



Young Environmental Consulting
Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Della Schall Young, CPESC, PMP

Date: August 14, 2020

Re: LMRWD 3rd and 4th quarter 2020 and 2021 Work Plans

Below is a table summary of the attached work plans for the third and fourth quarter 2020 and 2021. Young Environmental developed the work plans, as requested, to present the purpose and intent of each project where funds have been levied or will be levied according to the activities outlined in the District's watershed management plan.

Projects	2012–19	2020	2021
Spring Creek Hydrology and Hydraulic Study: The proposed study resulted from complaints from two residents with properties abutting Spring Creek that have and continue to sustain damage from erosion. This study is designed to develop the modeling to validate and potentially enhance the proposed 2019 creek stabilization designs for 112 5th Street West and 404 Broadway Street in Carver, Minnesota.	X	X	X
Calcareous Fens: This brings three activities for moving the District's understanding of these high-value resources: (1) completing the value engineering workshop, which will guide the development of the predictive tool and monitoring network; (2) to complete the Gun Club Fen stormwater intrusion study; and (3) to draft the Seminary Fen Management Plan.	X	X	X
Assumption Creek Hydrology Assessment: The hydrology of the trout stream needs to be studied and restored. As noted in the 2019 Geomorphic Assessment and highlighted in the watershed management plan, the hydrology needs to be evaluated for opportunities to resupply the surface and groundwater to the creek.	X		

Projects	2012–19	2020	2021
<p>Minnesota River Floodplain Model Feasibility Study: The District Rules have incorporated the flood fringe into the overall floodplain management. However, modeling for projects is evaluated individually, not based on the cumulative effects of all these projects on the Minnesota River floodplain and flood fringe. This study would review the current models and consider the cumulative effects of the projects on the Minnesota River floodplain and flood fringe.</p>	X		
<p>Gully Inventory and Assessment (South Side): This work will build upon the 2020 Gully Inventory and Condition Assessment report by identifying potential gullies that were not inspected or assessed in the original 2007 Gully Inventory. Using GIS software and supplemental fieldwork, this work will identify potential gullies that are contributing to the flow and sediment accumulation of the Minnesota River from the cities of Burnsville, Eagan, Savage, and Shakopee, as well as develop recommendations for future field work to assess the condition of these gullies.</p>		X	
<p>Minnesota River Corridor Management Project: The plan will examine the pressures on the river from inside the watershed and will expand to consider areas upland of the watershed, given that the river is itself a complex natural system and a shared resource where varied interests such as recreation and commerce converge. The outcome will be the development of a shared vision for maximizing public benefits, including the following: (1) creating greater understanding of the Lower Minnesota River Corridor and its landscape, (2) describing a desired future for the river and discussing how change in the surrounding landscape can help attain this future, (3) suggesting a structure or framework by which the vision can be implemented, and (4) identifying shared public values that form the basis of the project.</p>			X
<p>Education and Outreach: This presents the activities for the newly formed E&O activities, such as the 60th Anniversary, as well as the formation and management of the citizen advisory committee and watershed signages.</p>			X

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Spring Creek Hydrology and Hydraulics Study

WORK PLAN – August 3, 2020

Summary

<i>Outcome:</i>	Spring Creek hydrology and hydraulics study to validate the proposed 2019 stabilization designs for 112 5 th Street West and 404 Broadway Street in Carver, MN.
<i>Project Partners:</i>	Minnesota Department of Natural Resources (MNDNR), U.S. Army Corps of Engineers (USACE), Carver County, and City of Carver
<i>Timeline for Completion of Project:</i>	September through December 2020
<i>Total Project Budget:</i>	\$20,900–\$26,200

Objective 1. Project Management

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

Timeline for Completion: September 2020

Deliverables: Invoices and project updates

Estimated Budget: \$2,500–\$3,000

Objective 2. Data Collection and Review

Task 2-1: Gather available information. Collect available background resource information and modeling data from public resources including the City of Carver, the Minnesota Department of Natural Resources, and the U.S. Army Corps of Engineers. Hydrology information from the USGS StreamStats website also will be reviewed to determine if it is appropriate for this project in lieu of developing a separate hydrology model. Any available soils data also will be collected to evaluate the potential for scour and sediment transport. The data collected and used will be summarized in a technical memorandum in Objective 5.

Timeline for Completion: September 2020

Estimated Budget: \$2,600–\$2,900

Objective 3. Hydrology Model

Task 3-1: Develop a hydrology dataset for the hydraulic modeling. Evaluate the StreamStats data collected in Objective 2 and determine if it is appropriate to use these flows for the hydraulic modeling. If the error associated with the StreamStats data is determined to be too high or uncharacteristic of the flows occurring in Spring Creek, then develop a preliminary HEC-HMS model to determine design flows for the Spring Creek watershed. Flows to be determined include bankfull (approximately 1- to 2-year event), 10-year, 50-year, 100-year, and 500-year flood events, consistent with FEMA requirements for floodplain submittals.

