



# Environment and Natural Resources Trust Fund

## 2027 Request for Proposal

### General Information

**Proposal ID:** 2027-412

**Proposal Title:** Minnesota Solar for Soil, Water, and Wildlife

### Project Manager Information

**Name:** Melissa Birch

**Organization:** U of MN - Extension Regional Sustainable Development Partnerships

**Office Telephone:** (218) 866-2338

**Email:** mbirch@umn.edu

### Project Basic Information

**Project Summary:** The project will strengthen natural resource and agricultural co-benefits of increasing solar deployment through co-designed educational materials, land use planning tools, outreach and engagement, technical assistance, and a train-the-trainer approach.

**ENRTF Funds Requested:** \$1,200,000

**Proposed Project Completion:** June 30, 2030

**LCCMR Funding Category:** Energy (E)

### 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.**

It is widely known that solar is a critical technology for reducing emissions of greenhouse gases and other air pollutants from energy generation. What is less widely known is that research has demonstrated the promise of solar—when sited and managed appropriately—to provide non-energy co-benefits to the environment and natural resources, such as reductions in stormwater runoff and nitrate leaching to groundwater; increased soil organic carbon; habitat for pollinators, songbirds, and other species; and agrivoltaic applications, such as solar grazing.

Collaborators on this project have extensive experience engaging and assisting communities on clean energy, sustainable agriculture, and natural resources. The message from communities has been clear: Minnesotans care about their landscapes—soil, air, water, wildlife, and agriculture. Minnesotans also care about the livelihoods and vibrancy of their communities, whether rural or urban. Ensuring that solar deployment supports these goals plays a key role in building broad public support for an energy transition.

At the same time, for people who do not work in the clean energy sector every day, navigating the complex and evolving solar landscape can be challenging. Similar challenges confront those in the clean energy sector who do not regularly connect with communities or natural resource issues.

### **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 will take a holistic approach to solar in Minnesota, bridging knowledge and communication gaps at the intersections of solar development, community planning, agricultural production and natural resource conservation. It will expand access to the reliable information and individualized assistance that are essential for successful solar project implementation.

To maximize co-benefits related to climate, air and water quality, soil health, wildlife, and agricultural ecosystems, this project will develop educational resources and land use planning tools and will share them in multiple ways to reach farmers and other landowners, local and Tribal government staff and elected officials, and solar developers, with the goal of incorporating these scientifically grounded best practices into solar site selection, design, management (over the lifespan of the project), and decommissioning (at the end of the project's useful life).

In addition to providing engaging informational resources, educational opportunities, and direct technical assistance, the project will implement a multisectoral train-the-trainer approach, deepening the bench of people across the state who are able to provide assistance on these topics.

### **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?**

The project will facilitate deployment of renewable energy in ways that align with community priorities and strengthen multiple natural resource co-benefits. While the primary LCCMR funding priority for this project is Energy (E3-E5), it will also make meaningful contributions to the Water (B4, B6), Land (F1, F2), Resiliency (A4, A6), and Fish and Wildlife (D3) priorities.

Furthermore, by ensuring that local communities are able to realize multifaceted benefits from solar on their landscape, the project will increase acceptance of solar deployment.

## Activities and Milestones

### Activity 1: Create Minnesota Solar for Soil, Water, and Wildlife Toolkit, including co-design activities and dissemination

**Activity Budget:** \$300,000

**Activity Description:**

Core resources to support solar-related land use planning, designed in consultation with stakeholders and the research community, will include:

- \* Best practices for strengthening natural and agricultural ecosystem co-benefits through solar site selection, design, and management.
- \* Refined statewide GIS-based tool for identifying natural and agricultural ecosystem service tradeoffs associated with siting community- and utility-scale solar in specific locations.
- \* Planning and zoning guidance for local and Tribal governments, including model language on natural resources for comprehensive plans, solar ordinances, and development / community benefits agreements.

Resources will be disseminated to regional development organizations (RDOs); local and Tribal governments; natural resource conservation entities like Soil and Water Conservation Districts (SWCDs), Drinking Water Source Management Areas (DWSMAs), and nonprofits; solar developers; and utilities.

Core resources will be complemented by web content, factsheets, and case studies that present relevant information to a general audience in an engaging way. In addition to sharing these resources directly with stakeholders, the project will enable locally and regionally trusted organizations to co-brand and distribute factsheets, increasing impact.

The project team will track web statistics for digital resources and conduct follow-up surveys with relevant entities to assess use of resources in land use planning and project implementation.

