



Environment and Natural Resources Trust Fund

2024 Request for Proposal

General Information

Proposal ID: 2024-019

Proposal Title: Environmental Welfare through Sustainable Reuse in Iron Range

Project Manager Information

Name: Petrina Rhines

Organization: Birch Group

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Project Basic Information

Project Summary: Protect and preserve Minnesota's environment through sustainable reuse and workforce development initiatives, prioritizing environmental protection and natural resource conservation through socially responsible and sustainable building practices within the built environment.

Funds Requested: \$1,103,000

Proposed Project Completion: December 31, 2026

LCCMR Funding Category: Air Quality, Climate Change, and Renewable Energy (E)

Project Location

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

Region(s): Central, NE,

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

Region(s): NE, Central, Metro,

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.

St. Louis County has five transfer stations that accept demo or C&D waste, with the main facility in the Mesabi Iron Range. The Quad city areas of Virginia, Eveleth, Gilbert, and Mountain Iron collected 6,803 tons of C&D waste in 2022. However, three out of the five sites are expected to experience significant growth in waste volume due to demolition this year. Over the next three years, 80 homes are scheduled for demolition, with 40 of those homes located within a 3-block radius in the City of Virginia for a new police and fire station. This will send approximately 800 tons of C&D waste to landfills, generating methane gas that is 23 times more harmful than CO₂e, negatively affecting the environment and the community.

Demolishing structures generates waste which disperses lead-laden toxins and dust up to 400 feet from a job site, with effects lasting up to 30 years. The Mesabi Iron Range is well-known for its beautiful outdoors, recreation, and sensitive ecosystems. Therefore, the impact of C&D waste from demolition can cause soil contamination and water pollution with far-reaching consequences.

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.

To address this pressing issue, our proposal is to deconstruct 80 county-owned homes over the next three years, at a pace of two homes per month. By doing so, we can minimize greenhouse gas emissions and maximize the recovery of usable materials. On-site sorting of materials will be carried out, and these will be transported to our reuse store, which is the only store of its kind in Virginia, MN. Through this process, we can prevent almost 300 tons of building materials within 1.5 years, from being sent to the waste stream. This approach will also create sustainable climate careers, which will benefit the community and ensure a safe and healthy environment for people to live, work, and play in the Mesabi Iron Range area.

Our strategy relies on sustainable building practices and waste diversion efforts through deconstruction, with the goal of reducing the amount of C&D waste in the Mesabi Iron Range area by 9% by the summer of 2027. This initiative will divert around 600 tons of total waste and help to preserve the natural environment.

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?

Our sustainable practices will prevent the negative impacts of large-scale demolition in the Mesabi Iron Range area, minimizing the dispersion of lead-laden toxins, dust and reducing noise levels. Salvaging reusable building materials will reduce the need for new materials, while promoting eco-protection--safeguarding against soil contamination. Ultimately, our approach preserves the natural environment, while promoting a healthy place to live, work, and play while creating sustainable climate careers and economic opportunities. We'll reduce C&D waste by 9% in landfills, promoting a sustainable solution that benefits the community, environment, and economy of the Mesabi Iron Range area by 2026.

Activities and Milestones

Activity 1: Create environmental protection via deconstruction initiatives ultimately fostering workforce development and climate careers, while supporting the environment.

Activity Budget: \$880,500

Activity Description:

To identify waste reduction opportunities within the private and public sector of the construction industry and implement waste diversion efforts. Through these efforts, we aim to divert 600 tons of reusable building materials over 3 years through deconstruction of tax-forfeited properties and reclamation of C&D Waste from transfer sites primarily located in the Mesabi Iron Range Area. Our current partnerships with St. Louis County's Environmental Services division and Land & Minerals Department, will provide deconstruction opportunities which will provide job training programs towards climate careers. These workforce development efforts will assist in accomplishing our goals to deconstruct 54 homes from July 2024-December 2027.

To support our waste diversion initiatives, we will engaged NRRI's services to aid us in diverting materials from the waste stream. We aim to lower tipping fees and hauling cost for the County by \$642,000 resulting from C&D waste and breathe new life into building materials. Our collaboration with NRRI will involve strategy of logistics, collecting, managing, and transporting materials onsite while exploring creative approaches to repurposing lumber and other extracted building materials. Our primary objective is to reduce C&D waste across five transfer sites in the Mesabi Iron Range.

Activity Milestones:

Description	Approximate Completion Date
Reduce lead laden toxins and prevent health and environmental concerns	December 31, 2024
10% Growth rate for public/private sectors utilizing deconstruction services within the Mesabi Iron Range	December 31, 2025
9% Reduction of C&D waste going to St. Louis County Transfer Sites/Landfills.	December 31, 2026
Train 48 individuals as Deconstruction Specialists with Building Material Reuse Certifications	December 31, 2026
Promote and advocate deconstruction to the community-at-large and increase awareness by 25%	December 31, 2026

Activity 2: Maintain a Reuse Center in the Mesabi Iron Range area that provides salvaged/reusable building materials, job training and education.

