

Climate Action- Carbon & Resilience Plan Review

Office of Sustainability, 2022

Background



- ❑ **Science-** Science-Based Targets set by the IPCC to avoid irreparable damage
 - ❑ Reduce Emissions by 45% by 2030 to 2010 level
 - ❑ Net Zero Emissions by 2050
- ❑ **Signatory-** Chancellor Mone signed the “Climate Commitment” in 2017
- ❑ **Statement of Purpose-** Agreed upon Project Charter
- ❑ **Scope-** UWM Community, nested by the regional Resilience Plan conducted by MMSD in 2018

Plan

Mitigation

Reduce Emissions to Avoid the worst of Climate Change & Limit our Impact on the Environment

Adaptation

Build Resilience in our Community, Infrastructure, and Environment to Unavoidable Climate Hazards

Process

- ❑ **Convene Stakeholders (90+)**- Core > Advisory > Broad-based, including governance reps, MMSD, and faculty, student, & staff subject matter experts
- ❑ **Identify Climate Hazards**- to SE Wisconsin Coastal Region
- ❑ **Baseline Emissions Reporting**
- ❑ **Assess Resilience**- Defining Community, Infrastructure, & Environmental Assets
 - ❑ Evaluating our Vulnerabilities & Strengths
- ❑ **Plan Mitigation & Adaptation Goals & Steps**
 - ❑ Mitigation, Adaptation, Curriculum/Research, & Community Partners
 - ❑ Visioning

Vision

“UWM will reduce greenhouse gases by 2050 to meet international, science-based targets and enhance our campus community’s health and well-being. UWM will play a leading role on climate action in the Milwaukee region through community-based research, student experiential learning, administrative innovation, and organizational partnerships.”

Assumptions

1. Climate change is a great exacerbator of societal, environmental, and economic challenges, especially those already affecting vulnerable communities.

2. There is no new normal. Weather events will fluctuate across extremes (precipitation and temperature).

3. The climate & public health impacts of one extra ton of CO₂ emitted is calculated in the "social cost" of carbon.

4. SE Wisconsin may expect population increases as a climate haven with key water resources. Forward-thinking policies must be made to ensure equitable development.

