



November 8, 2019
Monona Terrace Community & Convention Center
Madison, WI

Conference Report



About the Wisconsin Academy of Sciences, Arts & Letters

The Wisconsin Academy's mission is to create a better world by connecting Wisconsin people and ideas. The Academy is a place where people can connect with experts and learn from each other. Our programs are made for people who are curious about our world and proud of Wisconsin ideas: the James Watrous Gallery, *Wisconsin People & Ideas* magazine, Wisconsin Strategy Initiatives, Fiction & Poetry and Academy Fellows Awards, and public events that explore Wisconsin ideas and move the world forward. For more information, visit **wisconsinacademy.org**.

About the Climate & Energy Initiative

The Academy's Wisconsin Strategy Initiatives engage experts, stakeholders, and community leaders across diverse sectors to find solutions to statewide problems. Through the Climate & Energy Initiative, the Academy seeks to understand and address Wisconsin's role in global climate change and explore diverse, sustainable energy choices.

To learn more about past and current long-term Initiatives undertaken by the Academy, visit **wisconsinacademy.org/initiatives**.

Conference Resources

For resources from Climate Fast Forward, including white papers, discussion guides, presentations, and video recordings of the plenary sessions, visit the **Resources** tab at **wisconsinacademy.org/fastforward**. Please feel free to email Chelsea Chandler, Initiatives Director, at cchandler@wisconsinacademy.org with any questions or to request copies of the resources listed above.

Wisconsin Academy Report Contributors

Jane Elder, Executive Director

Chelsea Chandler, Initiatives Director

Catie DeMets, Initiatives Assistant

Jason A. Smith, Associate Director

Thanks to the following funders and contributors

Funding provided by:

McKnight Foundation

Sally Mead Hands Foundation

Carolyn Foundation

Brookby Foundation

Report Contributors:

Climate Fast Forward participants:

This report is the culmination of the collaborative efforts of our Climate Fast Forward participants.

Track team leads and facilitators:

Lauren Azar, Attorney, Azar Law LLC

Fred Clark, Executive Director, Wisconsin's Green Fire

Marian Farrior, Restoration Work Party Manager, UW Arboretum

Melissa Gavin, Chief Network Officer, RE-AMP Network
Sherrie Gruder, Sustainable Design and Energy Specialist, UW-Extension
Richard Heinemann, Attorney, Boardman & Clark
Christine Kelly, Sustainability Education and Organizational Learning Designer
Jennifer Kobylecky, Communications and Outreach Manager, Discovery to Product at UW-Madison
Robin Lisowski, Director of Research and Innovation, Slipstream
Diane Mayerfeld, Sustainable Agriculture Coordinator, UW-Extension
Curt Meine, Senior Fellow, Aldo Leopold Foundation
Matt Mitro, Fisheries Research Scientist, Wisconsin Department of Natural Resources
Gary Radloff, Principal, The Radloff Group
Keith Reopelle, Director, Dane County Office of Energy and Climate Change
Peter Skopce, Director, Wisconsin Public Interest Research Group
Nadia Vogt, Senior Projects Manager, Milwaukee Metropolitan Sewerage District

Note takers:

Terry Daulton, Board President, Wisconsin's Green Fire
Sharon Dunwoody, Professor Emerita, School of Journalism and Mass Communication, UW-Madison
Jeremy Gragert, Co-Coordinator, Progressive Students & Alumni
Tina Ignasiak, Development Associate, Wisconsin Academy of Sciences, Arts & Letters
Ann Wilson, Business Manager, Wisconsin Academy of Sciences, Arts & Letters

Plenary speakers:

Lieutenant Governor Mandela Barnes, State of Wisconsin
Bruce Beihoff, Technical Director, Grainger Institute of Engineering at UW-Madison
Chancellor Rebecca Blank, UW-Madison
Robin Chapman, Poet
Secretary-designee Preston Cole, Wisconsin Department of Natural Resources
Tyler Huebner, Executive Director, RENEW Wisconsin
Mic Isham, Executive Administrator, Great Lakes Indian Fish and Wildlife Commission
Paul Robbins, Director, Nelson Institute for Environmental Studies at UW-Madison
Mayor Satya Rhodes-Conway, City of Madison
Daniel Vimont, Director, Nelson Institute Center for Climatic Research at UW-Madison and Co-Director, Wisconsin Initiative on Climate Change Impact

Additional planning committee members (*most listed above*):

Heather Allen, RENEW Wisconsin
Robert Croll, Great Lakes Indian Fish and Wildlife Commission
Emily Reynolds, Nelson Institute for Environmental Studies, UW-Madison

Executive Summary

Participants of the Climate Fast Forward conference were tasked with crafting strategies to mitigate climate change and increase resilience in Wisconsin. Lively discussions took place on a variety of sub-topics within five broad discussion tracks: 1. Energy Generation, 2. Energy Use, 3. Resilience & Adaptation, 4. Natural Carbon Sinks, and 5. Governance. While roughly 475 specific ideas emerged from the process (see the Appendix), participants voted on the “top 15” recommendations to share with the full group of conference attendees. This report highlights these 15 examples, and also surfaces a number of common themes in the strategies.

Top 15 Crowdsourced Recommendations

Track/Timeframe	Near-term (1-3 years)	Long-term (4-10 years)
1. Energy Generation	<ul style="list-style-type: none">• Legalize third-party ownership of solar• Create an innovation sandbox for energy storage	<ul style="list-style-type: none">• Price carbon
2. Energy Use	<ul style="list-style-type: none">• Increase funding for local and state energy efficiency and community benefits programs• Encourage employers to invest in public transit and active transportation	<ul style="list-style-type: none">• Expose the true external costs of fossil fuels
3. Resilience & Adaptation	<ul style="list-style-type: none">• Create a state-funded and state-run AmeriCorps-like program to coordinate resilience• Pilot microgrids for critical infrastructure	<ul style="list-style-type: none">• Develop a new message for community engagement and education
4. Natural Carbon Sinks	<ul style="list-style-type: none">• Define carbon as forest product through state policy• Clarify state policy to allow third-party renewable energy generation on farms, regardless of scale	<ul style="list-style-type: none">• Create state-based agricultural policy that pays farmers for carbon sequestration
5. Governance	<ul style="list-style-type: none">• Strengthen the State’s energy office to fund UW-Extension to facilitate collaborative resilience planning• Accelerate the clean economy	<ul style="list-style-type: none">• Price carbon, economy-wide and with an equity lens

Themes

In addition to the top recommendations that the participants in the breakout tracks voted to highlight, they generated hundreds of additional exemplary ideas for climate mitigation, adaptation, and resilience in Wisconsin. While the full diversity of specific ideas are catalogued in the Appendix, we noticed that many of these recommendations coalesced around a handful of themes.

