



CITY of NOVI CITY COUNCIL

**Agenda Item H
June 18, 2018**

SUBJECT: Approval to award civil engineering services to Spalding DeDecker for design engineering and inspection services associated with the South Lake Drive Storm Sewer and Storm Structure Rehabilitation project in the amount of \$50,850.00.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division

CITY MANAGER APPROVAL: 

EXPENDITURE REQUIRED	\$ 50,850.00
AMOUNT BUDGETED	\$ 55,935
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	210-211.00-865.052

BACKGROUND INFORMATION:

The South Lake Drive storm sewer system from West Park Drive to 13 Mile Road was constructed in 2003. Since that time, the City has experienced issues with the storm sewer manholes in the existing pavement. The City has been regularly repairing these manholes and the existing settled pavement at each structure. Many of these storm sewer structures are located within the influence of the existing bike lane located along the south side of South Lake Drive, which poses a hazard to the safety of the bike lane users. The City Engineering Consultant Spalding DeDecker recently inspected the site. Several manholes show severe signs of deterioration and are filled with water to within 12 inches of the casting's rim. The high water table and the fact the outlet pipe for the entire storm sewer system is submerged in the Walled Lake drainage area accelerate the deterioration of the system.

Spalding DeDecker will dewater and televise 35 storm sewer structures and storm water pipeline from Lilley Trail to 13 Mile Road. The televising is necessary to determine if the pipes and structures need lining to protect them from further deterioration. Upon the completion of the storm sewer pipe and storm structure evaluation, Spalding DeDecker will prepare a report outlining the recommendations for procedures on the work application.

The attached *Design Engineering Services* proposal, as executed by Spalding DeDecker, outlines the scope of services in more detail. The design fee rate is submitted as a lump sum for inspections and engineering work. This work includes structure inspections, condition assessment and reporting, engineering plans, specifications, and bidding, totaling \$50,850.00. The total cost of the rehabilitation project is estimated at \$450,174.00.

The Engineering Division has reviewed the scope of services proposal and recommends approval. The proposed work completion schedule is by November 2018.

RECOMMENDED ACTION: Approval to award civil engineering services to Spalding DeDecker for design engineering and inspection services associated with the South Lake Drive Storm Sewer and Storm Structure Rehabilitation project in the amount of \$50,850.00.

South Lake Drive Storm Sewer and Storm Structure Rehabilitation

Location Map




Map Author: Joseph Akers
 Date: June 18, 2018
 Project: South Lake Drive Storm Sewer & CB Repair
 Version: 1

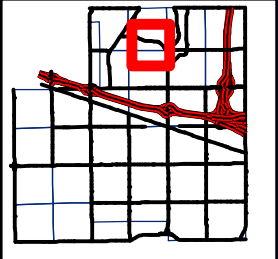
Amended By:
 Date:
 Department:

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Legend

 Proposed Inspection Limits



City of Novi
 Engineering Division
 Department of Public Services
 26300 Lee BeGole Drive
 Novi, MI 48375
 cityofnovi.org



May 30, 2018

Mr. George Melistas
Engineering Senior Manager
City of Novi
45175 Ten Mile Road
Novi, Michigan 48375

Email: gmelistas@cityofnovi.org

**Re: South Lake Drive Utility Structure Inspection
Proposal for Civil Engineering Services**

Dear Mr. Melistas:

Spalding DeDecker (SD) is pleased to provide the following proposal to inspect the storm and watermain structures and storm sewer to determine repairs that may be needed and provide a recommendation for the repairs.

Project Understanding

The City of Novi has experienced issues with the utility manholes along South Lake Drive recently and would like to have the utility manholes and storm sewer pipes inspected and recommendations made for the repair/rehabilitation of the structures. South Lake Drive storm sewer system was constructed in 2003.

In the past few years the City has been repairing structures and the pavement around them that have settled. Spalding DeDecker (SD) has recently visited the site and inspected three manholes that have shown severe signs of deterioration and found that the structures were filled with water to within about 12" of the rim of the casting. This is due to the high water table in the area and the fact that the outlet pipe for the storm system is submerged in Walled Lake.

SD will inspect the structures located in the roadway and storm system and develop a written report outlining the recommended repair and/or rehabilitation of the structures and storm system. We have counted 35 structures located in the roadway that will be inspected. Based on our site visit and review of the three structures, our initial reaction is that due to the high water table, the adjustment rings and mortar bed at the castings have deteriorated and is allowing the soil around the structure to migrate through the cracks and that has caused the pavement areas to settle.

In order for us to provide a complete inspection of the structures, we are going to have to attempt to pump the water down in the structures. This may be problematic due to the high water table and also plugging the storm lines that are submerged under the water that are not visible. Every attempt will be made to inspect the complete structure. We will notify the City should we encounter problems with the dewatering.

As a part of the inspection SD will work with Advanced Underground, a company that specializes in televising pipes. We will attempt to plug the main outlet pipe into the lake and pump down the system to run the camera through the pipes. This may be problematic due to the high water table and the ability to pump down the system enough to for the camera to function properly. We will review all options to



provide video of the pipes including isolating smaller portions of the system. Should dewatering the storm system not be possible due to the high water table, SD will inspect the portion of the structures not filled with water.

Upon completion of the condition assessment, SD will prepare construction documents for the repair and rehabilitation of the manholes, catch basins and storm sewer lines, including specifications and bid documents. SD will assist the City with bidding the project and provide construction administration and inspection during construction.

