Environment and Natural Resources Trust Fund

M.L. 2022 Approved Work Plan

General Information

ID Number: 2022-295

Staff Lead: Michael Varien

Date this document submitted to LCCMR: July 21, 2022

Project Title: Aggregate Resource Mapping

Project Budget: $500,000

Project Manager Information

Name: Heather Arends

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Project Reporting

Date Work Plan Approved by LCCMR: August 17, 2022

Reporting Schedule: March 1 / September 1 of each year.

Project Completion: June 30, 2025

Final Report Due Date: August 14, 2025

Legal Information

Legal Citation: M.L. 2022, Chp. 94, Sec. 2, Subd. 10a

Appropriation Language: $500,000 the second year is from the trust fund to the commissioner of natural resources for continued mapping of the aggregate resource potential in the state of Minnesota and to make the information available in print and electronic format to local units of government for use in planning and zoning.

Appropriation End Date: June 30, 2025

Narrative

Project Summary: DNR aggregate resources maps/datasets provide vital information to local governments to support informed land-use decisions and natural resource management. This proposal will complete and start projects for 2-3 counties.

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

The Minnesota Legislature passed Statute 84.94 directing the DNR to map aggregate resources for local governments. Aggregate is a term for sand and gravel as well as crushed stone resources. Aggregates are not evenly distributed across the state or within a county. As a result, some of Minnesota's counties face natural scarcity issues and are in dire need for information about the distribution of quality construction aggregate.

Approximately 50% of aggregates produced in MN supply publicly-funded projects. Access to local resources reduces the cost of construction for taxpayers as well as lower the carbon footprint of construction projects, both are vital in sustaining resilient communities. Therefore, the purpose of MS 84.94 is to ensure the orderly and environmentally sound development of aggregate resources and to give local governments information to make sound land use decisions. The passing of the Bipartisan Infrastructure Law in late 2021, the largest long-term investment in our infrastructure and economy in the Nation's history, will put local governments at the forefront of protecting the environment as well as spreading the burden of supplying the resources needed to repair our aging infrastructure.

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.

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 to produce final maps and dataset, as well as compile information for 2-3 counties. Final datasets will be widely available so that all stakeholders are better informed to protect, conserve, preserve, and enhance the state's natural resources. County Board of Commissioners of all counties on the ARMP waitlist have passed a resolution requesting this work. Despite the waitlist, nine counties have requested this work in the past three years.

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, and sustainable community development.

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 resource 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 2022 Legislative platform supports statewide, accelerated aggregate resource mapping.

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?

In the Future

Activities and Milestones

Activity 1: Aggregate Resource Mapping

Activity Budget: $500,000

Activity Description:
DNR geologists use county-scale geologic mapping techniques to identify sand, gravel, and crushed stone resources and characterize their relative quality. This information is foundational to natural resource stewardship and used by local governments and the public. The aggregate mapping process includes:

1. Compiling and evaluating gravel pit data, historic geologic information, GIS datasets, and remotely sensed layers (e.g. LiDAR).
2. Conducting fieldwork to describe and analyze deposits, survey gravel pits and bedrock quarries, and collect geologic observations.
3. Drafting aggregate resource potential maps based on office and field-based data, facilitating technical peer review, and gathering public comment.
4. Publishing county-specific data products including free GIS data packages, countywide PDF maps, and interactive aggregate map services.
5. Co-Sponsoring a workshop with local partners to educate users how to apply project data to local resource stewardship, while continuing to provide ongoing technical support.

DNR's Aggregate Resource Mapping Program coordinates with Minnesota Geologic Survey and Minnesota Department of Transportation, as well as local partners, to produce geologically accurate and publicly accessible maps and information.