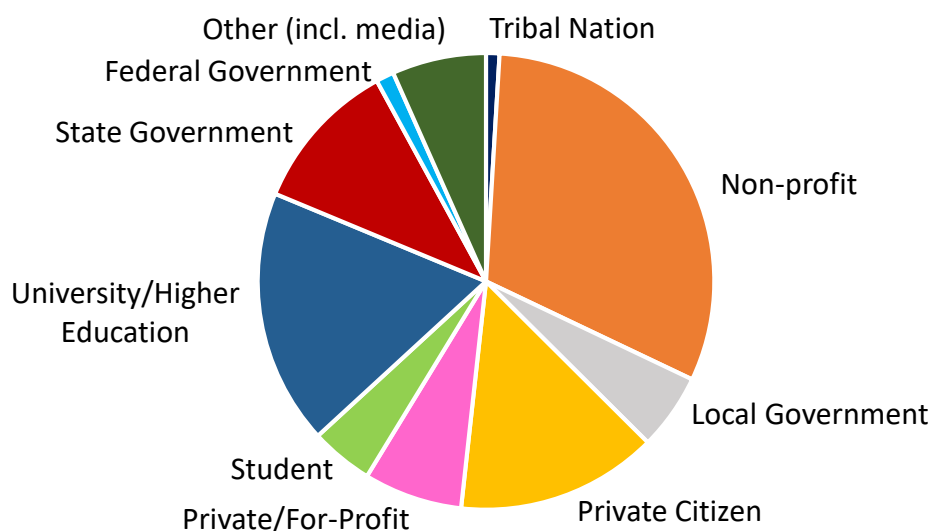
Participants emphasized the importance of having **a plan for Wisconsin** in order to effectively map a strategy to decrease (or eliminate) greenhouse gas emissions and increase resilience. Many individuals also noted the importance of **cross-jurisdictional and multi-level collaboration**, as the sources and impacts of climate change do not respect man-made boundaries and organizational structures. Other themes were to give **power to the people** through healthy energy democracies and our broader democratic system of governance, and also to specifically **empower local government** since many climate strategies are best created and implemented at this scale. Across topic areas, participants emphatically insisted that **equity and access** need to be centered in crafting responses to the climate crisis in Wisconsin; those most affected must play key roles both because it’s fair and because their insights are invaluable in crafting effective solutions. **Pricing carbon** repeatedly emerged not only in the “top 15” recommendations, but also consistently across breakout tracks as a comprehensive solution. Participants also noted that there are many **co-benefits** – such as clean water, healthy soils, and

improved human health – associated with many strategies aimed at lowering greenhouse gas emissions, and that better quantifying and messaging around these stacked benefits can help advance climate solutions. Finally, continuing to gather **research and data** in a rapidly changing landscape and engaging in effective **education and communication** will support solutions across the board.

Climate Fast Forward Conference Overview

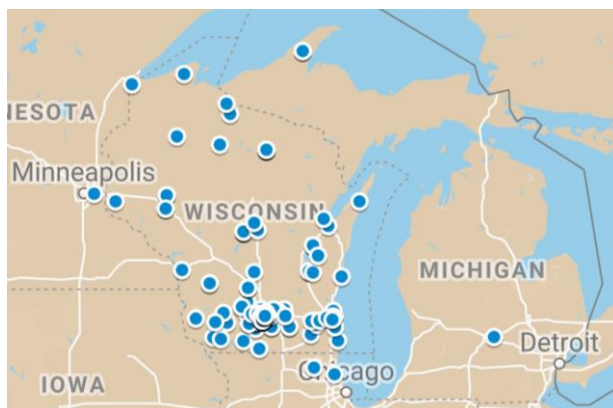
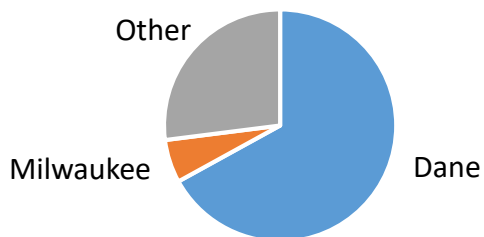
Over 300 conference participants attended Climate Fast Forward, representing a wide variety of backgrounds and experiences. We observed a broad range of ages – from high school students to retired elders – and varying levels of familiarity with climate change-related topics, from curious citizens to environmental leaders and advocates. Prior to the event, our planning team made a focused effort to recruit diverse participants, especially youth and members of Tribal Nations, and provided full attendance scholarships to over ten percent of participants; it was critical to include as many and as diverse of voices as possible, given the conference’s “crowdsourcing” approach to creating solutions. The following chart shows the breakdown of conference participants by sector:

Attendance by Sector



Participants came from communities around the state—and, in a few instances, neighboring states—to represent both rural and urban perspectives. As one participant noted, “The power of the day came with the eclectic group of voices that came together to explore solutions to our climate change crisis: at my table, we had a couple of climate activists, a farmer, a writer, a college student, retirees, a former teacher, a young founder of an NGO and recent AmeriCorps participant. The intersection of these perspectives created worthwhile discussion and out-of-the-box thinking.” The following chart and map illustrate the geographic range of where participants were from:

Attendance by Geography



Conference attendees participated in facilitated discussion in one of five tracks: 1. Energy Generation, 2. Energy Use, 3. Resilience & Adaptation, 4. Natural Carbon Sinks, and 5. Governance. Within each track, participants joined smaller group conversations to dive deeper into sub-topics in each of the tracks. In preparation for the conference and as outlined in the white papers, the track leads suggested a number of small group topics for discussion. At the conference, participants were also able to recommend additional topics for small groups.

In these small group discussions of the five breakout tracks, conference participants generated and recorded about 475 specific ideas for how Wisconsin can be a leader in decreasing greenhouse gas emissions and increasing carbon storage and resilience. These ideas, as documented by the participants on flip charts during the discussion, are catalogued in the Appendix.

During the conference, the participants in each breakout track were tasked with narrowing the many great ideas down to a “top 3” to share with the full group of conference participants. Participants evaluated the ideas based on timeline (near- or long-term), the level of effort and impact each idea entailed, and how actionable (near-term) or transformational (long-term) the idea was. A sticky dot vote was used to select three recommendations from each track. While the top 15 recommendations (three from each of the five tracks) that came out of the conference highlight excellent opportunities, this whittling process left many promising solutions on the table.

Therefore, we felt it was important to include all of these crowdsourced ideas in this conference report, which you will find in the Appendix. We have not elaborated on the specific recommendations, since we did not have the full context behind each of these ideas that took place in the dozens of concurrent small group discussions, and do not want to overstep in interpreting intent or attributing specific details.

The primary purpose of the conference was to drive dialogue, and we generated countless discussions and hundreds of recommendations. We view the generation and compilation of the hundreds of ideas in the Appendix as a first step in advancing these recommendations. A next logical step would be rigorously evaluating them against a set of criteria, such as reduction in greenhouse gases, costs, and political feasibility. Additionally, many of these ideas need actors ascribed to them – that is, the agency, organization, or leader who could move them forward. Given the short timeframe for these ambitious discussions, and the sheer number of excellent ideas generated, this evaluation was not possible during the day-long Climate Fast Forward conference, but it is our hope that this report can be used as a source document for those in our state seeking climate solutions to explore great ideas. Given the urgency of the climate crisis, it is imperative that our state move forward with solutions.

Climate Fast Forward Top 15 Crowdsourced Recommendations

The following is a summary of the recommendations that were voted as the top near- and long-term opportunities for Wisconsin to pursue with respect to energy generation and use, resilience and adaptation, natural carbon sinks, and governance. This represents just fifteen of the hundreds of ideas generated through the facilitated discussion at the Climate Fast Forward Conference. Refer to the Appendix for more a comprehensive list of ideas generated.