**Activity Milestones:**

Description	Approximate Completion Date
Solar factsheets finalized, with topics including soil, water, wildlife, and agrivoltaics	September 30, 2027
Solar + natural resource planning and zoning guidance completed	December 31, 2027
GIS-based tool refined in consultation with stakeholders	March 31, 2028
Best practice guide finalized after feedback received from stakeholder and peer review	June 30, 2028
Initial dissemination to target audiences completed	December 31, 2028

### Activity 2: Provide direct technical assistance (TA) on planning for utility- and community-scale solar

**Activity Budget:** \$300,000

**Activity Description:**

Activity 2 will support alignment of community- and utility-scale solar development with community priorities, particularly those related to natural resource and agricultural ecosystem co-benefits (including ecovoltaics and agrivoltaics). The project will build on the CERTs-led Minnesota Siting Collaborative’s TA offerings (on siting and permitting of renewable energy) to include a more comprehensive treatment of co-benefits in solar development planning processes.

Outreach will be conducted to local and Tribal governments, regional development organizations, natural resource conservation entities, developers, to ensure that these entities are aware of the TA available. They will be able to

request assistance through the form on the CERTs website (as well as by contacting any of the project collaborators), and a referral process will be in place to direct the request to whichever of the collaborators is best suited to providing the specific TA requested. Areas with high renewable energy potential and significant opportunity for positive natural resource impacts (such as DWSMAs) will be prioritized for outreach on this TA.

Evaluation will include post-TA surveys as well as tracking integration of natural resource considerations in project site selection, design, and management; and in comprehensive plans, ordinances, and other plans emerging from processes where TA was provided.

**Activity Milestones:**

Description	Approximate Completion Date
First year TA evaluation and recommendations for changes	September 30, 2028
Second year TA evaluation and recommendations for changes	September 30, 2029
Finalize post-project TA plan	March 31, 2030

**Activity 3: Provide direct technical assistance (TA) on solar-related planning and project implementation**

**Activity Budget:** \$460,000

**Activity Description:**

To facilitate deployment of community-identified solar projects, the project team will conduct outreach and will provide TA to at least 80 farmers, small businesses, and/or public sector entities interested in implementation of smaller solar projects (<1MW). This TA may include: recommendations for pre-solar energy efficiency measures; virtual or in-person solar feasibility assessments; sharing resources on agrivoltaics, options to strengthen natural resource co-benefits, and storage options for peak shaving and/or resilience; solar RFP development, distribution, and criteria for evaluation; and assistance with identifying relevant funding and financing options.

Both TA and outcomes will be tracked, including solar project deployment, as well as implementation of site selection, design, and management practices that support natural resource and agricultural co-benefits.

**Activity Milestones:**

Description	Approximate Completion Date
TA provided to 25 farmers, small businesses, local governments, or Tribes /	June 30, 2028
TA provided to an additional 30 farmers, small businesses, local governments, or Tribes	June 30, 2029
TA provided to an additional 25 farmers, small businesses, local governments, or Tribes	June 30, 2030

**Activity 4: Train-the-trainer: strengthening assistance capacity statewide**

**Activity Budget:** \$140,000

**Activity Description:**

Activity 4 will establish a network of entities who can provide science-backed guidance on solar development and natural resource co-benefits. Major tasks include the development of training modules for use as part of in-person, virtual, and asynchronous online training, as well as the provision of training to at least 8 natural resource conservation and/or agricultural organizations, 8 RDOs and local government-serving organizations, and 5 Tribal governments.

At the end of the training, participants will have an understanding of the fundamentals of solar, agrivoltaics, and natural

resource co-benefits; will know how to utilize the resources developed in Activity 1; and will know who to reach out to if deeper assistance is needed. Evaluation will include pre- and post-training surveys and a follow-up survey after 6 months to catalogue assistance provided by training participants.

**Activity Milestones:**

Description	Approximate Completion Date
Training modules finalized based on core resources developed in Activity 1	December 31, 2028
At least 3 training sessions completed	September 30, 2029
Online, asynchronous training launched	December 31, 2029

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Brian Ross	Great Plains Institute	Vice-President, Renewable Energy / GPI's role: Integration of natural resource conservation elements into planning and zoning guidance, model ordinances, development agreement and community benefits agreement templates. TA to local governments on land use planning processes. Support development and delivery of training. TA on community-initiated solar projects in the metro region.	Yes
Joshua Kielsmeier-Cook	University of Minnesota Extension, Regional Sustainable Development Partnerships	Director, Sustainable Agriculture and Food Systems / RSDP's role: Convene University-community work groups and boards to facilitate co-design of toolkit and training modules for farmers and natural resource conservation entities. Lead recruitment of farmer collaborators and provide technical assistance. Co-lead training for farmer-serving and natural resource conservation entities.	Yes
Jason Walker	Southwest Regional Development Commission	Community Development Director / SRDC's role: Conduct outreach and lead local government, utility, and solar developer engagement in SW Minnesota. TA to local governments on planning and implementation, (e.g., solar in comprehensive plans and understanding development agreements). Support development and delivery of training for RDOs and local governments.	Yes
Daniel Wiggins, Jr.	Midwest Tribal Energy Resources Association	Executive Director / MTERA's role: Lead integration of natural resource conservation elements into solar guidance for Tribal governments, including co-design process. Technical assistance to Tribal governments on solar planning processes. Lead development and delivery of training for Tribal governments.	Yes
Melissa Birch	Clean Energy Resource Teams, University of Minnesota Extension, Regional Sustainable Development Partnerships	Co-Director / Project Manager. CERTs' role: Development and hosting of online and print educational toolkit, including stakeholder and subject matter expert co-design. Outreach and technical assistance on solar planning (landscape scale) and project implementation (on-farm, commercial, public sector). Development and delivery of training (in-person, virtual, asynchronous online).	Yes