Task 3-2: Evaluate changes in hydrology and watershed. The 2019 Spring Creek Assessment Summary conducted by Barr included recommendations to evaluate changes in hydrology from the larger Spring Creek watershed to determine what the area may experience in the future and aid in the design of stabilization measures. Using the LMRWD “Climate Assessment” memorandum developed as part of the 2020 LMRWD “Fens

Sustainability Gaps Analysis,” we also will estimate future hydrologic conditions as influenced by climate change and future land use changes in the City of Carver.

Timeline for Completion: September through October 2020

Deliverable: Design flows for existing conditions as well as predicted conditions

Estimated Budget: \$2,300–\$5,400

Objective 4. Hydraulic Model

Task 4-1: Develop preliminary model: Using HEC-RAS, we will develop a 1D model of the lower Spring Creek existing conditions, from the confluence with the Minnesota River to approximately 6th Street West in the City of Carver, consistent with current FEMA floodplain standards. Using the design flows developed in Objective 3, the existing conditions and future hydrologic conditions will be evaluated and water surface elevations, velocities, and stream power within the channel will be determined. Preliminary results will be presented in tabular and graphical form for review.

Task 4-2: Quality control and review: Barr Engineering will provide a review of the hydrology and hydraulic models and results developed in Tasks 3 and 4 to ensure compatibility with regional and federal floodplain standards and to confirm that best engineering practices have been applied. Barr Engineering will provide Young Environmental with a summary of specific comments that should be addressed in Task 4-3.

Task 4-3: Finalize models: Based on the comments received by Barr Engineering in Task 4-2, Young Environmental will update the hydrologic and hydraulic models and revise the result tables and figures.

Task 4-4: Evaluate 2019 proposed designs: The 2019 Barr report included the Carver SWCD conceptual plans for two residences along Spring Creek (112 5th Street West and 404 Broadway Street). Those proposed designs will be reevaluated based on the updated channel flows and velocities determined in Task 4-3. Recommendations will be made to improve the resilience of the proposed stabilization measures for long-term success.

Timeline for Completion: October through November 2020

Deliverables: HEC-RAS modeling, results, and maps; design recommendations

Estimated Budget: \$5,700–\$6,300

Objective 5. Documentation

Task 5-1: Develop a draft technical memorandum: Develop a draft technical memorandum that will document the data collected, methods and software used, and results from the hydrologic and hydraulic models. Based on the results from the hydraulic modeling, the proposed stabilization designs will be evaluated, and any proposed revisions will be presented. The draft memo will be submitted to the District and city partners for consideration and written feedback.

Task 5-2: Finalize the Report: Finalize draft report and incorporate project partners, district administrator, and managers’ written feedback.

Timeline for Completion: November–December 2020

Deliverables: Draft and final memo and results

Estimated Budget: \$7,800–\$8,600

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Calcareous Fens

WORK PLAN—August 3, 2020

During 2019–2020, the District completed a comprehensive review of the calcareous fens within its jurisdiction, and the review is documented in the 2020 Fen Sustainability Gaps Analysis for Carver, Dakota, and Scott Counties Minnesota report (Report). The fens are Gun Club Lake North and South Fens, Nicols Meadow Fen and Black Dog Fen in Dakota County, Seminary Fen in Carver County, and Savage Fen in Scott County. The report recommends a number of activities necessary to protect and preserve these high value resources. The recommendations for priority action are presented below and are based on partner interest and the available information.

Summary

<i>Outcome:</i>	various reports and analysis
<i>Project partners:</i>	Minnesota Department of Natural Resources (DNR), US Fish and Wildlife Service (USFWS), stakeholder organizations, other partner agencies
<i>Timeline for completion of project:</i>	October 2020–December 2021
<i>Total project budget:</i>	\$87,000–\$109,250

Objective 1. Groundwater Recharge Value Engineering Workshop

Task 1-1: Value Engineering Workshop. Over the past few years, the District has considered numerous methods of understanding the sustainability of calcareous fens within its jurisdiction, including modeling and predicting the effects of permitted pumping and climate on the system as well as monitoring and tracking both dynamic and static water levels of the fens. Through a facilitated two- to three-hour workshop, we will bring groundwater professionals together to review the available information on the fens and the District’s goals to develop the best approach for understanding fen groundwater management sustainability.

Timeline for completion: two months

Deliverables: invitational e-mail, agenda, review package, and instructions and outcomes summary

Estimated objective 1 budget: \$5,000–\$7,500

Objective 2. Gun Club Fen Stormwater Intrusion Study

Task 2-1: Stormwater Intrusion Study. During spring 2020, the DNR approached the District about investigating a scar that has formed within the Gun Club North Fen (see the attached map). This study will investigate the sources of the stormwater channeled toward the fen and will generate concept plans to mitigate the flow upstream and/or diffuse it when it enters the fen to correct the scar.

