

M.L. 2019, First Special Session, Chapter 4, Article 2, Sec. 2, Subd. 03h Project Abstract
For the Period Ending June 30, 2023

PROJECT TITLE: Accelerated Aggregate Resource Mapping

PROJECT MANAGER: Heather Arends

AFFILIATION: MN DNR

MAILING ADDRESS: 500 Lafayette Road

CITY/STATE/ZIP: St. Paul/MN/55155-4045

PHONE: 651-259-5376

E-MAIL: heather.arends@state.mn.us

WEBSITE: https://www.dnr.state.mn.us/lands_minerals/aggregate_maps/index.html

FUNDING SOURCE: Environment and Natural Resources Trust Fund

LEGAL CITATION: M.L. 2019, First Special Session, Chapter 4, Article 2, Sec. 2, Subd. 03h

APPROPRIATION AMOUNT: \$700,000

AMOUNT SPENT: \$618,868

AMOUNT REMAINING: \$81,132

Sound bite of Project Outcomes and Results

Minnesota Department of Natural Resources completed and distributed aggregate maps for Sibley, Swift, Redwood, and Kandiyohi Counties to assist governments in planning and conserving of competing resources. Understanding where aggregates are located supports resilient communities and informed land use decision-making.

Overall Project Outcome and Results

Aggregate resources are mined in every county in Minnesota. With historic investments in repairing failing infrastructure, local governments need information about where quality aggregates are located. Deposits closer to a construction site reduce greenhouse gas emissions from road construction and maintenance activities. Aggregate mining can compete with other natural resources, like native prairie, which can result in loss of critical habitat. Having detailed information about the distribution and quality of aggregate deposits is important in making land use decisions and achieving Environmental, Social, and Governance (ESG) standards.

Using compiled data as well as collecting data through field investigations, the Aggregate Resource Mapping Program (ARMP)

- identified and characterized aggregate resources in Sibley, Swift, Redwood, Kandiyohi counties
- surveyed the location and status of reclamation of all gravel pits within each county
- created geospatial information and databases at a scale at least of 1:100,000
- provided technical support to counties regarding how to incorporate aggregate resources in planning, permitting, and reclamation
- disseminated data and maps free of charge to county staff, elected officials, and the public both in public meetings and via an on-line web mapping service

DNR also started compilation efforts for St. Louis County and Sibley County. This information will be used by local governments, conservation groups, the public, and county highway engineers. The DNR will continue to provide these counties with technical support and information in the future.

Project Results Use and Dissemination

For each county mapped, the DNR presented results at a public county commissioners meeting followed by a meeting with county staff. DNR also created news releases announcing mapping completion of every county and where to find the information on our website. We strive to make this information readily available to the public. Each county has its own [designated website](#) where information can be accessed three ways:

- data can be viewed interactively on a DNR webmap service called [Aggregate Mapper](#).

- PDFs of maps can be downloaded
- Geospatial data in ESRI file geodatabases and shapefile and metadata can be downloaded.



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2019 ENRTF Final Report (Main Document)

Today's Date: August 15, 2023

Date of Next Status Update Report: Final Report

Date of Work Plan Approval: June 21, 2019

Project Completion Date: June 30, 2023

PROJECT TITLE: Accelerated Aggregate Resource Mapping

Project Manager: Heather Arends

Organization: Minnesota Department of Natural Resources

College/Department/Division: Lands and Minerals Division

Mailing Address: Box 45, 500 Lafayette Rd

City/State/Zip Code: St. Paul, MN 55155

Telephone Number: 651-259-5376

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

Web Address: www.dnr.state.mn.us/lands_minerals/aggregate_maps/index.html

Location: Kandiyohi, Redwood, Swift, and Sibley Counties.

Total Project Budget: \$700,000

Amount Spent: \$618,868

Balance: \$81,132

Legal Citation: M.L. 2019, First Special Session, Chapter 4, Article 2, Subd. 03h as extended by M.L. 2022, Chp. 94, Sec. 2, Subd. 19 (c.1) [to June 30, 2023]

Appropriation Language: \$700,000 the first year is from the trust fund to the commissioner of natural resources to map the aggregate resource potential for four counties and make this information available in print and electronic format to local units of government for use in planning and zoning.