Activity Milestones:

Description	Approximate Completion Date
Compile data for 2-3 counties	March 31, 2023
Conduct fieldwork, collect field observations, inventory active, inactive, and reclaimed pits/quarries, and collect samples.	November 30, 2024
Digitize draft lines and mapping units within mapped counties.	March 31, 2025
Complete and publish aggregate resource maps for 2-3 counties.	June 30, 2025

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
MN Counties	MN Counties	County staff assist with the dissemination of materials upon the completion of an aggregate map, coordinate updates with the County Commissioner Board, and have obligations under MS 84.94 to include aggregate resources in comprehensive planning.	No
Minnesota Department of Transportation	Minnesota Department of Transportation (Mn/DOT)	The MnDOT is identified in MS 84.94 as cooperative agency. DNR works with MnDOT to obtain information about aggregate pits and quality data.	No
Minnesota Geological Survey	Minnesota Geological Survey (MGS)	MGS is listed as a cooperative agency within MS 84.94. DNR works with MGS to obtain the most recent geologic information to derive aggregate resource potential.	No

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.
Every aggregate map is produced in portable document format (PDF), an interactive web map, as geographic information system files (GIS), and in printed form. The digital files are available to download from the Department of Natural Resources as well as the Minnesota Geospatial Commons. Each completed county as its own webpage that links to the above mentioned formats of dissemination: https://www.dnr.state.mn.us/lands_minerals/aggregate_maps/index.html. Each project culminates in a workshop hosted by the DNR for county staff, and any other interested parties; and a presentation to the county commissioners at a regularly scheduled board meeting. At these workshops, the products are described, access to the products is explained, and examples of applications of the products to common resource management situations are demonstrated. Printed copies are shared with the county, who in turn can distribute them to libraries, schools, townships, and other agencies. Any member of the public may request a map, free of charge.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENRTF Acknowledgement Guidelines.

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?
Project results and associated data are published in portable document format, interactive web map, GIS files, and print. Digital files are available for download on DNR's website and Minnesota Geospatial Commons. Any member of the public may request a map, free of charge.

DNR will co-sponsor an aggregate workshop with completed counties so that staff and any other interested parties, can learn how to apply project data to local resource stewardship. DNR will also present all final products to County Commissioners. After the final data release, no additional funding is required.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Geologist 1		Project Geologist			28%	0.75	X	$78,000
Geologist 2		Project Geologist			28%	3	X	$278,500
GIS Specialist		Cartographer			28%	0.75		$75,000
							Sub Total	**$431,500**
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Equipment	Field equipment such as augers, shovels, safety equipment and related services.	Equipment needed to conduct geologic fieldwork.					$3,500
	Tools and Supplies	Supplies includes paper, ink for printing maps, fieldnote books, field clothing and boots.	Supplies for printing of maps, conducting fieldwork.					$2,500
							Sub Total	**$6,000**
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Lodging, meals, mileage for 200 days	Travel expenses for MN travel related to field survey in Acitivies 1 & 2. Travel expenses are subject to State of MN labor agreements and DNR policy. Most travel expenses are related to the 4-6 months of time when staff are conducting field work that requires					$29,643

			food, transportation in seasonal DNR fleet vehicles, and lodging.					
							Sub Total	**$29,643**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								
		Direct and Necessary Cost	To support DNR internal services associated with projects					$32,857
							Sub Total	**$32,857**
							Grand Total	**$500,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Personnel - Geologist 1		Project Geologist	**Classified :** This is a request to fund a classified position. The geologist has reached the limit, as specified by union contract, to be a temporary unclassified employee. Displaced work will be distributed to other staff.
Personnel - Geologist 2		Project Geologist	**Classified :** This is a request to fund a classified position. This position plays multiple roles within LAM and works on several projects, including Aggregate Mapping. Work can be absorbed by imbedded MNIT staff.

Non ENRTF Funds

Category	Specific Source	Use	Status	$ Amount
State				
In-Kind	General Fund	Supplemental funds for expenses not covered by LCCMR	Pending	$15,000
In-Kind	General Fund	Employee salary for .75 FTE for 3 years for a total of 2.25 FTEs	Pending	$240,000
			State Sub Total	**$255,000**
Non-State				
			Non State Sub Total	**-**
			Funds Total	**$255,000**

Attachments

Required Attachments

Visual Component

File: c023a043-cfc.pdf

Alternate Text for Visual Component

Status map of the DNR Aggregate Resource Mapping Program showing completed, in progress, and requested counties....

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

No changes from proposal to workplan stage.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you agree travel expenses must follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I agree to the Commissioner's Plan.

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?

