Environment and Natural Resources Trust Fund

M.L. 2021 Approved Work Plan

General Information

ID Number: 2021-118

Staff Lead: Michael Varien

Date this document submitted to LCCMR: July 21, 2021

Project Title: Groundwater Contamination Mapping Project - Phase II

Project Budget: $800,000

Project Manager Information

Name: Myrna Halbach

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Project Reporting

Date Work Plan Approved by LCCMR: July 20, 2021

Reporting Schedule: December 1 / June 1 of each year.

Project Completion: April 30, 2024

Final Report Due Date: June 14, 2024

Legal Information

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 03f

Appropriation Language: $800,000 the first year is from the trust fund to the commissioner of the Pollution Control Agency to improve protection of groundwater resources for drinking water by expanding the web-based interactive groundwater contamination mapping system to include all other state hazardous and solid waste cleanup programs and by upgrading the system to collect monitoring data.

Appropriation End Date: June 30, 2024

Narrative

Project Summary: The project is a continuation of the efforts begun with the 2017 ENRTF-funded Groundwater Contamination Mapping Project. The 2017 ENRTF funded project will be completed June 30, 2020.

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

The 2017 ENRTF-funded project focused on 93 superfund sites. This project will extend that work to other programs, upgrade the agency's foundational groundwater data access system; and develop an online portal to receive monitoring data.

The 2017 ENRTF-funded project provided great insight for how the MPCA should approach a more complete effort in communicating about Superfund sites and their impacts to groundwater. Additionally, the MPCA discovered the importance of obtaining monitoring data electronically, standardizing location identification in the field for timely monitoring, and an approach for use with all clean-up sites. The MPCA believes the process used for Superfund sites will have similar value for other remediation, solid waste and hazardous waste sites.

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.

The MPCA intends to complete the mapping effort for all clean-up programs, solid waste and hazardous waste sites and upgrading the data systems that support monitoring data. The 2021 Project will close the existing data accessibility gap for anyone involved in groundwater use and regulation in Minnesota. The 2021 Project will ensure the map site stories are available from the groundwater data page, and the groundwater data is available from the site story page (developed in the 2017 project). To be truly accessible, an interested person must be able to smoothly transition between the site story communication map and the data behind it, as well as the inverse.

The 2021 project will compile data from thousands of project files in the solid waste, closed landfill, site assessment, RCRA, petroleum remediation, integrated remediation, brownfield and related programs. A team of temporary employees will be hired to complete the data collection project.

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?

For the 2021 project, the MPCA intends to develop an electronic data portal to collect groundwater monitoring data; making it more accessible to the public and staff.

Additionally, the 2021 project would upgrade the external data system storing groundwater data for those needing to look at data from a statewide perspective, by chemical, aquifer, or other means. The MPCA believes the system will be extensible to other state agencies in the future as we do share the monitoring database.

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

Activities and Milestones

Activity 1: Create on-line electronic data portal

Activity Budget: $220,000

Activity Description:

An on-line electronic data portal will be built to collect groundwater monitoring data (both historic and current data). The portal will be designed to receive data from laboratories or from permittees or from consultants. The portal must support the authorized individual or organization submitting the data as required by a governing document – permit, clean up requirement, etc. The data collected will range from very specific conditions when sampling occurred, date sampling occurred, date of analysis, and then the results of required parameters which will vary from inorganic to organic parameters depending on the site, permit, and clean up activities. Programs we expect to benefit from this portal are the MPCA's remediation programs (superfund, closed landfill, site assessment, brownfields, petroleum) and our land permitting programs (hazardous waste, solid waste). The portal will also need to be designed to allow MPCA staff to import historical data into the system to replace current labor-intensive processes that delay usability of the data.

Activity Milestones:

Description	Completion Date
Portal Requirements are gathered and themed to determine needs specific to permitted programs and clean-up efforts	May 31, 2022
Portal is designed to ensure needs of permitted programs and clean up efforts are met, data is QA'd upon submittal, and submittal dates are captured for compliance purposes	July 31, 2022
Portal is developed by MNIT@MPCA developers, QA testing is conducted for functionality	December 31, 2022
Portal is tested with historic data by users to determine if quality assurance efforts are met and data is received in correct databases and structure. Testing includes internal and external users.	February 28, 2023
Portal is in production	May 31, 2023

Activity 2: Interactive web-based map, site story and access to the groundwater data

Activity Budget: $250,000

Activity Description:

All areas of concern for clean up sites and permitted impacted groundwater systems will be mapped utilizing GIS technology and web mapping using the system developed with the 2017 ENRTF. Groundwater accessibility improvements will also be made to the existing information site provided to the public. The public will be able to seamlessly transition from the map to the narrative and to the underlying groundwater data. Key component of this activity is not only more programs will be represented on the groundwater contamination map, but our ability to provide data outward facing will improve and both systems will be connected and allow sites to be found from the data and data from sites. Thus, making the total system more usable by the general public, consultants, and public officials.