M.L. 2022 - Sec. 2. ENVIRONMENT AND NATURAL RESOURCES TRUST FUND; EXTENSIONS. [to June 30, 2023]

I. PROJECT STATEMENT:

The goals of this project are to map the aggregate resources of four counties and work with local governments to include this information in planning and zoning. Aggregate resource mapping will be achieved by conducting geologic fieldwork and GIS analysis to produce related datasets and maps. Directed by Statute 84.94, this effort provides necessary information to local governments to support sound natural resources decision-making and to ensure the availability of aggregate resources for future generations.

The Aggregate Resource Mapping Program (ARMP) proposes to 1) identify and characterize aggregate resources in four counties; 2) survey the location and status of reclamation of all gravel pits within each county 3) create geospatial information and databases at a scale of 1:100,000 4) provide technical support to counties regarding how to incorporate aggregate resources in planning, permitting, and reclamation; 5) disseminate data and maps to county staff, elected officials, and the public through on-line web mapping service:

(https://www.dnr.state.mn.us/lands_minerals/aggregate_maps/online_maps/index.html). The four counties include Kandiyohi, Swift, Redwood, and Sibley. Future phases of mapping will include Chippewa, Lyon, and Yellow Medicine. All listed counties passed a county board resolution requesting this work to be completed.

Aggregate resources are needed to maintain and repair critical and aging infrastructure. In rural areas, upwards of 90% of aggregates are paid with public tax money. While aggregate demand is associated with urbanization, rural areas are responsible for the largest network of roads. Rural areas are also confronted with unique issues that significantly impact access to and availability of aggregates, such as natural scarcity of high quality aggregates. Without locally available aggregates, the distance to transport aggregates directly increases the cost of publically funded projects and the carbon foot-print of construction projects. Knowing the location of all sources of aggregate as well as their quality is needed by local land use planners and elected officials to make informed decisions. For this reason, the Minnesota Association of County Planners and Zoning Administrators (MACPZA) supports the funding of aggregate mapping in their 2018 Legislative platform. In addition, the final recommendations of the 2017 Aggregate Resources Task Force Final Report supports funding for accelerated mapping of aggregate resources with the goal of completing the state in 10 years.

The Department of Natural Resources (DNR) is directed to map aggregate resources under MN Statute §84.94. Aggregate resource mapping is a cooperative effort between the DNR and the Minnesota Geologic Survey as well as the Minnesota Department of Transportation (Mn/DOT). Every effort is made to collaborate with these agencies, as well as local governments, to inform the data, interpretations, and final products generated by the DNR.

II. OVERALL PROJECT STATUS UPDATES:

First Update: March 15, 2020

This first update is for activities and costs completed from July 1, 2019 through February 18, 2020. DNR restarted the Aggregate Resource Mapping Program and hired two geologists. Project areas for mapping include Kandiyohi and Redwood Counties. Gravel pit inventories and delineation of aggregate resource potential have been initiated in both counties.

Second Update: September 15, 2020

The second update covers activities and accounting completed from February 20, 2020 to September 15, 2020. It includes amendments proposed on November 13, 2020, which is the submission date of this update.

Starting in March 2020, project progress was impacted due to CoVID-19. On-boarding of new geologists was diminished by the inability to conduct in-person training both in the office and while driving in the field. Fieldwork was delayed by three months due to work from home orders and was hampered by limitations on overnight travel. As a result, staff had to commute daily to the project area. To address safety concerns with the

pandemic, mapping methodologies required modifications, such as no drilling because social distancing due to concerns of maintaining adequate social distance between driller and geologist. In August, one geologist left DNR employment. Enterprise-wide state hiring restrictions prevented the ability to repost the position. However, staffing may be resolved through work-out-of-class appointments with an internal DNR employees.