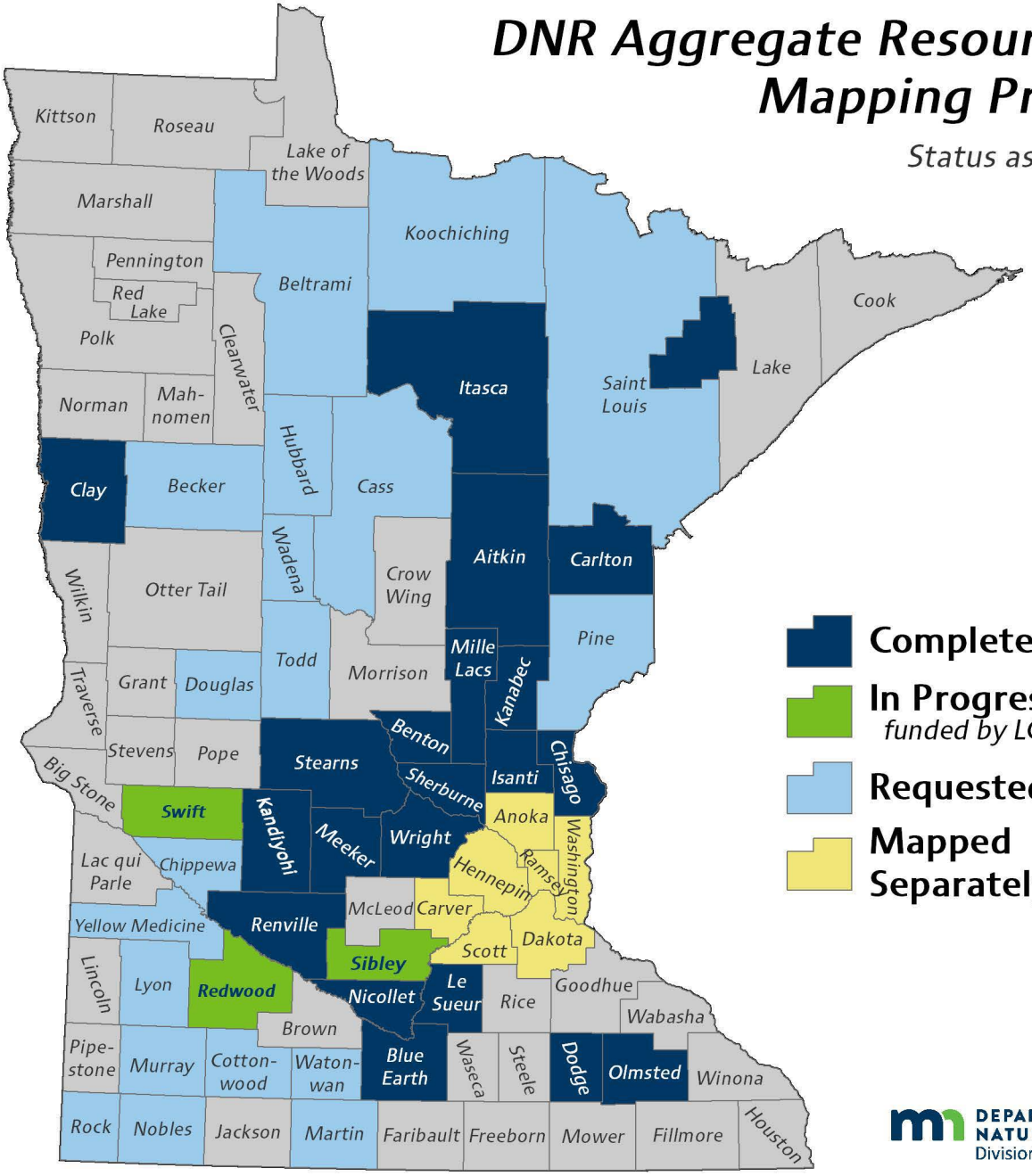
No

Does the organization have a fiscal agent for this project?

No

DNR Aggregate Resource Mapping Program

Status as of July 2022



Completed

In Progress
funded by LCCMR

Requested

Mapped Separately

DEPARTMENT OF NATURAL RESOURCES
Division of Lands and Minerals