Track 1: Energy Generation

Near-term Recommendations

- **Legalize third-party ownership of solar:** Participants noted the importance of this policy, and asserted that nothing in the state would advance solar power more than clarifying that third-party ownership of solar is legal. The group recognized that this issue is currently working its way through the courts and that it could also be cleared up through legislation. In the meantime, it is important to tell the story of third-party solar ownership, and specifically to do an economic analysis to demonstrate the economic benefits that would result if there were a clear determination that third-party ownership were legal in Wisconsin.
- **Create an innovation sandbox for energy storage:** The group suggested creating an energy storage innovation sandbox to make Wisconsin a testbed for storage approaches and technologies at a variety of scales. A regulatory sandbox allows innovators to test business ideas under regulatory supervision in a low-risk environment that facilitates experimentation, reduces legal uncertainty, and can expose regulators to new ideas. Wisconsin is in the early stages of energy storage, as the first commercial-scale storage project recently went into effect. Other states, including our neighbors, have progressed more on energy storage due to drivers such as mandates. For example, Iowa created a state-level energy storage action plan. Creating an innovation sandbox would be a bold move to make Wisconsin a leader in energy storage.

Long-term Recommendation

- **Price carbon:** A discussion group focused on energy and justice recommended implementing a carbon fee and dividend for two main reasons. First, this policy would address climate change in a comprehensive way, realizing more emission reductions than partial solutions, and therefore realize more benefits in terms of impacts on low-income communities and communities of color. Second, under this proposal, two-thirds of citizens would realize an economic gain through the dividend. The lower a person's income, the greater the benefit, so by design this policy helps low-income families by providing a direct economic benefit. The optimal level of policy implementation remains an outstanding question. If it is best applied as a federal policy, the state of Wisconsin should convene multiple stakeholders and determine as a state how Wisconsin could be as supportive as possible in getting this policy adopted at the federal level.

Track 2: Energy Use

Near-term Recommendations

- **Increase funding for local and state energy efficiency and community benefits programs:** Participants recommended significantly increasing funding for Focus on Energy, weatherization programs, and other options can help drive efficiency and renewable energy. This would include specific activities supporting energy efficiency such as improving energy audits.
- **Encourage employers to invest in public transit and active transportation:** The group suggested employers in businesses, government agencies, and organizations could promote public transit and active transportation (such as biking) to their employees as they already do by providing

employee parking (which incentivizes “car culture” and driving to work). Since a structure is already in place, this shift would be easy to implement and would make a significant impact.

Long-term Recommendation

- **Expose the true external costs of fossil fuels:** Another suggestion was to account for health, environmental, climate, and all other impacts that fossil fuel energy generation and use create. This fuller accounting of impacts would encourage consumers to invest in energy efficiency and move towards renewable energy sources.

Track 3: Resilience and Adaptation

Near-term Recommendations

- **Create a state-funded and state-run AmeriCorps-like program to coordinate resilience at local/watershed/regional levels:** The group noted that this program would help build capacity and relationships in rural communities, train locals, engage with state-level efforts, create a better understanding of rural assistance programs, and provide technical support for flood mitigation options like natural flood management.
- **Pilot microgrids for critical infrastructure:** A microgrid is a localized collection of electricity sources (often including renewables) and load, which generally is connected to the larger electricity grid but can also “island” or separate. By integrating a variety of energy sources and being able to operate independently, a microgrid can increase energy security by supplying emergency power. Piloting microgrids in critical infrastructure, such as hospitals, will increase the resilience of the places where having a reliable energy supply is most crucial. The group suggested these microgrid pilots should be both privately and publicly funded.

Long-term Recommendation

- **Develop a new message for community engagement and education:** Effective communication is critical for engaging communities in developing and implementing resilience solutions. Therefore, crafting the right message, as well as finding the right messengers, is crucial.

Track 4: Natural Carbon Sinks

Near-term Recommendations

- **Define carbon as a forest product through state policy:** Track participants noted that carbon could be added to the list of forest products in Wisconsin so it could be sold as a commodity. Wisconsin already sells large quantities of pulp and paper, saw timber, and biomass. A huge additional opportunity that Wisconsin is not yet capturing is to sell carbon. Markets are emerging, and are already available to large forest owners, to sell carbon either through compliance cap-and-trade programs (e.g., California’s) or through voluntary carbon exchanges. The group recommended defining carbon as a forest product, which would ripple through many different programs and statutes, including Wisconsin’s Managed Forest Law (MFL) and management of state and county forest lands. This would provide forest managers the opportunity to sell not just what we cut, but also to sell what we grow.
- **Clarify state policy to allow third-party renewable energy generation on farms, regardless of scale:** This echoes the recommendation from Track 1. While this track on natural carbon sinks largely focused on sequestering carbon, one small group discussed greenhouse gas emissions in agriculture more broadly, since net emissions are a crucial metric and storing carbon through certain practices is not beneficial overall if it is being offset by carbon that is released into the atmosphere through other on-farm practices. Therefore, in the context of natural carbon sinks, participants noted that allowing third-party renewable energy generation on farms would enable land owners to reduce or offset emissions from practices that emit greenhouse gases on

agricultural working lands. Additionally, the group asserted that any emergent policy should be scale-neutral or explicitly include small-scale farms so not only larger-scale operations benefit.

Long-term Recommendation

- **Create state-based agricultural policy that pays farmers for carbon sequestration:** Participants recognized that farmers' management decisions for agricultural working lands are often guided by policy. Much of this is set at the federal level, but some opportunities exist at the state level. The biggest drivers of federal and state agricultural policy currently consist of: 1) maximizing production, and 2) benefiting the farm economy. If we were to add carbon sequestration, or even climate benefits (greenhouse gas emission reductions) more broadly, farmers would benefit. Maximizing production can hurt farmers because in commodity markets, higher production results in lower per-unit prices. If our policy was driven by agriculture that benefits our climate, communities, and environment, it would also result in co-benefits for farm economics. Some examples of policies that could be implemented at the state level include property taxes adjustments (a farmer sequestering carbon could get a reduction on their agricultural property tax) and subsidy programs (which have already been developed in some other states). Experts would need to establish methods for measuring how much carbon a farmer is sequestering in order to calculate payments. Some practices that sequester carbon include reducing soil disturbance (i.e., tillage), increasing soil cover year-round with cover crops or perennial crops, planting trees, and converting marginal cropland to perennial crops (e.g., well-managed pasture) or conservation land.

Track 5: Governance

Near-term Recommendations

- **Strengthen the State's energy office to fund UW-Extension to facilitate collaborative resilience planning:** The group suggested funding UW-Extension through Wisconsin's energy office. UW-Extension would then be supported to promote collaboration and planning across the state with respect to resiliency.
- **Accelerate the clean economy:** Participants recommended expanding job training for clean energy jobs such as wind siting and wind and solar installation. Government incentives could also promote a green economy. Specific examples include: requiring green procurement by state and local government, providing tax credits and grants to promote regenerative agricultural practices, and having the Wisconsin Economic Development Corporation (WEDC) provide climate grants.

Long-term Recommendation

- **Price carbon, economy wide and with an equity lens:** This echoes the recommendation from Track 1. The participants in this breakout track noted that pricing carbon would be the least disruptive to the economy as compared to other strategies, and would make many of the governance challenges related to climate change obsolete since this approach would address the root causes in a comprehensive way.

Climate Fast Forward Emerging Themes

The recommendations that the breakout track participants voted as the top 15 ideas represent a diversity of promising options to pursue. But for each one of these “top” ideas, there were dozens of other important and meaningful recommendations. While, beyond the sticky dot vote, these many ideas have not yet been evaluated by objective criteria to create a hierarchy of solutions, a number of clear themes arose. These themes – along with some sample recommendations made by conference participants – are presented below. We recommend perusing the Appendix for a comprehensive list of recommendations, as the examples listed below illustrate the types of ideas falling under each theme but are not intended to be elevated above the rest.

