



# Environment and Natural Resources Trust Fund

2027 Request for Proposal

## General Information

**Proposal ID:** 2027-099

**Proposal Title:** Establishing and Evaluating the Benefits of Urban Mini-Forests

## Project Manager Information

**Name:** Hannah Lewis

**Organization:** Renewing the Countryside

**Office Telephone:** (612) 850-5735

**Email:** hannah@rtcinfo.org

## Project Basic Information

**Project Summary:** Renewing the Countryside and partners will establish native “mini-forests” at community sites and measure the buffering effect on air and noise pollution and temperature of 4 mini-forests along high-traffic corridors.

**ENRTF Funds Requested:** \$298,000

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

**LCCMR Funding Category:** Small Projects (G)

**Secondary Category:** Land (F)

## Project Location

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

Region(s): Metro

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

Region(s): Metro

**When will the work impact occur?**

During the Project

## Narrative

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

Urban tree canopy supports public health by improving air quality and beautifying cities. Trees are especially important - yet often lacking - near high-traffic, industrial, and highly developed areas exposed to high emissions and the Urban Heat Island effect. Households located in these areas are disproportionately exposed to pollution and extreme heat, and bear the brunt of the associated health outcomes.

We propose to partner with communities beside I-94 in St. Paul to increase tree canopy by planting native “mini-forests,” and to evaluate the pollution buffering effect of this innovative practice. RTC has installed mini-forests at 2 sites in the Twin Cities with a third planned for 2026 (2 are beside I-94). A mini-forest provides the same kinds of benefits that street trees provide, but has the potential to be more ecologically robust. The dense, multi-layered forest structure creates a cool, moist microclimate within that supports the growth and health of all the trees that make it up. It also has a large total leaf surface area to absorb carbon, generate oxygen, and cool the area through shading and transpiration. A mini-forest provides wildlife habitat and buffers against flooding and drought because of its healthy, spongy soil.

### **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.**

The solution we propose is to establish 1 or more small native forest strips (mini-forests) at community sites near highways, and to evaluate their buffering effects on air and noise pollution, as well as temperature and biodiversity. The mini-forests will be established according to the Miyawaki method, which features late successional MN tree and shrub species that are planted densely and become self-sustaining after 3 years of light maintenance. The species are chosen based on site-specific climate, soil, and topographical conditions. The Miyawaki method is an internationally recognized eco-restoration approach that invites community participation in planting small native forests in cities. We will partner with St. Paul schools located beside I-94 to install a 400m<sup>2</sup> mini-forest (or two 200m<sup>2</sup> patches) on their grounds that will double as outdoor classrooms. In addition, we will partner with UMN Department of Forest Resources to measure the buffering effects of this mini-forest and 3 other recently planted mini-forests - also located beside highways in the Twin Cities. We will work with UMN researchers and school and community partners to engage youth and adults in education and monitoring activities aimed at deepening ecological knowledge and connection to nature in the middle of the city.

### **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 outcomes include: (1) establishment of native forest buffer strips (mini-forests) in strategic locations between community gathering sites and highways; (2) assessment of the effects of mini-forests on temperature, air and noise pollution, and local biodiversity; (3) engagement of local community members in the planning, planting, stewardship, data collection, and sharing of research results. The plantings will serve as trial and demonstration sites for future mini-forests within the Twin Cities metro area with the idea of establishing a network of these plantings to support public health and ecological connectivity

## Activities and Milestones

### Activity 1: Establish mini-forest in partnership with local community

**Activity Budget:** \$200,000

**Activity Description:**

Objective: Restoration of degraded urban land beside high-traffic corridors in partnership with local community to mitigate air and noise pollution, reduce temperatures, support wildlife, and connect people to nature.

Task A: Identify 1-2 sites in consultation with city, school, and community members for a total of 400m<sup>2</sup> to be planted.