## Dissemination

**Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.**

This project will disseminate relevant resources through the following methods: CERTs' and collaborators' websites, newsletters, and social media; case studies and storytelling; direct outreach to target audiences (via email, phone, in-person meetings, and listservs); virtual and in-person educational opportunities; and the provision of technical assistance.

## 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 leverages both long-standing and emergent networks to reach audiences and build capacity throughout Minnesota. A key element of this is the train-the-trainer approach. By sharing knowledge across a diverse array of

organizations and institutions, statewide, it helps ensure that expertise is carried forward beyond the end of the grant—in other words, the project seeks to make best practice the standard practice.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Minnesota Million: Seedlings for Reforestation and CO2 Sequestration	M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 08e	\$906,000

## Project Manager and Organization Qualifications

**Project Manager Name:** Melissa Birch

**Job Title:** Clean Energy Resource Teams Co-Director

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

Dr. Melissa Birch joined the Clean Energy Resource Teams in 2017. Prior to that, she earned a Ph.D. from the Fletcher School at Tufts University, where she focused on the intersection between economic development, environmental and land use policy, and community engagement. She has also worked in the education, natural resources, and nonprofit sectors.

During her time at CERTs, she has strengthened relationships and collaborated on initiatives with a wide range of partners and stakeholders, including local and Tribal governments; regional development organizations; the business, agricultural, and renewable energy sectors; electric utilities; community-based organizations; and educational institutions. Before transitioning to the CERTs Co-Director role, she served as CERTs’ Rural Energy Development Manager, providing technical assistance on renewable energy and energy efficiency to agricultural producers and rural small businesses.

In her current role, she oversees most of CERTs’ grants (state, federal, and philanthropic), including reporting and evaluation efforts and management of full-time staff, graduate research assistants, and consultants. She leads CERTs’ programs on utility innovation, Community Energy Ambassadors, and renewable energy siting. Recent and ongoing renewable energy work includes:

- \* Community-engaged research on cultural ecosystem service impacts associated with solar development—part of the Photovoltaics Supporting Cultural and Community EcoSystem Services (PV-SUCCESS) project funded by the U.S. Department of Energy’s Deploying Solar with Wildlife and Ecosystem Services Benefits (SolWEB) program;
- \* Community engagement and technical assistance on community benefits mechanisms for renewable energy and storage projects; and
- \* Serving as PI for the 11-partner Minnesota Siting Collaborative project, funded under the U.S. Department of Energy’s Reliable Energy Siting through Technical Engagement and Planning (R-STEP) program. The Collaborative brings together State, nonprofit, University, Tribal, regional development, and industry partners to build capacity around the siting and permitting of community- and utility-scale renewable energy.

**Organization:** U of MN - Extension Regional Sustainable Development Partnerships

### Organization Description:

“The clean energy resource teams (CERT’s) project is an innovative state, university, and nonprofit partnership that serves as a catalyst for community energy planning and projects” (Minnesota Statutes 2025, section 216C.385, subdivision 2). The CERTs Partnership ([www.cleanenergyresourceteams.org](http://www.cleanenergyresourceteams.org)) includes the University of Minnesota Extension’s Regional Sustainable Development Partnerships (RSDP/applicant), the Southwest Regional Development Commission (SRDC), the Great Plains Institute (GPI), and the Department of Commerce.

For over 20 years, CERTs has provided reliable clean energy information and assistance, developed relationships and collaborations with diverse stakeholders, and engaged communities on energy efficiency and renewable energy. CERTs has regional staff and stakeholder steering committees in each of CERTs' seven regions, supported by statewide staff.