Timeline for completion: three months

Deliverables: draft and final feasibility study

Estimated objective 2 budget: \$17,000–23,750

Objective 3: Seminary Fen Management Plan

Task 3-1. Complete the Fen Management Plan. Over the past ten years or so, the DNR, Metropolitan Council, and other stakeholders have convened a workgroup focused on protecting the Seminary Fen. The appears to have stalled, but the *Fen Sustainability Gaps Analysis* completed by the District should be used to reignite the workgroup to complete the management plan. The work would consist of facilitating workgroup discussions focused on reviewing the outcomes of the *Fen Sustainability Gaps Analysis*, the pending *Trout Streams Study*, and participating in the value engineering workshop to develop a comprehensive management plan for the fen.

Timeline for completion: twelve months

Deliverables: agendas, meeting summaries, and the draft and final management plan

Estimated budget: \$45,000–\$53,000

Task 3-2. Complete Vegetation Study (Relevé). The DNR has identified five locations within the Seminary Fen relevé plots to be completed. For these relevés, as with the ones being completed on Gun Club Lake and the Nicols Meadow fens, the DNR recommends that the studies are completed with two separate field visits—one in June or early July and the other in August or early September. The dual survey ensures all species are visible and identifiable during one of the two visits.

Timeline for completion: five months

Deliverables: floristic quality assessment and summary observations

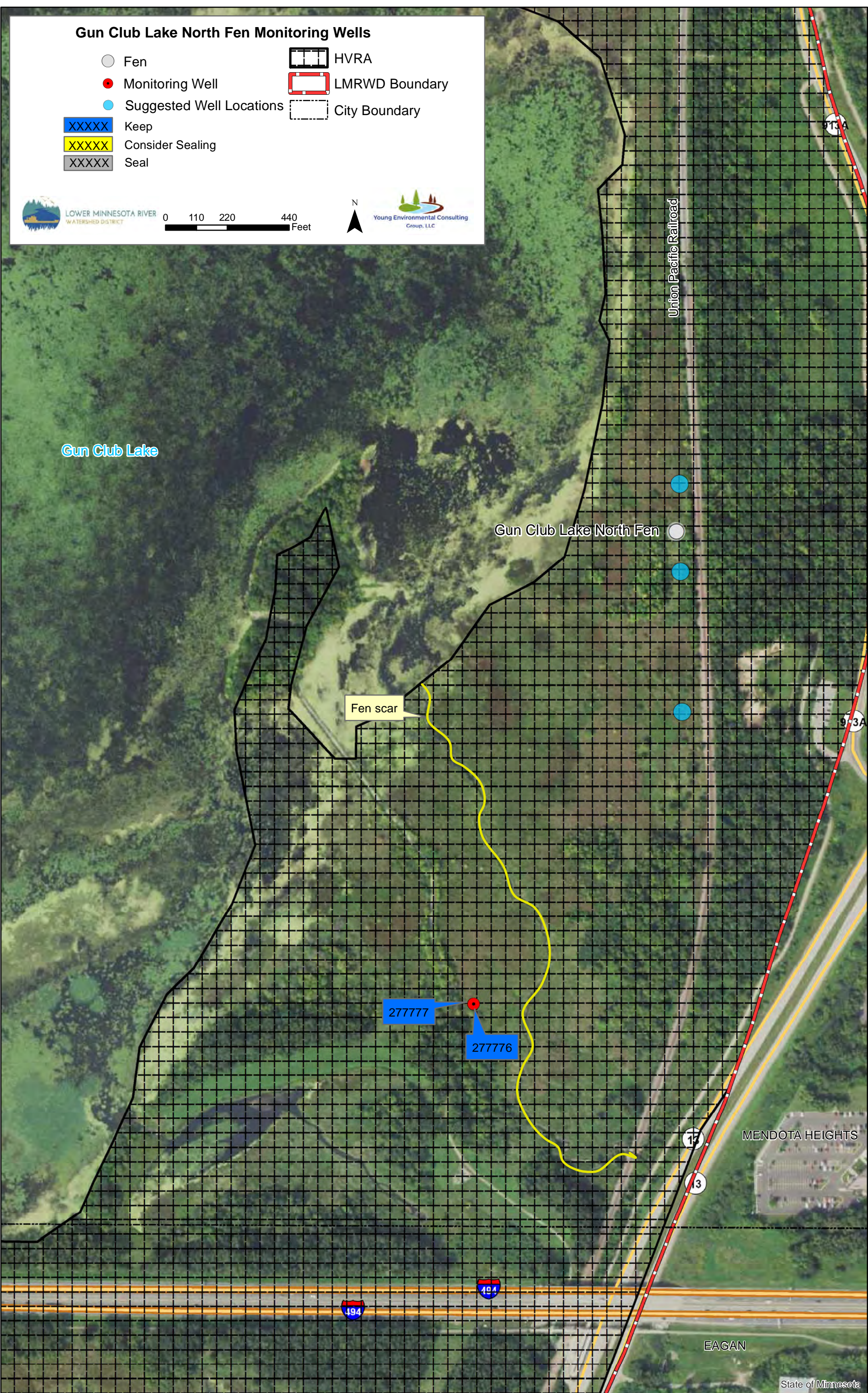
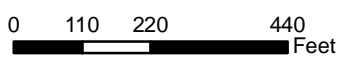
Estimated budget: \$20,000–\$25,000

