



Environment and Natural Resources Trust Fund

2027 Request for Proposal

General Information

Proposal ID: 2027-378

Proposal Title: Tree Seed Procurement for Future Forests

Project Manager Information

Name: Ed Potter

Organization: MN DNR - Forestry Division

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Project Basic Information

Project Summary: Develop and train seed collectors, select forested stands for collecting improved seed collection, and establish a seed orchard for building future forest resiliency.

ENRTF Funds Requested: \$295,000

Proposed Project Completion: June 30, 2031

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?

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.

Increasing forest cover is a national priority and is part of both the Minnesota State Forest Action Plan and Minnesota Climate Action Framework. Current annual seedling sales from the state forest nursery are approximately 3.5 million with a goal of maintaining 10 million annually. Other than the state forest nursery, Minnesota has no large-scale conservation grade seeding producer for reforestation purposes. State seed collection relies almost solely on self-trained private collectors who sell seed to the state forest nursery. Collecting forest run seed is difficult and time consuming. The number of people collecting seed is diminishing. As nursery production ramps up seed inventories at the nursery are rapidly being depleted. Additionally, there is growing expectations that states will need to focus on resiliency and climate adaptation. A much more robust seed collection approach is needed to maintain state planting expectations on both public and private lands.

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 project involves 3 parts. 1) The University of Minnesota Extension will deliver seed collection curriculum and assist the DNR in extending a multi-species seed collection training program. This portion of the project will quickly broaden Minnesota's capacity to bring in new seed collectors. 2) The U of M Duluth Natural Resource Research Institute (NRRI) will assist the DNR in selecting and testing forested stands producing high quality seed and twig cuttings for grafting to develop a high-quality seed orchard at the DNR's General Andrews facility in Willow River. 3) The DNR will expand portions (approximately 30 acres) of the General Andrews Nursery as a seed orchard using the identified seed and cuttings. This combined approach will provide additional forest run seed collection early in the process and provide efficiency to seed collection for the long-term for sustained production. Collecting seed from orchards is much more efficient and cost effective.

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's training element will increase the state's ability to address the shortage of seed collectors to meet near-term nursery planting requirements. The addition of a research component for selecting quality reproduction stock will provide the ability to produce higher quality seed or both near-term nursery planting and long-term orchard development. Developing a multi-species orchard will assist in field training and provide an efficient environment for long-term seed production.

Activities and Milestones

Activity 1: Seed Collection Training

Activity Budget: \$19,039

Activity Description:

One hundred and fifty participants will be trained as collectors and an additional five DNR staff members who will function as ongoing trainers once the project is completed. Eight training sessions will be delivered over the duration of the project. Training will occur through online and in field exercises in three forested regions of the state. Course materials will be provided to the DNR for future use. The University of Minnesota Extension will also retain the training materials and curricula for future use once the project is completed.

Activity Milestones:

Description	Approximate Completion Date
Seed Collection Training, 8 sessions, 4 per year in years 1 and 2	June 30, 2029
Evaluation and Adjustment of Course Curriculum Materials as Needed	June 30, 2029
Deliver final course materials from Extension to DNR Forestry	June 30, 2029

Activity 2: Identify forest stands, collect, and test seed and cuttings from phenotypically superior trees

Activity Budget: \$44,785

Activity Description:

NRRI's Conservation of Biological Diversity Research Program, along with DNR Foresters, will identify forested stands with trees exhibiting high quality development and superior seed or cone production. Material collected will be tested for viability, survivability, growth and disease resistance. Selected seed and cuttings will be used in the nursery for direct seeding production and planting in the orchard for future research and development. The collection list will include spruce, pine, oak, maple and may include additional species identified as needed by the state forest nursery and silviculture programs. Trees will be selected from the northern and southeastern regions of the state. The primary outcome will be the development of a seed production orchard at the General Andrews facility designed to produce high quality seed to promote reforestation and assisted migration for carbon sequestration and storage and climate resiliency.

Activity Milestones:

Description	Approximate Completion Date
Seed and cutting testing	June 30, 2029
Delivery of all planting, grafting, testing results, and recommendations to the DNR.	June 30, 2029

Activity 3: Orchard Development and construction

Activity Budget: \$231,176

Activity Description:

Construct a seed orchard at the General Andrews site. Acquire supplies and materials required to establish approximately 30 acres of tree orchard. Materials include potting containers, soil mixtures, fertilizers, and planting tools. The DNR greenhouse located on site will be used for grafting scion material. Grafting requires the seed or cone producing sections or branches of trees to be adhered to older tree trunks to speed seed development and production. Once grafting is completed, viable trees are transferred into the orchard to develop. Seed sources will be documented

for each bed planting. Once the orchard is established it will typically take several years to produce harvestable seed. Maintenance of the orchard will require early irrigation, mowing, and periodic trimming. The anticipated results are a facility for producing multi-species quality seed for reforestation. Resulting seed is expected to produce improved high quality resilient future forests. The orchard will create a foundational structure for researching and monitoring to determine adaptive species and assisted forest migration in a changing environment.