Task B: Prepare planting site/s in consultation with site host, ecologists/foresters, landscaping professionals, BWSR guides

Task C: Install and maintain mini-forests in partnership with the school and community

Outputs: Site-specific native forest species lists; planting site ground de-compacted and amended with organic material; installation of rabbit-proof fencing as needed, application of straw mulching; installation of 400m<sup>2</sup> of high-quality native mini-forest; a clear maintenance plan for 3-yr establishment period; school staff and leadership familiar with value and ways to use to the mini-forest for education and positive sensory experience, and clear guidelines and protocol for routine, limited long-term stewardship

**Activity Milestones:**

Description	Approximate Completion Date
Mini-forest/s established	June 30, 2028
Mini-forest becomes self-sustaining	June 30, 2030

### Activity 2: Research buffering effects of a 4 mini-forests of different ages on temperature, air pollution, noise pollution, and biodiversity

**Activity Budget:** \$98,000

**Activity Description:**

Objective: Quantify benefits of mini-forest and share results broadly

Task A: Develop a simple research protocol in collaboration with UMN Forest Resources and acquire needed supplies

Task B: Collect data at 4 mini-forest weekly May through September

Task C: Analyze and communicate findings locally, statewide, and beyond

Output: Valid research protocols and tools for measuring pollinator/soil invertebrate diversity, air quality, noise, and temperature inside and beside mini-forests; 3 years of data for forests at ages ranging from 0 to 5 years old; publication of a short, easy-to-read report; presentation to local and statewide stakeholders; research report suitable for academic journal submission

**Activity Milestones:**

Description	Approximate Completion Date
Research protocol in place and data collection initiated	July 31, 2027
Research findings broadly shared (with preliminary results shared in 2028 and 2029)	June 30, 2030

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Claudia Nanninga	University of Minnesota	research manager	Yes
Alexandria Harris	Renewing the Countryside	community engagement manager	Yes
Jacque Thomas	(independent)	school engagement coordinator	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.**

Renewing the Countryside will work with the UMN Department of Forest Resources to develop research protocols, to analyze data, and to share results. Results will be documented and shared as both a report and in the form of stories, featured on the RTC website, distributed to RTC's 8,000 member newsletter, to the international Miyawaki (mini-forest) Research Network, and shared through the MN Shade Tree program, for example. Manuscripts summarizing this research, key findings, and associated recommendations will be prepared and submitted for publication in the peer-reviewed scientific literature.

Educational materials will be developed to share with members of the public during training events and at local schools. Outreach activities will potentially be hosted at nature centers and at the MN State Fair. Information and results will also be offered to members of the public through presentations, workshops, and by way of mini-forest active engagement roles such as planting/maintenance volunteers, and citizen scientists. Interested parties, such as state entities, parks, and school districts, can also request detailed data from the projects that are of particular interest to them, offering the results further potential for impact and reach.

## 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?**

Since mini-forests become self-sustaining within 3 years of weeding and watering, this LCCMR installation is expected to be maintenance free when the project is complete. Community engagement and education is integral to planting, stewardship and ongoing monitoring, and will help ensure mini-forest longevity due to community awareness and sense of investment. Research results will be shared in the form of accessible, easy-to-read written materials and presentations shared locally at community and school events, and more broadly throughout the Twin Cities and statewide through multiple outreach platforms, and will provide a basis for evaluating future investments in mini-forests.

## Project Manager and Organization Qualifications

**Project Manager Name:** Hannah Lewis

**Job Title:** project manager

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

Hannah Lewis manages Renewing the Countryside's urban agriculture and mini-forest projects, and co-manages a farmer outreach project. She is the author of *Mini-Forest Revolution: Using the Miyawaki Method to Rapidly Rewild the World* (Chelsea Green 2022), which was translated into French, Italian, German, and Japanese, and is the 2023 winner of

a Nautilus Book Award. Hannah regularly presents on the Miyawaki Method and mini-forest planting to audiences across the US and internationally; she has co-led three mini-forest installations, including two in the Twin Cities, and participated in an intensive 4-day Miyawaki Method training workshop in Japan. She has an MS in Sustainable Agriculture and Sociology from Iowa State University and a BA in Environmental Studies from Middlebury College.