Gun Club Lake North Fen Monitoring Wells

- Fen
- Monitoring Well
- Suggested Well Locations
- XXXXX Keep
- XXXXX Consider Sealing
- XXXXX Seal
- ▭ HVRA
- ▭ LMRWD Boundary
- ▭ City Boundary



LOWER MINNESOTA RIVER
WATERSHED DISTRICT



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Assumption Creek Hydrology Assessment

WORK PLAN—August 10, 2020

Summary

<i>Outcome:</i>	Assumption Creek Hydrology Assessment, to be used as a supplemental report for the Trout Streams Gaps Analysis and Seminary Fen Management Plans. Building off the 2019 <i>Trout Streams Geomorphology Study</i> and the 2020 <i>Fens Suitability Gaps Analysis</i> , this assessment will focus on the hydrogeology of the system and the contributing stormwater inflows.
<i>Project partners:</i>	Minnesota Department of Natural Resources (MNDNR), US Army Corps of Engineers (USACE), Carver County, and City of Chaska
<i>Timeline for completion of project:</i>	September–December 2020
<i>Total project budget:</i>	\$27,200–\$30,000

Objective 1. Project Management

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

Deliverables: invoices and project updates

Estimated budget: \$2,500–\$3,000

Objective 2. Data Collection and Review

Task 2-1: Gather the available information. Collect background resource information from previous District efforts, including the *Strategic Resources Evaluation Plan*, *Geomorphic and Habitat Assessments of Trout Streams in the Lower Minnesota River Watershed District*, and *LMRWD Fen Sustainability Plan* as well as from public resources, including the City of Chaska, Minnesota Department of Natural Resources, and US Army Corps of Engineers. Together, with the current Trout Streams Strategic Management Plan project, develop a standardized e-mail 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, perform a historic aerial photo analysis of the Assumption Creek watershed and develop a comprehensive list of past land uses and activities that may have altered the surface water and groundwater hydrology near Assumption Creek. Review soils data to identify areas of potential groundwater recharge in the watershed and review land-use changes from the historic aerial photo analysis. A simple hydrology model may also be developed to determine the potential surface water runoff contribution to the creek and downstream Seminary Fen.

Timeline for completion: September 2020

Deliverables: Standardized e-mail to project partners, desktop analysis, project partner meeting agendas, and summaries.

Estimated budget: \$5,400–\$5,800

Objective 3. Field Work

Task 3-1: Complete gaps analysis for Assumption Creek. Evaluate the data collected in Objective 2 for any gaps that would be necessary to restore the hydrology and groundwater connection for Assumption Creek. Review the data for evidence of channel instability, including the presence of mid-channel bars in the east reach. Additionally, this task will include coordination with Barr to reevaluate the 2019 recommendations and others to aid in closing these gaps.

Task 3-2: Collect field data. Visit the locations south of Flying Cloud Drive on Assumption Creek that were inaccessible during the 2019 field work because of flooding on the Minnesota River, and perform geomorphology and habitat assessments following the same methodology and procedures used in 2019. The 2019 report completed by Barr Engineering included recommendations for additional field work: 1) Collect additional flow measurements upstream and downstream of Seminary Fen to quantify baseflow conditions; and 2) If site conditions allow, assess the portion of Assumption Creek downstream of Flying Cloud Drive with the same methodology and procedures used in 2019.

Timeline for completion: September–October 2020

Deliverables: gaps analysis and field data collection

Estimated budget: \$6,900–\$7,600

Objective 4. Documentation

Task 4-1: Generate draft outline. Generate a draft annotated outline that documents the findings and recommendations of Objectives 2 and 3 and that outlines opportunities that may exist to restore the groundwater hydrology.

Task 4-2: Develop the draft report. Build on the annotated outline and develop the draft report documenting the methods, assumptions, procedures, results, and recommendations. Submit the draft report to the District and project partners for consideration and written feedback.

Task 4-3: Present approach and preliminary recommendations. Present the approach and preliminary recommendations to the project partners and the District’s managers.

Task 4-4: Finalize the report. Finalize the draft report and incorporate project partners’, district administrators’, and managers’ written feedback.

Timeline for completion: October–December 2020

Deliverables: annotated outline, draft report, preliminary plan presentation, and final report

Estimated budget: \$12,400–\$13,600

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Lower Minnesota River Floodplain Development Procedures and Model Action Plan

WORK PLAN—August 9, 2020

Summary

<i>Outcome:</i>	Floodplain Regulation Procedures and Model Action Plan
<i>Project partners:</i>	Minnesota Department of Natural Resources (MNDNR), US Army Corps of Engineers (USACE), Dakota County, Carver County, Scott County, Hennepin County, and the fourteen LMRWD Partner Cities
<i>Timeline for completion:</i>	August through December 2020
<i>Total project budget:</i>	\$27,000–\$30,000

Objective 1. Project Management

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

Deliverables: Invoices, project updates

Estimated budget: \$2,500–\$3,000

Objective 2. Data Collection and Review

Task 2-1: Gather available information. Collect background resource information from previous District permits as well as from public resources, including existing modeling data from the MnDNR, Letter of Map Changes from FEMA, and direct requests LMRWD partner cities 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 comprehensive list of items needed to regulate floodplain development effectively and fairly within the District. This task will also develop a comprehensive list of available stormwater and floodplain models in the District, including date last updated and software platform used.