A Plan for Wisconsin

A common strategy that arose across the breakout tracks was the need to develop plans to address climate change. An overarching state-level climate action plan, as well as other plans that deal with complementary topics and at different scales, were recommended. A state climate action plan might also include, for example, the state’s transition plan to zero-carbon. In tandem, executive orders or state mandates that boldly emphasize the urgent need for planning on climate change and resilience might prove useful tools for moving such a plan forward in a timely manner. Participants also voiced the need to create statewide plans for electrification infrastructure for vehicles and future transportation needs, reducing requirements for parking minimums, zoning changes, and regional food warehouses with access by small grocers and producers. A more specific suggestion was for a comprehensive statewide transition plan from natural gas/fuel heating considering government, utilities’ natural gas business model, consumer adoption, and cost-effective technology.

Cross-Jurisdictional and Multi-Level Collaboration

Climate change does not respect jurisdictional boundaries. Indeed, the activities contributing to this complex challenge and the impacts of climate change occur across boundaries and often require coordinated responses. Strategies at a variety of levels and scales, including those crossing traditional jurisdictional boundaries, from local to state to federal governments, and engaging many actors, from individuals to landowners to organizations to businesses to state agencies and all levels of government, are all vital ingredients in the success of implementing climate action. Coordinated efforts between these actors are critical. Participants widely called for more watershed-based resilience planning to identify risks, create localized solutions, and ensure equitable reduction of flood impacts. (Part of this could include analysis of upstream options versus buyouts.) Similarly, several participants recommended restoring regional transportation authorities to coordinate transportation planning efforts across boundaries. Other approaches could include managing carbon in forests and conservation lands across land ownership boundaries. In addition to these cross-jurisdictional strategies, taking a multi-level approach would also be valuable, for example, assigning a Chief Resilience Officer or Office to coordinate state- and local-level efforts and ensure alignment with federal efforts when relevant. Some participants advocated for passing a Wisconsin “Green New Deal,” which would include a long-term, comprehensive, coordinated effort to reach 100 % clean energy by: engaging the research capacity of University of Wisconsin; electrifying transit systems; adopting sustainable economic development; promoting regenerative agriculture; supporting green building retrofits and green infrastructure; and protecting natural lands.

Empower Local Government

While many efforts can be effectively driven by the state, many solutions are best owned and promoted locally – in cities, towns, villages, and counties. It’s important to both empower local communities in

decision-making and remove restrictions to local control (two sides of the same coin, perhaps). To accomplish this, some participants called for placing limits on the power of state law to preempt local ordinances. On the other side of the coin, several participants highlighted the value of gathering local knowledge and tools from local residents and entities as assets for resilience planning. Some suggested using this information to develop community-based toolkits for local entities' use. Many called for providing or increasing funding for local efforts, which would, for example, empower local entities to offer their own tailored incentive programs for green infrastructure and other climate mitigation or resilience efforts.

Equity and Access

There were recurring calls for elevating voices from marginalized and traditionally underrepresented communities, including those most impacted by a changing climate. Racially, ethnically, and culturally diverse voices need to be key players in designing policies and activities that impact their communities. Many participants pointed out that these communities offer valuable experiences to climate resilience conversations, due to their parallel experience of being impelled to develop tools for resilience in response to systems of oppression. These communities could help shape messaging around climate change and action, and approaches such as collective impact action, the Jemez principles, and environmental justice examples could provide insight for embedding equity into considerations around climate resilience strategies. For community and educational efforts, participants noted the importance of ensuring that discussions are accessible to all. Specific examples include scheduling meetings outside the typical schedule of a work week so that people can participate regardless of their job and offering resources (such as childcare and information/tools in multiple languages) for people to overcome barriers to participation. To enact this, participants called for government funding for projects demonstrating inclusive and representative engagement.

Participants also acknowledged the importance of access to decision-making and resources with regards to geography and scale. Many current resources and policies support large-scale systems, and participants called for the establishment of more scale-neutral or pro-small/mid-scale agricultural and forestry policy and resources. For example, mechanisms such as carbon aggregation can allow multiple landholders to “scale up” their forest management efforts by combining their carbon sequestered into a common pool to trade on the carbon market. Other examples include making more on-farm micro-digesters available and reducing the required size of parcels for conservation easements.

Pricing Carbon

Another popular concept was that climate should be, by default, considered whenever decisions are being made. This recommendation emerged as a recurring “top” recommendation in the breakout tracks, and some kind of carbon pricing mechanism was mentioned in each of the five tracks. The true cost of emitting carbon dioxide is not generally embedded in the price of a product or service, creating an “externality.” Attributing an appropriate cost to carbon corrects this market failure, internalizing the externality, so the price consumers pay reflects the full cost to society of emitting this carbon. There are various options for how to set a carbon price and design associated markets. Some participants suggested cap-and-trade, while others recommended a carbon fee and dividend. One suggestion was creating a compliance market for carbon offsets with money going back into conservation lands (like prairies and wetlands) that sequester carbon, with the Department of Natural Resources (DNR) as a prototype.

Co-Benefits

Many participants emphasized the inherently interconnected nature of many climate mitigation and resilience solutions. Many activities that help to decrease greenhouse gas emissions or sequester carbon also contribute to better public health, support clean water, build community self-sufficiency, and myriad other co-benefits. For instance, as several participants pointed out, crop diversification on agricultural lands not only sequesters carbon but also creates greater economic stability and certainty of food supply for farmers and communities, particularly given the increasing frequency of extreme weather events. Other sustainable land management practices, such as (pollinator) habitat restoration, similarly can contribute to carbon sequestration while also building soil health, benefiting our food supply (through higher pollination rates) and increasing the aesthetic and recreational value of landscapes. Similarly, a few participants suggested focusing research and implementation efforts on perennializing annual crops, which would not only sequester carbon in soil, but also build soil health and allow farmers to focus their resources and attention on activities besides seed purchasing, annual reseeding, and chemical applications. Some participants suggested that co-benefits should be part of decision-making on how to allocate financial incentives, for instance, incentivizing or monetizing solar projects that enhance water quality, pollinator habitat, or aesthetic practices. More broadly, participants advocated for educating the public on co-benefits and including co-benefits as part of messaging around climate resilience and mitigation solutions.

Power to the People

A frequent theme to emerge from small groups was the importance of a fair and representative democracy, since our elected and appointed leaders determine the policies that can drive or hinder climate action. This broad concept also applied to ideas around agency and independence in energy generation. Energy democracy – understanding how the energy system works in Wisconsin and who makes key decisions, and empowering the public to find their role and influence in this system – repeatedly emerged as a theme. On this front, some participants suggested supporting a community choice aggregation approach, and more generally, many recommended supporting community-based energy self-sufficiency. A few participants proposed that restructuring and modernizing the utility business model to deliver power as a service rather than a commodity, could prove a fruitful step towards energy democracy. More broadly, participants from all tracks offered recommendations that would contribute to a healthy political democracy for Wisconsin and beyond. Participants forwarded a variety of ideas for restoring opportunities for civic engagement and voter equality, including voting, advocating for campaign finance reform, and the overturning of the Citizens United decision. At the state level specifically, participants suggested that one possible way to empower citizens would be to elect agency Secretaries or Commissioners – to the Department of Natural Resources and Public Service Commission for example – rather than having them appointed and confirmed.

