

**Environment and Natural Resources Trust Fund**

# 2022 Request for Proposal

## **General Information**

**Proposal ID:** 2022-119

**Proposal Title:** Mapping Construction Resources for Recreation and Transportation Infrastructure

## **Project Manager Information**

**Name:** Heather Arends

**Organization:** MN DNR - Lands and Minerals Division

**Office Telephone:** (651) 219-1808

**Email:** heather.arends@state.mn.us

## **Project Basic Information**

**Project Summary:** To sustainably manage resources needed for publicly-funded transportation and recreation projects, DNR will provide St. Louis County with aggregate maps to inform decisions on land use and natural resource conservation.

**Funds Requested:** $776,000

**Proposed Project Completion:** June 30 2025

**LCCMR Funding 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?** During the Project and In the Future

## **Narrative**

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

Minnesota’s transportation and recreation infrastructure relies on the availability of local aggregate resources. Since 1991, ENRTF funded at least 1,000 miles of new and reconstructed trails, 28 bridges, 2 interpretive centers, and 12 new water access sites. ENRTF projects restoring shorelines, producing clean energies, and making the outdoors ADA compliant all rely on the availability of aggregate resources.  
  
The delivered price of aggregate doubles at approximately 23 miles. Aggregates for some projects travel more than twice this distance because local resources are depleted or unknown. Aggregate availability in many areas of the state, including the North Shore, is limited due to natural geological scarcity. These issues not only increase the cost of publicly funded projects, but also increase the project's carbon footprint.   
  
St. Louis County is working to balance a limited supply of quality aggregate with a growing need for road and bridge maintenance, septic system installation, and outdoor recreation development. In the last three years, St. Louis County invested nearly $10 Million in trail projects from grants, bonding requests, recent awards, and local matches. As demand for aggregate continues to grow, an aggregate map is needed to better protect and conserve ecological, recreational, and economic resources.

**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.**

Similar to how groundwater maps inform decisions about sustainable water use, aggregate resource maps inform decisions about the impacts of developing, or not developing, a potential resource. In this proposal, the DNR’s Aggregate Resource Mapping Program (ARMP) will identify and characterize aggregate resources in St. Louis County, and make this information widely available so that all users of aggregates are better equipped to protect, conserve, preserve, and enhance the state’s natural resources. The St. Louis County Board of Commissioners passed a resolution requesting this work in 2004, and the waitlist for aggregate mapping has grown to 18 counties who also passed similar resolution.  
  
The Minnesota legislature directs (Minn. Stat. §84.94) the DNR to provide aggregate resource information to local governments. This proposal is also consistent with the final recommendations of the 2017 Aggregate Resources Task Force to fund ARMP, so that maps can be available statewide. ARMP uses a combination of remote sensing interpretation, geologic fieldwork, and GIS analysis to inventory aggregate resources and reclamation. Aggregate maps and associated GIS data can be layered with other natural resource layers to inform decisions on resource conservation and protection, infrastructure projects, sustainable community development, and land asset management.

**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?**

This proposal will produce technical, yet easy to understand, aggregate maps showing the distribution and quality of sand and gravel and crushed stone resources compiled at a 1:50,000 scale. Associated GIS datasets include spatial database of aggregate resource potential, field observations, and an inventory of all current and historical gravel mines, noting the status of reclamation. This information provides all stakeholders detailed information that can be layered with other natural resource data. For this reason, the Minnesota Association of County Planners and Zoning Administrator’s 2020 Legislative platform supports statewide aggregate resource mapping.

## **Activities and Milestones**

### **Activity 1: Map the aggregate resources of St. Louis County.**

**Activity Budget:** $776,000

**Activity Description:**Aggregate resource mapping works in coordination with the Minnesota Geologic Survey and MN Department of Natural Resources. DNR geologists compile existing information on the geology of the county. DNR geologists will conduct an initial assessment of aggregate potential through analysis of glacial landform-sediment associations. Geologists will then conduct remote surveys as well as fieldwork to inventory the activity and reclamation status of all gravel mines. Field observations will also be collected and entered into a database. Final inventory of aggregate potential will be completed using GIS.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Compile existing geology, soils, wells, aggregate quality data | December 31 2022 |
| Digitize draft lines and mapping units within the county. | June 30 2024 |
| Conduct fieldwork, collect filed observations, inventory active, inactive, and reclaimed aggregate mines. | November 30 2024 |
| Complete and publish aggregate resource maps for St. Louis County, host a workshop. | June 30 2025 |

## **Project Partners and Collaborators**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Organization** | **Role** | **Receiving Funds** |
| Julie Marinucci | St. Louis County | Deputy Director of the St. Louis County Department of Lands and Minerals. | 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?**The results of the project will be available on the DNR website. St. Louis County will have a dedicated page where the public can access this information in four ways: by requesting a paper copy of the maps, downloading a PDF of the maps, downloading GIS databases, and viewing GIS data on a web map server. The DNR will host a workshop for St. Louis County to review results and information. No additional funding or work is anticipated once the project is completed.