Progress, despite these setbacks, has been achieved in both Kandiyohi and Redwood counties. In Kandiyohi, the gravel pit survey is ~75% complete. Delineation of draft lines has been completed with approximately 80% of the county having mapping units. The project geologist has conducted fieldwork starting in mid-July to ground truth map units, collect observation points, and describe gravel pits. For Redwood, the gravel pit inventory is in progress with the identification of 400 gravel pits. Inventory needs to undergo further editing and data quality assessments. Delineation of aggregate potential is in progress with ~40% completion. Data also needs editing and quality assessments. Field work for Redwood has not begun and will need amendment to conduct fieldwork in spring 2021 and complete the mapping in June 2022.

Additional field work for Kandiyohi will take place throughout fall of 2020. Next steps include finalizing mapping units, gravel pit database, and field observations for Kandiyohi. Work on cartographic products, such as map text, layout, annotations will be in November/December. Planning for final distribution of product and virtual outreach platforms and efforts is underway.

Amendment Request as of 11/13/ 2020

The amendment request involves changing the completion date for Kandiyohi County from December 2020 to March of 2021 and Redwood County from December 2020 to June of 2022. As mentioned above, delays due to Department and enterprise-wide policies related to CoVID have impacted project work and hiring. We have developed a plan to address setbacks in Redwood with transitioning a qualified persons to join the aggregate mapping team. This person is expected to on-board in December. We are identifying changes to the mapping methodology that can help supplement drilling and fieldwork – such as developing analytical and statistical models to identify aggregates in conjunction with strategic placed ground truthing sites. Redwood will be completed using a team approach instead of a project geologist. Fieldwork will be done using both geologist to gather data. Final compilation will be conducted through team efforts and distribution of labor over the next 1.5 years. This approach allows for the start-up of Sibley and Swift counties to stay on track for winter of 2021.

Additional amendments address interaction with the public and public gatherings. Given the uncertainty of CoVID, we are cancelling public engagements that involve public meetings. We will work with county officials to try to identify methods for public outreach, such as coordinated outreach to news media and use of virtual formats.

Amendment Approved by LCCMR 1/12/2021

Third Update: March 15, 2021

The third update covers activities and accounting completed from November 13, 2020 to March 15, 2021.

We worked through the statewide hiring freeze. Minnesota Management and Budget granted the Aggregate Resource Mapping Program an exemption to hire. We filled the project geologist position and the person started on February 3, 2021. Over the last five weeks, the new geologist begun work on Sibley County, which involves collecting GIS and geologic datasets, inventorying gravel pits, and analyzing Minnesota Department of Transportation quality information. This initial phase of mapping has also begun for Swift County. We are in the process of scheduling meetings with the county to inform them of the initiation of the project and project milestones.

The completion of Kandiyohi County is on schedule and final datasets will be released on March 30, 2021, which will be announced with a DNR press release. Since the last update, GIS datasets have been finalized, draft metadata has been written and in the process of editing, a draft map has been constructed and in the process of editing. The final datasets will include GIS data of aggregate potential, gravel pit survey, and fieldwork observation points; a PDF map; paper maps upon request; a project webpage with attribution to ENTRF funding;

and access to GIS data through our online aggregate resource webmap. We are in contact with the county to schedule a presentation with the Board of County Commissioners. The County is unable to accommodate virtual presentations at Board meetings and we are looking to seek an exemption to travel and meet in person. We also have scheduled a virtual training day for staff and interested parties to present the project results on April 6, 2021.

For Redwood County, we decided the best approach to complete this county would involve the whole team instead of an individual project leader. The gravel pit survey is in the queue and will be worked on in April 2021 by both project geologists.

Fourth Update: September 15, 2021

The fourth update covers activities and accounting completed from March 15, 2021 through September 15, 2021.

The DNR Aggregate Resource Mapping (ARMP) completed and published Kandiyohi County aggregate map and associated GIS datasets in March of 2021.

https://files.dnr.state.mn.us/lands_minerals/aggregate/kandiyohi_sandandgravel.pdf

ARMP data compilation served on the Minnesota Geospatial Commons was updated in March of 2021 to include Kandiyohi County datasets.