Research and Data

Participants recommended centering and investing in science and indigenous knowledge as a basis for crafting effective climate solutions, and giving researchers support to do this data-gathering as well as outreach and education. As our climate rapidly changes, we need to maintain current and cutting-edge research to support effective decision-making and act appropriately. We also need translators to help explain what the latest research findings mean for state and local decision-making, planning, economics, and public health. One example of this, participants recommended, would be to reinvigorate the Wisconsin Initiative on Climate Change Impacts (WICCI). Another suggestion was to use publicly-owned lands to research and promote conservation practices, with demonstration farms being one possible forum for sharing this research. Echoing the above-discussed themes of co-benefits and cross-

jurisdictional/multi-level approaches, many advocated for investing in and coordinating research, data collection, and monitoring that specifically demonstrates the cost-effectiveness of nature-based solutions. This kind of research could be powerfully leveraged through cross-pollination with on-the-ground action. In general, participants highlighted the importance of supporting more and better data for resilience models and plans that apply an equity lens. Please see the Appendix for a wide variety of specific recommendations for possible research and data topics.

Education and Communication

The group forwarded that communication and education around systems – both human and ecological – is critical to building the foundation for climate action advocates and informed, engaged communities. There are countless opportunities for education of key stakeholder groups—from absentee landholders about land management practices for carbon sequestration or emissions reductions to regional city planners about integrating climate change into planning considerations to climate activism for and by youth. Not only are new educational forums important, but participants also flagged the opportunity to integrate climate into existing education systems. Some suggested that high schools add health impacts of climate change and ways to engage in solutions to health class curriculum. In addition, opportunities exist to use and more widely disseminate existing resources and knowledge, including climate assessments and toolkits for building community resilience. In this same vein, the “train the trainer” model could be useful, especially for certain direct-service fields and agencies such as the Natural Resources Conservation Service (NRCS) and UW-Extension. Some recommended that the UW Nonprofit Leadership Program and UW Business School add a Climate Resilience or Mitigation certificate program.

Finally, participants noted that key messengers, equipped with intentional approaches to messaging, can help spread the word about success stories and outstanding community models in a variety of formats, from storytelling to best practice guides. For instance, reframing conversations from “climate change” to “weather” (e.g., extreme weather, rainfall, insects) can powerfully de-politicize terminologies and lead to productive conversations around shared values. Similarly, soil stewardship could be used successfully to frame communication, outreach, and messaging (e.g., “carbon is your friend!”) with particular stakeholders such as landholders and agricultural producers. By contrast, some stakeholders may be responsive to climate messaging around the idea that “we cannot afford *not* to address climate change now.” If framed correctly and with the right information based on research and data, this could include such stakeholders as the energy industry, private business, and governments. Messaging that includes discussion of co-benefits—including cost savings of energy efficiency—could likewise prove effective among some stakeholders. Participants suggested that these many and varied approaches can support the success of climate adaptation and mitigation strategies for individuals, communities, and governments.

Appendix: Comprehensive Recommendations from Small Group Discussions

This table includes all recommendations recorded by small groups in the five breakout tracks. All recommendations are noted here as they were written on flipcharts to preserve meaning and accuracy. We invite you to refer to this as a source document for ideas on possible climate change solutions in Wisconsin and beyond.

Track	Table Topic	Recommendation or Opportunity
Energy Generation	Clean Energy Equity and Justice	Support community choice aggregation approach
		Pass "Complete Streets" ordinances
		Implement building code upgrades to address split incentives
		Governments and renewable energy groups engage with community organizations
		Support government funding for projects demonstrating inclusive and representative engagement
		Establish carbon pricing with dividend to ensure equity and justice goals
		Expand (clean energy) transit options
		Restructure utility economic model (deliver power as service, not commodity)
		Campaign finance reform
	Electrifying Heating and Cooling	Conduct an emissions profile analysis (inventory current electric heat vs. natural gas, projections for 2050 under electric generation decarbonization forecast): data of generation sources and impact of electrifying.
		Create generation portfolio (i.e., generation resources mix)
		Build and publicize demonstration pilots: homes and commercial buildings
		Create and distribute net-zero guides and codes
		Support new net-zero construction
		Focus on Energy Program: Incentivize emissions reductions and fuel switches (rather than energy saved or money saved)
		Utility natural gas operations: Create emissions reduction plans and targets
		Market transformation of HVAC contractors
		Implement statewide workforce training
		Create a state climate action plan
		Create a comprehensive transition plan for natural gas/fuel heating covering: government, utility's natural gas business model, consumer adoption, cost-effective technology.
	Optimizing Solar Siting	Pass solar (siting) and standards laws (incl. minimum siting, operating, and end of life/decommissioning practices, performance standards)--at least partly incentive-based
		Limit preemption of local government
		Co-located storage (Solar standards law--like building code)

Energy Generation	Optimizing Solar Siting	Support parity between treatment of solar and fossil fuel facilities
		Prohibit conversion of forest and wetland to solar
		Identify best practices for solar siting, including model practices/ordinances/ codes and public education, and create best practices guide for Wisconsin
		Establish a PSC docket on distributed energy
		Develop a revenue-sharing model
		Create and make available land leases to protect against bad actors
		Incentivize or monetize solar that acknowledges water quality and pollinator habitat, as well as aesthetic practices
		Create plans for decommissioning panels
		Create solar performance standards for prairies, pollinators, storm water, reclamation, and habitat
		Explore long-term possibility for utility purchase
		Legalize third party financing
		Level the playing field to allow more third party solar
		Standardize solar permitting for residential areas
		Explore model ordinances
		Explore incentive options and implement incentives programs
	Advancing Distributed Energy Resources (DERs)	Support innovative loan programs for DER installations
		Create and distribute third-party-validated case studies at State Energy Office
		Hold a conference on chartering and statutes of utilities
		Research best practices for DERs in other states
		Change utility laws and be creative with administrative rules (e.g., net metering support)
		Create financial instruments to allow utilities to divest in fossil fuels
		Support regional discussions on energy policy
		Securitize assets to encourage DER alternatives
		Collaborate with utilities on consumer benefits laws
		Support net metering
		Local communities for LLCs to capitalize on DER tax incentives
		Communicate accurate return on investment (ROI) to people
		Modernize utility business model
		Resolve reliability and resilience issues (base load and pulse load)
	Energy Storage	Create an Innovation Sandbox for energy storage in Wisconsin
		Raise visibility of critical importance of and need for sufficient storage among renewable energy supporters
		Support energy self-sufficiency for communities
		Subsidize storage
		Pursue innovation for improvement of EV batteries
		Develop funding approach for energy storage