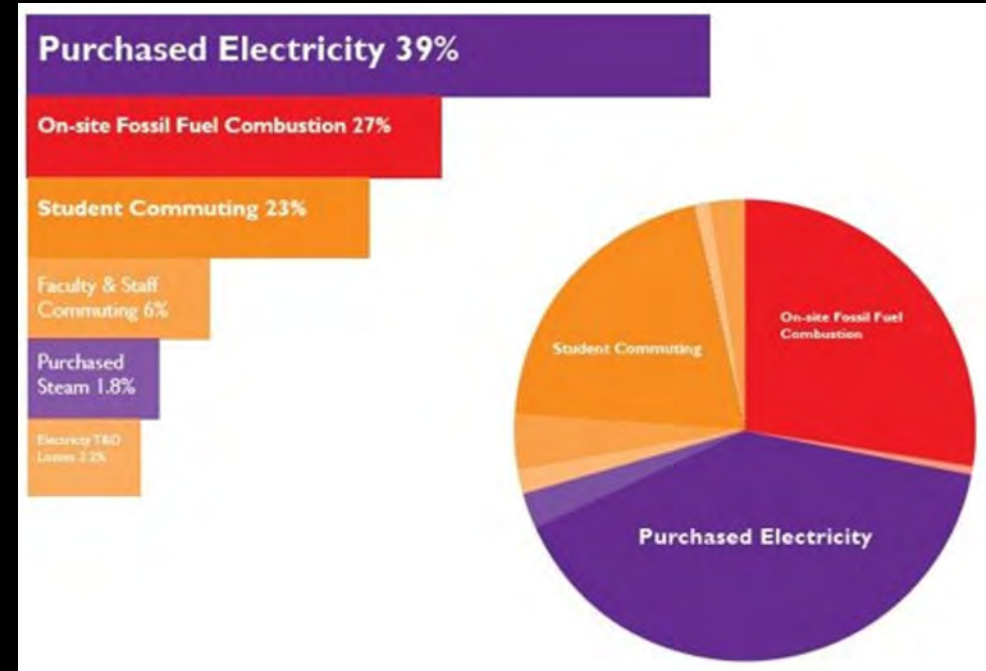
Strategies

- For Mitigation Scopes and Adaptation Assets
- Broad to Specific
- Catalytic Projects
 - Launch Pad
 - UWM Oversight/control
 - Large Impact
 - Addressing the First Five Years of the Plan

Draft Plan- Mitigation Scopes

- Main Sources by Scope (95%)

- **Scope 1- On-Site (Heating & Cooling)**
- **Scope 2- Purchased (Electricity)**
- **Scope 3- Indirect (Commuting)**



Scope 1 Heating/Cooling- Strategies & Catalytic Project

Climate Solutions	Climate Solution Description
Utilize Space Efficiently	Utilize Space efficiently to avoid/reduce inefficient energy use.
Lower EUI each year	Lower EUI each year: EUI (Energy Use Intensity) EUI is an indicator of the energy efficiency of a building. EUI can be improved through energy conservation measures as well as constructing/renovating buildings to target energy performance thresholds. As most heating currently is from fossil fuels, reductions in energy use will directly lower UWM emissions.
Use Fossil-fuel free energy	Switch to fossil free fuel sources: Heating and cooling through non fossil-fuel resources is imperative to meet science-based reductions without carbon capture technology. This includes thermal energy storage.
Offset fossil-fuel purchases	Offset fossil-fuel purchases: Offset fossil-fuel emissions through purchased credits or carbon capture and sequestration. Credits should be purchased through local partnerships to drive economic benefits and low-carbon transformation as geographically close to UWM as possible.
Convert fleet and fleet infrastructure to non-fossil fuel burning vehicles	Convert Fleet: Through DOA and UW System, transform UWM's fleet to non-fossil burning vehicles.
Use University Research to Accelerate progress toward low carbon technologies	Research to accelerate progress toward low-carbon tech: Use research strengths at UWM to accelerate progress towards implementable low-carbon solutions for heating and cooling, and vehicle use.

Strategically plan for the heating/cooling plant of the future, taking into consideration two major points- First, study the positive feedback loop of warming waters and higher demands for cooling over the next 30+ years. Second, plan for substantial upgrades based on useful life and reducing fossil fuel use.



Scope 2 Electricity- Strategies & Catalytic Project

Climate Solutions	Climate Solution Description
Utilize Space Efficiently	Utilize Space efficiently to avoid/reduce inefficient energy use.
Lower EUI each year	Lower EUI each year: EUI (Energy Use Intensity), EUI is an indicator of the energy efficiency of a building. EUI can be improved through energy conservation measures as well as constructing/renewing buildings to target energy performance thresholds. As most heating/cooling is from fossil fuels, reductions in energy use will directly lower UWM emissions.
Use Fossil-fuel free energy	Harness fossil-fuel free energy sources to power or offset campus electric load
Use University Research to Accelerate progress toward low carbon technologies	Research to aid grid modernization, greening of grid: Use research strengths at UWM to accelerate progress towards implementable low-carbon solutions for a greener grid that is reliable and resilient in the face of climate impacts

Implement both on-site & off-site renewable electrical energy. Consider resilient backup power on-site, what can be done locally, and projects that support students and equity. In order to meet 100%, consider future efficiencies and off-site power purchase agreements.



Scope 3 Commuting- Strategies & Catalytic Project

Climate Solutions	Climate Solution Description
Less intense fossil-fuel transportation	Support commuter mode switch, remote work, and near-campus living. Research and promote regional alternative transportation solutions. Prioritize campus culture impact.
Reduce waste resources while increasing control and flexibility	Increase operational oversight of waste resources in order to minimize emissions and take advantage of dedicated market economics/know that recycling streams are being reused effectively.
Prioritize upstream purchases with greatest impact on local economy and emissions	Study institutional purchases to determine highest impact on emissions and local economy. Prioritize alternatives to high life-cycle emissions purchases.