<https://gisdata.mn.gov/dataset/geos-aggregate-mapping>

Several media outlets reported on the completion of the Kandiyohi County Aggregate Map. DNR staff also organized a workshop and presented results to the county staff. DNR distributed maps each member of the County Board, county planning and zoning staff, county highway engineer, and every Kandiyohi township administrator.

Mapping is currently underway for Redwood, Sibley, and Swift counties. As of this summer, DNR staff inventoried nearly all the gravel pits and collected observation points for Sibley and Swift. The field portion of these counties is nearly complete. Fieldwork for Redwood County is underway and expected to be completed by fall 2021.

Fifth Update: March 15, 2022

The fifth update covers activities and accounting completed from September 15, 2021 through March 15, 2022.

ARMP completed the remaining field work during the fall months for Swift, Sibley, and Redwood Counties. By the end of the fall field season, a total of 483 field observations were collected (160 for Swift, 111 for Redwood, and 212 for Sibley); 939 gravel pits have been inventoried (271 for Swift, 409 for Redwood, and 259 for Sibley). DNR geologists also completed a drilling campaign in public right of ways and on public lands, with a total of 25 holes drilled in the three counties. Drill holes are used to ground truth maps in areas with potential aggregate or in areas that had little natural exposure.

Because tribal reservations lands are within Redwood County, DNR has been in on-going conversations with the Mdewakanton Band of Dakota of the Lower Sioux Indian Community about the inclusion of tribal lands on the aggregate resource maps. During conversations, staff and members of the Lower Sioux Indian Community expressed concerns about collection of data and drilling on Indian-owned lands outside of the reservation boundary. As a result, DNR avoided any disruption or data collection in right of ways adjacent to these lands as identified in county parcel data.

Swift, Sibley, and Redwood Counties have draft contact lines digitized. Swift is the furthest along with a completed draft map that is awaiting final editing and review. Redwood and Sibley in the process of completing draft lines with additional work needed to create mapping units and cartographic layout and design.

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

In this update, the DNR has worked to finish the completion of three aggregate resource maps. The completion of Swift, Sibley, and Redwood is scheduled for fall of 2022. Swift data has been reviewed and nearly complete and a draft layout is underway. Sibley and Redwood are still being digitized.

In June, unclassified staff were hired as permanent classified employees as they approached their three-year limit specified in the MAPE employee contract.

Sixth Update as of September 15, 2022:

The sixth update covers activities from March 15th, 2022 to September 15, 2022. Media releases and Gov Delivery notices are scheduled to be sent out on September 20th, 2022 announcing the final data release and completion of aggregate resource maps for Swift, Sibley, and Redwood counties for 9/20, 9/27, and 10/4, respectively. Datasets for all three projects, including maps to locate aggregate resources and a countywide gravel pit survey, will be publicly available on the DNR’s website. DNR geologists have scheduled presentations with each of the respective County Commissioner Boards and meetings with county staff to review the data and mapping results.

Amendment Request as of 7/01/2022

A budget change is reflected in a training expenditure that occurred in 2021. A geologist attended a MNDOT aggregate production class. The training was essential for the geologist to better understand MNDOT specifications, aggregate tests, and how these tests can be used to determine aggregate quality. Reducing our supply budget from \$15,400 to \$15,070, it is requested that \$330 be transferred to training.

For staffing, our cartographer has taken a promotion within MNIT. The position, a GIS analyst, is embedded within Lands and Minerals, so that staff member is able to work on and complete this project. However, his services will need to be accessed through a Service Level Agreement (SLA) with MNIT. An adjustment is reflected within a proposed new budget. It is requested to transfer the following items below to professional contracts for a total of \$28,000 and to apply these funds to time coded to the project since 07/01/2022.

- \$20,429 from Personnel, specifically field technician,
- \$3,233 from Personnel, GIS Cartographer
- \$4,338 from Equipment/Tools/Supplies
\$28,000 to Professional Services – Service Level Agreement for MNIT Services.

