



Environment and Natural Resources Trust Fund

2022 Request for Proposal

General Information

Proposal ID: 2022-225

Proposal Title: Native Plant Community Data in City of Duluth

Project Manager Information

Name: Virginia Breidenbach

Organization: Minnesota Land Trust

Office Telephone: (218) 221-7033

Email: gbreidenbach@mnland.org

Project Basic Information

Project Summary: Develop Native Plant Community data and maps for the City of Duluth and St. Louis River estuary to support conservation and restoration activities.

Funds Requested: \$198,000

Proposed Project Completion: December 31 2023

LCCMR Funding Category: Small Projects (H)

Secondary Category: Foundational Natural Resource Data and Information (A)

Project Location

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

Region(s): NE

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

Region(s): NE

When will the work impact occur?

In the Future

Narrative

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

MLT uses Native Plant Community (NPC) data as a foundational component of our habitat restoration and protection efforts statewide. DNR Minnesota Biological Survey (MBS) has systematically surveyed natural habitats across the state, using NPC classifications to help understand the ecology, condition, and distribution of natural communities. This vegetation classification system provides a wealth of information on Minnesota's natural heritage including the presence/absence of NPCs, condition of communities present, and the rarity of those communities across the state. In addition, NPCs provide restoration targets for areas impacted by invasive species infestations or anthropogenically altered natural areas. MLT has been working with the City of Duluth Natural Resources Coordinator for the past three years to develop and expand the City's natural resources program and is co-managing development of the city's first Natural Resources Management Program Plan (NRMPP), being developed under a Great Lakes Restoration Initiative Grant. Work to permanently protect lands of high ecological integrity along the St. Louis River corridor highlighted the importance of NPC data within the city's program. As a result, the city has recently adopted NPCs as a foundational component of its program. Approximately 5,000 acres within the City have NPC classifications; this project would classify 10,000 acres.

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

NPC data will be developed for approximately 10,000 acres of open space within the city of Duluth using geospatial analysis and field verification. The information will be incorporated into Duluth's natural resources program and will assist in: identifying areas of high ecological integrity that should be protected; identifying areas impacted by invasive species or other anthropogenic activities that should be restored; and setting restoration targets for impacted areas. SEH was contracted by MLT through a competitive bidding process to complete NPC classifications for 1,200 acres along the St. Louis River in 2018. SEH is currently under contract with the City for a pilot project to further develop protocols for NPC classification with geospatial methods and field verification. SEH's experience and knowledge with MLT and the City of Duluth is vital to this data collection effort to set target goals for the assessed lands.

MLT is currently working with the City to complete restoration of forest and wetland habitats with a focus on avian use through funding from the Great Lakes Restoration Initiative and the Minnesota Outdoor Heritage Fund. Data developed in this effort will directly support planned restoration work in addition to the needs described above.

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?

Project outcomes include a field-verified GIS database containing information on the following:

- Identification of priority conservation targets, including high-quality native plant communities for preservation
- Detailed maps with severity and extent of invasive plants for prioritizing control activities
- Science-based restoration target, achievable under current conditions based on historical NPCs.
- Documentation of plant community condition in relation to important stream and riparian habitat, with associated restoration benefits to water quality and fisheries.

Activities and Milestones

Activity 1: Develop Native Plant Community GIS Database

Activity Budget: \$198,000

Activity Description:

This activity will classify NPCs using GIS remote sensing and existing data resources including LiDAR, DEMs, and multiple years of color and infrared imagery. Outcomes of the mapping will be high level NPC classifications for plant communities larger than one (1) acre in size within the study area. Mapping will also include a general classification of non-NPC areas, such as “non-native plant community,” “disturbed,” or “developed area.”

Deliverables are:

- GIS layers including NPC extent and classification, as well as suggested field sampling locations.
- Maps of NPC extent and location.
- Report describing approach, methods, and results of NPC classifications. Preliminary data would also include suggestions for field verification locations.

Refined NPC classifications and condition ranks (i.e., quantification of ecological integrity) require field verification. Field verification consists of plot and/or transect based data collection at targeted locations, with vegetation data, representative photographs, and qualitative notes on observed threats/stressors. Field verification would be planned to follow completion of initial GIS mapping. MLT will coordinate with SEH and the City of Duluth Natural Resources Coordinator to accomplish the work to ensure both MLT and the City’s data needs are met with this effort.

Activity Milestones:

Description	Completion Date
Initial GIS mapping	March 31 2023
Field verification and data collection	July 31 2023
Refined GIS mapping	November 30 2023

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Gini Breidenbach, PE	Minnesota Land Trust	Project Manager – project and grant management; coordination amongst partners	Yes
Daryl Peterson	Minnesota Land Trust	Project Oversight – ensure MLT’s data needs for restoration efforts are met	Yes
Allyz Kramer, PWS, CMWP	Short Elliot Hendrickson, Inc.	QA/QC Manager – review SEH data submittals for accuracy and conformance with project goals; DNR approved botanical surveyor	Yes
Natalie White, PWS, CMWP	Short Elliot Hendrickson, Inc.	NPC Mapping Manager – SEH team lead for GIS mapping and field verification; DNR approved botanical surveyor	Yes
Diane Desotelle	City of Duluth	City Natural Resources Coordinator – coordination with MLT and SEH to ensure data needs for the City’s program are met	No

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 be funded?