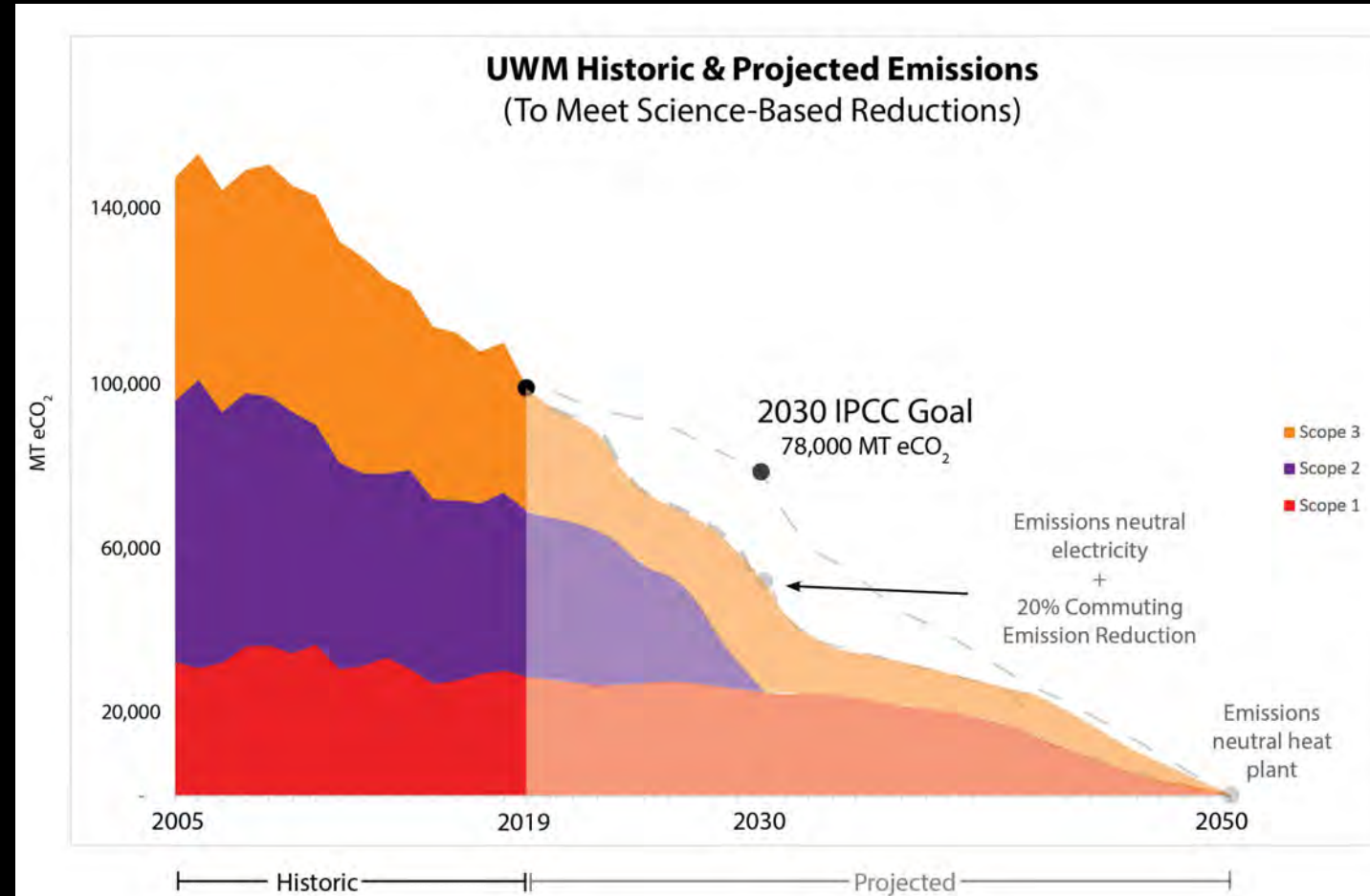
Build capacity in the Office of Sustainability & Transportation Services to support alternative commuter options that reduce emissions. Build off existing UWM-specific research. Support commuters through transportation demand management that includes but is not limited to - Full implementation of the 2018 Bike Hub Study, lobbying for the HOP and future BRT connections to UWM, and establishing long-distance frequent fliers for outlying suburban connections to UWM.