Activity Milestones:

Description	Completion Date
Requirements are gathered for each program (what will be shown, how is data translated, and how will data be shown through the data portal (interpreted, raw, subsets, etc.). Understanding this will guide development activities. Determine the number of interactive features required and what is needed to develop the appropriate features	December 31, 2022
Interactive features are designed by MNIT@MPCA with program input	March 31, 2023
Interactive features are developed, and quality tested by MNIT@MPCA	August 31, 2023

Interactive features are tested (internally/externally) – user testing will include external users to determine usability and clarity of the features	December 31, 2023
Fully functional system in operation	March 31, 2024

Activity 3: Extract groundwater testing data from individual MPCA files to populate a centralized database.

Activity Budget: $330,000

Activity Description:

The MPCA will obtain groundwater testing results from MPCA files, environmental consultants and environmental testing laboratories. This activity builds on activity one and helps inform activity one by understanding the number of monitoring parameters used by each program, what are the boundaries needed for acceptance of the data, who should submit data on behalf of a facility and what are the resources they have to submit. In most cases, the expectation is that MPCA staff will need to load the data into the data systems. The results will be imported into a centralized database by the ENRTF recipients.

Activity Milestones:

Description	Completion Date
Requirements are gathered from each program (what data would be available electronically, how far into the past is the historical data usable, is sufficient information on data quality available, what formats are acceptable for submittal, etc.).	December 31, 2021
All active site files from various programs reviewed to compile locations and results.	April 30, 2022
Collection of data results in approved format from appropriate sources	March 31, 2023
Groundwater testing results are in centralized data systems using Portal developed in Activity 1.	September 30, 2023

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.
The MPCA intends to use a variety of ways to keep stakeholders informed in the following ways:
•   Use Gov Delivery messages to inform public of upgraded systems and seek input on the project during development.
•   Use external testers from our stakeholder participants to ensure usability along with functionality.
•   Conduct presentations at scientific and professional meetings, such as the groundwater association and solid waste administrators annual conferences.
•   Scientific partners with our groundwater ambient projects will be part of testing the interactive application and we will demonstrate how the application works to other researchers (currently static reports are published).
•   Use existing web application feedback form to solicit comments from the public during the project but also after the project to improve its ongoing maintenance.
•   Use our What's in My Neighborhood to promote changes in behavior; and
•   Review the web application for accessibility and content that is plain language by MPCA Communication specialists.
All web landing pages, documents, presentations, and electronic messaging will acknowledge the efforts were made possible by the Environment and Natural Resources Trust Fund and the logo for the fund will be visible.

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?
As more programs and state agencies are added to the web-application and portal, the size of groundwater data available to the public will grow and the data will support work related to groundwater use, regulation and conservation in Minnesota. Once the system is upgraded and built the MPCA will continue to maintain the data and applications so that the groundwater data and stories are current, timely and accessible. An online portal and a database to manage the site stories are key components to making the long-term maintenance of the project viable and manageable, as data will be delivered electronically.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Analyzing Alternative for Muncipal Wastewater Treatment	M.L. 2016, Chp. 186, Sec. 2, Subd. 04m	$180,000
Groundwater Contamination Mapping	M.L. 2017, Chp. 96, Sec. 2, Subd. 03h	$400,000
Assessment of Urban Air Pollution	M.L. 2017, Chp. 96, Sec. 2, Subd. 07b	$700,000

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
MNIT Support		Design, develop online data portal and web application for site stories and groundwater monitoring data. MNIT services would occur through the MPCA partnership (not a contract) with MNIT@MPCA and allows for MNIT employees dedicated to the project. MNIT may backfill behind these employees with unclassified positions for other MNIT work.			25%	3		$325,000
Program Data Coordinator and Entry Level Hydrologists		Compile groundwater data across multiple programs, ensure quality of data, and support the data development for the data portal and web applications			25%	3.3		$400,000
							Sub Total	**$725,000**
Contracts and Services								
Private and Public Environmental Laboratories	Professional or Technical Service Contract	Payment for labs extraction of historic data from their data system.				0		$75,000
							Sub Total	**$75,000**
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	**$800,000**

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	State General and Environmental Fund	Project Lead - Ingrid Verhagen 0.5 FTE for 3 years. Lead the project for the business and liaison with MNIT.	Pending	$180,000
In-Kind	State General and Environmental Fund	Subject Matter Experts - Not specified and Anne Morris, 3 FTE for 3 years. Assist in requirement development for business and design of some elements. Aid in compilation of historic data.	Pending	$1,080,000
In-Kind	State General and Environmental Fund	MNIT Business Analyst and Project Manager - TBD - 1 FTE for 3 years. Assist in requirements gathering and manage design and development.	Pending	$360,000
In-Kind	State General and Environmental Fund	Project Manager - Myrna Halbach. 0.15 FTE for 3 years to provide overall management and decision-making on the project.	Pending	$54,000
			State Sub Total	**$1,674,000**
Non-State				
-			**Non State Sub Total**	-
			Funds Total	**$1,674,000**

Attachments

Required Attachments
Visual Component
File: e35eaeb4-7d2.pdf

Alternate Text for Visual Component
Groundwater testing results are entered into a centralized database through an on-line portal. Interpretation of the testing results allow groundwater areas of concern to be located and mapped. A statewide interactive map and site story application allows the application user the ability to interact with the map and learn about the attributes of the site. The user may also download the data to support land restoration, groundwater conservation and protect drinking water. Access to the groundw...

