



Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-414

Proposal Title: Accelerating Climate Adaptation Across Minnesota's Nature-Based Tourism Economy

Project Manager Information

Name: Heidi Roop

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

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Project Basic Information

Project Summary: In collaboration with businesses and communities, we will develop highly-localized insights about the costs, benefits, and tradeoffs associated with future extreme weather and resiliency investments across Minnesota's nature-based tourism economy.

ENRTF Funds Requested: \$400,000

Proposed Project Completion: June 30, 2028

LCCMR Funding Category: Resiliency (A)

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Minnesota's nature-based tourism economy employed over ninety thousand people and generated \$13.5 billion in 2023 through year-round activities like snowmobiling, skiing, biking, and angling. These pursuits support greater Minnesota's economy as recreationists spend on lodging, food, specialized apparel, and other supplies. Yet, the success of nature-based tourism is intimately tied to weather, climate, and the health of the natural environment. As evident in recent events like the "lost winter," businesses and communities dependent on nature-based tourism are on the frontlines of short- and long-term changes in temperature, precipitation, snowpack depth and duration, forest health, and lake ice and water quality conditions.

It is essential that businesses and communities understand emerging climate challenges and have the tools and technical assistance needed to plan and implement economically-viable solutions for long-term resiliency. This requires closing the gap between projections of future climate conditions in Minnesota and robust information about the costs, benefits, and trade-offs of different resiliency interventions and strategies. This proposal seeks to narrow this gap through a collaboration between professionals and communities engaging in nature-based tourism and Extension to develop economic insights, tools, and technical assistance to ensure we can sustain Minnesota's nature-based tourism economy even as climate challenges grow.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

This project weaves together resilience and economic research with the co-creation of three regional climate-resilient economy plans and Extension resources to broaden understanding and implementation of economically-viable resiliency strategies for nature-based tourism. In collaboration with tourism-focused businesses, communities, Regional Development Organizations and the University of Minnesota Climate Adaptation Partnership (MCAP) and Tourism Center (TC), we will assess the impacts of future climate scenarios on Minnesota's regional nature-based tourism economies, develop regional resiliency plans, and support network-building to accelerate implementation of resiliency solutions.

Utilizing an established framework for planning for a climate-resilient economy, we will collaborate across Minnesota's nature-based tourism sector using the following approaches to broaden understanding and implementation of effective climate adaptation strategies: 1) convene regional tourism assessment teams to engage in iterative workshops to develop shared understanding of sector-specific climate hazards and economic vulnerability, and currently used resiliency strategies; 2) leverage these insights to inform localized economic modeling to create location and sector-specific insights for evaluating the potential cost and benefits of different resiliency strategies, and 3) develop and deliver public resiliency prioritization and implementation workshops to educate and deepen the networks of tourism owners and community leaders needed to accelerate climate resiliency across Minnesota's nature-based tourism economy.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

In collaboration with communities, businesses, and rights holders across the state, this project will develop new localized insights about the costs, benefits, and tradeoffs associated with future extreme weather and adaptation actions across Minnesota's nature-based tourism economy. These insights will inform regional and local planning and decision-making by businesses, Tribal, and community tourism leaders, water and natural resource managers, among others. Potential applications include informing strategic investment in, and assisting with, adaptive management of recreational landscapes and trails, changing seasonal use patterns, and transitioning to new or different forms of recreation suited to changing climate and weather patterns.

Activities and Milestones

Activity 1: Evaluate Impacts, Hazards, Vulnerabilities, and Resiliency Assets Across Minnesota's Nature-based Tourism Economy

Activity Budget: \$94,581

Activity Description:

To identify climate impacts, vulnerabilities, and resiliency assets across Minnesota's nature-based tourism economy, we will convene climate-resilient economy assessment and planning teams from three regions with different nature-based tourism activities, assets, and economic characteristics. These teams will include tourism-focused businesses, industry leaders, Tribal and community members. Proposed focal regions, which will be refined with project partners, include the Arrowhead, Brainerd Lakes, and the Driftless Area. These 'archetype' geographies will increase statewide relevance and ensure scalability to other communities and regions.

Each team will first participate in a regional climate-resilient tourism economy planning workshop. Participants will be guided through a structured, dialogue-based process, using maps, climate projections, and economic indicators, to identify critical aspects of each region's climate and economic risks under different future scenarios. Participants will begin to identify regionally-relevant resiliency strategies and any known or anticipated costs or changes in economic activity under the different climate scenarios. Workshop outcomes will include an inventory of important economic assets for nature-based tourism, a tailored vulnerability scale, and resiliency strategies of interest in each region. These convenings will inform economic modeling (Activity 2) to develop quantitative future scenarios to provide economic insights for informing resiliency implementation opportunities for each region (Activity 3).