Energy Use	Transforming transportation (incl land use reform, community density)	Change city zoning laws to eliminate zoning categories that are single family only and increase density and mixed use urban areas
		Restructure and establish regional transportation authorities
		Planning on a regional basis with coordination
		Non-motorized transportation infrastructure (incl. changing roads to support bikes and e-bikes)
		Electrify buses and taxis
		Education of problem, systems, and connection to making changes to help solve climate issues
		Create a statewide plan for: electrification infrastructure for vehicles, reducing requirements for parking minimums, zoning changes, regional food warehouse allowing smaller grocers to access
		Light rail
		Tax on driving through WI (tolls) to fund alternatives
		Modeling and storytelling to start a trend in neighborhoods
		Encourage businesses, government agencies, and organizations to invest in public transit and active transportation proportionate to their employee parking investments
		Curtail discretionary highly-emissive activities and forms of consumption. Choose minimally-emissive forms of recreation rather than flying or driving, reduce lawn sizes and mowing, reduce use of power tools for simple yard tasks.
	Scaling up residential building energy efficiency	Increase funding by order of magnitude for Focus on Energy and Weatherization including better audits and energy improvements
		Create a new public authority that consolidates the following: WHEDA, WEDC, FoE, Dept of energy and innovation - with a mission of addressing climate change impacts on Wisconsin
		Leverage the funds all together as a group to eliminate inefficiencies of current agencies
	Scaling up commercial and industrial building energy efficiency	Expanding local and state-wide incentives for energy efficiency and renewable energy, incl. rewarding utilities for incentivizing energy efficiency
		Local communities and companies commit to a benchmarking process and create plans for progress
		Educate building users and owners regarding benefits of energy efficiency
		Rally clean energy communities to change our laws, tell their success stories
		Upgrade equipment and controls
		Local government incentives for energy efficient construction
		Update building code requirements
		Municipalities require all buildings to meet a particular LEED certification level and implementing general energy efficiency and renewable energy to lead by example
		Cap and trade
		Educate current and future workforce on maintenance and installation of energy efficient technologies, incl. tech schools and continuing education

Energy Use	Scaling up comm. and ind. building energy efficiency	PACE financing program at county level
		Identify and expose all externalities of energy generation and incorporate that into energy source selection
		Drive up the cost of fossil fuels for renewable energy to take off
		Identify energy waste, create strategies to increase efficiency (e.g., retro commissioning)
	Advancing beneficial electrification	Change metric of measurement to greenhouse gas emissions and increase salience by making this understandable for consumers
		Reopen/Reuse Act 141: increase in energy efficiency of renewable portfolio standard
		A lot of challenges to make Act 141 “actionable”
	State government & policy	Decrease/eliminate coal use
		Increase optimism: alignment of interests between industry, utilities, renewable advocates, etc.
		Focus on efficiency first
		Increase renewables and storage
		Policy and incentives for renewable energy and energy efficiency
		Reframe metric to greenhouse gas vs kilowatt hours (measure impact in terms of emissions)
		Carbon tax policy
		Raise conscience and understanding of alternate technologies (e.g., heat pump, heat pump dryer, heat pump water heater, induction stove, etc)
		Building codes
		Increase renewable portfolio standards
		Mobilize grassroots to influence policy
		Bundling energy efficiency, renewable energy, and electrification
		Workforce training at company and employee level
		Any changes should be informed by a comprehensive community listening process, with a special focus on ensuring outreach to underrepresented groups.
Resilience and Adaptation	Agriculture and working lands	Reframe conversation from climate change to weather (e.g., extreme weather, rainfall, insects)
		Promote farmer-driven adaptation strategies
		Social norming: interaction among farmers, farmer to farmer networks
		Strengthen farmer-farmer relationships; build trust and cooperation
		Use soil stewardship frame in communication, outreach, messaging (e.g., carbon is your friend!)
		Explore local farming solutions
		Encourage conservation practices (cover crops, no-till, NMPs) using tax incentives
		ID supply chain bottlenecks and address them
		Use publicly owned lands to promote conservation practices (demonstration farms)

Resilience and Adaptation	Agriculture and working lands	Exploit market-based solutions; market determines supply (UW plus state, local govt)
		Diversity farm revenue
		Diversify crops and livestock
		Explore and invest in vertical farming and urban ag
		Establish statewide food policy council
		Land trust/easement options to ease annexation and ease development pressure with restrictions on purchase agreements
		Consumer pressure with carbon labelling
	Equity and social justice including Native Nations	Public campaign (coalition) including: create new social norms, increase representation of marginalized groups, increase preparedness for all groups, better transportation, increase funding
		Recognize and define equity issues
		Representation (no tokens, grassroots organization)/addressing exclusion of marginalized communities from positions of power
		Awareness of Indigenous representation
		Planning for disaster-preparedness for First Nations and marginalized communities
		Planning for transportation needs
		Funding? Securing the means to fund long term goals
		Recognize vulnerable groups and lateral impacts
		Enacting policy that allows First Nations to sue
		Systemic changes in government policy
		Normalizing equity in accessibility
		Center health, gender, class, racial equity in the conversation when making legal policies
		Engage community to promote community-informed solutions
		Financial policy informed by marginalized interest
		Policy surrounding children, mental health, historical trauma/distrust
		We call for a systemic change in policy that addresses the needs of those most adversely affected by climate change and the least represented in decision making. We call for all institutions in WI to form a coalition in support of climate policy change to recognize marginalized communities.
	Rural Communities	Create a state-funded and state-run “AmeriCorps-like” program to coordinate resiliency at local/watershed/regional level, serving rural communities
		a. Build capacity
		b. Facilitate relationships
		c. Train locals
		d. State task force
		e. Understanding of rural assistance programs
		Remove redundancy between existing state programs that rural communities can access for disaster recovery, preparedness, and resiliency (opens up funding and position authority), incl. state statute changes

Resilience and Adaptation	Rural Communities	Consider natural infrastructure, floodplains and wetlands, natural flood management
		Invest in and coordinate research, data collection, and monitoring that demonstrates cost-effectiveness of nature-based solutions.
		Create guidance or toolkit to incorporate existing standalone planning/resiliency efforts into land use and community planning requirements, conduct outreach
	Green Infrastructure	Mapping cities (climate impacts and opportunities, demographics)
		Engage citizens—community dialogues, local voices and networks
		Offer incentives for renewable energy
		Business program development, green infrastructure
		Review/audit community codes/ordinances that impede green infrastructure (including insurance policies)—and change them
		Offer alternatives that allow for climate adaptation
		Change municipal land management practices (mowing, salting, planting)
		Review municipal energy use/operations/sources
		Frame with intentional climate lens
		Offer individual and business property audits of green infrastructure options
	Resiliency planning	Evacuate communities as a last resort
		More/better data for resiliency models/plans, with a focus on equity
		More watershed—risk and solutions—analysis for upstream options vs buyouts
		Education and planning on risk
		Community, business, NGO levels
		Decision makers local and state
		Develop flood action plans for individuals and businesses
		Storytelling “story maps”
		Green infrastructure
		Planning
		Awareness building campaign for key stakeholders
		Local/grassroots targets
		Something like Clean Lakes Alliance
		Strategic partners with Biz Sustainability Council
		Funding increase for solutions
		Green infrastructure implementation
		Develop watershed plans to locate risks and interventions (GI) to equitably reduce flood impacts
		Fund, develop, communicate (targeted communication plan), implement
	Public Health	Develop and implement grassroots community public health infrastructure for mental health response
		Expand cooling centers to outstate
		Provide energy support for cooling/provision of AC for heat waves
		Executive orders to boldly emphasize need for planning on climate change