Supply Budget Change

- 15,400 is the previous amount
- -\$330 for training
- -\$4338 for GIS
10,732 amended amount

Amendment Approved by LCCMR 11/07/2022

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

Through this grant, DNR completed Using compiled data as well as collecting data through field investigations, the Aggregate Resource Mapping Program (ARMP)

- identified and characterized aggregate resources in Sibley, Swift, Redwood, Kandiyohi counties
- surveyed the location and status of reclamation of all gravel pits within each county
- created geospatial information and databases at a scale at least of 1:100,000
- provided technical support to counties regarding how to incorporate aggregate resources in planning, permitting, and reclamation
- disseminated data and maps free of charge to county staff, elected officials, and the public both in public meetings and via an on-line web mapping service

DNR also started compilation efforts for St. Louis County and Sibley County. This information will be used by local governments, conservation groups, the public, and county highway engineers. The DNR will continue to provide these counties with technical support and information in the future.

III. PROJECT ACTIVITIES AND OUTCOMES:

Activity 1: Aggregate mapping

Description: Current mapping projects in Kandiyohi, Redwood, Swift, and Sibley are most likely to need funding from this grant to sustain progress. Staff will compile all available and relevant gravel pit data, historic geologic maps, reports, and digital data. Geologists will conduct fieldwork to describe and sample landforms, survey gravel mines and bedrock quarries, and collect geologic observations. Geologic data is then analyzed and to produce draft maps. Draft maps undergo internal review. Concurrently, associated databases are formalized and prepared for use in geographic information systems and distribution. Maps are also printed for use of local governments, such as townships and municipalities.

ENRTF BUDGET: \$ 700,000

Outcome	Completion Date
1. Completion of Kandiyohi County	Mar 2021
2. Completion of aggregate maps for Redwood, Swift and Sibley counties, which are next in line based on the date in which a county board resolution was passed requesting aggregate resource maps.	June 2022
3. Conduct four workshops to assist local governments use and incorporate data from project into land use	1 online workshop in Winter 2021; 3 workshops in Spring 2022
4. Start the compilation of data for next counties on current waitlist (see attached)	June 2022

First Update: March 15, 2020

Progress was made for first outcome.

Second Update: September 15, 2020

Third Update: March 15, 2021

Fourth Update: September 15, 2021

Fifth Update: March 15, 2022

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of September 15, 2022:

Progress was made for outcomes 2 and 3. Staff are preparing for the completion of three aggregate resource maps and public outreach.

Seventh Update as of March 1, 2023:

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

All four outcomes have been achieved for this project, which resulted in aggregate maps and GIS data for Sibley, Kandiyohi, Swift, and Redwood counties. We started compiling data for our next counties to be mapped, which includes St. Louis and Yellow Medicine counties. These counties have waited for 20 years to be mapped.

DNR is working through a backlog of requests from local governments who are looking for this information to manage their natural resources through comprehensive planning and zoning. Wise decision-making regarding natural resource conservation and protection relies on good information. Sustainable communities need information about where different and potentially competing natural resources exist so they can protect significant and critical habitats while being mindful of orderly development of aggregate resources. Since we have started this project in 2019, eleven counties have passed county board resolutions requesting this work to be done, which has doubled our waitlist to 21 counties. Thirty counties out of 87 have been mapped.

In addition to county outreach and engagement, we have further refined our policies regarding aggregate mapping and sovereign nations. During this project, we had on-going discussions with the Lower Sioux Agency about how to map near Community owned land. We avoided taking samples or drilling on tribally owned lands outside of the Agency reservation boundary. While the agency was interested in having aggregate resource information, they did not want it public. In the end, we removed aggregate data within the formal boundary of the Community.

In terms of the budget, it was helpful to have the year extension due to CoVID delays, but we still fell short of spending the total budget. Our biggest surplus is associated with in-state travel. For a significant portion of the project, geologists were commuting several hours to field areas instead of staying in hotels. We also did not use the drill truck as much as initially planned in efforts to maintain social distancing protocols, which impacted our supply budget. Instead, geologist used soil augurs to conduct ground truthing of mapping units. While augers do not go as deep as a drill truck, it is an adaptation that the geologists are continuing to use for field mapping. The surplus amount was too small to hire a third geologist and hiring is a 3-6 month process at the DNR, so it is difficult to be responsive with short-term positions.