GIS geodatabase will be maintained by the City of Duluth. Land protection and restoration activities prioritized as a result of this effort will be funded by the City of Duluth or its partners through a combination of funding sources, including city natural resources program funds and state and federal grant sources.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Metro Conservation Corridors Phase VIII - Coordination and Mapping and Conservation Easements	M.L. 2015, Chp. 76, Sec. 2, Subd. 09e	\$515,000
Conservation Easements in the Avon Hills - Phase III	M.L. 2016, Chp. 186, Sec. 2, Subd. 09c	\$1,300,000
Preserving the Avon Hills with Reverse-Bidding Easements	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 09j	\$1,600,000

Project Manager and Organization Qualifications

Project Manager Name: Virginia Breidenbach

Job Title: Restoration Program Manager

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

Gini Breidenbach is an engineer with over 20 years of experience in water resources, habitat assessment, and restoration. She has been working on planning and restoration efforts in the St. Louis River since 2010. Gini is currently managing habitat restoration for a colony Common Terns on Interstate Island in the estuary, co-managing development of the City of Duluth’s first Natural Resources Management Program Plan, and leading the bi-state Lower St. Louis River Landscape Conservation Design Project to support collaborative conservation planning in the estuary. Gini recently managed a project to develop nominations and management plans for the St. Louis River and Hartley Natural Areas under the city of Duluth’s Natural Area Program. Both natural areas received city council approval, resulting in approximately 1,800 acres of lands designated for permanent protection within the city. For this effort, Gini managed a

contract with SEH, Inc. to develop native plant community data and complete sensitive plant surveys for the St. Louis River Natural Area. She is experienced in the use of geospatial data for prioritizing conservation actions. In addition, she is experienced in presentation of complex data for community outreach. Gini has a B.S. and M.S. in Civil and Environmental Engineering from Michigan Technological University, a professional certificate in watershed management from Michigan State University and is a registered professional engineer in Minnesota.

Organization: Minnesota Land Trust

Organization Description:

Minnesota Land Trust (MLT) is an accredited 501(c)(3) non-governmental organization that preserves Minnesota's natural and scenic heritage through public and private partnerships. MLT works to protect and enhance Minnesota's threatened lands and waters by providing agencies, communities, and organizations with assistance in planning and delivering on-the-ground conservation in order to expand the State's overall capacity. The Land Trust plays a crucial role in St. Louis River recovery by developing and implementing priority aquatic and terrestrial restoration projects with local, state, tribal, and federal agencies. MTL has been assisting the City of Duluth with its conservation planning, recreational access, and natural resources program needs for over 10 years.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Gini Breidenbach		Project Manager			18%	0.3		\$28,500
Daryl Peterson		Project oversight			18%	0.04		\$6,300
MLT Admin		Grant administration activities			18%	0.04		\$3,200
							Sub Total	\$38,000
Contracts and Services								
Short Elliot Hendrickson, Inc.	Sub award	Native Plant Community GIS mapping and follow-up field verification and condition assessment: Classify plant communities for incorporation into Duluth's natural resources management program to inform management planning and priorities				0		\$160,000
							Sub Total	\$160,000
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
							Sub Total	-

Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$198,000

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				
Cash	Lessard-Sams Outdoor Heritage Council FY2022 Recommended appropriation (ML 2021, Ch. XX, Art. 1, Sec. 2, subd.)	Restoration of 100 acres of forest and 25 acres of wetland habitat for birds	Pending	\$565,400
			State Sub Total	\$565,400
Non-State				
Cash	U.S. EPA Great Lakes Restoration Initiative awarded to City of Duluth with MLT as a subawardee	Development of city of Duluth Natural Resources Program Plan; restoration of 30 acres of forest habitat for birds; acquisition of tax- forfeit parcels along the St. Louis River corridor	Secured	\$900,000
			Non State Sub Total	\$900,000
			Funds Total	\$1,465,400

Attachments

Required Attachments

Visual Component

File: [6435f481-409.pdf](#)

Alternate Text for Visual Component

The visual is a map of northern Minnesota showing the municipal boundary of the city of Duluth outlined in red. The map shows that the city of Duluth is bordered by Lake Superior on the southeast and the St. Louis River on the southwest. A small locator map is in the lower left corner showing the location of the city of Duluth within the State of Minnesota with a red dot. The dot is located on the east side of the state on the western tip of Lake Superior....

Financial Capacity

File: [ea1eaedb-f87.pdf](#)

Board Resolution or Letter

Title	File
Minnesota Land Trust Board Resolution	23c4a10e-d13.pdf

Optional Attachments

Support Letter or Other

Title	File
City of Duluth Letter of Support	fc915d20-2a6.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?

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

Legend

 Duluth City Boundary

0 2.5 5
Miles



NPC mapping to occur within naturally vegetated and/or open space areas with City limits.

Path: X:\AED\IDULUT115904115-final.dgn\151-drawings\90-GIS\ExplorePro\ExplorePro.aprx



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Project: DULUT 155781
Print Date: 4/1/2021

Map by: btolcser
Projection: NAD 83 UTM 15N
Source: MNDNR, City of Duluth, SEH
Background: ESRI Basemap

NPC MAPPING PROJECT AREA

MN Land Trust NPC Project
Duluth, Minnesota

Figure
1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