Timeline for completion: August through October 2020

Deliverables: Standardized email to project partners, draft floodplain development procedures criteria, available models

Estimated budget: \$5,500–\$6,000

Objective 3. Project Partner Coordination

Task 3-1: Solicit input from project partners. Reach out to all project partners to solicit input on floodplain development regulation, current floodplain permitting procedures, available floodplain models, and interest in cooperatively working with the District to develop a regional floodplain model. This task will begin following LMRWD notification to project partners in Objective 2.

Task 3-2: Assess project partner input. We will assess project partner responses from Task 3-1 to refine the floodplain development procedures developed in Objective 2 and look for opportunities to develop a regional LMRWD floodplain model. This task will outline opportunities and constraints related to developing a regional LMRWD model, including modeling platforms, data needs, and recommendations.

Timeline for completion: September through October 2020

Deliverables: Project partner meeting agendas and summaries, refinements to floodplain development procedures criteria, available model outline

Estimated budget: \$6,200–\$7,000

Objective 4. Documentation

Task 4-1: Generate draft outline. Generate a draft annotated outline that documents the findings and recommendations of Objectives 2 and 3 and build the foundation for a LMRWD Model Action Plan.

Task 4-2: Develop the draft report. Build on the annotated outline; develop the draft LMRWD Model Action Plan documenting methods, assumptions, procedures, results, and recommendations. Submit draft report to the District and project partners for consideration and written feedback.

Task 4-3: Finalize the report. Finalize LMRWD Model Action Plan, incorporating project partners', district administrator's, and managers' written feedback.

Timeline for completion: October through December 2020

Deliverables: Annotated outline, draft plan, preliminary plan presentation, final plan

Estimated budget: \$12,800–\$14,000

LOWER MINNESOTA RIVER WATERSHED DISTRICT

GULLY 2: SOUTH SIDE OF THE MINNESOTA RIVER DESKTOP ASSESSMENT AND FIELD INVENTORY AND CONDITION ASSESSMENT

WORK PLAN—July 31, 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. This work will build upon the 2020 Gully Inventory and Condition Assessment report by identifying potential gullies that were not inspected or assessed in the original 2007 Gully Inventory. Using GIS software and supplemental fieldwork, this work will identify potential gullies that are contributing to the flow and sediment accumulation of the Minnesota River from the cities of Burnsville, Eagan, Savage, and Shakopee as well as develop recommendations for future field work to assess the condition of these gullies.

Summary

Outcome: Identify and make recommendations for future field work and condition assessments of gullies located in the cities of Burnsville, Eagan, Savage, and Shakopee within the Lower Minnesota River Watershed District.

Timeline for completion: January 2021–September 2021

Project partners: Minnesota Department of Natural Resources (MnDNR), US Fish and Wildlife Service (USFWS), Trout Unlimited, City of Burnsville, City of Eagan, City of Savage, City of Shakopee, Dakota County, and Scott County

Audience (For whom this plan is intended): Cities and counties within the Lower Minnesota River Watershed District (LMRWD) and resource and land use professionals

Total project budget: \$67,600–\$74,900

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, and generate and maintain project schedule/Gantt chart.

Timeline for completion: 5–12 months

Estimated budget: \$3,300–\$4,000

Objective 2. Desktop Analysis

Task 2-1: Review background information. As part of the 2020 Gully Inventory and Assessment Project, the Young Environmental staff collected information from public resources for all cities within the District. Information was extracted for only the sites visited as part of the 2007 Inventory, and the south side of the District was not reviewed as part of that scope. The compiled information will be reviewed, and municipalities within this study area may be contacted for additional information and to determine areas of concern, proposed projects, and completed projects that may affect future field work and surveys. In addition, this task will include coordination with the USFWS and Minnesota Department of Natural Resources to gain permission to perform survey work on their land.

Task 2-2: Gully erosion susceptibility analysis. From the information collected and reviewed in Task 2-1, we will identify and map potential gullies as well as proposed and completed municipal projects that may address gully erosion. Contact partners (identified above) for additional information as needed. Develop a Gully Erosion Susceptibility Analysis and map using geospatial data to estimate which areas within the southern LMRWD

watershed may be susceptible to gully erosion. The analysis will include MnDNR LiDAR data, soil types, land use and land cover, and surficial geology.

Task 2-3: Fieldwork prioritization. From the map of potential and unassessed sites developed in Task 2-2, we will identify additional data that may be needed to complete future field work. We will work with project partners as needed, including coordinating meetings with the municipalities to discuss draft findings and incorporating their input into the final technical memorandum recommendations.

