

# Final Abstract

Final Report Approved on September 9, 2024

## M.L. 2021 Project Abstract

For the Period Ending June 30, 2024

**Project Title:** Morrison County Performance Drainage and Hydrology Management II

**Project Manager:** Shannon Wettstein

**Affiliation:** Morrison Soil and Water Conservation District

**Mailing Address:** 16776 Heron Road USDA Service Center

**City/State/Zip:** Little Falls, MN 56345

**Phone:** (320) 631-3553

**E-mail:** shannon.wettstein@morrisonswcd.org

**Website:** <https://morrisonswcd.org/>

**Funding Source:**

**Fiscal Year:**

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

**Appropriation Amount:** \$197,000

**Amount Spent:** \$197,000

**Amount Remaining:** -

### Sound bite of Project Outcomes and Results

Morrison SWCD documented the location, elevations, and condition of culverts throughout the 28 townships in the county. This culvert data provides an understanding of drainage features for watershed analysis and protection, will prevent wetlands from being drained due to improperly placed culverts and presents opportunities for habitat and wildlife restoration.

### Overall Project Outcome and Results

Since ENRTF funding for this project began all 28 township road centerline culverts, Camp Ripley and county ditch culverts have been surveyed for a total of 7,800 culverts. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data has helped de-escalate conflicts between landowners and at times units of government.

Since November 30, 2023, the townships that have submitted culvert replacement forms have had their replacement culverts surveyed and inventoried. All townships have been encouraged to submit a culvert replacement form to help keep the county inventory as up to date as possible. Inventory work is completed, and the data reports and analyses

have been completed with updated replacement culverts. All this information is stored at the SWCD, with Morrison County and with the appropriate road authorities.

Our office continues to assist township board road authorities and their contractors as well as Morrison County Public Works and Land Services and Camp Ripley with technical and engineering assistance. Morrison County has experienced several intense rain events that have washed out roads and culverts where this information was able to help reconstruct infrastructure in these washed-out areas.

On June 24th, 2022, the city of Randall, MN experienced a 500 yr storm event that resulted in 12"+ of rain. The culvert inventory obtained through the ENRTF funds was used by emergency management services and several road authorities to manage the flood event.

In the fall of 2022, Three Morrison county townships had requested assistance with repairs and documentation to FEMA from storm events that year. The assistance that the SWCD gives to these townships is a direct result of the culvert inventory. The historic data the inventory has collected is invaluable to reestablish elevations after a disaster event.

### **Project Results Use and Dissemination**

The final culvert inventory has been submitted to Morrison County GIS Department to be updated on the County GIS Beacon Site for the public and other resource professionals to access. The Morrison SWCD engineering technician continues to aid township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County. The data from this LCCMR project is being used as a model for the statewide standard.



## Environment and Natural Resources Trust Fund

M.L. 2021 Approved Final Report

### General Information

**Date:** November 18, 2024

**ID Number:** 2021-238

**Staff Lead:** Tom Dietrich

**Project Title:** Morrison County Performance Drainage and Hydrology Management II

**Project Budget:** \$197,000

### Project Manager Information

**Name:** Shannon Wettstein

**Organization:** Morrison Soil and Water Conservation District

**Office Telephone:** (320) 631-3553

**Email:** shannon.wettstein@morrisonswcd.org

**Web Address:** <https://morrisonswcd.org/>

### Project Reporting

**Final Report Approved:** September 9, 2024

**Reporting Status:** Project Completed & Additional Update Approved

**Date of Last Action:** September 9, 2024

**Project Completion:** April 30, 2024

### Legal Information

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

**Appropriation Language:** \$197,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Morrison Soil and Water Conservation District to complete the Morrison County culvert inventory started in 2016 to help solve landowner conflicts, protect wetlands, improve water quality, and design additional water storage throughout the county.

**Appropriation End Date:** June 30, 2024

## Narrative

**Project Summary:** Complete the Morrison County culvert inventory started in 2016 to help solve landowner conflicts, protect wetlands, improve water quality, ensure road safety and design additional water storage throughout the county.