Overall, these funds have made a significant impact on spreading awareness about the users of aggregate resource information. This program is designed, within [MN Statute 84.94](#), to support local governments and the public as they have difficult conversations about mining, land use, and conservation. These maps and the resulting conversations will help communities who are facing aggregate shortages to be able to address the needs of their communities while being protective of natural resources. Furthermore, we have been contacted by the states of Washington, Arizona, and Michigan in efforts to model this program.

IV. DISSEMINATION:

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 has its own [webpage](#) that links to the above-mentioned formats of dissemination. Each project culminates in a workshop of the results to the 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](#).

First Update: March 15, 2020

The following is a list of selected dissemination activities for the reporting period July 1, 2019 through February 19, 2020:

- October 10 – Presented to management team of DNR Regional Office – New Ulm.
- November – Presentation to the Kandiyohi County Board of Commissioners and Staff.
- December – Updated ARMP website to include program news.
- December 10 – Article of aggregate mapping published in West Central Tribune.
- February 4 – Presented to the Redwood County Board of Commissioners and Staff.
- February 13 – Article of aggregate mapping published in Redwood Falls Gazette.
- February 19 – Presented to Minnesota Association of County Land Commissioners.

Second Update: September 15, 2020

Due to work from home orders and CoVID protocols, no dissemination activities were conducted from February 20, 2020 to September 29, 2020.

Third Update: March 15, 2021

Due to work from home orders and CoVID protocols, no dissemination activities were conducted from November 13, 2020 and March 15, 2021.

Fourth Update: September 15, 2021

The following is a list of dissemination activities for the reporting period of March 15-September 15, 2021

- March 30 – DNR launches new web page to disseminate aggregate mapping results of Kandiyohi County and DNR includes GIS data from Kandiyohi County on webmap server.
https://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/kandiyohi.html
- March 30 - DNR publishes a press release announcing the completion of Kandiyohi County.
[Minnesota Department of Natural Resources completes sand and gravel resource map for Kandiyohi County : Mar 30, 2021 | News Release | Minnesota DNR \(state.mn.us\)](#)
- March 30 – West Central Tribune published article on Kandiyohi County aggregate map. (print/online news media)
<https://www.wctrib.com/news/government-and-politics/6960420-Minnesota-Department-of-Natural-Resources-completes-sand-and-gravel-resource-map-for-Kandiyohi-County>

- March 30 KWLM posts on social media (Facebook) completion of Kandiyohi County aggregate map.
- March 31 – Einpresswire publishes article on completion of Kandiyohi County aggregate map. (online news media)
https://www.einnews.com/pr_news/537816875/minnesota-department-of-natural-resources-completes-sand-and-gravel-resource-map-for-kandiyohi-county
- April 1 – Article/announcement of publication of Kandiyohi County on KMRS/KKOK (radio)
<https://kmrskkok.com/2021/04/01/dnr-completes-sand-and-gravel-resource-map-for-kandiyohi-county/>
- April – Article/announcement of publication of Kandiyohi County and status of Redwood County on KLGR (radio)
<https://www.myklgr.com/mn-dnr-completes-new-geological-map-for-kandiyohi-county-redwood-county-mapping-project-continues/>
- April 1 – Daily Advent publishes online article on completion of Kandiyohi County aggregate map.
<https://www.dailyadvent.com/news/227da72d8080332477e04b2b7fcdfa8-DNR-Completes-Sand-and-Gravel-Resource-Map-for-Kandiyohi-County>
- April 7 – DNR hosts workshop for Kandiyohi County Staff to present results of mapping.
- June 15 – DNR presents information for the Sibley County Board of Commissioners about aggregate mapping.

Fifth Update: March 15, 2022

No dissemination activities occurred during this update.

Update as of June 30, 2022:

Project extended to June 30, 2023 by LCCMR 6/30/22 as a result of M.L. 2022, Chp.94, Sec. 2, Subd. 19, legislative extension criteria being met.

Sixth Update as of September 15, 2022:

Dissemination activities were developed and planned for late September and October of 2022, including a press release, Gov Delivery announcement, and the scheduling of several public meetings.

