

LOWER MINNESOTA RIVER WATERSHED DISTRICT  
**2020 UPDATED GULLY INVENTORY AND CONDITION ASSESSMENT**

WORKPLAN – March 23, 2020

*Using the Minnesota River as a focal point, this project will examine issues facing the river's complex natural system, which is a shared resource and a place where varied interests and other systems converge. The report will examine pressures on the river from inside the watershed and expand to consider areas upland of the watershed. Fieldwork will be conducted to inventory gullies in the watershed and to prioritize the gullies by their potential for loading sediment into the Minnesota River. The outcome will determine the primary areas of flow and sediment contribution into the Minnesota River between the City of Carver and the confluence with the Mississippi River, as well as formulating potential management strategies moving forward.*

**Summary**

*Outcome:* 2020 Updated Gully Inventory and Condition Assessment

*Timeline for Completion of Project:* 2020 – 2021

*Project Partners:* Minnesota Department of Natural Resources (MnDNR), U.S. Fish and Wildlife Service (USFWS), Trout Unlimited, City of Burnsville, City of Eagan, City of Bloomington, City of Savage, City of Shakopee, City of Chaska, City of Chanhassen, Dakota County, Carver County, Scott County, and Hennepin County.

*Audience (For whom is this plan intended?):* Cities and counties within the Lower Minnesota River Watershed District (LMRWD), and resource and landuse professionals.

*Total Project Budget:* \$109,000 – \$118,500, see table 1

**Objective 1. Project Management**

*Task 1-1: Project plan development and project management.* Finalize the workplan; assign project tasks; determine if additional resources are needed; set dates for deliverables; generate and maintain project schedule/Gantt chart.

*Timeline for Objective 1 Completion:* 5 – 7 months

*Estimated Objective 1 Budget:* \$4,500 – \$6,000

**Objective 2. Collect and Review Data**

*Task 2-1: Gather background information.* Gather background resource information from public resources, including LiDAR data from the MnDNR, and water resources management plans from partners' websites listed above. Develop standardized email for LMRWD to send to project partners notifying them about the project and advising that they may be contacted by Young Environmental staff.

*Task 2-2: Desktop analysis.* From the information collected in task 2-1, develop a list and map of existing gullies, as well as proposed and completed projects since 2006 that may have addressed gully erosion. Reach out to partners identified above for additional information as needed. Develop a Gully Erosion Susceptibility analysis and map using geospatial data, including MnDNR LiDAR data, soil types, land use and land cover, and surficial geology, to determine remotely which areas within the LMRWD watershed may be most susceptible to gully erosion.

*Task 2-3: Complete a gaps analysis for 2020 fieldwork.* Validate 2006 Gully Inventory and compare to LMRWD and partner studies and projects since 2006, as well as LMRWD and partner planned studies and projects and the

Gully Erosion Susceptibility analysis from task 2-2. Develop a list of sites which have not been assessed to date that will provide the basis for the objective 3 fieldwork. Work with project partners as needed.

*Task 2-4: Condition assessment means and methods.* Develop means and methods to address data gaps in the existing gully inventory and ensure the necessary data for determining a conditional assessment is collected during the 2020 fieldwork. Develop field data collection sheets to ensure data needed to objectively assess and rank an individual gully is captured during summer field visits.

*Timeline for Objective 2 Completion:* 6 – 10 weeks

*Estimated Objective 2 Budget:* \$15,000 – \$17,000

### **Objective 3. Fieldwork**

*Task 3-1: Gully Inventory.* Deploy a team of interns to update the 2006 LMRWD Gully Inventory. Interns will collect photographs and waypoint locations of each of the gullies in the District identified in objective 2. Using the field data collection sheets developed in task 2-4, the current gully condition will be objectively assessed in the field. This will be supported by field data collection sheets, photographs, waypoint locations, and any field notes detailing the condition of the gully.

*Task 3-2: Gully Ranking.* Based on the gully condition assessment, rate the identified and assessed gullies in the LMRWD by the potential for sediment loading into the Minnesota River, HVRA, or 303-listed impaired waterbody, and potential project partnering opportunities.

*Timeline for Objective 3 Completion:* 12 weeks

*Training Needed for Objective 3:* Field safety training; gully condition assessment field sheets training.

*Equipment Needed for Objective 3:* Bug spray, sun block, car rental, LMRWD decals for cars, broomsticks/walking sticks, personal protective equipment (safety vests, safety glasses, hats), first aid kits, field notebooks, pencils, water bottles, and survey rods/measuring tape

*Estimated Objective 4 Budget:* \$74,000 – \$78,000

### **Objective 4. Documentation**

*Task 4-1: Generate draft outline.* Generate draft annotated outline for the 2020 Updated Gully Inventory that will document the assumptions, methodology, results of the desktop analyses and 2020 fieldwork, and any recommendations or conclusions.

*Task 4-2: Develop Updated Gully Inventory report.* Building on the annotated outline, develop the draft report documenting methods, assumptions, procedures, results, and recommendations.

*Task 4-3: Presentation of Approach and Preliminary Findings.* Interns will present the gully inventory, condition assessment, and preliminary results to the LMRWD Board

*Task 4-4: Submit Report for Review and Finalize Document.* Submit draft Updated Gully Inventory to the District and project partners for consideration and written feedback with a two-week review window for return comments. Review feedback on draft Updated Gully Inventory. Incorporate edits as needed and submit final report to Board and project partners.

*Timeline for Objective 4 Completion:* 4 weeks

*Estimated Objective 4 Budget:* \$15,500 – \$17,500

**Table 1: LMRWD 2020 Gully Inventory Update – Schedule and Cost Estimate**

Objective	Task	Schedule (Mar. – Oct. 2020)	Budget
Objective 1. Project Management	Task 1-1: Project plan development and project management	5 – 7 months	\$4,500 – \$6,000
Objective 2. Collect and Review Data	Task 2-1: Gather background information	6 – 10 weeks	\$15,000 – \$17,000
	Task 2-2: Desktop analysis		
	Task 2-3: Complete gaps analysis for 2020 fieldwork		
	Task 2-4: Condition assessment means and methods		
Objective 3. Gully Inventory	Task 3-1: Gully inventory	10 – 12 weeks	\$74,000 – \$78,000
	Task 3-2: Gully ranking		
Objective 4. Documentation	Task 4-1: Annotated outline	4 weeks	\$15,500 – \$17,500
	Task 4-2: Updated Gully Inventory report		
	Task 4-3: Presentation of approach and findings		
	Task 4-4: Submit report for review and finalize Updated Gully Inventory		
Total		5 – 7 months	\$109,000 – \$118,500