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

Morrison County, like other agricultural counties, has experienced a vast increase in drainage. Thousands of acres are being tiled with no approval or oversight. The water moving across the landscape has altered drainage capacity of county and township roads, as well as created major conflict between neighbors and road authorities' due to impacts of standing water on agricultural fields and topping of public roads. Morrison SWCD historically has taken the lead in managing drainage, county wide, through the administration of the Wetland Conservation Act (WCA) guiding private landowners and the local road authorities through WCA laws and regulation relating to ditching and draining. This leadership role was taken a step further when in 2016, the district was awarded a LCCMR grant to hire a hydrology technician and conduct an initial culvert inventory along township roads. This previous grant supported the completion of two thirds of the counties township centerline and driveway culverts. Due to the sheer amount of culverts and the time necessary to inventory them the previous grant was not sufficient to complete the entire county.

**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.**

Morrison SWCD is committed to serving the public through a leadership role in managing drainage and sharing a more complete understanding of drainage infrastructure within the county. The way to do this is by completing the county wide culvert inventory which was started in 2016 and by sharing this information with our partners, the public and local drainage authorities. This information will assist local authorities in making decisions about upcoming project areas based on complete hydrology and storm water information which ultimately improves public road safety and saves taxpayers money by allowing townships to take a more systematic approach to improving infrastructure. This information will help reduce conflict between landowners experiencing flooding or drainage issues by painting a clearer picture of what is actually happening on the landscape. This information will protect wetland habitats from accidental drainage when contractors or private landowners replace pipes at incorrect elevations. Finally, this information will allow Morrison SWCD to solve drainage issues not by just pushing water onto someone else but by identifying and designing water storage projects so they can be adopted on the landscape using federal, state or local funds.

**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?**

Conduct culvert inventories on approximately 4,000 culverts along township roads, county road culvert information would be gathered by Morrison County Highway Department. This information would then:

- Create and maintain a database of all culvert elevations throughout the county.
- Provide updated culvert inventory data to Morrison County for publication on Morrison County Beacon GIS site.
- Prioritize and rank inventory work based on watershed and safety considerations.
- Provide updated culvert inventory data and prioritization suggestions to road authorities at the Township and County level as well as Camp Ripley, MN DNR and FEMA
- Identify locations for water storage throughout the county.

## Project Location

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

Region(s): Central

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

Region(s): Central

**When will the work impact occur?**

During the Project and In the Future

## Activities and Milestones

### Activity 1: Inventory culverts within Morrison County, specifically township road centerline and private driveways

**Activity Budget:** \$197,000

**Activity Description:**

Complete township centerline and driveway culverts in ten townships in order to comprehend the hydrology and storm water management for the county. The hydrology technician afforded through this capacity funding would work with township and county road authorities as well as Camp Ripley to identify culvert locations so drainage infrastructure can be inventoried. This inventory data will then be used to make improvements to drainage ways such as restoring surface water connectivity, fixing problem areas susceptible to washouts and establishing water storage areas on the landscape to slow surface water down. The inventory data will also be used to ensure proper culvert replacement occurs to keeps wetlands intact.

Over time, culvert locations have been lost, have fallen into disrepair or in most cases are improperly replaced. This combined with additional surface water being added to drainage infrastructure from subsurface tile drainage puts enormous pressure on road authorities to find solutions when flooding, washouts or property is affected. Surface water and wetlands often fall victim while trying to resolve these conflicts. This data gives road authorities information which can be used to make better decisions and ultimately protect wetlands and surface water.

**Activity Milestones:**

Description	Approximate Completion Date
Create and maintain a database of all culvert elevations throughout the county	October 31, 2022
Conduct culvert inventories on approximately 4,000 culverts	October 31, 2022
Provide updated culvert inventory data to Morrison County for publication on Morrison County Beacon GIS	January 31, 2023
Identify and design water storage locations throughout the county	February 28, 2023
Prioritize and rank inventory work based on watershed and safety considerations	February 28, 2023
Provide updated culvert inventory data to Camp Ripley, DNR and FEMA.	April 30, 2023
Provide updated culvert inventory data and prioritization suggestions to road authorities and share with partners	April 30, 2023