Resilience and Adaptation	Public Health	Provide education of regional city planners around climate change
		Incentivize distribution of services
		Carbon tax
		Vote
		Add climate change and health to health class curriculum
		Provide executive order and funding to require continuing education requirements with respect to climate change
		Department of Education to require health education curriculum to include health impacts of climate change and empowerment for solutions
	Education and Public Engagement	Targeted, intentional relationship-building, community engagement, and education prioritizing underserved communities. Culturally competent messaging and messengers
		Think outside M-F, 9-5 timeframe (dinners, childcare and other barriers—make it easy)
		Attend and educate at existing events
		Mass public campaigns with targeted messaging
		Engage volunteers
		Natural scientists and social scientists working together
		Money, messaging, collaboration, bipartisan (or targeted?) buy-in from our elected officials
		“Your voice matters” —new messaging (Puerto Rico as example): beyond individualism, continuum of individual action, policy, systems, power structures, takes a big village and you're a member
		Adaptation and resilience to climate change and stress with tools and experiences of resilience communities (of color, women, LGBTQ, etc.) who help shape message. Strategies: Collective impact, Jemez principles, Environmental justice.
		To anticipate and prevent flooding disasters: Design and implement awareness building campaign for stakeholders, communications plan, use a local grassroots example. Develop watershed plans to locate risks and interventions (like green infrastructure) to equitably address flood impacts. Milwaukee has a great model.
		Public awareness Coordination (org leader)
		Accessible resources
		Localize solutions
		Training the trainer
		Increase funding for statewide coordinator to raise awareness and funding for education in the state budget (For extreme weather resilience and adaptation)
		K-12 curriculum overhaul (Education: creating new framework (i.e., integrating climate change with cultural, STEM, humanities, indigenous ways of knowing)
		Personal stories
		Ongoing strategies for localizing solutions
		Move political systems to reflect public opinion: accept and acknowledge climate change

Resilience and Adaptation	Energy Security	Pilot projects (micro grid for critical infrastructure with storage for rural resilience)
		Leverage big data
		Policy=2050 goals, 2030 goals, 2025 goals
		Community solar and storage for LMI
		Cyber playground
		Chief resilience officer/office to coordinate state/local/federal efforts
		Voluntary actions in sustainable ag (incl. farmer-led initiatives around water quality, flood mitigation)
		Methane rule/more capture
		Critical mass and micro grid projects
		Incentives for storage revolution, technology revolution, and scale
		Artificial intelligence for financial investment
		Cyber security regulations (PSCW) and protocols, specifically around inverter standards for storage and security
		Micro digesters (including more on-farm)
		Conduct vulnerability assessments for WI biota (gap analysis)
		Make existing climate assessments more available to WI citizens/other tools
		Engage public and private landowners and land managers to develop communication plan: what to communicate and how and to whom (also professional land managers)
		Encourage academic and agency engagement in relevant research, and foster cross-pollination with on the ground action
	Protecting at-risk species and habitats	Prioritize: species, habitat, icons with regional value
		Assess current monitoring—can it address climate change impacts?
		Fee and dividend on carbon
		Allow more autonomy for local municipalities
		Climate education for and by youth
		Adaptation and resilience focus
		Perform a standardized vulnerability and risk assessment across the state (local entities can use it: base)
		All recipients of restoration/conservation funding need to consider climate resilience
		Build climate change resilience into conservation planning and permitting processes
		Land mgmt. practices maximize species and habitat conservation and carbon sequestration
		Local self-sufficiency (restore limited home rule for climate related issues)
		Provide knowledge and tools to local entities
		Climate education, vulnerability and risk assessments, climate modeling, data collection
		Gather local knowledge and tools from local entities, develop uniform toolkit to empower local entities

Resilience and Adaptation	Protecting at-risk species and habitats	Enact WICCI recommendations and update:
		Support WICCI 2
		Engage diverse stakeholders and staff
		Funding for staff, updating and carrying out recommendations
		Engage landowners/managers in actionable recommendations—carrying out
		Spread awareness of resources/recommendations
Natural Carbon Sinks	Conservation Lands	Restore and increase Knowles Nelson Stewardship. \$33 to 86 million. Restore to pre-13-15.
		Add eco-services criteria
		Education: tell stories through carbon benefit lens
		Research on economic value of eco-services and benefits to local communities
		State leads by example – incentives for carbon offset projects (buffer strips, etc.)
		Private landowner benefits for recommended use – nature-based
		Define carbon as a forest product (3.3 million acres) using managed forest law value: If we define carbon as a forest product, we would have control over management and carbon would be sellable.
		Phosphorus capture/offset using natural area restoration
		Phosphorus Rule adaptive management
		Sustain Knowles Nelson Stewardship for long-term
		Add carbon sequestration goals
		Re-open DNR nurseries
		Develop carbon offset markets in Wisconsin, with DNR as prototype
		Research on economic value of sequestration
		Carbon sink mitigation for future population impacts (climate ref.)
		Establish conservation curriculum
		Aggregate carbon benefits for small landowners (see Eastern states)
		Alternative uses for decomposing material
		Fed/state funding tied to ecological benefits
		Memorial forest for carbon offset
		Cultural education on ecosystems
		Enlist NGOs to share stories
		Restore state nurseries
		Institutional management of carbon market
		Farm Bill lobbying to restore CRP land
		Compliance market for carbon offsets, with money going back into conservation lands that sink carbon
	Urban Forests	Local ordinance for protection of large trees, e.g., provide some of the funds into city forest. Each city has to pass this and develop a sample ordinance.
		Cities include trees in their ordinances e.g., require trees to be planted and to provide the infrastructure to do this. Example: if you are planting trees you need to have set back rules for buildings to allow room for the trees.

Natural Carbon Sinks	Urban Forests	Zoning ordinances for treating trees as infrastructure
		Model ordinance for community/local or state; Just as important as lights/signs etc.
		Garner community support for removing infrastructure
		Persuading organizations through demonstrated community support
		State level allocation/implementation – increased funding to programs (incl. for replacement/upkeep of diseased trees, new tree planting)
		Expand community tree inventory – better utilization ongoing efforts sharing with public
		Street smart design, incl. reducing impermeable surfaces
		Land protection = economic profit (incl. Carbon markets (e.g., City Forest Credits))
		Urban conservation works program
		Conservation easement: Reduce required size of parcel
		Property taxes, incl. vouchers, grants for trees, community forest startup/expand already implemented programs
		Underground utility lines
		Native landscaping/gardens and food forests
		Protecting big trees
		Zoning for reforestation abandoned lots/blighted areas
		Incentivize tree planting, particularly in economically disadvantaged communities
		Community composting of landscape waste
		Victory gardens but for tree planting
	Forests	Increase forest products R & D through WICCI mitigation rapid assessment & strategies
		Improved understanding of carbon life cycles
		Synthesize research on improved forest management
		Revitalized seedling operations
		Training
		Thinking/managing carbon across ownership boundaries
		Planting trees
		Establishing conservation easement
		Figure out the survival of tree species in general areas
		Assessing and implementing improved forest management on state lands
		Identifying drainage basins
		Research carbon sequestration rates of different forest types and ages
		R&D, Framework for wood products substitution
		Task force to understand landowner and professional needs for climate adaptation
		Educational program for maintaining forest
		Develop incentive mechanisms to retain forest/carbon
		Desired future condition – setting targets at landscape scale
		Overturning Citizens United decision
		Synthesize what is known about forest management