Task 2-4: Technical memo. Develop a list of recommendations to guide future field work assessments. The methodology developed for the desktop analysis will be documented and results and recommendations presented in a technical memorandum to be appended to the final 2020 Gully Inventory Report as a supplemental appendix.

Timeline for completion: 4–6 weeks

Estimated budget: \$5,500–\$6,200

Objective 3. Field Work

Task 3-1: Collect new gully waypoints and field condition assessments. Following the same methodology developed for the *2020 Gully Inventory and Condition Assessment*, conduct site visits to each of the identified gullies from objective 2. As before, Young Environmental will use interns to collect photographs, waypoint locations, and notes detailing the condition of each of the gullies using the same field data collection sheets developed as part of the 2020 Gully Inventory and Assessment Project.

Task 3-2: Collect drone survey bids. Following the completion of the 2020 field season, a final list will be compiled of the sites that were inaccessible because of steep slopes or other safety concerns. We will have local drone experts assess the final list and create mapping to determine if a drone survey is feasible. If a drone survey is determined to be feasible, a separate scope of work will be developed to complete it.

Task 3-3: Gully ranking. Based on the gully condition assessment, Young Environmental will rate the identified and assessed gullies in the LMRWD using the same methodology developed in the *2020 Gully Inventory and Assessment* report. Criteria to be used will include the potential for sediment loading into the Minnesota River, proximity to HVRA or 303-listed impaired waterbody, and interest by project partners.

Timeline for completion: 8–12 weeks, dependent on weather

Estimated budget: \$52,100–\$57,400

Objective 4. Documentation

Task 4-1: Draft technical memorandum. Develop a technical memorandum that presents the methods, results, and recommendations from the 2020–21 fieldwork and append to the final *2020 Gully Inventory and Condition Assessment* report. The draft memorandum will be provided to the district and partners for comment.

Task 4-2: Finalize technical memorandum and append to final 2020 Gully Inventory and Condition Assessment Report. Submit the final technical memorandum and findings to the District and project partners. Append final technical memorandum to the final report for documentation.

Timeline for completion: 4 weeks

Estimated budget: \$6,600–\$7,300

LOWER MINNESOTA RIVER WATERSHED DISTRICT

Minnesota River Corridor (MRC) Plan

WORK PLAN—August 3, 2020

Using the Minnesota River as a focal point, this project will examine issues that face the river's complex natural system, which is a shared resource and a place where varied interests converge. The result of this project will be a multipurpose corridor plan that will serve as a guiding document for all the political jurisdictions and agencies. It will seek to create a new foundation for cooperation and strategic financial investment that can provide multiple benefits.

The plan will examine the pressures on the river from inside the watershed and will expand to consider areas upland of the watershed, given that the river is itself a complex natural system and a shared resource where varied interests such as recreation and commerce converge. The outcome will be the development of a shared vision for maximizing public benefits, including the following: (1) creating greater understanding of the Lower Minnesota River Corridor and its landscape, (2) describing a desired future for the river and discussing how change in the surrounding landscape can help attain this future, (3) suggesting a structure or framework by which the vision can be implemented, and (4) identifying shared public values that form the basis of the project.

Potential management strategies will also be identified as part of the process to improve water quality, integrate wildlife habitat and outdoor recreation, and create a framework for more sustainable economic development within the watershed. The plan will also recognize the role of private land ownership in the development of the watershed and will provide landowners with the tools and opportunities to become more involved and implement best practices.

Summary

<i>Outcome:</i>	Minnesota River Corridor (MRC) Plan
<i>Project partners:</i>	Residents and business owners of LMRWD, Minnesota Board of Water and Soil Resources (BWSR), Minnesota Department of Natural Resources (DNR), US Army Corps of Engineers (USACE), US Coast Guard, US Fish and Wildlife Service (USFWS), Friends of the Mississippi, Minnesota Valley Refuge Friends, stakeholder organizations, and other partner agencies
<i>Timeline for completion:</i>	September 2020 through July 2021
<i>Total project budget:</i>	\$86,100–\$100,000

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 the project schedule and Gantt chart.

Timeline for completion: September 2020 through July 2021

Deliverables: Invoices and project updates

Estimated budget: \$8,200–\$9,800

Objective 2. Collect and Review Data

Task 2-1: Review and build on past efforts. Gather previous plans and studies from partners' websites, past LMRWD studies and projects, and available online data sources. Review to develop a comprehensive list of

resources that exist within or near the District that address water quality, habitat and natural resources, land use and community plans, recreational opportunities, and infrastructure or other intersecting systems.

Task 2-2: Preliminary issue identification and qualitative analysis. Using the information collected in Task 2-1, review the data to identify key concerns, shared values or goals, and projected growth within the watershed. Develop a list of the priority sites and issues as a starting point for public engagement activities.

Task 2-3: GIS mapping. Develop watershed mapping to characterize the Lower Minnesota River Corridor by water quality, habitat and natural resources, land use and community plans, recreational opportunities, and infrastructure or other intersecting systems. Maps will be developed to document the current conditions across the corridor as well as to map the needs related to the Corridor Plan goals.