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
West Central Technical Service Area Engineers	Technical Service Area II	Provide engineering services and design work for water storage when identified by Morrison SWCD.	No
Camp Ripley Environmental	Department of Military Affairs (DMA)	Accompany Morrison SWCD when down range on camp training locations so culvert locations which flow into Morrison County can be documented. Work with Morrison SWCD to identify locations for water storage and wetland restorations.	No
Township Road Authorities	Morrison County Townships	Provide locations of known culverts along township roads so these can be surveyed and documented.	No
Morrison County Land Services	Morrison County	Provides the platform for all of the publicly accessible culvert inventory data on their Morrison County Beacon, the interactive GIS mapping service of the county.	No
Morrison County Highway Department	Morrison County	Simultaneously working on completing a culvert inventory on all county roads throughout the county using the same methods and equipment as Morrison SWCD so a more complete picture of the county drainage infrastructure can be formed. Work with Morrison SWCD to identify potential water storage locations.	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.**

Reports of the culvert inventory data will be supplied to township officials as both a hard copy and an electronic copy. Maps detailing locations of culverts by sections along with the data which in an Excel spreadsheet format will be included as will a key for the information. Reports will also include locations and elevation data for centerline and private drive culverts along township roads. The reports will also detail material size, type, shape and conditions of pipes and flow direction. Culverts will then be rated based on their current conditions and recommended maintenance activities will be noted.

We will present to the County Board, the annual Township Association meetings, and to other smaller groups to demonstrate the project. The county board will be kept in the loop continually to take feedback. The whole project is very closely aligned with the County Public Works Department and DNR to make sure we have an overall project that serves each agency as well and any and all users. A subset of the data from the inventory will be made available for public viewing on the Morrison County interactive GIS system, Beacon. Full data sets will be shared with FEMA, DNR, Camp Ripley, Morrison County Public Works and US Fish and Wildlife Service.

Potential locations identified through the inventory for wetland restoration and water storage will be shared and discussed at the Morrison Technical Evaluation Panel. If the property owner, be it landowners, township governments, Camp Ripley or Morrison County are interested, engineers from WCTSA will design wetland restoration or water storage solutions for future implementation.

The Environment and Natural Resources Trust Fund will be acknowledged on the Morrison SWCD website through use of the trust fund logo and attribution language. Credit will also be given to the ENRTF on project print and electronic media shared between Morrison SWCD and the partners involved in the project including Morrison County, Morrison County townships, Camp Ripley, and other partners who request printed or electronic data of the inventory. Any future publication about the project including articles published by the Morrison County Record or any other news or radio outlet will include acknowledgement of public funds received through the ENRTF.

## 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?**

Once the drainage inventory is complete Morrison SWCD will continue to staff a hydrology technician in-house for assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date. Ongoing culvert inventory data would be maintained by Morrison SWCD and would be accessible electronically through the Morrison County Beacon GIS system. This completed inventory will also identify locations for water storage throughout the county. Morrison SWCD would work with our engineers to design and implement these structures through various federal, state or local sources.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Morrison County Performance Drainage and Hydrology Management	M.L. 2016, Chp. 186, Sec. 2, Subd. 04r	\$209,000
Oak Wilt Suppression at its Northern Edge	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 06b	\$100,000



## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
<b>Personnel</b>										
Engineering Technician		Survey culvert locations, elevations and conditions; Provide hydrologic assessments; provide technical assistance to drainage authorities, Camp Ripley and private landowners			33%	3		\$195,505	-	-
							<b>Sub Total</b>	<b>\$195,505</b>	<b>\$195,505</b>	-
<b>Contracts and Services</b>										
West Central Technical Service Area (WCTSA) Engineers	Sub award	WCTSA provides engineering services to SWCDs within a twelve county region in central Minnesota. WCTSA would work with Morrison SWCD once a project location had been identified to design water storage capacity on the landscape. These plans could then be implemented once additional funding is secured.				0.09		-	-	-
							<b>Sub Total</b>	-	-	-
<b>Equipment, Tools, and Supplies</b>										
							<b>Sub Total</b>	-	-	-
<b>Capital Expenditures</b>										
							<b>Sub Total</b>	-	-	-
<b>Acquisitions and Stewardship</b>										
							<b>Sub Total</b>	-	-	-
<b>Travel In Minnesota</b>										

