



CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

November 8, 2022

Mr. Paul M. Davis, P.E.
City Engineer, Deputy Director, Department of Public Services
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309

**RE: Bloomer Park Erosion Control - City File E22-TBD
City of Rochester Hills, Michigan
Proposal #9-D951**

Dear Mr. Davis:

In response to your request, we have reviewed the project requirements relative to development of plans and specifications for the update of park drainage systems to assist in reducing excessive erosion within easterly sections of the park property.

NFE reviewed the existing conditions along the easterly side of the park on November 3rd, with the Bloomer Park supervisor, and noted the following:

1. Various sections of park storm drainage pipes appear to be undersized and have been found in the recent past to backup during large rain events. This causes overland flow that is not controlled and contributes to excessive soil erosion within the park.
2. There are multiple locations where existing underground storm sewer piping discharges into wooded areas and has contributed to the erosion of soils and in most cases eroded open channels have developed in areas where stormwater migrates towards the east.
3. Footbridges have been installed where trails cross over clear drainage courses. These footbridges are not compliant for ADA accessibility and do not contain safety features that should be included to keep the public safe. Also, foot bridges should be analyzed to assure that the channel below the structures can carry the storm event without being impeded by the bridge or where the bridge is overtopped with storm water flow.
4. Runoff eventually flows to a very large ravine on the park property that is heavily eroded and requires stabilization.
5. Separately, runoff at the northwest end of the existing Velodrome is eroding the pedestrian pathway and is eroding an existing ravine at its eventual outlet.
6. Collectively, the drainage system is causing heavy sediment loading within the drainage district and requires heavy maintenance to correct erosion control concerns.

NOWAK & FRAUS ENGINEERS

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Based on our review of the project requirements, we have identified the following scope of work required to design the required improvements to address both safety and soil erosion issues within this area of the park. We understand this work will be included in the paving plans NFE is currently working on for the parking lot reconstruction project. The expectation is that a single contract will be let that addresses paving, and erosion issues.

SCOPE OF WORK

PHASE I SERVICES – PRE-ENGINEERING

- Perform all field investigation and survey services required to support the full design development of the project. Field investigation and survey services will include the following:
 - Perform required field survey of the project development area and prepare existing condition drawings consistent with Rochester Hills requirements.
 - Existing underground utilities shall be located and identified, including rim elevations and pipe inverts.
 - Existing spot grades shall be as needed to fully map the existing drainage concern areas
 - All existing trees and improvements within the limits of the project shall be located. NFE will engage ASTI to complete needed tree survey data in this work zone.
 - Perform field engineering analysis to identify construction constraints, conditions and make engineering assessment of current conditions to support design initiatives.

PHASE II SERVICES – PRELIMINARY ENGINEERING

- Analyze the drainage area based upon USGS mapping and existing acquired topographic data and determine appropriate overland and pipe sizing. Prepare preliminary construction plans in accordance with City requirements. Construction plans to include the following:
 - Existing Condition Plans
 - Preliminary Grading and Storm Drain Plans
- Standard Detail Sheet(s) Plan sheets will be drawn to a scale of 1"=30' horizontal and 1"=3' vertical.
- Identify work items consistent with MDOT Standard Specifications for Construction and prepare preliminary Engineer's Opinion of Construction Cost.
- Coordinate project development with the City and other permitting agencies as required for project permits.
- Identify potential utility conflicts and coordinate with utility companies to resolve utility conflicts.
- Attend project design review meeting to present preliminary design and obtain critical feedback from City staff and departments.
- Attend public hearings, City Commission meeting, etc. as requested

PHASE III SERVICES – FINAL ENGINEERING FOR SELECTION OPTION

- Prepare final construction plans in accordance with City requirements. Construction plans to include the following:
 - Existing Condition Plans
 - Final Grading, Storm Drain and SESC Plans
 - Final Typical Detail Sheet with existing and proposed Cross-Sections.
 - Standard Detail Sheet
- Identify work items consistent with MDOT Standard Specifications for Construction and prepare final Engineer’s Opinion of Construction Cost.
- Coordinate project development with the City and permitting agencies, as required for project permits. Apply for and obtain all required permits from permitting authorities.
- Prepare construction bid documents including modified Rochester Hills boiler plate, standard specifications for construction
- Submit 90% complete final design package to City for final review and comments.
- Make all necessary changes to final design documents and assist City with project bidding process
 - Review submitted bids for completeness and accuracy and prepare a bid tabulation sheet
 - Review references and prepare a letter recommending award to the desired contractor
- Attend project meetings as required to develop final design consistent with City requirements. Based on the work outlined above, we submit the following engineering fee for your approval:

Based on the work outlined above, we submit the following engineering fee for your approval:

PROJECT – BLOOMER PARK EROSION CONTROL PROJECT

<u>WORK</u>	<u>ESTIMATED FEE</u>
Phase I – Pre-Engineering Services	\$19,824.00
Phase II – Preliminary Engineering Services	\$12,672.00
Phase III – Final Engineering Services	\$12,336.00
Reimbursable Expenses	\$ 1,000.00
TOTAL NOT-TO-EXCEED AMOUNT PROJECT 1:	<u>\$45,832.00</u>

We submit the following cost breakdown as evidence of our expected costs associated with the design of the project:

PHASE I – PRE-ENGINEERING

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
2 Person Survey Crew	Topographic Survey	36	\$139.00	\$ 5,004.00
Engineering Tech III	Topographic Survey	60	84.00	5,040.00
Engineer II	Field Review/Investigation	10	78.00	1,560.00
Principal	Coordination	6	120.00	720.00
Tree Survey Allowance				3,000.00
Wetland Survey Allowance				4,500.00
Subtotal Phase I				\$19,824.00

PHASE II – PRELIMINARY ENGINEERING

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
Engineering Tech. III	Prepare Const. Drawings in CAD	32	\$ 84.00	\$ 2,688.00
Project Engineer	Watershed review and Design of Improvements	40	96.00	3,840.00
Engineer II	Quantities & Cost Estimate, etc.	48	78.00	3,744.00
Principal	Review & Coordinate	20	120.00	2,400.00
Subtotal Phase II:				\$12,672.00

PHASE III – FINAL ENGINEERING

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
Engineering Tech. III	Prepare Const. Drawings in CAD	40	\$ 84.00	\$ 3,360.00
Project Engineer	Design of Improvements	36	96.00	3,456.00
Engineer II	Quantities & Cost Estimate, etc.	40	78.00	3,120.00
Principal	Review & Coordinate	20	120.00	2,400.00
Subtotal Phase III:				\$12,336.00

REIMBURSABLES

Blueprinting, delivery charges, etc.	\$ 1,000.00
Subtotal Reimbursables: \$ 1,000.00	

TOTAL NOT-TO-EXCEED AMOUNT PROJECT 1: \$ 45,832.00


Mr. Paul M Davis, P.E.
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The work will be undertaken in accordance with our professional services agreement dated August 5, 2020, and we will proceed with the design work upon your authorization and complete the required construction documents within the following design development schedule:

Pre-Engineering Phase	Completed by December 16, 2022
Preliminary Engineering Phase	Completed by January 27, 2023
Final Engineering Phase	Completed by March 10, 2023
Permits	Completed by June 30, 2023
Bid Package Complete	Completed by April 3, 2023
Bids Received	June, 2023

Timeline above assumes an EGLE permitting process for wetland crossings. We understand that this work may be added to the Bloomer Park Paving Project. If that is the case, NFE will work with the selected contractor to obtain the necessary pricing for a change order to that contract. Please be advised that invoices will be based on actual hours and work required as approved by your office and the not-to-exceed amount will not be exceeded unless authorized by our office. We look forward to working with you on this important project for the City. If you have any questions or require further information, please feel free to contact me.

Sincerely,
Nowak & Fraus Engineers



Jeffrey J. Huhta, P.E., P.S.
Managing Partner

Date: November 8, 2022

Recommended By:
CITY OF ROCHESTER HILLS

Paul Davis, P.E., Deputy DPS Director

Date: _____

Approved By:
CITY OF ROCHESTER HILLS

Bryan K. Barnett, Mayor

Date: _____