Timeline for completion: September through November 2020

Deliverables: Development of data matrix and identification of key issues within the watershed from previous studies, preliminary mapping of existing watershed conditions

Estimated budget: \$14,400–\$17,300

Objective 3. Partnering and Public Engagement

Task 3-1: Contact potential project partners and outreach. Reach out to project partners, including municipal partners, county partners, DNR, USFWS, BWSR, landowners (business, agricultural, and residential), recreation and stewardship agencies, and other partner agencies with an introductory email and request a point of contact for those interested in participating in the MRC and technical advisory group process. These points of contact will be asked to participate in future discussions with the District to help identify major issues.

Task 3-2: Focus groups. Three information gathering sessions will be held with randomly selected residential, business, and agricultural landowners located within the watershed and with stewardship and recreation organizations. Participants will be asked to provide their insights into how they value the river, how the river has changed over time, what regulatory issues they have encountered, and what they hope the plan will accomplish. These meetings will be held virtually. Another information gathering session will be held with local watershed organizations that may also be contacted for advice about advertising for public workshops and identifying problems, particularly any lessons-learned from the COVID19 pandemic. Such organizations may include Friends of the Mississippi River and the Vermillion River Watershed District.

Task 3-3: Partner workshops. Review the proposed process and objectives with partners for their endorsement; solicit feedback and learn how their expertise and knowledge of the resource can lend itself to the project. Facilitate a virtual open house to characterize the partners' perspectives of the watershed and the key issues identified in Objective 2. Three workshops will be held virtually and are generally discussed below:

Workshop 1: A River Worth Protecting

The goal of the first workshop is to introduce attendees to the MRC Plan and identify priorities for water quality, habitat, appropriate recreation, and future growth opportunities. The workshop will be broken into regional sessions, by county.

Workshop 2: Working Together

The second workshop will offer participants the opportunity to review and refine the draft concepts for the full corridor plan.

Workshop 3: Putting the Plan into Action

The third workshop will allow the participants to refine the corridor concepts that constitute the Corridor Plan vision. Input will be sought into how the plan will be coordinated and implemented.

Task 3-4: Open house. The draft Minnesota River Corridor Plan will be released for public review and presented at an open house during the public review and comment period. The session will be unstructured to allow project

team members to answer questions and engage participants in discussion about the draft plan. A summary of the received comments will be provided and incorporated into the final document.

Task 3-5: Surveys. Develop an online survey to be incorporated to the LMRWD website to solicit feedback from residents, businesses, and those with an interest in the LMRWD. This survey will be used to determine what the public believes are the key issues facing the District.

Task 3-6: Regulation review. With the adoption of the District Rules in February 2020, we propose to set aside some time in the MRC to check in with partners on the permitting process. While the substance of the rules is not new, the regulatory process is, and there may be room to improve the implementation of the rules and permits as well as reduce costs for the District. Part of this task will include a review of the LMRWD processes compared to other metro watershed districts and state-level water regulation.

Task 3-7: Issue identification and qualitative analysis update. We will update the preliminary issue identification and qualitative analysis based on the feedback from our public outreach activities.

Timeline for completion: October 2020–June 2021

Deliverables: Agendas, facilitation, and summaries for all meetings, workshops, and open houses specified above

Estimated budget: \$18,400–\$25,800

Objective 4. Corridor Plan

Task 4-1: Generate draft outline. Generate a draft of an annotated outline for the MRC Plan, with the following goals cited from the LMRWD’s 2018 Watershed Management Plan:

- *G1. Create greater understanding of the Lower Minnesota River Corridor and its landscape*
- *G2. Describe the desired future of the river and discuss how change in the surrounding landscape can help attain this future*
- *G3. Suggest a structure or framework by which the vision can be implemented*
- *G4. Identify shared public values that form the basis of the project.*

Task 4-3: Draft the Lower Minnesota River Corridor Plan. Utilize information gathered from local resources, partners, previous LMRWD projects, goals, and objectives or strategies to draft the plan. Circulate the draft among project partners for written feedback and allow for a two-week review period. A single page handout will that summarizes the draft report will also be completed for the project partner review.

Task 4-3: Draft plan for public comment and review. Incorporate project partner feedback, finalize the draft plan, and make it available for a 30-day public comment period.

Task 4-4: Final plan. After incorporating comments received during the public comment period, the final report will be updated, finalized, and presented to the board for acceptance.