	Miles/ Meals/ Lodging	Approximately 17,000 miles within Morrison County	Providing transportation in and around townships and Camp Ripley to conduct the inventory					\$1,495	\$1,495	-
							<b>Sub Total</b>	<b>\$1,495</b>	<b>\$1,495</b>	-
<b>Travel Outside Minnesota</b>										
							<b>Sub Total</b>	-	-	-
<b>Printing and Publication</b>										
							<b>Sub Total</b>	-	-	-
<b>Other Expenses</b>										
							<b>Sub Total</b>	-	-	-
							<b>Grand Total</b>	<b>\$197,000</b>	<b>\$197,000</b>	-

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	\$ Amount Spent	\$ Amount Remaining
<b>State</b>						
In-Kind	SWCD Local Capacity dollars provided through the Clean Water Fund.	Morrison SWCD staff time for administration of the grant including reporting and grant management. Staff time sharing culvert inventory information with agency partners and at local township and county government meetings.	Secured	\$25,000	\$25,000	-
			<b>State Sub Total</b>	<b>\$25,000</b>	<b>\$25,000</b>	<b>-</b>
<b>Non-State</b>						
In-Kind	Morrison County and Township tax base.	Township Supervisor per diem for semiannual township meeting, time and mileage to identify culverts, submit culvert replacement forms and go over inventory data with SWCD staff; County Public Works time to inventory and mark culverts, host and attend meetings where the information is presented, submit culvert replacement information; County Land Services and GIS Departments time to update Beacon the interactive GIS mapping; County Commissioner per diem to attend and speak at meetings where the information is presented; Marking flags for townships to identify culvert locations during their annual road and bridge drive.	Secured	\$32,000	\$32,000	-
			<b>Non State Sub Total</b>	<b>\$32,000</b>	<b>\$32,000</b>	<b>-</b>
			<b>Funds Total</b>	<b>\$57,000</b>	<b>\$57,000</b>	<b>-</b>

## Attachments

### Required Attachments

#### *Visual Component*

File: [bc09a41b-05b.pdf](#)

#### *Alternate Text for Visual Component*

Map showing Morrison County with remaining townships and Camp Ripley to be inventoried. Also shows all of the culvert locations inventoried since 2016 when the project started....

#### *Board Resolution or Letter*

Title	File
Morrison SWCD Resolution	<a href="#">d984e3b3-b0d.docx</a>

### Supplemental Attachments

#### *Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other*

Title	File
Representative Kresha Support Letter	<a href="#">ad177cbf-20e.pdf</a>
Senator Gazelka Support Letter	<a href="#">ec3e257b-ce5.pdf</a>
Camp Ripley Support Letter	<a href="#">d44e325e-064.doc</a>
Morrison SWCD 2021-238 Background Check Certification	<a href="#">9780ffb2-275.pdf</a>
Morrison County Finished TWSP	<a href="#">ab77e380-5d3.pdf</a>
Staff Field Photo	<a href="#">694f0ded-6f2.jpe</a>
Final Culvert Map	<a href="#">b108294f-f7f.pdf</a>
Photo Collage	<a href="#">4ace2b38-c70.png</a>
Culvert Inventory Project	<a href="#">390cf4a6-111.pdf</a>
Culvert Inventory Project Summary	<a href="#">ecb35f98-dcc.pdf</a>
Water Storage and Prioritization	<a href="#">daaa053c-7a4.pdf</a>

#### *Media Links*

Title	Link
Morrison County Beacon GIS	<a href="https://beacon.schneidercorp.com/?site=MorrisonCountyMN">https://beacon.schneidercorp.com/?site=MorrisonCountyMN</a>

### Difference between Proposal and Work Plan

#### *Describe changes from Proposal to Work Plan Stage*

Changes made based on comments from LCCMR staff 2/10/21.