Activity Budget: \$142,500

Activity Description:

We acquired a 12,000 SF Reuse Center in downtown Virginia, MN. It will be the only store and training facility in St. Louis County, providing the Mesabi Iron Range and the wider community with quality reusable building materials, including new windows and doors donated every two weeks and will be priced at 60% lower cost than new ones. We will also offer our salvaged goods at a 60% reduction to attract new consumers while retaining existing customers. The location will also serve as our primary hub for job training, workforce development, and reuse education. The Reuse Store will sell 80% of salvaged and reclaimed materials from waste diversion and deconstruction projects. We estimate 20% as donations and 15% from suppliers in Minneapolis, MN, transported every three months or as needed. The center will also offer ongoing training for Deconstruction Specialist, two-week Building Reuse Certification and makers space.

We expect wild popularity of the Reuse Center due to our latest survey of residents in the Mesabi Iron Range area. 95%

percent of the community stated they would definitely shop at the Reuse Store while the other 5% stated they would need to see the inventory first.

Activity Milestones:

Description	Approximate Completion Date
Provide a Reuse Center and resource for training and education on sustainable practices	July 31, 2024
Provide quality reusable building materials to the entire St Louis County	December 31, 2024

Activity 3: Research, test and develop a tool for measuring, managing and reporting social value and innovative ways to integrate

Activity Budget: \$80,000

Activity Description:

Our aim is to establish an online social value platform that enables the construction sector to monitor the advancement of social value objectives for projects, with a specific emphasis on deconstruction undertakings and waste diversion. By furnishing updates on a project's progress and outcomes, encompassing its effect on communities, economic and environmental factors, as well as its alignment with community demands and priorities, the social value portal will promote transparency and accountability. The platform will also gauge the social value of the project by identifying areas for improvement and disseminating best practices, such as optimizing employment opportunities and reducing waste.

To ensure the prosperity of the social value portal, we've partnered with the National Reuse Research Institute (NRRI) to conduct research and compile data on our material harvesting progress. NRRI will organize data in a user-friendly format, reporting on the progress of our material harvesting practices, while exploring and developing innovative tools for deployment on-site and in the Reuse center, elevating our deconstruction practices. Furthermore, we'll share the portal with counties and practitioners across the state and advocate for its use to identify potential areas for improvement while achieving sustainable business practices that align with environmental, economic, and societal objectives.

Activity Milestones:

Description	Approximate Completion Date
Research and develop user -friendly Social Value Portal for the construction industry and reuse sector.	December 31, 2026

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Victor Krause	UMD NRRRI	Assess transfer sites for safe harvesting of reusable building materials and explore on-site storage before transport to Reuse Center. Research innovative tools to prepare materials for reuse/sale, while collaborating to enhance deconstruction and material handling education/training. Assemble easily formatted data for reporting progress towards achieving sustainable development goals.	Yes

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?

The results of our sustainable business practices will be implemented through Environmental Impact Reports and an Environmental Social Governance Portal. This will entail identifying and salvaging valuable materials, safely handling hazardous materials, and how waste was disposed. Ongoing efforts will be funded through a combination of public/private sector partnerships, grants and our Virginia Reuse Store. The findings, results, and products developed will be shared with the wider community through public presentations, reports, and online resources. If additional work is needed, it will be funded through a combination of fundraising efforts and grant applications to government agencies and private foundations.

Project Manager and Organization Qualifications

Project Manager Name: Petrina Rhines

Job Title: Executive Director/Founder

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

Petrina Rhines has an impressive background in real estate development and sustainability. Her work in redeveloping homes that were scheduled for demolition shows her commitment to sustainability and reducing waste. Her education in real estate finance and carpentry apprenticeship further solidify her expertise in the field.

Her work as program director for the Steger Center for Sustainability, managing and maintaining a large acreage homestead and overseeing the construction of dove tail cabins, showcases her ability to manage complex projects and budgets.

Her experience as Deconstruction Business Manager for a non-profit organization highlights her ability to streamline workflow and improve business practices. And with the establishment of Birch Group and Scrapbox Salvage Co, she has continued to find innovative ways to reduce waste and promote sustainability. For example, she is now the hub for several door/window suppliers and has accepted their new surplus within her store which to date has diverted

As sitting Vice President for ReuseMN, and advocate for climate change, her speaking engagements at schools also demonstrate her commitment to educating others about sustainability and encouraging the next generation to make positive changes for the environment. Overall, Petrina Rhines is a dedicated and accomplished leader in the field of sustainable real estate development and reuse practices.