Timeline for completion: December 2020–July 2021

Deliverables: A draft report for internal review, a public draft report for public comment, and a final report

Estimated budget: \$45,100–\$47,100

LOWER MINNESOTA RIVER WATERSHED DISTRICT

2020–21 Public Education and Outreach Plan

WORK PLAN—August 10, 2020

Summary

<i>Outcome:</i>	2020–22 Public Education and Outreach Plan
<i>Project partners:</i>	City partners, residents, and businesses of the District; US Fish and Wildlife Service (USFWS); US Army Corps of Engineers (USACE); and non-governmental organizations (NGOs)
<i>Timeline for completion of project:</i>	August 2020–December 2021
<i>Total project budget:</i>	2020: \$27,625 – \$34,575 2021: \$61,275 – \$73,325

Objective 1. 60th Anniversary

Task 1-1: Commemorative 60th anniversary YouTube video. This year signifies the District’s 60th year of operation. To commemorate the milestone, a YouTube video will be developed, integrating the historical significance of the organization, its current realities as managers strive to protect high-value resources (calcareous fens, trout waters, and the beautiful Minnesota River Bluffs), and the District’s future. The video will include interviews from past and current board managers and partners.

Task 1-2: Newspaper article. As a companion piece to Task 2-1, an article will be developed for the website. The article will include infographics and a historical timeline. In addition, the team will contact environmental reporters at NPR and the *Star Tribune* to publish pieces on the District.

Timeline for Completion: August 2020–December 2020

Deliverables: YouTube video, newsletter, and articles on NPR and in the *Star Tribune*

Estimated budget: \$18,900–\$23,500

Objective 2. Citizen Advisory Committee (CAC)

Task 2.1: Organize a CAC of five members or more. The District has been without a CAC, an integral part of its mission, since 2009. This has been due in large part to the boundaries of the District, which largely contains commercial and natural areas. Over the past four to five years, the District has sponsored the Freshwater Society’s Master Water Stewards program. The hope is some of those sponsored stewards would volunteer to serve on the CAC. Nevertheless, there will be an intensive search to find CAC members using social media, municipal partners, and other groups within the District for assistance.

Task 2.2: Plan and facilitate the CAC inaugural meeting. Young Environmental will develop the agenda and draft a committee membership agreement and responsibilities list, as well as a tentative meetings schedule. At the meeting, members will review and revise the information and develop a vision statement. One of the potential tasks for the CAC would be to review and evaluate the website through the citizen’s lens.

Task 2.3: Monitor and assist the CAC. Young Environmental will coordinate the development of the meeting agenda and meeting summary/notes with the secretary, provide technical information, and support and host the virtual meetings.

Timeline for completion: September 2020–December 2021

Deliverables: CAC membership roster, inaugural meeting agenda, summary, membership agreement, and tentative meeting schedule

Estimated budget: \$22,900–\$28,300

Objective 3. Website

Task 3.1: Website review and updates. Young Environmental will contact three education and outreach professionals from other watershed management organizations to review the look, functionality, and presentation of information for public consumption. Additionally, the CAC will be asked to review the website and provide comments. The comments generated will be presented to the administrator and managers for consideration. Once approved, the website will be revised accordingly. Because the website must be dynamic, the CAC will be asked to review the website annually.

Timeline for completion: September 2020–January 2021

Deliverables: Letter to three WMOs requesting assistance and outlining the assignment and timeline; CAC assignment and timeline; collation of the information and recommendations for the administrator and managers

Estimated budget: \$4,000–\$5,700

Objective 4. Articles

Task 4.1: Publish four articles annually. Produce and publish an article per quarter about District projects, initiatives, sponsored water stewards and their projects, and other issues. The articles will be used to help residents, stakeholders, and partners “see” the District and what it engages in. Initial articles will be on the Dredge and the East Chaska Creek Projects.

Timeline for completion: January – December 2021

Deliverables: Quarterly articles published on the District’s website and shared with stakeholders and partners

Estimated budget: \$8,600–\$9,600

Objective 5. District Signage

Task 6.1: Signage. Identify sign locations for LMRWD projects and other District resources. Make recommendations to the administrator for proposed sign locations, such as Minnesota River crossings, calcareous fens, trout streams, and high-value resource areas. Develop mock-up examples, and provide an estimate for the cost of five priority sites, including design and fabrication.

Timeline for completion: January–March 2021

Deliverables: Recommendations for District sign locations and fabrication cost memorandum

Estimated budget: \$5,300–\$5,800

Objective 6. Schools and NGOs Engagement

Task 7-1: Partnership assessment. Complete an assessment of the LMRWD boundary to find potential partners in local schools, nonprofits, and NGOs. Evaluate existing and established education or sustainability programs and partners (USFWS, Ft. Snelling, National Wildlife Refuge, Cargill, Minnesota Valley Refuge Friends, Minnesota Valley Trust Board, Partner Schools Program, 3 Rivers Fishing Adventures, etc.).

Task 6-2: Education strategy. Develop an education strategy to explore the opportunity to partner with schools and what the partnership might look like. Present findings to the board and open to discussion. Consider after-

school programs as a strategy. An education strategy plan will be developed with a list of recommended partners and activities for the 2021–22 academic year. This plan will be presented to the board for approval.

Task 6-3: Strategy implementation. TBD, pending approval of the education strategy plan in Task 3-2.

Timeline for completion: March 2021–August 2021

Deliverables: Education strategy plan and presentation to the board

Estimated budget: \$29,200–\$35,000