## 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 understand the Commissioner's Plan applies.

**Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?**

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

## Work Plan Amendments

Amendment ID	Request Type	Changes made on the following pages	Explanation & justification for Amendment Request (word limit 75)	Date Submitted	Approved	Date of LCCMR Action
1	Completion Date	Previous Completion Date: 10/31/2023 New Completion Date: 06/30/2024	We have not spent all of our funding yet for the project and continue to work towards project goals.	May 25, 2023	Yes	May 25, 2023
2	Amendment Request	<ul style="list-style-type: none"> <li>• Budget</li> <li>• Project Collaborators - Project Partner Info</li> <li>• Budget - Personnel</li> <li>• Budget - Professional / Technical Contracts</li> <li>• Budget - Travel and Conferences</li> </ul>	<p>We are requesting:</p> <ul style="list-style-type: none"> <li>• Contracts and Services budget would decrease \$20,000 to \$0.</li> <li>• Travel budget would be reduced by \$8,004.95 to a revised budget of \$1,495.05</li> <li>• Personnel – Engineering Technician would be increased by 28,004.95.</li> </ul> <p>Our Technician has been able to continue to complete contract goals without assistance and has determined he will not need assistance from West Central Technical Service Area (WCTSA) Engineers. The District has absorbed travel costs.</p>	October 5, 2023	Yes	October 9, 2023
3	Completion Date	Previous Completion Date: 06/30/2024 New Completion Date: 04/30/2024	Project is completed and we would like to submit a final update. Thank you, Shannon	May 10, 2024	Yes	June 25, 2024

# Additional Status Update Reporting

## Additional Status Update July 26, 2024

**Date Submitted:** July 26, 2024

**Date Approved:** August 14, 2024

### Overall Update

Since ENRTF funding for this project began all 28 township road centerline culverts, Camp Ripley and county ditch culverts have been surveyed for a total of 7,800 culverts. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data has helped de-escalate conflicts between landowners and at times units of government.

Since November 30, 2023, the townships that have submitted culvert replacement forms have had their replacement culverts surveyed and inventoried. All townships have been encouraged to submit a culvert replacement form to help keep the county inventory as up to date as possible. Inventory work is completed, and the data reports and analyses have been completed with updated replacement culverts. All this information is stored at the SWCD, with Morrison County and with the appropriate road authorities.

Our office continues to assist township board road authorities and their contractors as well as Morrison County Public Works and Land Services and Camp Ripley with technical and engineering assistance. Morrison County has experienced several intense rain events that have washed out roads and culverts where this information was able to help reconstruct infrastructure in these washed-out areas.

### Activity 1

Inventoried culverts is completed in Morrison County, specifically township centerline and driveways. Milestones # 1 thru # 7 are completed. Our engineering technician was supported by this grant to do this work.

Milestone # 1: Completed. We are working in-house with our local staff to identifying and designing water storage locations throughout the county. Four water storage projects are in the works and have been designed by USFW.

Milestone # 2: Completed. Provide updated culvert inventory data to Camp Ripley, MNDNR, FEMA, county, townships, and consulting engineer firms.

Milestone # 3: Completed. Provide updated culvert inventory data and prioritization suggestions to road authorities and share with partners.

Milestone # 4: Completed. Prioritize and rank inventory work based on watershed and safety considerations.

Milestone # 5: Completed. Provide updated culvert inventory data to Morrison County for publication on the Morrison County Beacon GIS.

Milestone # 6: Completed. Create and maintain a database of all culvert elevations throughout the county.

Milestone # 7: Completed. Conduct culvert inventories on approximately 4,000 culverts.

*(This activity marked as complete as of this status update)*

### Dissemination

The final culvert inventory has been submitted to Morrison County GIS Department to be updated on the County GIS Beacon Site for the public and other resource professionals to access. The Morrison SWCD engineering technician continues to offer assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data



has helped de-escalate conflicts as well as help reconstruct infrastructure that has washed out during extreme rain events the last couple of years. The Morrison SWCD engineering technician continues to Co-Chair of the state culvert standard work group. The culvert standard work group is a subcommittee to the MN 3D Geomatics Committee. The culvert work group is a group of resource and engineering professionals working on developing a uniform standard for culvert inventories statewide. The data from this LCCMR project is being used as a model for the statewide standard.