## **Other ENRTF Appropriations Awarded in the Last Six Years**

|  |  |  |
| --- | --- | --- |
| **Name** | **Appropriation** | **Amount Awarded** |
| Accelerated Aggregate Resource Mapping | M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 03h | $700,000 |

## **Project Manager and Organization Qualifications**

**Project Manager Name:** Heather Arends

**Job Title:** Mineral Potential Section Manager

**Provide description of the project manager’s qualifications to manage the proposed project.**Heather has worked for the DNR for 20 years as an industrial minerals geologist, supervisor, and now section manager that oversees the stewardship of the state's 12 million acre mineral estate. Heather has a degree in geology from the University of Minnesota, Morris and is working on a M.S. of Geological Sciences from the University of Minnesota, Duluth.

**Organization:** MN DNR - Lands and Minerals Division

**Organization Description:**The mission of the Minnesota Department of Natural Resources (DNR) is to work with Minnesotans to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

## **Budget Summary**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category / Name** | **Subcategory or Type** | **Description** | **Purpose** | **Gen. Ineli gible** | **% Bene fits** | **# FTE** | **Class ified Staff?** | **$ Amount** |
| **Personnel** |  |  |  |  |  |  |  |  |
| Research Scientist 2 |  | Geologist |  |  | 20% | 3 |  | $287,899 |
| Research Scientist 2 |  | Geologist |  |  | 20% | 3 |  | $262,174 |
| Program Coordinator |  | Project Lead Worker |  |  | 20% | 0.9 |  | $103,480 |
| Technician |  | Field Assistant |  |  | 20% | 0.5 |  | $24,296 |
|  |  |  |  |  |  |  | **Sub Total** | **$677,849** |
| **Contracts and Services** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Equipment, Tools, and Supplies** |  |  |  |  |  |  |  |  |
|  | Equipment | drilling equipment, hand augers | Field work related expenditures |  |  |  |  | $1,000 |
|  | Tools and Supplies | field gear, sample bags, safety gear and boots, notebooks for 4 staff | Supplies to conduct fieldwork |  |  |  |  | $2,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$3,000** |
| **Capital Expenditures** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Acquisitions and Stewardship** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel In Minnesota** |  |  |  |  |  |  |  |  |
|  | Miles/ Meals/ Lodging | 12 weeks of lodging, mileage, food for 4 people | Field work for geologic mapping and training, |  |  |  |  | $42,680 |
|  |  |  |  |  |  |  | **Sub Total** | **$42,680** |
| **Travel Outside Minnesota** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Printing and Publication** |  |  |  |  |  |  |  |  |
|  | Printing | Paper, ink, labels | Printing maps for distribution |  |  |  |  | $500 |
|  |  |  |  |  |  |  | **Sub Total** | **$500** |
| **Other Expenses** |  |  |  |  |  |  |  |  |
|  |  | Direct and Necessary Costs | HR support, IT support, fiscal support, communication support, planning support |  |  |  |  | $51,971 |
|  |  |  |  |  |  |  | **Sub Total** | **$51,971** |
|  |  |  |  |  |  |  | **Grand Total** | **$776,000** |

### **Classified Staff or Generally Ineligible Expenses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **Amount** |
| **State** |  |  |  |  |
| In-Kind | General Fund | Supplement training budget and out of state travel, salaries of permanent staff | Pending | $100,000 |
|  |  |  | **State Sub Total** | **$100,000** |
| **Non-State** |  |  |  |  |
| In-Kind | St. Louis County will provide in-kind services to test aggregate texture and quality | Laboratory analysis | Pending | $18,000 |
|  |  |  | **Non State Sub Total** | **$18,000** |
|  |  |  | **Funds Total** | **$118,000** |

## **Attachments**

### **Required Attachments**

#### ***Visual Component***

File: [a3540e20-dd6.pdf](https://lccmrprojectmgmt.leg.mn/media/map/a3540e20-dd6.pdf)

#### ***Alternate Text for Visual Component***

Status map of completed, in progress, and requested counties. Three quotes of support Harvey Thorleifson, Director of the Minnesota Geological Survey, Beth Pierce, Norther St. Louis County Trails task Force, and Nancy Daubenberger, Deputy Commissioner of the Department of Transportation....

## **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