Seventh Update as of March 1, 2023:

Final Report as of June 30, 2023 (to be submitted before August 15, 2023):

DNR has worked to make aggregate maps and data readily available to the public. When a county is completed, DNR takes similar steps for every completed project to disseminate the information. This includes creating a DNR news release which is usually picked up by regional or local newspapers, presenting results at a County Board Commissioners meeting, going through the GIS data with county staff, sending out printed maps to township administrators, then followed up with technical assistance upon request. We also communicate with regional DNR leadership to ensure they are aware of the start and finish of each county.

We publish the data on the DNR website in three forms:

1. Compiled data from all completed counties can be viewed interactively on a [web map application](#).
2. Data can be viewed by opening or downloading a PDF of the final plate.

3. Spatial GIS datasets, metadata, and related tabular files of geological and aggregate features can be downloaded.

We also publish compiled data on the MN Spatial Geocommons.

Specific dissemination activities from the last reporting period until June 30, 2023 are detailed below:

- September 20
 - DNR publishes news release: [DNR Completes three new aggregate resource maps of Swift, Sibley, and Redwood counties.](#)
 - DNR launches new web page to disseminate aggregate mapping results of [Swift County](#). DNR includes GIS data from Swift County on webmap server.
 - DNR presents final data and results to Swift County Commissioners at public meeting.
 - DNR sends maps to all township administrators within the county.
- September 27
 - DNR launches new web page to disseminate aggregate mapping results of [Sibley County](#). DNR includes GIS data from Sibley County on webmap server.
 - DNR presents final data and results to Sibley County Commissioners at a public meeting.
 - DNR sends maps to all township administrators within the county.
- October 4
 - DNR launches new web page to disseminate aggregate mapping results of [Redwood County](#). DNR includes GIS data from Redwood County on webmap server.
 - DNR presents final data and results to Redwood County Commissioners at a public meeting.
 - DNR sends maps to all township administrators within the county.
- October 24 – Updated new release of information of all three newly completed counties to the [MN Geospatial Commons Aggregate Mapping Program page](#), which disseminates GIS information.
- February 4 – Latest update to the [MN Geospatial Commons](#) Aggregate Resource Mapping Program page that disseminates GIS information from completed projects.
- March 8 – Minnesota Rural Water Association 39th Annual Conference – gave presentation on aggregate mining and water resources.
- Publishing date unknown: [My KLGR.com](#) picks up DNR news release.
- Publishing date unknown: Swift County links to aggregate map on [county website](#).

All four maps acknowledged ENTRF funds with use of the logo and a written statement as a subtitle attributing that the funding was provided through the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

V. ADDITIONAL BUDGET INFORMATION:

A. Personnel and Capital Expenditures

Explanation of Capital Expenditures Greater Than \$5,000:

Explanation of Use of Classified Staff:

Aggregate mappers were hired as permanent classified staff. It takes about 1.5 years to train staff for aggregate mapping and significant cost for employee development. Retention necessary to further their technical expertise.

Total Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:

Enter Total Estimated Personnel Hours for entire duration of project: 18,200	Divide total personnel hours by 2,080 hours in 1 yr. = TOTAL FTE: 8.75
--	--

Total Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:

Enter Total Estimated Contract Personnel Hours for entire duration of project: N/A	Divide total contract hours by 2,080 hours in 1 yr. = TOTAL FTE: 0
--	--

VI. PROJECT PARTNERS:

A. Partners outside of project manager’s organization receiving ENRTF funding

B. Partners outside of project manager’s organization NOT receiving ENRTF funding

VII. LONG-TERM- IMPLEMENTATION AND FUNDING:

VIII. REPORTING REQUIREMENTS:

- Project status update reports will be submitted March 15 and September 15 each year of the project.
- A final report and associated products will be submitted between June 30, 2023 and August 15, 2023.

IX. SEE ADDITIONAL WORK PLAN COMPONENTS:

- A. Budget Spreadsheet**
- B. Visual Component or Map**

Here are links to final maps and GIS products. GIS zip files contains spatial GIS datasets (ESRI File Geodatabase and shapefiles), metadata, and related tabular files of geological and aggregate features created by the DNR, MnDOT, and MGS.