**Organization:** Renewing the Countryside

**Organization Description:**

Renewing the Countryside (RTC) is a Minnesota-based 501(c)(3) nonprofit founded in 2001 with a mission to cultivate vibrant rural and urban communities by supporting collaborative leadership, environmental stewardship, resilient farms, and local food systems. Core services include supporting conservation and working lands stewardship; facilitating farmland access for emerging farmers; providing farm business management education; and establishing durable local food connections. RTC has strong partnerships with grassroots organizations, agencies, educational institutions, and nonprofits across the Twin Cities metro area and statewide, and several projects that link urban and rural people. Through our St. Paul-based Farm to Early Care program initiated in 2018, RTC became aware of strong interest within St. Paul communities of Frogtown and Rondo to expand and improve the ecological integrity of neighborhood green space. In response to this, we initiated our mini-forest program in 2023, with the first mini-forest planted in 2024. In 2025, we planted a second mini-forest in Brooklyn Center, and will plant another St. Paul mini-forest in 2026. All of these were planted in partnership with schools, where we engage children in the planting process and ongoing science lessons at the mini-forests, which become an outdoor classroom as they grow and evolve.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
1 project manager and technical lead		Responsible for overall planning and implementation, and providing technical guidance on mini-forest planting and maintenance			32%	0.6		\$55,467
1 community engagement manager		Responsible for engaging schools, families, and volunteers in planting, stewardship, and education related to the mini-forest, working in coordination with community liaison			32%	0.69		\$52,923
1 financial director		Responsible for bookkeeping and financial management for project funds, including grant invoicing and assisting with financial reporting			32%	0.15		\$9,455
2 communications staff		Provide project-related outreach and publicity of project activities and research results			32%	0.15		\$13,260
1 executive director		Responsible for project oversight and compliance			32%	0.06		\$7,997
							<b>Sub Total</b>	<b>\$139,102</b>
<b>Contracts and Services</b>								
UMN Dept. of Forest Resources	Service Contract	Personnel: Claudia Nanninga (Dept of Forest Resources), with support from Prof. Rebecca Montgomery and a seasonal technician, will develop research protocols to assess the buffering effects on temperature and air and noise pollution of 4 mini-forests (of differing ages) located beside highways, collect and analyze data, and share results.				0.78		\$90,000
Landscaping professional	Acquisition services	Preparing planting site by decompacting the ground and incorporating organic material, installing fencing, and other tasks as needed; supporting mini-forest maintenance through periodic watering throughout each growing season and other tasks as needed.				-		\$9,000
Jacquelyn Thomas	Service Contract	Partner with RTC to support and organize school leadership, educators, support staff, and parents in implementation and sustaining of the mini-forest				0.3		\$36,798

		program. Provide guidance in the use of the mini-forest as a dynamic learning and sensory space for students that develops their connection to nature.						
							<b>Sub Total</b>	<b>\$135,798</b>
<b>Equipment, Tools, and Supplies</b>								
	Tools and Supplies	research tools	Class 1 sound level meter, research grade particulate matter monitor, digital ambient temperature meter					\$8,000
	Tools and Supplies	1,200 native tree/shrub seedlings at \$10/ea	planted at a density 3 per square meter in 400m2 area					\$12,000
	Tools and Supplies	Compost, 30 cu yds at \$25/yd^3	to incorporate over 400m2 area planting site					\$750
	Tools and Supplies	straw mulch, 50bales at \$15/bale	to protect soil after planting over an area of 400m2					\$750
	Tools and Supplies	fencing (4-5 ft high wire fencing rolls, metal stakes)	to protect mini-forest form rabbit predation and trampling during establishment period					\$600
	Tools and Supplies	Volunteer and educational supplies	Provide light refreshments at volunteer planting and stewardship events, as well as gardening tools (extra gloves or shovels as needed), and educational supplies (pollinator ID guides, etc.) for volunteers during planting and stewardship events.					\$600
	Tools and Supplies	Maintenance supplies	To address any needs may arise related to mini-forest maintenance, such as fence repair, seedling replacement, supplemental mulch, etc.					\$400
							<b>Sub Total</b>	<b>\$23,100</b>
<b>Capital Equipment</b>								
							<b>Sub Total</b>	<b>-</b>
<b>Acquisitions and Stewardship</b>								

							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								
							<b>Sub Total</b>	-
<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
							<b>Sub Total</b>	-
<b>Other Expenses</b>								
							<b>Sub Total</b>	-
							<b>Grand Total</b>	<b>\$298,000</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: \$298,000**