Optional Attachments
Support Letter or Other

Title	File
2021-07-06_ENRTF Background Check Certification Form FINAL	cb4257ff-baa.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage
Time was taken to reassess this project based on the budget reduction, but still achieve all 3 activities. The budget is to be reduced $140,000 and the new distribution of dollars is reflected in the activities. We believe all components of the project will be established with the reduced budget, but we may not complete the actual work for some of the new programs during the timeframe. However, we do believe that the entire web framework, upgrade to our groundwater data, and data portal will be built. What may remain will be the actual pulling data and completing the site stories for perhaps one or two new permit programs depending on their staff availability.

We reduced Activity 1 by $60,000 and intend to augment the work with staff currently working on a portal for other MPCA efforts, such as permit applications. As we looked at areas for reduction, we further consulted with our IT partners on how we might leverage existing knowledge and work being done. While we cannot replace developing specific requirements and validation needs for incoming data, we do believe we might leverage the framework under construction and thus, lessening the overall effort to elicit requirements.

We reduced Activity 2 by $30,000 and believe the reduction will delay the implementation of site stories for one of the new programs (hazardous waste). This program will still benefit from Activity 1 by having its data received through a portal, but we may not be able to get all of its information into site stories and mapping of concerned areas completed. We expect the delay to be in the neighborhood of 12 to 18 months.

We reduced Activity 3 by $50,000. We will augment this effort with more existing staff. Also, as we reflected on the need to fund laboratories to provide historical data, we think it will take less because much of the new programs will benefit from laboratories being familiar with our format and data quality need from the 2017 LCCMR work. We recognize we will have some new laboratories that we will need to help them understand the format, but we think it will be fewer than originally expected due to the high cooperation we are receiving for the 2017 LCCMR project.

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?
> N/A

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

Mapping groundwater contamination: accessible data to protect resources

Groundwater Testing Results entered in Centralized Database through On-Line Portal for all MPCA programs

Interpretation of testing results to locate and map groundwater areas of concern
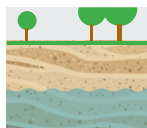
Statewide interactive map and site story application
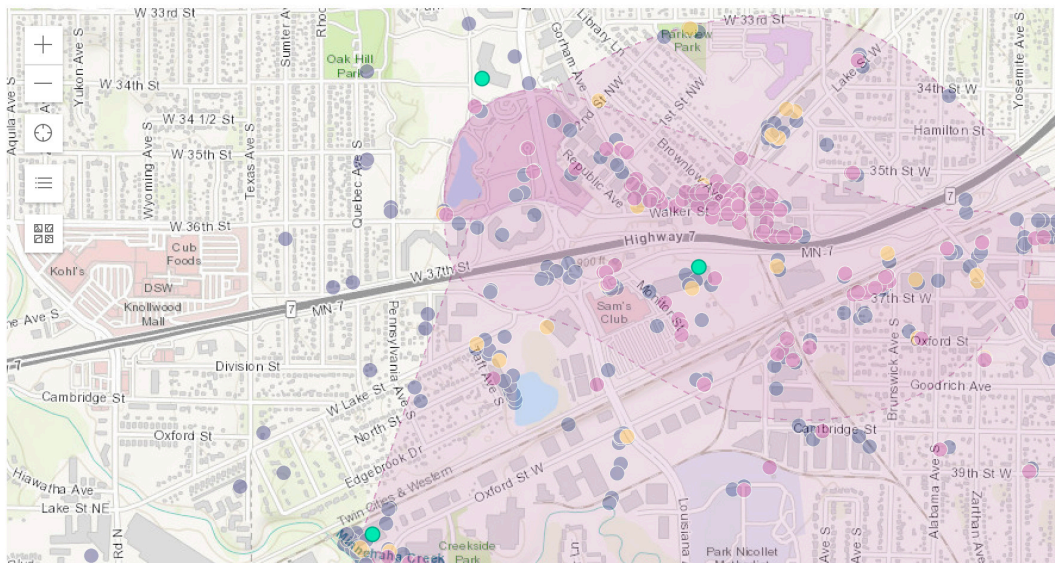
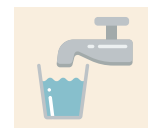
Assessible data and technology transfer

What are the benefits?

 Expedited land restoration

 More effective groundwater conservation

 Increased protection of drinking water

Who does this help?

 Cities, counties, Metropolitan Council, state agencies, federal agencies, community groups, individual citizens and private industry