Proposed Scope of Services

The following is our scope of services:

- SD will have a crew inspect the utility structures along South Lake Drive in accordance with the current NASSCO MACP guidelines.
- Generate a condition assessment form for each structure along with the location and type of water quality units used.
- Provide, where possible a video and condition assessment in accordance with the current NASSCO PACP guidelines of the storm sewer pipes.
- Prepare a written report outlining the condition of the structures and system, our recommended repairs, the Giffels Webster plans with SD's as-built information and a cost estimate for the repair of the structures and storm sewer.
- Prepare plans and specifications for the repair and rehabilitation of the manholes, catch basins and the storm sewer.
- Assist the City with bidding the project.

Construction Cost Estimate and Proposed Fees

Based on our pre-qualification status with the City, engineering design fees are based on a percentage of the pre-design construction cost estimate. The fee percentage used depends on the type of services to be provided based on the proposed work. However, the nature of this project does not correlate to the types of services pre-established in the fee table. The fees below are based on estimated hours to complete the work.

FEE

We will perform the following work on an hourly basis in accordance with the shown rates with the anticipated budgets:

Structure Inspection:	\$6,500.00	Budget
Video Storm Sewers	\$7,000.00	Budget
De-Watering System	\$7,900.00	Budget

Structure Inspection - 2 Person O & M Crew	\$180.00/Hr.
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Video Storm Sewer – Advance Underground \$200.00/Hr.
Structure Pumping – Advance Underground \$225.00/Hr.

We will perform the following work on a lumps sum basis:

Structure Inspections (If Dewatering can't be achieved)	\$ 3,300.00	Lump Sum
Condition Report and Assessment	\$ 4,100.00	Lump Sum
Engineering Plans, Specifications and Bidding	\$25,750.00	Lump Sum
TOTAL MAXIMUM FEE	\$50,850.00	lump sum

Project Schedule

The following summarizes the anticipated schedule for the project:

<u>Milestone</u>	<u>Completed By</u>
Project Award	6/18/2018
Structure/Sewer Inspections	6/22/18
Condition Assessment Report	6/27/18
Construction Documents	7/17/18
Bid Project	8/2/18
Council Award	8/27/18
Begin Construction	9/12/18
Complete Construction	11/1/18

Thank you for your selection of SD to provide design services for the South Lake Drive project. Please do not hesitate to contact me if you have any questions or comments regarding this submittal.

SPALDING DEDECKER ASSOCIATES, INC.

David E. Richmond, PE
Project Manager

OPINION OF PROBABLE CONSTRUCTION COST

PROJECT NAME: SOUTH LAKE DRIVE STORM STRUCTURE REPAIR
 CLIENT NAME: CITY OF NOVI
 PREPARED BY: DER

PROJECT NO:
 PROJECT CITY ID:
 DATE: 30-May-18

NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	Bonds, Insurance and Mobilization (5% Max)	1	LS	\$ 13,250.00	\$ 13,250.00
2	Pre-Construction Audio-Visual	1	LS	\$ 1,000.00	\$ 1,000.00
3	Soil Erosion Control Measures	1	LS	\$ 4,500.00	\$ 4,500.00
4	Temporary Traffic Control Devices	1	LS	\$ 15,000.00	\$ 15,000.00
5	Pavement, Remove	50	SY	\$ 15.00	\$ 750.00
6	Structure Encapsulation	35	EA	\$ 1,500.00	\$ 52,500.00
7	Structure Rehabilitation, Type 2	25	EA	\$ 1,200.00	\$ 30,000.00
8	Pipe Lining (12" to 18")	1,000	LF	\$ 150.00	\$ 150,000.00
9	HMA Pavement, Complete	50	SY	\$ 75.00	\$ 3,750.00
10	Restoration	1	LS	\$ 7,500.00	\$ 7,500.00
OPINION OF PROBABLE CONSTRUCTION COST:					\$ 278,250.00
ENGINEERING FEES :					\$ 50,850.00
ROW ACQUISITION (\$2700/PERMANENT EASEMENT):					\$ -
GEOTECHNICAL (2.5%):					\$ -
DESIGN CONTINGENCY (20%):					\$ 10,170.00
CONSTRUCTION ADMINISTRATION (6.75%):					\$ 18,782.00
Crew Days: 45 DAYS @ \$ 700.00					\$ 31,500.00
CONSTRUCTION MATERIAL TESTING (2.5%):					\$ -
CONSTRUCTION CONTINGENCY (10%):					\$ 32,854.00
Total Estimated Cost:					\$ 422,406.00
<p><i>In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience. The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.</i></p>					

NOTES:

PRELIMINARY OPINION OF PROBABLE PROJECT COSTS

Project ID#	CIP Budget Category	Opinion as of	Total Project Cost
New	Storm Sewer & Drainage	June 2018	\$450,174

South Lake Drive Storm Sewer and Storm Structure Rehabilitation

Dewatering and televising the storm sewer prior to repairing the sewer system.



Design Engineering	\$	50,850
Right-of-Way Acquisition	\$	-
Geotechnical Design	\$	-
Other	\$	-
TOTAL ENGINEERING	\$	50,850
* Contingency	\$	5,085
<i>* Contingency Notes:</i>		
10%		
TOTAL ENGINEERING (including contingency)	\$	55,935

Construction	\$	278,250
Construction Engineering	\$	18,782
Crew Days	\$	31,500
Material Testing	\$	-
Other	\$	-
TOTAL CONSTRUCTION	\$	328,532
* Contingency	\$	65,707
<i>* Contingency Notes:</i>		
20%		
TOTAL CONSTRUCTION (including contingency)	\$	394,239

BUDGET DETERMINATION BASED ON YEAR AWARDED			
2018-19	\$450,174	2023-24	\$521,875
2019-20	\$463,679	2024-25	\$537,531
2020-21	\$477,590	2025-26	\$553,657
2021-22	\$491,917	2026-27	\$570,267
2022-23	\$506,675	2027-28	\$587,375

Outside Funding?

No