KANDIYOHI COUNTY:

1. Plate: [Aggregate Resources, Kandiyohi County, Minnesota \(PDF\)](#). (36 x 46 inches, full size, 47.1MB)
2. A compressed set of files, [kandiyohidata.zip \(ZIP\)](#). This compressed set of files is 148 MB.

SWIFT COUNTY:

1. Plate: [Aggregate Resources, Swift County, Minnesota \(PDF\)](#). (36 x 26 inches, full size, 40.0MB)
2. A compressed set of files, [swiftdata.zip \(ZIP\)](#). This compressed set of files is 44.2 MB.

SIBLEY COUNTY:

1. Plate: [Aggregate Resources, Sibley County, Minnesota \(PDF\)](#). (36 x 24 inches, full size, 23.9MB)
2. A compressed set of files, [sibleydata.zip \(ZIP\)](#). This compressed set of files is 29.8 MB.

REDWOOD COUNTY:

1. Plate: [Aggregate Resources, Redwood County, Minnesota \(PDF\)](#).
(36 x 24 inches, full size, 23.9MB)
2. A compressed set of files, [redwooddata.zip \(ZIP\)](#). This compressed set of files is 29.8 MB.

Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).”



Attachment A

Date Submitted By: August 15, 2023

Environment and Natural Resources Trust Fund

M.L. 2019 Project Budget - Final

Legal Citation: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 03h

Project Manager: Heather Arends

Project Title: Accelerated Aggregate Resource Mapping

Organization: MN DNR

Project Budget: \$700,000

Project Length and Completion Date: June 30, 2023

Attachment A:



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Budget	Amount Spent	Balance
BUDGET ITEM			
Personnel (Wages and Benefits)		\$ -	\$ -
Geologist/Research Scientist (72% salary, 28% benefits), 1 unclassified FTE for 3 years	\$ 256,380	\$ 233,206	\$ 23,174
Geologist/Research Scientist (72% salary, 28% benefits), 1 unclassified FTE for 3 years	\$ 256,380	\$ 237,161	\$ 19,219
GIS/Cartographer (72% salary, 28% benefits) 0.25 classified FTE for 3 years	\$ 63,578	\$ 63,578	\$ 0
Field Technician (72% salary, 28% benefits) 0.25 classified FTE for 2 years			
Professional/Technical/Service Contracts			
Service Level Agreements for MNIT services	\$ 28,000	\$ 21,195	\$ 6,806
Equipment/Tools/Supplies			
Equipment is used from previous survey periods when at all possible (e.g. GPS units, drilling equipment, augers, cameras, communication/safety equipment, etc.) but replaced, repaired, or updated as necessary. Items such as batteries, sample bags, field notebooks, and hand held augers.	\$ 10,732	\$ 6,376	\$ 4,356
Capital Expenditures Over \$5,000			
		\$ -	\$ -
Fee Title Acquisition			
		\$ -	\$ -
Easement Acquisition			
		\$ -	\$ -
Professional Services for Acquisition			
		\$ -	\$ -
Printing			
		\$ -	\$ -
Travel expenses in Minnesota			
Travel expenses for MN travel related to field survey in Activities 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 food, transportation in seasonal DNR fleet vehicles, and lodging.	\$ 36,737	\$ 9,160	\$ 27,577
Other: Training - MN DOT Aggregate Production Class	\$ 330	\$ 330	\$ -
Direct and Necessary Costs: Direct and Necessary expenses: HR Support (~\$10,712), Safety Support (~\$2,219x),	\$ 47,863	\$ 47,863	\$ -
COLUMN TOTAL	\$ 700,000	\$ 618,869	\$ 81,131

OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:		\$ -	\$ -	\$ -
State:		\$ -	\$ -	\$ -
In kind:		\$ -	\$ -	\$ -

PAST AND CURRENT ENRTF APPROPRIATIONS	Amount legally obligated but not expended	Budget	Spent	Balance
Current appropriation:		\$ -	\$ -	\$ -
Past appropriations:		\$ -	\$ -	\$ -