability.	All	More collaboration on projects. Getting continuity of funding.	SFI/Institute
	Tech forward provides good engagement so far	Stop being short sighted.	All	include partners in sustainability from the beginning. we dont feel we have the power or expertise to compete with other institutes for funding on sustainable projects.	ALL, University culture
	Sustainability is platform in SFRS research program	Grad students in enterprises	Enterprise Program	Campus fund for sustainability grants (2)	Coordinator, VPR, Administration
	Grad students and new faculty who care and engage in their research	stop overemphasizing sustainability as only a technical thing-invite social scientists (2)	All	We are not considering carbon footprint in research project funding or planning (2) . Analyze carbon footprint of any research project proposals, and travel to conferences. This would incentivize researchers to design research methods that are more sustainable energy efficient.	Coordinator, VPR, Administration
	Require interdisciplinary work; we do that well	Green washing	All	Engage the student body more. Coordination between student groups: sustainability summit, share out together.	Coordinator
	Systems science	Need equitable availability of resources	MTU Incentive Structure	Post how you're improving the community on a website; increased visibility. Make a statement like "we're dedicated to (researching) sustainability": this would give people direction for proposals.	Coordinator
	Community solar project in Lanse.	There is no funding directly to sustainability projects, very specific funds based on departments but not to a sustainability project overall	Tech Forward Coordination	Integrating research projects based on sustainability, interdepartmental projects that utilize tech and nontechnical sustainability. Ex: Projects between Social sciences and Geophysics, etc.	SFI/Institute
	Applied research, theoretical research both are good at getting students invovled.	Subscribing to and publishing in for-profit journals. All research should be open access and publicly owned.	All, MTU Incentive Structure	When recruiting faculty in all departments, we should give weight to sustainability research.	Office/Institute, Coordinator

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	Continue to encourage undergraduates to get involved in research.	stop thinking sustainability as a "band-aid" that you just add to a project.	All	Grow hemp on Ford Center land.	CFRES
	students think there are a lot of opportunities to do sustainability related research, if enterprises count as research cross over between education and research, lots of pockets of cool stuff going on related to sustainability challenges, we are pretty good at working together currently to think about larger ramifications of tech development / lots of great seeds all over campus!			disincentive the pursuit of projects that dont mention sustainability.	All
	Green Chemistry. Proper disposal of chemicals				
	Faculty focusing on sustainability				
	Coordination between facilities and researchers on new technologies				
	publishing in Green Chemistry Journal. Institutes for sustainability, can continue and grow them.				
	New sustainability research opportunities for undergraduate students! That could grow and expand to other departments.				
	Enterprises that work with industry on real world problems regarding sustainability. Local research.				
	Different aspects of sustainability in policy, engineering, tech, but they are siloed departmentally				
	Multidisciplinary projects (bioenergy, others): good in added knowledge and encouraging each other in sustainability.				
	Sustainability Development House (mentioned by 4 people) - and their research and community outreach				

NOTES ON CAMPUS:	What's happening that should?	What's happening that shouldn't?	Responsibility	What should start?	Responsibility
	We have a green roof. Model that in more places	stop using disposable cups/products - end single use!!!!!! throwing away food waste (turn it into energy). it's a mindset that we need to get over. we can't remove sustainability and isolate it from all other aspects of life. ban single use from events and anything on campus	Dining, Auxiliaries, Athletics	Compile list of sustainability resources and people	Coordinator
	Starting to build to LEED certification	Food waste and recycling in the garbage	Dining, Auxiliaries, Athletics	Recycling Food Waste. work with faculty on composting, consider working with a commercial entity to expand.	Coordinator
	sustainability demonstration house, green campus enterprise. we have people who care and can talk about avenues for making that care productive. recycling in librar. portion of energy provided to tech is renewable (needs to continue and grow!). passionate leaders Sloan grant, lots of potential for growth. SFI - is good and should grow	Food service at MTU is an unsustainable mess. Everything is in plastic containers, with plastic "silverware". Even hot prepared food is served on one-use plastic. The MUB (and I believe all major dorms) has a fully functional dishroom and kitchens. It would be great to see reusable dishware and recyclable packaging for all food items. We should also consider composting all "green" and "brown" food wastes in the major dining halls.	Dining, Auxiliaries, Athletics	raise awareness. post signs. make sustainability cool . better communication on recycling (signage). educating students on why sustainability is important, Organized Outreach programs (broader impacts), more outreach to places not fully engaged in sustainability discussion, a single location or person to improve accountability, highlight the good things that are going on. . Learn from umc about communication	Coordinator (communication and outreach is a huge part). Important place to ask for resources.
