

## Memorandum

**To:** Randy Anhorn, NMCWD Administrator  
**From:** Matt Kumka and Janna Kieffer  
**Subject:** Scope of Work – Feasibility Analysis, Lynmar Basin Stormwater Retrofit  
**Date:** September 9, 2021

## Scope of Work- Feasibility Analysis, Lynmar Basin Stormwater Retrofit Concept Plan

### Background

The Lynmar Basin is a low-lying, open space area between Lynmar Lane and Bristol Boulevard that receives stormwater from a 20-acre residential watershed. The Lynmar Basin, located in the Lake Edina watershed, currently serves as a dry pond, providing flood detention but minimal water quality benefits. This location was identified as a potential site to implement stormwater best management practices in the *Lake Cornelia and Lake Edina Water Quality Improvement Project, Feasibility Study/Preliminary Engineering Report* to reduce stormwater volume and pollutants to downstream Lake Edina.

In summer 2021, the NMCWD completed development of the conceptual design for the stormwater retrofit of the Lynmar Basin, in collaboration with the City of Edina. As part of that effort, water quality and flood risk reduction benefits were quantified and other co-benefits summarized, including improved ecology and wildlife habitat, enhanced active and passive recreation opportunities within the park, and educational opportunities for park users were also developed. The final concept design will be presented to the Edina City Council on September 20, 2021 for approval.

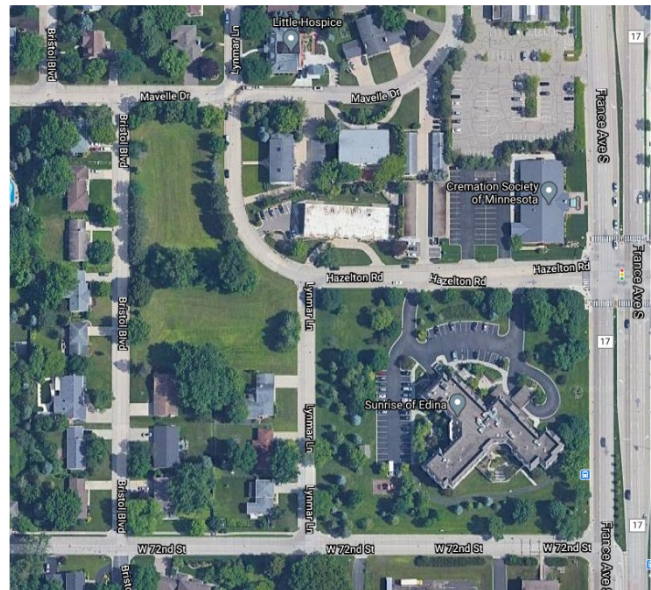
This scope of work is for developing a more detailed feasibility analysis based on the final agreed upon concept design.

### Proposed Scope of Work

#### 1. Soil Borings

Soil borings at the Lynmar Basin are necessary to confirm the infiltration capacity of soils and assess distance to groundwater (see Task 2). As directed by the Administrator, Barr will coordinate collection of investigative soil borings. This work will include the following subtasks:

- a. The soil borings will be performed by a subcontractor to Barr. It is assumed that four soil borings will be necessary. Barr will arrange for two price quotes and provide a summary of quotes and a



**Lynmar Basin is a low-lying, turfed/natural area just south of Mavelle Drive, between Bristol Boulevard and Lynmar Lane.**

recommendation to the Administrator. Soil borings will include soil classification, grain size analysis, and blow counts. Four total soil borings are planned. For the groundwater mounding analysis, two of the borings shall be to a minimum depth of 30', unless groundwater is encountered. For assessing infiltration potential, two of the borings shall be to a minimum depth of 16', regardless of groundwater level. Borings will make note of observed debris or other environmental concerns such as odor. Boring logs will be prepared.

- b. Coordinating soil borings, including creating specifications with work requirements and associated site access considerations. For the soil borings, Barr will create a figure providing locations for the work. Barr will coordinate with the City in regards to communications with the local residents as necessary.
- c. Review the soil boring and analysis findings and consider implications of the findings on the stormwater retrofit design. The soil boring results will also be utilized in Task 2.