Emissions Reduction Over Time

- Targets

- Implementation of Catalytic Projects



Draft Plan- Adaptation Assets

- **Environment**
- **Campus Community**
- **Infrastructure**

Community

- Community Partners
- Student, Faculty & Staff Food Resources
- Student, Faculty & Staff Health Care
- Student, Faculty & Staff Housing
- Student, Faculty & Staff Transportation

Environment

- Lake Michigan
- Milwaukee Rivers
- UWM Landscaping
- UWM Gardens
- UWM-Owned Natural Spaces

Infrastructure

- Building Shell
- Building Systems
- Central Plant & Associated Infrastructure
- Campus Fleet
- Parking Infrastructure
- Streets & Sidewalks

Environment- Strategies & Catalytic Project

Sphere	Overall Description
Operations & Programming	Fund and implement operational improvements on campus to positively impact local water quality, stormwater runoff (flooding), and urban heat island effect
Curriculum & Experiential Learning for Students	Provide curricular and experiential learning activities to better understand and address climate impacts to MKE and SE Wisconsin
Research	Research climate impacts on local assets, provide research insight to local entities in need of aid

Update the UWM stormwater masterplan to meet the most current climate predictions/projections. Implement findings into all campus capital developments.

Campus Community- Strategies & Catalytic Project

Sphere	Overall Description
Operations & Programming	Fund and implement operational and programming efforts on campus to address community health, food insecurity, commuting and housing
Curriculum & Experiential Learning for Students	Provide curricular and experiential learning activities to aid vulnerable communities in MKE and SE WI
Research	Research climate impacts on social and community assets, provide research insight to local entities in need of aid

Address any current gaps in support of student welfare based on climate impacts on their physical, mental, and financial health. Continue to build support around food insecurity, student health and wellness, and affordable transportation for those whose commutes are most impacted by weather.



Infrastructure- Strategies & Catalytic Project

Sphere	Overall Description
Operations & Programming	Fund and implement operational improvements and programming on campus to make UWM operations more resilient in the face of climate impacts
Curriculum & Experiential Learning for Students	Provide curricular and experiential learning activities (e.g. Living Learning Lab) on campus to address climate-related infrastructure challenges
Research	Research climate impacts on UWM assets, provide research insight to UWM resilience challenges

Mitigate flood damage and other climate hazards to existing and future buildings and steam tunnels on campus. Address salt damage to infrastructure as well.



Research & Curriculum Catalytic Project- Utilizing UWM's strengths in/with the community

Develop an Institute of Climate Resilience to align and support interdisciplinary research, curriculum, and experiential learning on sustainability and climate resilience in SE Wisconsin. Assess current research and curriculum offerings and develop resources to build upon what UWM offers as well as bring in new, relevant talent.

Implementation

- Teams Comprised of Stakeholders
- Align with other UWM Planning (DEI, 2030 Plan...)
- Develop 5 Year Plans Based on Catalytic Projects
 - Review Detailed Plan Alternatives
- Renew Plan w/ Next Steps Every Five Years

Current Next Steps

- Reviewed with Leadership
- Review with direct stakeholders, governance reps, and full advisory group
- Respond to feedback
- Bring to all governance senates



[Click here to view the full plan.](#)

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