	SDH, food waste reduction initiative, campus garden, behind the scenes energy and water savings. Lighting projects, recommissioning building systems. Efficient maintenance. Energy spent is flat even though we have increased campus square footage. GLRC vegetation roof. White roofs, greater reflection. Building standards related to sustainability are improving during new construction projects	1.) I would like to see MTU extend recycling bins to all floors of residence halls and more throughout campus. Composting of brown paper towel waste is another great step to reducing waste. 2.) MTU needs to be a leader in climate change mitigation by divesting in fossil fuels industries and promoting sustainability careers instead of petroleum based engineering firms. 3.) MTU should take all necessary action to meet its goals for STAR and publish the results. If MTU is too ashamed of its STAR score to publish it and share it with the public, something needs to change.	1.) Housng 2.) Administration 3.) Sustainability Coordinator	Need to control stom water run-off	Facilities Planning
	recycling	1.) Could Tech aim to remove all single-use plastic from use and replace all paper and styrofoam products with fully biodegradable ones (maybe recycled paper products?). 2.) Tech-owned composting facilities would also be great. 3.) Maybe Tech-owned farm animals such as pigs and chickens (maybe contracted out to be raised by local farmers or 4-H kids) to consume much of the food waste generated on campus.	Dining, Auxiliaries, Athletics, Facilities	1.) rooms that have "smart lighting" that turn on/off depending on occupancy 2.) more talks and events surrounding sustainability. 3.) initiate transition to 100% renewable energy. generate renewable energy at large scale on campus.	1.) Facilities 2.) Coordinator 3.) Energy Managment
	Sustainability demonstration house!! ALSO Green Campus enterprise is a great start for self-assessment - social media for these as well, so this is a great campus-community vehicle. Center for science and Environmental Outreach (Joan Chadde), Sustainability Film Series, World Water Day, energy footprint is coming down, Wads gardens, student action is increasing, recycling options are increasing	1.) Single-use plastic containers (MUB and student cafeterias). Catering, make reusables more affordable. 2.) Lights on at night, all night (fix with sensors). 3.) Waterfront parking instead of meeting, sitting, eating, recreation. Putting gas tank at waterfronts. More efficient parking. 4.) Expanding university outwards rather than upwards, taking up space.	1.) Dining, Aux, Athletics 2.) Facilities - Energy Management 3.) Transportation Services 4.) Facilities Planning	have sustainability 101 course/training needed to be completed to continue enrollment.	Gen Ed Council, Residential Education, Pavlis Honors College

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	Events like this! More talk, energy around sustainability (continue on this trajectory). Emphasis on enjoying the outdoors, and taking advantage of our access. Solar panels (the more the better). Enterprise. Recycling. Student groups that promote sustainability. Make sustainability optional, and have a diversity of ways for students to engage.	1.) Using disposable products, wasting food in the dining hall, Not promoting vegan and vegetarian eating on campus, 2.) dorms overheated	Dining, Auxiliaries, Athletics, Facilities	MTU should lead the charge for making rental housing more sustainable offer students a way to make improvements to their rentals or otherwise facilitate rental house upgrades, major investments in compost / fraternity / sorority engagements, other venues for driving change	Administration, Residential Education
	Composting in the dining halls, Wads garden	Stop being siloed!	All, University Culture	do an LCA to justify decisions for major and minor changes on campus! all investments should have a energy/carbon footprint attached to options	Facilities Planning
	Keep talking!	1.) If there's straws, they should get rid of them. Some departments use disposable materials during seminars, and could BAN disposable utensils. 2.) Use of paper towels	Dining, Auxiliaries, Athletics, Facilities	discourage food waste. Smaller plates, reusable take out containers	Dining, Coordinator
	Students are starting to vocalize disapproval of sustainability issues	Stop leaving the indoor lights on. Use more strategic thinking when implementing initiatives.	Facilities	better recycling and sourcing at big events, get rid of plasticware,	Dining, Coordinator