Activity Milestones:

Description	Approximate Completion Date
Acquire orchard supplies and materials	February 28, 2028
Hire staff for grafting, planting, and orchard maintenance.	March 31, 2028
Production and planting of the first grafted stock	October 31, 2029
Completion of 30 acres of orchard planting	June 30, 2031

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Kira Pollack	University Of Minnesota Extension	Seed collection training and curriculum development. Activities include building seed collection course curriculum and materials to expand the state's native seed collection capacity. Work includes training the trainer by assisting state employees in delivering and critiquing initial trainings for future course improvements.	Yes
John Dupliss	University of Minnesota, Natural Resource Research Institute	Work with MN DNR staff to identify stands of phenotypically superior trees, collect seed and scion wood and evaluate collected samples for viability, survivability, growth and disease resistance. Selected seed will be used to develop nursery stock for reforestation and develop seed orchards for further seed production.	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.

A comprehensive report with findings and key recommendations from the stand selection and seed viability testing will be presented to stakeholders and partners at regularly scheduled leadership team and staff meetings, workshops and seminars to educate and inform land managers, natural resources managers, stakeholders, and the general public. The University of Minnesota Extension's Forestry Team is well positioned to continue the training and outreach through incorporation of their seed collection curriculum as part of an ongoing forestry program. Continual information and training can be disseminated through organizations like the Sustainable Forestry Education Cooperative to reach the broadest possible audience including but not limited to agency, habitat management, conservation and environmental NGOs and the general public. The project will produce DNR trainers within the agency to continue seed collection capacity into the future. Ongoing results from this project can be measured in both the quality and quantity of seed delivered to the nursery over time.

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 project is expected to be completed within 4 years. The training piece will be completed within the initial 2 years. The stand identification for collection and seed testing is expected may be completed within the first 2 years. The establishment of the grafting and orchard development will occur after seed and cutting testing may take some additional time to fully develop. As a result, an additional year is requested to complete this 3rd portion of the project.

Project Manager and Organization Qualifications

Project Manager Name: Ed Potter

Job Title: Project Consultant Sr.

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

Retired state managerial employee working in a Post Retirement Option until the Department of Natural Resources Forestry Division hires a permanent seed procurement consultant to manage this project. Past positions held, Natural Resource Section Mgr., Administrative Planning Dir., Planning Dir. State, Management Analyst, Research Analyst during a 30+ year career working in the Departments of Health, Labor and Industry, and Natural Resources. Most recent

experience as a project consultant include assisting the Division of Forestry tree nursery program with project development and nursery restructuring. Work includes preparing capital improvement proposals, developing federal grant requests and reporting, budget preparation and management, writing position descriptions, developing online seedling sales technology, and assistance in hiring. Prior DNR experience includes manager of the Forestry Division administrative and financial unit, the state forest nursery, and resource assessment programs.

Organization: MN DNR - Forestry Division

Organization Description:

The Department of Natural Resources Forestry Division is Minnesota's lead agency/division for the management of state-owned lands and wildfire prevention/suppression.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Labor Trades and Equipment		Seasonal position to graft and plant trees.			30%	2.4		\$187,871
							Sub Total	\$187,871
Contracts and Services								
University of Minnesota Extension	Subaward	Deliver training curriculum, training materials, and train 150 seed collectors and provide services for train the trainer of 5 DNR forestry employees.				0.12		\$19,039
University of Minnesota Natural Resources Research Institute	Subaward	Assist MN DNR staff to identify stands of phenotypically superior trees, collect seed and scion wood and evaluate collected samples for viability, survivability, growth and disease resistance.				0.22		\$44,785
							Sub Total	\$63,824
Equipment, Tools, and Supplies								
	Tools and Supplies	Three-gallon potting containers for grafting at \$1.75 each * 150 per acre * 30 Acres	Used for establishing grafting stock within the nursery					\$7,875
	Tools and Supplies	Soil for grafted potted trees in the greenhouse	Used to provide growing medium for grafted trees					\$4,500
	Tools and Supplies	Fertilizer for grafted potted trees in the greenhouse	Provide nutrients to establish potted grafted trees in the greenhouse					\$2,496
							Sub Total	\$14,871
Capital Equipment								
							Sub Total	-
Acquisitions and Stewardship								

							Sub Total	-
Travel In Minnesota								
							Sub Total	-
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
		MN DNR Direct and Necessary	DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated projects. People Support (~\$5,822), Safety Support (~\$763), Financial Support (~\$2,438), Communication Support (~\$2,086), IT Support (~\$15,782), and Planning Support (~\$1,543).					\$28,434
							Sub Total	\$28,434
							Grand Total	\$295,000

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: \$295,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [e83c443f-af0.pdf](#)

Alternate Text for Visual Component

Graphic provides an aerial view of the of the 226-acre General Andrews complex. It shows approximately 45 planting fields separated by windrows and access roads. There are two sections with buildings. one area has the office, shop and greenhouse. The other shows the cold storage/packing/shipping house and storage....

Supplemental Attachments

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

Title	File
U of M Regents Approval Letter	617ae7d2-0b9.pdf
DNR Supplemental Budget	ebefce6c-d7c.pdf
U of M Extension Supplemental Budget	d0062503-5e8.pdf
Nature Resources Research Institute Supplemental Budget	12ee4edf-8b7.pdf
General Andrews Complex	58c2fec2-206.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?

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?

No

Does the organization have a fiscal agent for this project?

Yes

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:

Patty Thielen, Director, DNR Division of Forestry; Doug Tillma, DNR Forestry Strategic Planning and Policy Section Manager; Sarah Ebert, Supervisor, DNR State Forest Nursery; Kira Pollack, U of M Extension Educator; John Dupliss, U of M Natural Resource Research Institute, Silviculture Research Lead.

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