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

Yes

## Acquisition and Restoration

### Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
Hallie Q. Brown Community Center	Ramsey	The site consists of developed urban land, including lawn, parking lot, a building, and scattered trees.	Restoration	0.1	-	-	Public		
Rondo Education Center	Ramsey	This site is the home of two schools and a community center, and consists of developed urban land with buildings, lawn, parking lot, and assorted scattered trees. Because the site is located beside I-94, the children and adults who spend time there are exposed to constant noise and air pollution. The expected public benefits of the restoration are improved air quality and lower temperatures in the school yard, and ongoing inter-generational access to nature education and connection.	Restoration	0.1	-	-	Public		Has Not Begun
St. Paul Central High School	Ramsey	This site consists of developed urban land with buildings, lawn, sports fields, parking lot, and assorted scattered trees. Because the site is located beside I-94, the youth and adults who spend time there are regularly exposed constant noise and air pollution, which the restoration work is expected to mitigate.	Restoration	0.1	-	-	Public		
St. Peter Claver Catholic School	Ramsey	The site consists of developed urban land beside I-94, including buildings, lawns, parking lot, and a playground.	Restoration	0.1	-	-	Private		
<b>Totals</b>				<b>0.4</b>	<b>0</b>	<b>-</b>			

## Restoration

**1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.**

All the potential parcels are on public land, except the potential Catholic school site.

**2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.**

Project planning will involve developing a list of maintenance tasks and parties responsible, which will be shared with all the parties. Throughout the project, RTC will regularly verify that the responsibilities are being met, and that the desired outcomes are being achieved. Long-term maintenance will be limited in scope, and plans will be made for it to be woven into routine Buildings and Grounds maintenance plans for the property as a whole.

**3. Describe how restoration efforts will utilize and follow the Board of Soil and Water Resources "Native Vegetation Establishment and Enhancement Guidelines" in order to ensure ecological integrity and pollinator enhancement.**

This restoration effort will use only native species, and will emphasize ecological integrity by planting the ensemble of the site specific native forest community, including canopy and understory species. In addition, we will consult the Board of Soil and Water Resources "Native Vegetation Establishment and Enhancement Guidelines," and other expert guidance provided by entities such as MN-DNR.

**4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.**

The long-term maintenance needs will be minimal since the restoration is expected to be self sustaining after 3 years of weeding and watering. This project invests significantly in community engagement and education, which will help ensure longevity due to community awareness and sense of investment in the mini-forests, and will install an interpretive sign to help future generations understand the value and significance of the restoration, and potential maintenance concerns (such as potential future buckthorn removal).

**5. Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.**

Large, inter-generational volunteer groups are perfect for mini-forest planting events, which involve planting hundreds of seedlings and mulching afterward. We will include Conservation Corps as in outreach for the planting event and volunteer stewardship events in Years 2 and 3.

**6. Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or elsewhere.**

RTC will complete evaluations of the restoration initially after the mini-forest is planted to verify that the individual trees were properly planted and that initial watering is sufficient, and that the site is adequately protected from rabbit predation and any other threats. Site evaluation will continue regularly throughout the project as part of the monthly volunteer maintenance program (weeding, tree growth measurement, and biodiversity monitoring.)

## Attachments

### Required Attachments

#### *Map*

File: [b708ffbc-859.pdf](#)

#### *Alternate Text for Map*

This map shows a St. Paul corridor of I-94 in the historic Rondo neighborhood. The schools where we hope to perform the restoration work are located along this corridor. RTC's first (2024) mini-forest at Pilgrim Baptist Church, and future (2025) one at Maxfield Elementary are here too....

#### *Financial Capacity*

Title	File
RTC 990	<a href="#">d3be171d-491.pdf</a>
RTC Business Filing	<a href="#">0b31291c-3ae.pdf</a>
RTC 2024 Audit Report	<a href="#">b004b013-f64.pdf</a>

#### *Board Resolution or Letter*

Title	File
Board Letter from RTC Board Chair	<a href="#">367ccabe-307.pdf</a>

### Supplemental Attachments

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

Title	File
Select media on mini-forests	<a href="#">b6796fa5-e87.pdf</a>
Letter of support from current collaborator (Trust for Public Land)	<a href="#">f59e0f04-270.pdf</a>

## Administrative Use

**Does your project include restoration or acquisition of land rights?**

Yes: Restoration,

**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?**

N/A

**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")?**

Yes

**Do you certify that background checks are performed for background check crimes, as defined in Minnesota Statutes, section 299C.61, Subd. 2, on all employees, contractors, and volunteers who have or may have access to a child to whom children's services are provided by your organization?**

Yes

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

Alexandria Harris (RTC), Claudia Nanninga (UMN Dept of Forest Resources)

**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