	Positive movement and momentum	1.) still lots of groups that are oblivious to sustainability impacts / styrofoam cups, also plastic stuff in MUB dining halls, food waste, stop offering convenient but wasteful option, single use stuff ... 2.) management of heat/electric still a struggle, water-saving measures aerators, etc... 3.) computer issues are still a big deal,	Dining, Auxiliaries, Athletics, Facilities, IT	Recycling: Electronics and battery recycling: Battery recycling/ e-waste, dorm cleanups: have several e-waste recycling collection points around campus that are emptied regularly and have very clear signage about what can and can't be accepted. More recycling bins in general. Daniel Heights needs better recycling - currently have to carry stuff a long ways (outside)	Coordinator, Facilities, REHS, Information Technology
	Composting for food waste	Very little recycling in the dining halls on campus.	Residential Life, Housing, Dining	Husky exchange! Connect to local Restore! (3)	Coordinator
	HSTEM building	Proposals for sustainability projects on campus get rejected.	CFO, Facilities Planning	Share composting products with researchers	Coordinator - already being done with CFRES
	Student organizations like KYCA, Aspen, Sustainability club pushing for more awareness and school change	Bicycle friendly campus initiative - Tech is a part of one, are they sharing this widely? are they actually bike friendly?	CFO, Facilities Planning	Connections with the folks not in the room	Coordinator
	Students represented on in TechForward Initiatives	eliminate vending machines	CFO, Facilities Planning	Use strategic thinking. Need more concentration on the three R's: reduce, reuse, recycle.	Coordinator, Administration, CFO
		Uncertainty as to how effective the recycling program is	Coordinator to post results on website	keep an eye on when/how to make big decisions on campus for positive environmental impact, sustainability factored in to all big decisions like this!	Coordinator
		Excess lighting/light pollution	Facilities Planning	Improve access to waterfront/move fleet/facilities buildings for better recreation (3)	Facilities Planning

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		<p>1.) I would love to see campus (and the city) become more pedestrian friendly. I often walk/ride my bike but am faced with obstacles such as unplowed sidewalks and unmaintained bike trails. This means I end up walking/biking on the road.</p> <p>2.) All cafe and cafeteria food is served in plastic containers, even when you order and eat in the MUB. In addition, last time I checked, some of the plastic containers aren't even recyclable. Kenny mentioned an industrial composter, would be rad to have composting on campus.</p> <p>3.) Using the waterfront for parking/motor pool instead of outdoor meeting/eating/sitting/viewing/recreation space is unfortunate.</p> <p>4.) I see lots of lights on at night, seems to be a waste of energy and creates light pollution.</p>	Facilities Planning, Dining, Aux, Athletics, Facilities planning Faciliteis energy Management	Find ways to use campus as a living laboratory for sustainability (2)	Coordinator
		Stop plastic	Everyone	reduce light pollution	Facilities Planning
		There is a lot of dining hall food that could be composted and then used as soil for gardens on campus.	Cordinator + Dining Services this is in process	more agriculture locally, local gardens?	Facilities Planning, Purchasing, REHS
		Single use cutlery and straws, bleached napkins,	Dining Services should use and reuse metal silverware	not overheating dorms and buildings, getting waste management on board with what we are doing	Facilities, Purchasing
		All school events should switch over to reusable, dishes, napkins, silverware	Requires cost benefit calculation by requester and Dining Services	Implement purchasing and reuse at the policy level.	Purchasing
		Students are left out of the decision making process for most of university	Administration	Vegan and vegetarian options in the dining hall	Dining
		Diversity is only measured for domestic undergrads, not international grads	Institutional Analysis	Full time paid positions to ensure positive direction and accountability... (office for sustainability, someone in charge of this) to help Facilities build and move towards sustainability	Coordinator
		Auxillary services is ran as a for-profit, increasing student expenses that are not foreseen and covered by student tuition loans. This uncertainty is why students run into financial shortages, leading to needs like the food pantry.	CFO	All MTU vehicles should be electric, with a charging station. Electric vehicles charged with renewable energy (2)	Transportation Services