# Status Update Reporting

## Final Status Update June 14, 2024

**Date Submitted:** June 25, 2024

**Date Approved:** July 10, 2024

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# Additional Status Update Reporting

## Additional Status Update August 14, 2024

**Date Submitted:** May 29, 2024

**Date Approved:** June 18, 2024

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### Dissemination

The final culvert inventory has been submitted to Morrison County GIS Department to be updated on the County GIS Beacon Site for the public and other resource professionals to access. The Morrison SWCD engineering technician continues to offer assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data

has helped de-escalate conflicts as well as help reconstruct infrastructure that has washed out during extreme rain events the last couple of years. The Morrison SWCD engineering technician continues to Co-Chair of the state culvert standard work group. The culvert standard work group is a subcommittee to the MN 3D Geomatics Committee. The culvert work group is a group of resource and engineering professionals working on developing a uniform standard for culvert inventories statewide. The data from this LCCMR project is being used as a model for the statewide standard.

# Additional Status Update Reporting

## Additional Status Update April 30, 2024

**Date Submitted:** April 30, 2024

**Date Approved:** May 10, 2024

### Overall Update

Since ENRTF funding for this project began all 28 township road centerline culverts, Camp Ripley and county ditch culverts have been surveyed for a total of 7,800 culverts. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data has helped de-escalate conflicts between landowners and at times units of government.

Since November 30, 2023, the townships that have submitted culvert replacement forms have had their replacement culverts surveyed and inventoried. All townships have been encouraged to submit a culvert replacement form to help keep the county inventory as up to date as possible. Inventory work is completed, and the data reports and analyses have been completed with updated replacement culverts. All this information is stored at the SWCD, with Morrison County and with the appropriate road authorities.

Our office continues to assist township board road authorities and their contractors as well as Morrison County Public Works and Land Services and Camp Ripley with technical and engineering assistance. Morrison County has experienced several intense rain events that have washed out roads and culverts where this information was able to help reconstruct infrastructure in these washed-out areas.

### Activity 1

Inventoried culverts is completed in Morrison County, specifically township centerline and driveways. Milestones # 1 thru # 7 are completed. Our engineering technician was supported by this grant to do this work.

Milestone # 1: Completed. We are working in-house with our local staff to identifying and designing water storage locations throughout the county. Four water storage projects are in the works and have been designed by USFW.

Milestone # 2: Completed. Provide updated culvert inventory data to Camp Ripley, MNDNR, FEMA, county, townships, and consulting engineer firms.

Milestone # 3: Completed. Provide updated culvert inventory data and prioritization suggestions to road authorities and share with partners.

Milestone # 4: Completed. Prioritize and rank inventory work based on watershed and safety considerations.

Milestone # 5: Completed. Provide updated culvert inventory data to Morrison County for publication on the Morrison County Beacon GIS.

Milestone # 6: Completed. Create and maintain a database of all culvert elevations throughout the county.

Milestone # 7: Completed. Conduct culvert inventories on approximately 4,000 culverts.

*(This activity marked as complete as of this status update)*

### Dissemination

The final culvert inventory has been submitted to Morrison County GIS Department to be updated on the County GIS Beacon Site for the public and other resource professionals to access. The Morrison SWCD engineering technician continues to offer assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data

has helped de-escalate conflicts as well as help reconstruct infrastructure that has washed out during extreme rain events the last couple of years. The Morrison SWCD engineering technician continues to Co-Chair of the state culvert standard work group. The culvert standard work group is a subcommittee to the MN 3D Geomatics Committee. The culvert work group is a group of resource and engineering professionals working on developing a uniform standard for culvert inventories statewide. The data from this LCCMR project is being used as a model for the statewide standard.

# Status Update Reporting

## Status Update December 1, 2023

**Date Submitted:** November 30, 2023

**Date Approved:** January 18, 2024

### Overall Update

Since ENRTF funding for this project began all 28 township road centerline culverts, Camp Ripley and county ditch culverts have been surveyed for a total of 7,800 culverts. The last two construction seasons have been dryer than normal and has consequently reduced the amount of drainage conflicts. None the less, this data has helped de-escalate conflicts between landowners and at times units of government.

Since May 31st, 2023, the townships that have submitted culvert replacement forms have had their replacement culverts surveyed and inventoried. All townships have been encouraged to submit a culvert replacement form to help keep the county inventory as up to date as possible. Inventory work is completed, and the data reports and analyses have been completed with updated replacement culverts. All this information is stored at the SWCD and with the appropriate road authorities.