Natural Carbon Sinks	Forests	Pre-plant black ash swamps with other species
		Retool/improve Farm Bill provisions for forestry practices
		Change tax-use value: recreation vs. agriculture
		LCA
		Soil carbon
		Replanting after storm damage on state lands
		Optimize stand stocking on existing state and public lands for carbon sequestration
		Reduce barriers to establishment and regeneration (e.g., deer) at scale
	Working Lands	Clarify state policy to allow third party renewable energy on small farms. third party would be a company coming in and leasing rooftops on small farms, with farms getting the benefit of the income. State policies are not clear on ownership or development on this. Minnesota is a good model
		Carbon tax on rented and owned land.
		Clarify state policy to allow third party renewable energy – target small producers
		Tax on N to reduce fertilizer use
		Tax/incentives based on GHGs
		Promotion of renewable energy incentive programs (farm tech days) (tours & mentors)
		Required/guaranteed contracts to purchase methane produced by digesters
		Solar production rate structures somewhere between wholesale and retail
		Develop carbon footprint calculator for farm-level practices (built from nutrient management calculator)
		Information and tools in <u>multiple languages</u> – extension professionals with ESL skills.
		Education for NRCS, Extension, ag advisors
		Sustainable/GHG certification for golf courses and corporate landscapes
		Tax credit for conservation lands
		Developing carbon intensity labels on food
		Work with ag and food companies to establish sustainability goals and create demand for BMPs and contract rules
		Market development for diverse, new crops (State Dept. of Ag)
		Rural opportunities for energy efficiency upgrades (fuel)
		Fleet efficiency rules (CNG)
		Carbon footprint certification program?
		Land tenure/ownership incentivized for long-term practices
		And allow <u>renters</u> to participate in these programs/incentives (federal model)
		Education for <u>absentee landowners</u> about on-farm practices for GHG reductions – incorporate these into contracts
		Assistance to beginning farmers to transition onto land
		Township rules and zoning to allow renewable energy
		Professional assistance and grants to encourage pasture-based systems from CAFOs (also land availability)

Natural Carbon Sinks	Working Lands	Policies to support family farms, new farmers
		Explore/fund community bio digesters (PA example)
		Encourage/mandate fleet efficiency rather than biofuels
		Incentivize individual producers to install renewable energy
		Small equipment and tools trending toward electricity
	Agriculture	Target/identify/implement hydric soils for wetland restoration
		Educate public on co-benefits associated with solutions
		Change ag policies to pay farmers for carbon capture and ecological services rather than crop yield
		Base use-value tax assessments on performance
		Create/expand Dane Co. renewable gas model – manure digester or compost-based gas collection
		State should lead by carbon opportunities on state owned land
		Refuel steam plants with biomass
		Smart solar siting and grow perennials
		Plant trees – now! On marginal farm land. (More agroforestry/silvopasture)
		Work with plant breeders to develop natural wetlands to produce plants that produce marketable products
		Create market opportunities for biomass crops including state facilities
		Develop local markets to support perennialization
		Provide capital to support transitions
		Develop/use monitoring tools to monitor nutrient loss – tied to carbon loss.
		Technological advances/development in planting tools to reduce tillage. UW Ag Engineering agenda. Accelerate equipment solutions.
		Establish carbon tax to pay farmers
		Convert conventional ag lands to sustainable agriculture
		Perennialize annual crops
		Establish more scale-neutral (or pro-small/mid-scale) ag policy
		Build partnerships between farmers, scientists, advocates
		Localize food production
		Curb development of farmland with better urban planning practices
Governance	Local government	Identify climate ready communities CRC, incentives \$
		UW Facilitate planning, incl. Extension
		Resiliency planning
		Carbon offset—local
		2020 elections
		State Energy Office (More money, people, staff)
		Educational initiatives: Public awareness, cost savings
		NGO collaboration with government and business
		State grant program for climate ready community projects
		Wetland protections/local level

Governance	Local government	Get out the environmental vote
		Grid architecture: micro grids
		Incentives
		Green button utility (standardization) data
		More local control
		State mandate for resiliency planning
	Education	UW Extension funding/support mandate expansion
		Data sharing open information
		WICCI- Climate research
		How climate impacts people (communities, health outcomes)
		Learn from other states
		Qual and quantitative
		DPI state standards for education
		Standards and criteria for operations and decisions
		Climate leaders (similar to climate masters)
		Support teachers
		Model behavior (ie hot lunches)
		Communications: increase among the system and community
		Attach climate change mandate to Wisconsin Idea
		System-wide carbon pricing study/committee (how?)
		Listening sessions/engage taxpayers/community why their investment in UW system is climate change forward
		Show cost/benefit analysis to community at large
		Language that environment is not “free”
		Communicate benefits system wide to rural communities, etc.
		Collect knowledge, examples, stories from across the state
		Student representation at top level decision meetings
		Instructors should use climate as a context for learning
		Visualize what ideal system looks like
		Carbon neutral or negative goal
		Mandatory education in climate change K-12
		Plan by design
		Make the right thing the easy thing to do
		Invest in and value indigenous research/stories
	State legislature	Legislators initiate a series of town hall style meetings (including scientists and trusted messengers) on climate change in legislative districts
		Require the PSC to designate staff involvement in legislative outreach and provide them with autonomy
		Restrict building of new heavily polluting factories
		New laws informed by metrics on climate impacts
		Measurable CO2 impacts and reductions

Governance	State legislature	Increase educational aspects
		Building standards
		Science
		Market solutions AND government solutions
		Reaching legislative levers
		Laws and accountability
		Cut back factory farming
		Bipartisan support
		PSC participation
		Independent UW/economic analyses
		Trusted messengers
	NGO and Private Sector	Umbrella climate change agency
		Support for WI climate office
		Showcase and study climate leading organization
		Insurance incentives
		Link between green consciousness and talent
		Streamline approval process if build green
		State only purchase from sustainable business
		Expand clean energy job training—tech colleges, inner city, prisons
		Site wind turbines on farms, solar on marginal lands (NOT wetlands)
		Add climate component to SBDC
		Climate program in WEDC to give grants for climate adaptation
		Expand Nature Conservancy and other grants
		Make sure Nelson-Knowles is reauthorized for at least 10 years
		Ad campaigns
		“Culture declares”—Art groups and others declare climate emergency
		State grants to NGOs working on climate resilience (or with climate part of mission)—require them to collaborate
		UW Nonprofit leadership program add climate adaptation certificate for nonprofit leaders
		UW Business School adds climate certificate
		Organization certification
		Price on carbon
		Tax credit or crop insurance for farmers using climate-friendly practices
		Regenerative ag districts
		Wisconsin Green New Deal
	PSC	FOE: Change from energy savings to carbon savings
		Maintain a min. that utilities have to fund FOE, but can increase
		Communication paradigm change. “We cannot afford not to”
		Planning for electrification: reliability/renewable mix
		Resilience and energy assurance

Governance	PSC	DER including storage
		IRP on beneficial electrification—including inclusivity/justice
		Strategic plan for electrification
		Campaign Finance Reform
		Baseload: decarbonized
	DNR	Statewide entity to coordinate public/private activities and communications
		Economic Task Force (Energy, tourism, etc.)
		Legislative redistrict
		DNR/PSC Secretary Independence elected
		Leverage science expertise to create a plan
		Federal leadership
		Inclusivity/environmental justice
		Agency mission=long term planning
		Messaging and public outreach
	DNR and PSC	Create stat. framework to sustain
		Change incentives given to utilities (PBR)
		Carbon tax with household rebates
		Blue Ribbon Panel to review PSC mission update
		Climate refugees and impacts
		Carbon cap and trade
		Federal law change addressing climate
		Carbon tax and dividend