		Husky motors should not be in our best recreational location.	Facilities Planning	University needs to set goals for 2045- zero waste, carbon neutral, fair trade products. Departments need to fundraise and plan for their contributions.	Admin, CFO, Board
		The faculty and staff only address the technical and economic parts of sustainability. We miss the cultural aspects.	Administration, Coordintor	Pilot progressive environmental policies on campus. Carbon footprint for expenditures, transportation tax... Anything that may happen nationally, but set our end date 5-10 years before. Then we will be generating	Admin, CFO, Board
		Stalling on making meaningful changes to the way we do sustainability. Bring in new people, remove ineffective people	Administration, Coordintor	Use health insurance premiums to encourage people to walk and bike to campus.	Admin, CFO, Board
		Wasting land and money on the golf course. Repurpose that land for composting, solar, and greenhouses.	Auxiliaries	Reduction of single use plastics around campus (E.g. get rid of vending machines).	Facilities Planning, Purchasing, REHS
		saying that new buildings are leed certify-able, but not having them certified.	Facilities Planning	improve bike and pedestrian infrastructure: paths (snow removal), racks, etc (3)	Facilities Planning

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		Maintaining lawns with fertilizers and other chemicals across campus.	Facilities Grounds	Engage students in campus sustainability efforts during orientation	Coordinator, Wahtera Center
		Trying to keep up with Joneses in terms of tuition, student amenities, and ROI. We do not need a weight room in every dorm, this is what is contributing to the student debt crisis.	CFO	Students should be represented on the BOT.	Admin
		Do away with single use products	Purchasing, Dining, Auxiliary, Facilities	Make it easier to be sustainable in the residence halls	Coordinator + students this is in process
		Storm water control in facilities, retention, detention, better management to avoid things like the Father's Day flood	Facilities planning	Electronics and battery recycling: Battery recycling/ e-waste, dorm cleanups: have several e-waste recycling collection points around campus that are emptied regularly and have very clear signage about what can and can't be accepted.	Coordinator, Facilities
		Dedicated institutional continuity for sustainable facilities as a university, a direction that the university is taking to become an example in the community, LEED certified, etc.	Coordinator	Pay the residential electric rate, not be a corporate subsidy. This would make us immediately invest in local renewable.	Facilities Energy Managment
		Sustainability director position to incorporate the sustainability initiative and facilities	Coordinator	Develop food systems program. Raise/grow future foods like insects, algae, aquaponics, fungi	Coordinator
				Hstem building includes grey water system, solar (thermal and electric), triple pane windows, and living walls.	Facilities Planning
				Set goal for 30% female students and 5% underrepresented	Coordinator (generally: how S&R intersects with other priorities like enrollment and retention)
				Generate renewable energy on campus (3) use for fleet	Transportation Services
				Engage students with a supportive institutional structure	Coordinator
				Make sure faculty and staff funded by sustainability (in title, endowment, grant) are evaluated on their contribution	Admin, MTU Incentive Structure
				Incentivise staff to improve sustainability	MTU Incentive Structure
				optimization of heat and energy usage, infrastructure for campus to be more sustainable, make sustainability easy and accessible, create no other option. sustainability is just what we do	Facilities energy Managment
				Tell Tech students that donating to the ReStore helps the copper country and their neighbors. A place for information to go. Applying SDH to other places. Better public transportation: extend in to off campus housing. Composting everywhere. Improve pedestrian friendliness, especially in the winter: unplowed sidewalks are dangerous and arduous. Create partnerships with the community, between student groups. More places sharing, better information sharing.	
				Incorporating permaculture design into the campus gardens where local plants and food can be harvested from on campus gardens.	