Our office continues to assist township board road authorities and their contractors as well as Morrison County Public Works and Camp Ripley with technical and engineering assistance. Morrison County has experienced several intense rain events that have washed out roads and culverts where this information was able to help reconstruct infrastructure in these washed-out areas.

### Activity 1

Inventoried culverts is completed in Morrison County, specifically township centerline and driveways. Milestones # 1 thru # 7 are completed. Our engineering technician was supported by this grant to do this work.

Milestone # 1: In Process. We are working in-house with our local staff to identifying and designing water storage locations throughout the county.

Milestone # 2: Completed. Provide updated culvert inventory data to Camp Ripley, MNDNR, FEMA, county, townships, and consulting engineer firms.

Milestone # 3: Completed. Provide updated culvert inventory data and prioritization suggestions to road authorities and share with partners.

Milestone # 4: Completed. Prioritize and rank inventory work based on watershed and safety considerations.

Milestone # 5: Completed. Provide updated culvert inventory data to Morrison County for publication on the Morrison County Beacon GIS.

Milestone # 6: Completed. Create and maintain a database of all culvert elevations throughout the county.

Milestone # 7: Completed. Conduct culvert inventories on approximately 4,000 culverts. Buckman, Buh, Granite, Lakin, Morrill, Parker, Pulaski, and Swanville Townships were completed this field season.

### Dissemination

The final culvert inventory has been submitted to Morrison County GIS Department to be updated on the County GIS Beacon Site for the public and other resource professionals to access. The Morrison SWCD engineering technician continues to offer assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County.



The Morrison SWCD engineering technician continues to Co-Chair of the state culvert standard work group. The culvert standard work group is a subcommittee to the MN 3D Geomatics Committee. The culvert work group is a group of resource and engineering professionals working on developing a uniform standard for culvert inventories statewide. The data from this LCCMR project is one just a handful of inventories across the state being used as a model for the state-wide standard.

# Status Update Reporting

## Status Update June 1, 2023

**Date Submitted:** May 31, 2023

**Date Approved:** June 26, 2023

### Overall Update

Since December 1st, 2022, the remaining township culverts were surveyed, and the data has been compiled into a report and delivered to all the road authorities. All townships have contacted about submitting a culvert replacement form to help keep the county inventory as up to date as possible. Inventory work is completed, and the data reports and analyses have been completed.

Since ENRTF funding for this project began all 28 township road centerline culverts, Camp Ripley and county ditch culverts have been surveyed for a total of 7,800 culverts.

### Activity 1

Inventoried culverts is completed in Morrison County, specifically township centerline and driveways. Milestone # 1 is still in progress and Milestones # 2 thru # 7 are completed. Our engineering technician was supported by this grant to do this work.

Milestone # 1: In Progress. We are still working on identifying and designing water storage locations throughout the county.

Milestone # 2: Completed. Provide updated culvert inventory data to Camp Ripley, MNDNR, FEMA, county, townships, and consulting engineer firms.

Milestone # 3: Completed. Provide updated culvert inventory data and prioritization suggestions to road authorities and share with partners.

Milestone # 4: Completed. Prioritize and rank inventory work based on watershed and safety considerations.

Milestone # 5: Completed. Provide updated culvert inventory data to Morrison County for publication on the Morrison County Beacon GIS.

Milestone # 6: Completed. Create and maintain a database of all culvert elevations throughout the county.

Milestone # 7: Completed. Conduct culvert inventories on approximately 4,000 culverts. Buckman, Buh, Granite, Lakin, Morrill, Parker, Pulaski, and Swanville Townships were completed this field season. Approximately 1800 culverts were inventoried since the beginning of the grant.

### Dissemination

Final reports to the townships that were surveyed this previous field season are completed and have been delivered to those townships that were completed in the summer of 2022. The Morrison SWCD engineering technician continues to offer assistance to township officials, Morrison County, landowners and Camp Ripley as requested and work with each of these entities to keep the inventory up to date and to resolve drainage issues as this issue continues to be one of the most challenging natural resource problems in Morrison County.