Activity Milestones:

Description	Approximate Completion Date
Host project kick-off meeting to establish project structure, team expectations, and refine focal geographies.	September 30, 2026
Recruit ten tourism-focused stakeholders for each three regional climate-resilient economy assessment and planning teams.	October 31, 2026
Host initial climate-resilient tourism economy planning workshops for regional teams in each focal region.	April 30, 2027
Develop climate scenarios and existing economic indicators for each focal region for initial assessment workshops.	December 31, 2027

Activity 2: Develop Economic Insights to Inform Adaptation Investments and Strategies

Activity Budget: \$180,023

Activity Description:

Following the initial assessment workshop, the project team will conduct economic modeling, such as cost-benefit analysis (CBA), to describe the overall economic implications of each region's climate and economic risks under different future scenarios. We will analyze the economic tradeoffs associated with the implementation of different resiliency strategies identified during the initial climate resilient-economy planning and assessment workshops (Activity 1). These economic insights will be integrated into draft regional climate-resilient economy plans outlining the risks, costs, benefits, and trade-offs of different future climate and adaptation scenarios specific to nature-based tourism in Minnesota. We will then reconvene each assessment team for a second structured, dialogue-based regional workshop to review these results, and refine and prioritize recommendations for economically-viable resilience strategies including identifying strategies for which there is interest and willingness to adopt. This iterative process will result in three regional nature-based tourism-focused resilience plans with location and sector-specific adaptation strategies that can

be weighted and evaluated based on a suite of community benefits, climate resilience, and economic indicators. Altogether, this work will create a resilience planning framework that will be leveraged for community-wide engagement, multi-media content development, Extension education, and knowledge sharing in a Midwest regional conference and beyond (Activity 3).

Activity Milestones:

Description	Approximate Completion Date
Conduct economic analysis of each region's climate and economic risks under different future scenarios.	October 31, 2027
Host second regional climate-resilient tourism economy planning workshops to review economic analyses and resiliency actions.	December 31, 2027
Refine economic analyses and recommendations with workshop feedback and prepare draft climate-resilient economy plans.	February 28, 2028

Activity 3: Engagement and Planning to Accelerate Implementation of Resiliency Strategies

Activity Budget: \$125,396

Activity Description:

The project and planning and assessment teams will engage audiences across Minnesota, and the Midwest, to develop networks to share about opportunities and costs associated with nature-based tourism resilience and to accelerate implementation of sector-specific resiliency strategies. To deepen engagement and finalize the regional climate-resilient economy plans, we will host three regionwide climate-resilient tourism economy network-building workshops targeting broad networks of nature-based tourism operators, industry leaders, and the public in each focus region. Participants will review the climate resilient economy plans and assist with further prioritization of resilience strategies with a focus on utilizing the economic insights developed in this project and discussing willingness-to-adopt. Workshop results will be incorporated into the final regional climate-resilient tourism economy plans. We will also curate a series of multimedia content for engaging tourists and other audiences to share nature-based tourism resilience insights that resulted from this project to ensure stories of regional businesses and communities are elevated alongside the plans. To deepen regional networks, three members of each assessment and planning team will present the project at the 2027 Midwest Climate Resilience Conference. Long-term, Extension will integrate the planning framework into Extension programming to support other nature-based tourism operations and communities across Minnesota.

Activity Milestones:

Description	Approximate Completion Date
Present project processes and planning frameworks to practitioners at the Midwest Climate Resilience Conference.	October 31, 2027
Host regionwide climate-resilient tourism economy planning and network-building workshops identify and prioritize viable resilience strategies.	April 30, 2028
Create multimedia content, including videos, to share resilience experiences and opportunities with tourists and public.	April 30, 2028
Finalize each of three climate-resilient economy plans for distribution by partners, MCAP, and Extension.	June 30, 2028
Delivery of final project products and reports.	June 30, 2028