NEXT STEPS:	Within 6 months	RESPONSIBILITY	3-5 years	RESPONSIBILITY	30-50 years
	Establish a structure for Sustainability		Improve Stars score	Coordinator	Biodigester for all organic waste
	Aashe stars process - publish score	Coordinator	Fund Office of Sustainability	Upper Administration	Virtual reality education
	Regular information sessions about sustainability resources on campus (online too)	Coordinator	Formalize community partnerships	Coordinator	All replacements as sustainability upgrades
	sustainability tab in banweb for students to easily find courses	Registrar	Create strategic plan		Electric transportation service
	Engage IT! Make an IT plan that maximizes computers being OFF rather than requiring computers be ON when not in use	Information Technology is working on this infrastructure.	Plan for funding through endowments, grants, fees, fundraising	Advancement	regularly running electric bus to chicago
	Bus stops to off campus housing, Hancock	Transportation Service	Formal system of accountability and resources		net zero circular economy net zero across the mtu ecosystem
	Communication in orientations etc	Energy Management, Sustainability Coordinator, Student orgs, others?	Living lab continuously used for ed	Coordinator AEE/SDH	sustainable transportation
	University commitment to eliminating disposables	This was the most common response in the campus section. What can we do to address this one?	Comprehensive sustainability education on campus (gen ed, all majors)		producing our own food/produce
	Divestment of fossil fuel funds!				progress at mtu is shared to benefit community
	Sustainable investment options	CFO	Sustainability action hub		
	Awards for sustainability in various sectors. ex. education, fraternities, research, student organizations	Student affairs/Office of Research	Electric zip cars		diversify our local economy
	University Policy document		University divestment from fossil fuel industry		carbon neutral
			Need to invest in the long term. Even when things are lean. Otherwise, we will continue will push things forward.		Underwater biosphere
	BOT sign Resolution for Sustainability	Sec. of BOT			No fossil fuel cars allowed on campus
	Event Calendar 'Sustainability' tag	Calendar Administrator	diet awareness and education		
		Student Leadership and Involvement	supporting local ag		Biodiesel as generator backup
	Student Org 'Sustainability' tag				
	Setting up a sustainability directive committee	Administration, Coordinator	consideration of shoreline impact in planning		100% renewable
			A carbon offset program could be set up at MTU to help offset faculty and student travel (primarily air travel). Assuming a "tax" on faculty IRAD accounts and/or additional student fees would not be popular, it could start as a voluntary program. Faculty could donate to a fund to offset their travel, and students could volunteer to work on on-campus or local community offset projects, or conduct research on potential investments to existing offset programs. The offset projects could be student-driven (for example, see the UIUC Student Sustainability Committee: https://ssc.sustainability.illinois.edu/), perhaps with some oversight by a faculty advisor with relevant expertise. Other TechForward initiatives may be interested in partnering on this (e.g., Education for the 21st Century, which is looking to expand study abroad and community engagement opportunities for students), and as the program ramps up and projects get underway, we could look for external grants to supplement funding.		
	Increased Bus Stops	Transportation services			Carbon-neutral, circular economy
	Increased/regular communication and rewards with the University body on Sustainability efforts/initiatives on campus	Coordinator	Identification of aging infrastructure and best practices to replace with sustainable options		Reducing food waste

NEXT STEPS:	Within 6 months	RESPONSIBILITY	3-5 years	RESPONSIBILITY	30-50 years
	<p>Communication with student events on getting rid of single-use plastics</p> <p>Divesting from fossil fuels – caveat: research along with fossil fuel investments can increase sustainability</p> <p>Committee that reaches out to the community, alumni, and organizations to increase outreach and awareness</p> <p>MTU on-campus sustainability events with the community and the school that showcase our research, outreach, effects on the Keweenaw</p>	<p>Coordinator</p> <p>CFO</p> <p>Coordinator</p> <p>Coordinator</p>	<p>Better biking infrastructure</p> <p>Better electric transportation Infrastructure</p> <p>Needs to strategically invest in keeping sustainability at the forefront of the school's initiative</p> <p>Group dedicated to sustainability related funding through industry endowments</p> <p>Form a conference that is state-wide on increasing University, city, and world sustainability</p> <p>Keeping track of and ensuring completion of at least 10% of the goals set out today and in the next 6 months</p> <p>Ensuring continuity of ideas even after faculty/staff/students leave</p> <p>Making sure rental housing and social/community impact is good</p>		<p>Sustainability progress is shared with the community</p> <p>Michigan Tech diversifies its economy, partnering with businesses, building local economy</p>
	<p>MTU/Community exchange so school items don't go to waste</p>	<p>HuskyExchange!</p>			
	<p>School-wide sustainability Initiative</p> <p>Including sustainability options and awareness at new student orientation</p> <p>Increased Vegan/Vegetarian options and awareness</p>	<p>Coordinator</p> <p>Orientation coordination</p>			
	<p>Supporting local farmers, co-op</p>	<p>Dining, purchasing</p> <p>Dining, purchasing</p>			<p>Michigan Tech diversifies its economy, partnering with businesses and NO-BRAIN DRAIN</p>