## **2. Groundwater Mounding Analysis**

Barr will analyze the potential impact of increased infiltration in the Lynmar Basin on nearby groundwater levels. This work will include the following subtasks:

- a) Reviewing the best available data on local geology, soils, and existing groundwater and hydrologic conditions surrounding the park area.
- b) Reviewing soil boring results
- c) Conducting a groundwater mounding analysis with an emphasis on potential impacts to surrounding homes. This analysis includes reviewing the potential for long-term changes to groundwater conditions due to increased storage (temporary) and infiltration from lowering the bottom of the existing basin as proposed in the concept design. The potential increase in the water table elevation in relation to nearby structures and basements will be considered. For the purpose of this analysis, basement elevations will be assumed based on existing ground surface elevations.
- d) Summarizing findings

## **3. Basin Sizing Optimization and Storm Sewer Retrofit Analysis**

This task will consist of evaluating changes in tributary drainage area and basin sizing to optimize cost/benefit from the proposed stormwater retrofit project. Under existing conditions, stormwater that drains to the low area at the intersection of Hazelton Road and Lynmar Lane, just east of Lynmar Basin, is collected and conveyed southward through the trunk storm sewer system and is not directed into Lynmar Basin. Barr will evaluate the feasibility of capturing and redirecting stormwater from this tributary drainage area (Subwatershed LE\_24), including options to convey additional water into Lynmar Basin, costs for additional storm sewer retrofits, and additional water quality benefits (and associated cost/benefit). This task may also include consideration of modifications to the storage volume proposed in the Phase 1 Concept Design to optimize benefits. Barr assistance will include up to 30 hours for the following subtasks:

- a) Evaluating potential storm sewer retrofit and grade modification options at the intersection of Lynmar Lane and Hazelton Road to redirect additional stormwater into Lynmar Basin.
- b) Preparing opinion of cost for viable storm sewer retrofit options.

- c) Estimating pollutant reductions using the MIDS calculator for up to two scenarios (including increasing tributary drainage area to Lynmar Basin) and summarizing changes to project cost/benefit ratio.
- d) If necessary, refining existing stormwater XP-SWMM modelling to incorporate proposed storm sewer and basin sizing modifications.
- e) Creating drawings of reconfigured catch basins and storm sewer connections needed in order to redirect runoff to Lynmar Basin.

#### **4. Feasibility Report**

This task includes the following subtasks:

- a. Updating the project opinion of probable cost
- b. Developing feasibility report including a summary of the results of the tasks listed above, as well as discussion about affected property owners and project permitting requirements.
- c. Providing one draft report for review by NMCWD and City of Edina staff, one draft report for NMCWD Board and City Council review, and one final report, in electronic format. The cost estimate assumes only minor revisions to the report following review by the NMCWD board and/or Edina City Council.

#### **5. Project Meetings and Project Management**

Continued collaboration with the City of Edina regarding project design will be important. This task includes the following subtasks:

- a. Preparation for and attendance at up to two meetings with NMCWD and City of Edina staff.
- b. Presentation to Nine Mile Creek Board of Managers
- c. Conducting project administration, including planning and coordination with NMCWD and City of Edina, progress reporting, invoicing, and preparing monthly updates for NMCWD

#### **Assumptions**

- a. City and NMCWD staff to coordinate outreach process and develop materials for public engagement.
- b. City of Edina staff will coordinate with City of Edina Parks and Recreation staff and City Council, as necessary.

#### **Cost Estimate**

Table 1 summarizes the estimated cost for the scope of work outlined above. A detailed summary of subtasks, estimated hours, and costs is attached.

**Table 1. Estimated Project Cost**

Tasks	Estimated Total
1) Soil Borings	\$9,630
2) Groundwater Mounding Analysis	\$5,030
3) Basin Sizing Optimization and Storm Sewer Retrofits	\$4,250
4) Feasibility Report	\$5,850
5) Project Meetings & Management	\$3,800
<b>Total</b>	<b>\$28,560</b>

## Schedule

Table 2 summarizes the anticipated project schedule.