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Heidi Roop	University of Minnesota Climate Adaptation Partnership	Principal Investigator and Extension Specialist; Provide overall project management, climate science expertise, and leadership for the scenario development and assessment process.	Yes
Xinyi Qian	University of Minnesota Tourism Center	Co-Investigator and Extension Specialist; Support engagement with nature-based tourism partners and assessment teams, and assist with designing and delivering project workshops.	Yes
Ami Choi	University of Minnesota Tourism Center	Extension Educator; Lead development and delivery and evaluation of project workshops, and assist in translating workshop feedback and economic analyses into educational materials	Yes
Extension Educator (TBH)	University of Minnesota Climate Adaptation Partnership	Extension Educator; Lead development and delivery and evaluation of project workshops, and assist in translating workshop feedback and economic analyses into educational materials	Yes
Postdoctoral Associate (TBH)	University of Minnesota Climate Adaptation Partnership	Post-doctoral Researchers; Lead economic modeling and development of economic indicators and data for workshops and climate-resilience economy regional assessments and plans	Yes
Maria Tomczik	University of Minnesota Climate Adaptation Partnership	Research Project Specialist; Provide overall project and grant management, coordinate project reporting, and assist with workshop and partnership management logistics	Yes
Martin Froger Silver	University of Minnesota Climate Adaptation Partnership	Communications Specialist; Develop multi-media content and nature-based tourism case studies, lead online and communication resource development and distribution	Yes
Dena Coffman	University of Minnesota Climate Adaptation Partnership	GIS Specialist; Provide GIS and spatial analysis expertise for workshops including maps and scenarios development for each regional workshop and maps and figures for regional assessments and plans	Yes
Nathan Meyer	University of Minnesota Climate Adaptation Partnership	Extension Program Leader; Lead project evaluation and provide supervision for Extension educators and oversight for Extension program development, and lead overall project evaluation	No
Jim Goodman	Bob's Cabins on Lake Superior	Resort owner will collaborate with the project team to recruit tourism stakeholders and participate in northern MN assessment and planning team workshops.	No
Jessica Beyer	Region Nine Development Commission	Regional Development Organization leader will coordinate to the recruitment and engagement of tourism stakeholders in the project workshops, participate in refining the climate and economic analyses that are developed based on these workshops, and incorporate the information and tools into our decision-making.	No
Anna Wasescha	West Central Initiative	Regional Development Organization leader will coordinate to the recruitment and engagement of tourism stakeholders in the project workshops, participate in	No

		refining the climate and economic analyses that are developed based on these workshops, and incorporate the information and tools into our decision-making.	
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Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

This project will develop insights about the costs of extreme weather in Minnesota and the most economically-viable resilience strategies tailored to Minnesota's nature-based tourism economy. This collaborative project will develop a tailored climate-resilient economy assessment and planning framework that can be replicated in other natural resource-focused sectors. Long-term implementation will be supported through integration into ongoing Extension programming including MCAP's statewide Weather Ready Extension and Climate Adaptation Specialist Trainings and the TC Tourism Development programs. Three resilience plans developed through this project's climate-resilient economy assessment and planning and public engagement processes will be accessible through the MCAP and Extension websites.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Water and Climate Information to Enhance Community Resilience	M.L. 2022, , Chp. 94, Art. , Sec. 2, Subd. 04f	\$564,000
Managing Future Floods and Droughts in Minnesota	M.L. 2024, , Chp. 83, Art. , Sec. 2, Subd. 07e	\$460,000

Project Manager and Organization Qualifications

Project Manager Name: Heidi Roop

Job Title: Assistant Professor

Provide description of the project manager's qualifications to manage the proposed project.

Dr. Heidi Roop is well qualified to manage the proposed effort to enhance Minnesota's resilience to climate change. As the Director of the University of Minnesota Climate Adaptation Partnership (MCAP) and an Assistant Professor of Climate Science and Extension Specialist, she leads initiatives focused on integrating climate science into decision-making processes across various sectors, including tourism and recreation. Dr. Roop's expertise lies in bridging the gap between our understanding of future climate and practical applications. Her research spans diverse regions, from Antarctica to Lake Superior, providing her with a broad perspective on climate impacts. In Minnesota, Dr. Roop has been instrumental in enhancing communities' capacity to manage climate-related challenges. Under her leadership, the MCAP team has developed highly localized climate projections for Minnesota and resources to facilitate the use of this information for decision-making in multiple sectors, such as agriculture, tribal food systems, public health, the built environment, and tourism. Dr. Roop's work also extends to science communication to support individual action to support resilience. Her ability to convey complex scientific concepts to diverse audiences ensures that the stakeholders with whom she works are well-equipped to understand and address emerging climate challenges. Her multifaceted experience uniquely positions Dr. Roop to lead the initiatives in this proposal and to ensure Minnesota's businesses and communities are prepared to implement economically-viable solutions for long-term climate resilience.

