

Final Project Outline 03-19-2021

Monroe County Climate Readiness and Rural Economic Opportunity Assessment

Summary

The ***Monroe County Climate Readiness and Rural Economic Opportunity Assessment*** is a first of its kind effort to conduct a rapid, comprehensive assessment that brings together climate readiness and conservation-based economic opportunities at a county level. The effort will be initiated as a pilot project in Monroe County, Wisconsin with an approach that will be refined in process, and that can be rapidly replicated in other counties or county groups.

The assessment will utilize a team of specialists working with a host community to conduct a multi-faceted assessment with emphasis on community climate resiliency, built and natural infrastructure, and rural economic development through conservation. The outputs of the assessment will be a foundation for a county or other community of interest to make targeted investments and take the most effective actions to improve climate resiliency and climate mitigation and promote rural economic development actions that protect soil, water, ecosystem services, and vulnerable populations and communities.

Background

While state and federal governments play an essential role in developing climate policy, leading climate research, and delivering climate-focused resources, the on-the ground actions most needed to address climate change impacts will occur primarily at the community level. Since Wisconsin's first comprehensive climate report was delivered in 2011 significant progress has been made in data collection, modeling, and development of best practices while, during the same period, the size and severity of climate impacts has continued to increase.

The report of the Wisconsin Governor's Task Force on Climate Change calls for a broad spectrum of climate solutions, with a special emphasis on solutions that increase resiliency, rural economic development, and address climate justice and equity at the community level. This project addresses that need. As a first effort of its kind in Wisconsin, we hope to establish a standard of practice that can be replicated relatively quickly while being appropriately tailored in other counties and communities.

Methods and Activities

The Climate Readiness and Rural Economic Opportunity Assessment will use a team approach with subject matter experts to conduct assessments and make recommendations around: projecting future climate-related risks; mitigating vulnerabilities to flooding and other related risks in light of projected climate impacts; and conservation practices and land uses in farms and forests that increase resiliency, contribute to conserving soil and water, and help grow economic opportunities in rural communities.

This outline lays out a menu of assessment activities, however ultimately an **effective project needs to reflect the highest priorities of the host community**. The final scope of the assessment will be developed and finalized in a scoping process with Monroe County government and community climate leaders.

Elements of a Comprehensive Climate Assessment

I. Project Needs Assessment and Scoping

A prospective project will begin with discussions with stakeholders representing the host community and identification of a host community representative / point of contact.

An assessment team made up of subject matter experts and advisors will lead the assessment effort in partnership with members of the host community.

In Monroe County, Land Conservation Dept. (LCD) Director - Bob Micheel will serve as the host community point of contact. Selected members of the [Monroe County Climate Change Task Force](#) will serve as members of an ad hoc Monroe County host team.

Once an MOU is established, the assessment team and the host team will begin a scoping process to identify greatest needs and help refine the project parameters. Refining the project execution and methods will be ongoing between the assessment team and the host team.

II. Intake Assessment and Collect Data Sets

As part of the project design, the team will conduct interviews with local resource professionals, elected officials and community leaders, and stakeholder groups, to understand climate-critical issues, the threats faced by vulnerable communities, and issues of environmental justice.

Working with local experts, members of each of four sub-teams described below will compile local and statewide data sets, reports, and historical records on lands within the county and within surrounding watersheds.

III. Conduct Components of Climate Comprehensive Assessment

The assessment team is comprised of a **core team, and four sub-teams**, each of which will assess a defined aspect of climate change in the county and in surrounding areas or watersheds where warranted. Additional sub-teams could be added based on outcome of the needs assessment.

Project Core Team

The core team will include the leads for each of four sub-teams, select project team members and advisors, and representatives of the host community. The core team will meet at least monthly or as needed during the project period May 1st – Dec 30th.