Since 1997, the University of Minnesota Extension's Regional Sustainable Development Partnerships have brought together community and University knowledge and resources to drive sustainability across four focus areas: agriculture and food systems, clean energy, natural resources and resilient communities. Each of RSDP's five regions in Greater Minnesota is supported by staff and by community-University board and focus area work groups, ensuring that the work starts with communities and addresses their needs.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
2 Co-Directors, Clean Energy Resource Teams		Manage project. Contribute to toolkit and training modules. Plan and coordinate technical assistance. Deliver training.			37%	0.54		\$75,256
Director, RSDP Sustainable Agriculture and Food Systems		Lead agricultural sector engagement and integration of agrivoltaic elements			37%	0.06		\$7,909
4 Regional Coordinators, Clean Energy Resource Teams		Outreach, engagement, and technical assistance			32%	4.8		\$439,540
Communications and Engagement Manager		Manage communications activities, including print resources, web and other digital communications, and media engagement			37%	0.3		\$41,049
Local Government Engagement Manager, Clean Energy Resource Teams		Lead project development technical assistance to local governments			37%	0.3		\$42,000
Program Associate, Sustainable Agriculture and Food Systems		Agricultural sector outreach, engagement, and technical assistance			37%	0.75		\$86,025
4 Outreach Specialists + 1 Assistant Project Coordinator, Regional Sustainable Development Partnerships		Outreach, engagement, and technical assistance on natural and agricultural ecosystem best practices for solar			32%	0.75		\$76,130
Graduate Research Assistant		Assist with development of toolkit and training modules			44%	0.93		\$92,276

Post-Doctoral Fellow		GIS-based tool for evaluating ecosystem service tradeoffs			26%	1		\$89,815
							<b>Sub Total</b>	<b>\$950,000</b>
<b>Contracts and Services</b>								
Great Plains Institute	Subaward	Planning and zoning guidance; TA to local governments on land use planning; assist with training; TA on community-initiated projects in the metro region. Personnel: \$77,545; Travel: \$2,655				0.54		\$80,000
Southwest Regional Development Commission	Subaward	Local government, utility, and solar developer engagement efforts in SW Minnesota; TA to local governments on planning and implementation; support training efforts. Personnel: \$75,500; travel: \$4,500				0.6		\$80,000
Midwest Tribal Energy Resources Association	Subaward	Engagement, guidance resources, and TA for Tribes; training for Tribes. Personnel: \$60,000.				0.48		\$60,000
							<b>Sub Total</b>	<b>\$220,000</b>
<b>Equipment, Tools, and Supplies</b>								
							<b>Sub Total</b>	-
<b>Capital Equipment</b>								
							<b>Sub Total</b>	-
<b>Acquisitions and Stewardship</b>								
							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								
	Miles/ Meals/ Lodging	Lodging: 8 people x 3 overnights x \$150/night. Mileage: 10 people x 6 trips averaging 200 miles.	Outreach and technical assistance					\$13,200
	Miles/ Meals/ Lodging	Lodging: 2 people x 3 overnights x \$150. Mileage: 2 people x 3 trips averaging 200 miles.	In person training sessions					\$1,800
							<b>Sub Total</b>	<b>\$15,000</b>

<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
	Printing	Factsheets and handouts; 4000 pages x \$0.25	Dissemination of information from Activity 1					\$1,000
							<b>Sub Total</b>	<b>\$1,000</b>
<b>Other Expenses</b>								
		Stipends for participating farmers and other community members (\$100/hr)	Reduce barriers to participation in engagement activities					\$10,000
		Data / software	GIS-based ecosystem co-benefits tool					\$4,000
							<b>Sub Total</b>	<b>\$14,000</b>
							<b>Grand Total</b>	<b>\$1,200,000</b>

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: \$1,200,000**

**This amount accurately reflects total project cost?**

Yes

## Attachments

### Required Attachments

#### *Visual Component*

File: [c8b3993a-e90.pdf](#)

#### *Alternate Text for Visual Component*

Photos showing examples of strategies for maximizing natural resource co-benefits through siting (such as on DWSMAs), design and management (native plant ground cover, wildlife fencing, solar honey production, and solar grazing)....

### Supplemental Attachments

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

Title	File
Letter from SPA	<a href="#">cf887a35-abd.pdf</a>
Letter of Commitment: Midwest Tribal Energy Resources Association	<a href="#">1e3d484e-2ae.pdf</a>
Letter of Support: Lake County SWCD	<a href="#">87fb74de-5f8.pdf</a>
Letter of Support: Minnesota Farmers Union	<a href="#">444f1b2d-af1.docx</a>
Letter of Commitment: Regional Sustainable Development Partnerships	<a href="#">a383e458-d2f.docx</a>
Letter of Commitment: Southwest Regional Development Commission	<a href="#">3d07af52-ce5.pdf</a>
Letter of Commitment: Great Plains Institute	<a href="#">e23aedcd-274.pdf</a>

## 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?**

No

**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:**

Joshua Kielsmeier-Cook; Kerry Marsolek, University of Minnesota

**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**

N/A