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

Organization Description:

The University of Minnesota Climate Adaptation Partnership (MCAP) is a Center of University of Minnesota Extension and the College of Food, Agricultural and Natural Resource Sciences dedicated to assisting communities in responding to climate change through research, resources, and training. MCAP's mission centers on conducting advanced climate and

adaptation research, developing adaptation professionals, and implementing effective adaptation and resilience strategies across communities. Our approach emphasizes collaboration, capacity-building, and advancing climate-informed decision-making to support thriving communities and landscapes.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Principal Investigator		Provide overall project leadership, climate science expertise, and leadership for the scenario development and assessment process.			36.6%	0.08		\$19,356
Co-Investigator		Support engagement with nature-based tourism partners and assessment teams, and assist with designing and delivering project workshops.			36.6%	0.04		\$6,399
Extension Educators		Lead development and delivery and evaluation of project workshops, and assist in translating workshop feedback and economic analyses into regional plans and educational materials.			36.6%	0.68		\$79,541
Postdoctoral Associate		Lead economic modeling and collation of economic indicators and data for workshops and regional plans.			25.9%	2		\$180,566
Research Project Specialist		Provide project and grant management support, lead project reporting, and assist with all workshop logistics and partnership management logistics.			32.3%	0.34		\$27,100
Communications Specialist		Develop multimedia content and nature-based tourism stories, lead online and communication resource development and distribution, and support with layout and design of regional plans.			32.3%	0.26		\$22,970
GIS Specialist		Provide GIS expertise and analysis expertise for workshops including maps and scenarios development for each regional workshop and inclusion in regional plans.			32.3%	0.26		\$26,563
							Sub Total	\$362,495
Contracts and Services								
Workshop Participants	Service Contract	Honoraria will be provided to workshop participants to compensate them for their time and offset travel expenses. Honoraria are calculated at \$40/hour (\$200/person/5-hour workshop) for 6 planning and assessment team workshops (3 workshops/year, 10 participants per workshop) for a total of \$6,000/yr.				0		\$12,000

Workshop Participants	Service Contract	Honoraria will be provided to 9 participants of the assessment team (three per team) to attend and present project results at the 2027 Midwest Climate Resilience Conference, to be held in Indianapolis or similar Midwest city. \$1,000/person.				0		\$9,000
							Sub Total	\$21,000
Equipment, Tools, and Supplies								
	Tools and Supplies	Funding is requested for Adobe Creative Cloud (\$251/year) to support communications deliverables and plan document develop, and Economic analysis software (\$726/year) to support economic modeling activities.	To support communications and project deliverables and economic modeling activities.					\$1,954
							Sub Total	\$1,954
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	MN travel costs are expected to be approximately \$457/person/trip, with variability based on distance traveled. We anticipate 3 planning team workshops for 3 personnel traveling in 2 vehicles in years 1 and 2 and 3 community-wide workshops for 4 personnel traveling in 2 vehicles in year 2 (9 workshops total). We also anticipate 3 filming trips in year 2 for the communications specialist to develop case studies and other communications and education products. All trips are of the following approximate distances and durations: Average mileage - 350 miles/round trip at 0.70/mile for a total of \$245 per vehicle per trip; Average per diem, based on 2025 GSA rates, is	For the MCAP project team to travel to 6 planning team workshops and three community-wide workshops and for three filming trips for the communications specialist.					\$12,141

		expected to be \$110 per night for accommodations and approximately \$102 per trip for food and incidentals (\$51 per diem/day).						
							Sub Total	\$12,141
Travel Outside Minnesota								
	Miles/ Meals/ Lodging	1 domestic trip for 2 personnel to present project findings with assessment team members at the 3-day 2027 Midwest Climate Resilience Conference, planned for a central Midwest location like Indianapolis, IN. This trip is planned for an average roundtrip airfare from Minneapolis to/from Indianapolis at \$350/person and \$200 for ground transportation. The average per diem, based on 2025 GSA rates, is expected to be \$133 per night for accommodations for 3 nights and approximately \$280 per trip for food and incidentals per person (\$60 per diem for travel days, \$80 per diem for full day).	To present project findings with assessment team members at the 3-day 2027 Midwest Climate Resilience Conference, planned for a central Midwest location like Indianapolis, IN.					\$2,410
							Sub Total	\$2,410
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$400,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

Total Project Cost: \$400,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [23cb0915-bc8.pdf](#)

Alternate Text for Visual Component

A figure that shows the progression of the iterative, community-centered climate-resilient economy development process, including economic analysis and modeling, learning, education and networking activities....

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
University of Minnesota Sponsored Projects Endorsement	bd916901-2b3.pdf
Region Nine Development Commission Letter of Support	886b22ea-ca6.pdf
West Central Initiative Letter of Support	091893a2-1f6.pdf
Bob's Cabins on Lake Superior Letter of Support	ae12f32c-cb4.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I understand the UMN Policy on travel applies.

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

Yes

Does the organization have a fiscal agent for this project?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care,

treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

Nathan Meyer, University of Minnesota Extension; Maria Tomczik, University of Minnesota Extension

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

Yes, I understand