**Table 2. Anticipated Project Schedule**

Task	Estimated Completion
1) Soil Borings	October 2021
2) Groundwater Mounding Analysis	October 2021
3) Basin Sizing Optimization and Storm Sewer Retrofits	November 2021
4) Feasibility Report	Early-December 2021
5) Project Meetings & Management	ongoing

Thank you for the opportunity to provide a scope of work for this exciting project! Please contact us with questions or if you would like to discuss the proposed scope of work.

Project Name: Lynmar Basin Stormwater Retrofit-  
 Feasibility Study  
 Client Name: Nine Mile Creek Watershed District  
 Date: September 9, 2021



	Subtotal Hours	Subtotal Costs	Sub Contractors	Project Total	Percentage of Total
<b>1. Soil Borings</b>					
Coordinating soil borings	17.0	\$ 2,280.00	\$ -	\$ 2,280.00	
Conduct soil borings and prepare logs, assume 4	5.0	\$ 670.00	\$ 6,000.00	\$ 6,670.00	
Review data	5.0	\$ 680.00	\$ -	\$ 680.00	
<b>Subtotal</b>	<b>27.0</b>	<b>\$ 3,630.00</b>	<b>\$ 6,000.00</b>	<b>\$ 9,630.00</b>	<b>34%</b>
<b>2. Groundwater Mounding Analysis</b>					
Review existing data and soil borings	9.0	\$ 1,350.00	\$ -	\$ 1,350.00	
Conduct groundwater mounding analysis	20.0	\$ 2,840.00	\$ -	\$ 2,840.00	
Summarize findings	6.0	\$ 840.00	\$ -	\$ 840.00	
<b>Subtotal</b>	<b>35.0</b>	<b>\$ 5,030.00</b>	<b>\$ -</b>	<b>\$ 5,030.00</b>	<b>18%</b>
<b>3. Basin Sizing Optimization and Storm Sewer Retrofit Analysis</b>					
Evaluating potential storm sewer retrofit and grade modification options	8.0	\$ 1,100.00	\$ -	\$ 1,100.00	
Preparing cost estimate for storm sewer retrofit and grade modification options	4.0	\$ 490.00	\$ -	\$ 490.00	
Estimating pollutant reductions for up to two scenarios and revise cost/benefit	7.0	\$ 960.00	\$ -	\$ 960.00	
Refining existing stormwater XP-SWMM modelling	6.0	\$ 720.00	\$ -	\$ 720.00	
Creating drawings of storm sewer retrofits	8.0	\$ 980.00	\$ -	\$ 980.00	
<b>Subtotal</b>	<b>33.0</b>	<b>\$ 4,250.00</b>	<b>\$ -</b>	<b>\$ 4,250.00</b>	<b>15%</b>
<b>4. Feasibility Report</b>					
Update the project opinion of probable cost	4.0	\$ 490.00	\$ -	\$ 490.00	
Developing feasibility report	28.0	\$ 3,920.00	\$ -	\$ 3,920.00	
Report revisions, assume 2 rounds	10.0	\$ 1,440.00	\$ -	\$ 1,440.00	
<b>Subtotal</b>	<b>42.0</b>	<b>\$ 5,850.00</b>	<b>\$ -</b>	<b>\$ 5,850.00</b>	<b>20%</b>
<b>5. Project Meeting &amp; Project Management</b>					
Two meetings w/NMCWD and City of Edina staff	10.0	\$ 1,500.00	\$ -	\$ 1,500.00	
Miscellaneous project administration	7.0	\$ 1,060.00	\$ -	\$ 1,060.00	
Presentation to NMCWD Board of Managers	8.0	\$ 1,240.00	\$ -	\$ 1,240.00	
<b>Subtotal</b>	<b>25.0</b>	<b>\$ 3,800.00</b>	<b>\$ -</b>	<b>\$ 3,800.00</b>	<b>13%</b>
<b>Project Total</b>	<b>162.0</b>	<b>\$ 22,560.00</b>	<b>\$ 6,000.00</b>	<b>\$ 28,560.00</b>	