The Morrison SWCD engineering technician is a Co-Chair of the state culvert standard work group. The culvert standard work group is a subcommittee to the MN 3D Geomatics Committee. The culvert work group is a group of resource and engineering professionals working on developing a uniform standard for culvert inventories statewide. The data from this LCCMR project is one just a handful of inventories across the state being used as a model for the state-wide standard.

# Status Update Reporting

## Status Update December 1, 2022

**Date Submitted:** November 30, 2022

**Date Approved:** December 16, 2022

### Overall Update

Since June 1st, 2022, the remaining township culverts were surveyed. In addition to these townships that were inventoried this summer, all previously completed townships had the newly installed culverts inventoried to add an updated inventory to each of the previously completed townships. The engineering technician worked with township supervisors in remaining townships to identify the existing culverts during the field season. Inventory work is completed, and the data reports and analyses have started for the winter season. See Attached Map (Tab 7).

### Activity 1

Inventoried culverts is completed in Morrison County, specifically township centerline and driveways. Milestones # 1 thru # 3 are completed and Milestones #4 thru #7 are still in progress. Our engineering technician was supported by this grant to do this work. Our summer intern was supported with a Sourcewell grant during the field season.

Milestone # 1: Completed. Create and maintain a database of all culvert elevations throughout the county.

Milestone # 2: Completed. Conduct culvert inventories on approximately 4,000 culverts. Buckman, Buh, Granite, Lakin, Morrill, Parker, Pulaski, and Swanville Townships were completed this field season. Approximately 1800 culverts were inventoried since the beginning of the grant.

Milestone # 3: Completed. Provide updated culvert inventory data to Morrison County for publication on the Morrison County Beacon GIS.

Milestone #4: Not Started

Milestone #5: Not Started

Milestone #6: In Progress. Inventory data will be provided to the DNR and FEMA once culvert reports are completed. Inventory data was sent to DNR LiDAR.

Milestone #7: In Progress. Inventory data will be provided to the Townships once culvert reports are completed and share with partners.

### Dissemination

Digital copies of the culvert inventory have been sent to DNR LiDAR and FEMA for their use. We presented updates to the County Board and at the Township Association meeting in October 2022. Final reports to the townships that were surveyed this field season will be completed and delivered to those townships when completed in late winter 2023 / early spring 2023.

# Status Update Reporting

## Status Update June 1, 2022

**Date Submitted:** May 31, 2022

**Date Approved:** July 6, 2022

### Overall Update

All ongoing. Since July 20th, 2021 two more townships were completed, Ripley and Bellevue as were the areas in Camp Ripley for a total of 1,017 new culverts inventoried. The engineering technician worked with township supervisors in the remaining townships to identify where existing culverts were before starting field work. Inventory work can only be done during the construction season so once things froze up maps were created and data sharing were completed.

### Activity 1

Inventory culverts within Morrison County, specifically township road centerline and private driveways. All milestones are still ongoing. Our Engineering Technician was supported by this grant to do this work. We received another grant from Sourcewell to staff a summer intern who also helped with this program during the field season months.

Milestone #1: In Progress. Create and maintain a database of all culvert elevations throughout the county.

Milestone #2: In Progress. Conduct culvert inventories on approximately 4,000 culverts is still in progress. Ripley and Bellevue Townships are complete as are culverts in and around the edge of Camp Ripley. Buckman Township was started but not yet completed. 1017 culverts were inventories since the beginning of the grant.

Milestone #3: Not Started

Milestones #4: Not Started

Milestone #5: Not Started

Milestone #6: Inventory data was then provided to Camp Ripley, DNR and FEMA.

Milestone #7: In Progress. Updated culvert inventory data and prioritization suggestions to road authorities was shared for the townships completed and for Camp Ripley.

### Dissemination

Reports of the culvert inventory data that have been completed have been supplied to township officials as both a hard copy and an electronic copy and to Camp Ripley as an electronic copy. Maps detailing locations of culverts by sections along with the data which in an Excel spreadsheet format will be included as will a key for the information. Reports will also include locations and elevation data for centerline and private drive culverts along township roads. The reports will also detail material size, type, shape and conditions of pipes and flow direction. Culverts will then be rated based on their current conditions and recommended maintenance activities will be noted.

We have presented updates to the County Board, the annual Township Association meetings both right before funding was executed and after the project was started.