The core team (core team) will:

- Provide overall project guidance in consultation with our host community
- Ensure coordination and communication across sub-teams
- Design and coordinate the engagement with our host team and host community
- Work with the host community to identify and implement actions resulting from the project and design additional project phases if warranted.

Core Team Co-Leads:

Fred Clark, Executive Director, Wisconsin's Green Fire

Bob Micheel, Monroe County Land Conservation Dept. Director

Core Team Members (with others to be added):

Joann Kline, Conservation Strategies Group, LLC

Rob Montgomery, PE, Consulting Engineer

Christina Anderson, Climate Specialist, Wisconsin Land and Water

Nick Miller, Director of Conservation Science, The Nature Conservancy

Pam Porter, Policy Advisor, Wisconsin Department of Natural Resources

Nancy Turyk, UWSP Emeritus, Wisconsin's Green Fire

Sarah Peterson, Science Director, Wisconsin's Green Fire

Core Team Advisors

Prof. Anna Haines, Director Center for Land Use Education, UW-Stevens Point,

Dr. Steve Vavrus, Senior Scientist, Nelson Institute Center for Climatic Research, UW-Madison

Monroe County Host Team

The Monroe County Host Team will serve as the point of engagement for the assessment team. The Core Team and Host Team will meet together during the initial scoping, at various points during the assessment phase, and near the end of the assessment phase as the team prepares to share deliverables for the project. The team will provide feedback on local needs, resources, and other people who can advise the team and help inform the work. The host team will also help coordinate design and placement of demonstration projects called for in the project budget.

The Host Team will include:

- Bob Micheel, Monroe County Land Conservation Department Director
- Cedric Schnitzler, Monroe County Board Chair
- Tina Osterberg, Monroe County Administrator
- Additional selected members of the Monroe County Climate Change Task Force

The four technical sub-teams will operate quasi independently during the assessment phase, with regular coordination, and coming back together to finalize results and recommendations. Each sub-team will engage local partners who may also participate as members of the team. The four sub-teams, their charge and initial make up are described below:

Climate and Hydrological Modeling Sub-team

Climatologists with the UW-Madison and Wisconsin Institute for Climate Change Impacts will provide downscaled climate data for the Monroe County region with projections for temperature, precipitation, and weather for both low and high emissions scenarios, and modeling of flood event impacts. The sub-team will:

- Provide down-scaled climate projections for the Monroe County Region
- Model extreme rainfall statistics that reflect future climate conditions
- Based on historic data and existing landscape attributes such as topography, soils, and underlying geology, project the severity and extent of flood impacts during severe storm event scenarios.

Team Lead: Robert Montgomery, PE, Consulting Engineer

Team Member: Prof. Daniel Wright, Dept. of Civil and Env. Engineering, UW-Madison

Team Advisor: Dr. Steve Vavrus, Nelson Institute for Env. Studies, UW-Madison

Flood Resilience and Infrastructure Sub-team

The flood resilience sub-team will build on work by the climate sub-team to assess human-built (gray) infrastructure and natural (green) infrastructure that handles water in the landscape. The team will assess:

- Gray and green infrastructure most at risk from flood events
- Opportunities to improve resiliency to flood events through wetland and watershed restoration and infrastructure improvements.
- Identify floodways, current and former wetlands, and flood mitigation measures to protect downstream waters and communities.
- Recommendations for improved design standards for critical infrastructure

Team Lead: Joann Kline, Conservation Strategies Group, LLC

Team Member / Advisor: Rob Montgomery, PE, Consulting Engineer

Team Member / Advisor: Nick Miller, Science Director, The Nature Conservancy

Team Member / Advisor: Danielle Shannon, Northern Institute of Applied Climate Science

Agricultural Sub-team

The agricultural sub-team will assess crop lands, pasture, and grasslands, utilizing existing data sets together with and qualitative interviews with field experts to assess quality, condition, and trends in land use, and evaluate climate mitigation potential and estimate the state of agricultural carbon stocks.