Organization: Birch Group

Organization Description:

Birch Group's ethos is deeply connected to the values associated with the birch tree, including renewal, rebirth, and restoration. Our purpose is to safeguard and protect our natural resources through revival and reinvigorating materials that have reached the end of their useful life, while also fostering a sustainable future for all. Through our work, we aim to promote environmental protection, revive communities, while creating sustainable job opportunities. As environmental ambassadors and advocates for climate change, we strive to inspire others to adopt sustainable business practices and integrate them into their DNA.

Birch Group, is committed towards a Green Mission, where we strive to make deconstruction the norm rather than an alternative in the construction industry--ultimately revolutionizing the concept of deconstruction. Our approach offers a sustainable, cost-effective alternative to traditional demolition that reduces waste and greenhouse gases while creating new job opportunities and contributing to preserving the natural beauty of Minnesota. The revenue generated from our deconstruction projects supports our workforce development programs, which aim to empower individuals by providing them with training and skills that increase their productivity and prosperity in the workplace. This, in turn, creates a positive impact on their communities, making a vibrant and prosperous society.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Deconstruction Manager		Project planning, site assessor and trainer.			10%	2.5		\$64,000
Reuse Store Manager		Managing day-to-day operations of Reuse Store.			7%	2		\$44,000
Crew Lead/Supervisor		Supervising work of crew members and quality control.			24%	6		\$144,000
Crew Member		Dismantles structures and its components to be reused or repurposed.			58%	18		\$348,000
							Sub Total	\$600,000
Contracts and Services								
St. Louis County	Professional or Technical Service Contract	To provide properties for deconstruction and opportunities for waste diversion reclamation at landfills/Transfer sites.				2.5		\$210,000
University of Minnesota - NRRRI	Sub award	Researching and develop a Social Value Portal and innovative tools for use on the job site and in the Reuse Center.				7.5		\$109,000
Birch Group, LLC. Petrina Rhines	Professional or Technical Service Contract	Petrina Rhines will serve as Project Manager				2.5		\$127,000
							Sub Total	\$446,000
Equipment, Tools, and Supplies								
	Equipment	Service Truck	Will be used to transport crew members and trailers to job site.					\$25,000
	Equipment	Trailers - (Quantity 2) 6x10 Cargo Trailers w/Light Duty Ramp, Rear Double Door and Side Door (1,500lbs Capacity)	Trailers will provide a secure, convenient, and cost-effective solution for transporting and storing tools and materials on construction job sites.					\$12,000

	Tools and Supplies	Basic Deconstruction Tool Kit	Hand tools, power tools, and specialized equipment such as scaffolding and (2) gas generators and PPE to perform duties of job.					\$15,000
							Sub Total	\$52,000
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Transport of building materials	Birch Group aims to offer mileage reimbursement for 10 trips involving the transportation of materials from our Minneapolis reuse store to our reuse center in Virginia.					\$3,000
							Sub Total	\$3,000
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
	Publication	Environmental Impact Reports (EIR)	Overall, EIRs are an important tool for ensuring that proposed projects are carried out in an environmentally responsible manner. They help to identify potential environmental impacts, suggest mitigation measures, and ensure compliance with environmental laws and regulations.					\$2,000
							Sub Total	\$2,000
Other Expenses								

							Sub Total	-
							Grand Total	\$1,103,000

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	-

Attachments

Required Attachments

Visual Component

File: [bd5782a8-883.pdf](#)

Alternate Text for Visual Component

The negative impact demolition has on our environment and why its so important to choose sustainable business practices like deconstruction....

Financial Capacity

File: [3c58c72d-8af.pdf](#)

Board Resolution or Letter

Title	File
BOARD RESOLUTION LETTER - BIRCH GROUP	87c60d4c-0f8.pdf

Optional Attachments

Support Letter, Photos, Media, Other

Title	File
UMD/NRRI - Support Letter	055bd3f0-90a.pdf
St Louis County - Support Letter	e7952589-103.pdf
MPCA - Support Letter	2650fce6-c1b.pdf
Hennepin County - Support Letter	7375a257-980.pdf
EON Ventures - Support Letter	5c16742e-c28.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

Yes

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

Yes

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF? If so, describe here:

Yes, Reinvestment of funds will support the research and advancement of the Environmental Economy Social Portal which measures the needs of the community and if they are being met through the sustainable business/building practices. Reinvestment of funds will also assist with furthering our mission towards workforce development and job training partnerships.

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 design, construction, or renovation of a building, trail, campground, or other capital asset costing \$10,000 or more?

Yes

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?

No