The sub-team will:

- Recommend strategies for improving condition, productivity, and resiliency of agricultural and open lands through climate-informed management.
- Assess the existing carbon stocks and carbon sequestration potential of the agricultural resource using existing tools such as the USDA COMET model and available USDA soil and land use data sets.
- Assess current market opportunities for agricultural carbon and other revenue streams that create opportunities for agricultural producers.

Team Lead: Christina Anderson, Climate Specialist, Wisconsin Land and Water

Team Member / Advisor: Danielle Shannon, Northern Institute of Applied Climate Science

Team Member / Advisor: Pam Porter, WDNR

Forest Sub-team

The forest sub-team will assess public and private forest lands, utilizing existing data sets together with and qualitative interviews with field experts to assess quality, condition, and trends in forest use land use, identify primary climate-related threats to forests, evaluate their climate mitigation potential, and roughly estimate forest carbon stocks.

The sub-team will:

- Recommend strategies for improving condition, productivity, and resiliency of forests through climate-informed management.
- Identify relevant trends in forest land ownership and forest products markets.
- Assess the existing carbon stocks and carbon sequestration potential
- Identify emerging markets opportunities for forest carbon and other revenue streams that create opportunities for agricultural producers.

Team Lead: Fred Clark, Executive Director, Wisconsin's Green Fire

Team Member / Advisor: Stephen Handler, Northern Institute of Applied Climate Science

Team Member / Advisor: Todd Ontl, Northern Institute of Applied Climate Science

Team Member / Advisor: Brian Anderson, Wisconsin DNR, Division of Forestry

Team Member / Advisor: Greg Edge, Wisconsin DNR, Division of Forestry

Additional Potential Project Elements

- A Natural Climate Solutions Decision Support Tool developed by scientists at The Nature Conservancy in consultation with our project team.
- A web-based **GeoHUB** to serve as a portal for assessment results and maps, compiled and hosted by Wisconsin Department of Natural Resources.
- Community engagement, possibly including public presentations, listening sessions, and field activities to be determined in consultation with Monroe County Host team.

IV. Deliverables

The project goal is to assist Monroe County as effectively as possible in informing and inspiring community actions and investments around climate change and rural economic development through conservation. Project results will be shared in web-based and document format and in a variety of forums with Monroe County stakeholders. The project and host teams will jointly identify additional engagement that will assist the County in acting effectively to address priority climate-related needs.

Deliverables will include:

- a. Compiled results from the sub-teams, and a summary report with findings and recommendations.
- b. Priorities for protection and restoration of critical habitats for climate resiliency
- c. Priorities for land use policy and practice
- d. Mitigation practices in areas vulnerable to extreme flood events.
- e. Addressing special needs of vulnerable or underserved communities.
- f. Report on forest or agricultural carbon income opportunities.
- g. Items # a-f hosted in a dedicated Geo HUB (WDNR)
- h. Community forums to present findings and recommendations
- i. Demonstration practices with Monroe County Agricultural Advisory team
- j. Consultation with the host community to identify next steps and available resources.

Provisional Timeline (2021)

Component	Start Date	End Date
Complete Initial Scope of Work and Partner Commitments	Jan 1 st	April 1st
Project Launch	May 1st	
Needs Assessment and Scoping with Host Community	May 1 st	May 15 th
Refine and Finalize Project Elements	May 1 st	May 31st
Sub-teams Launch	May 1 st	August 30 th
Sub-teams Report Out to Team, Compile Results, Findings, Recommendations, Product Deliverables Complete	July 30 th	October 30 th
Demonstration Projects Selected, Implementation Begun	July 1st	October 30 ^{th*}
Public Report Out / Community Engagement	September 1 st	October 30 th
Map Next Steps with Host Community	October 1 st	November 30 th
Team De-brief and After-action Review	Ongoing	December 30 th

*Depending on the nature of demonstration projects implementation may continue in 2022.