



# CITY of NOVI CITY COUNCIL

**Agenda Item 4  
August 13, 2018**

**SUBJECT:** Approval to award civil engineering services to AECOM Great Lakes, Inc., for design engineering services associated with Eleven Mile Road Rehabilitation project from Wixom Road to Clark Street in the amount of \$174,294.00.

**SUBMITTING DEPARTMENT:** Department of Public Works, Engineering Division

**CITY MANAGER APPROVAL:** 

<b>EXPENDITURE REQUIRED</b>	\$ 41,496.00 202-202.00-865.177 (Taft Road to Clark Street) \$ 47,390.00 202-202.00-865.181 (Beck Road to Wixom Road) \$ 85,408.00 202-202.00-865.182 (Taft Road to Beck Road) <u>\$ 174,294.00 Total</u>
<b>AMOUNT BUDGETED</b>	\$ 57,398 202-202.00-865.177 (FY2017-18 Budget Rollover) \$ 63,292 202-202.00-865.181 (FY2017-18 Budget Rollover) \$ 101,310 202-202.00-865.182 (FY2017-18 Budget Rollover) <u>\$ 222,000 Total</u>
<b>APPROPRIATION REQUIRED</b>	N/A
<b>LINE ITEM NUMBER</b>	202-202.00-865.177 132-27 11 Mile Rehab (Taft to Clark) 202-202.00-865.181 132-26 11 Mile Rehab (Beck to Wixom) 202-202.00-865.182 082-30 11 Mile Rehab (Taft to Beck)

**BACKGROUND INFORMATION:**

The City has requested a proposal for design engineering services from AECOM for the road rehabilitation and reclamation of Eleven Mile Road from Wixom Road to Clark Street. The road ranges from "Fair" to "Poor" condition and requires the following repairs:

- Milling and overlaying Eleven Mile Road between Wixom Road and Beck Road while preserving the curb and gutter. This segment's condition rating is "Fair" and requires the least amount of rehabilitation of the three sections.
- Full pavement, base removal, and pavement replacement between Beck Road and Taft Road while preserving the existing curb and gutter. The road condition rating on this segment is "Poor" and requires a greater degree of rehabilitation.
- Milling and overlaying most of Eleven Mile Road between Taft Road and Clark Street and reconstructing or heavily rehabilitating approximately 400 feet, while preserving the curb and gutter. The road condition rating of this segment is mostly "Fair"; the eastern section is "Poor".

Staff plans to phase the construction of these segments over three years due to the overall cost of the project. The first section of Eleven Mile Road will be Beck Road to Taft Road, followed by Beck Road to Wixom Road and finishing off with Taft Road to Clark Street. The

construction of the first segment is planned to begin in fall of 2020 with the final segment construction planned to be completed by summer 2024.

The attached *Design Engineering Services* proposal, as executed by AECOM, outlines the scope of services in more detail. The design fee rate per the Exhibit B Fee Curve Schedule (as part of the City's general Engineering Services Contract with AECOM) is \$85,408.00 (5.5% for Beck Road to Taft Road reclamation), \$47,390.00 (4.5% for Wixom Road to Beck Road rehabilitation) and \$41,496.00 (4.5% for Taft Road to Clark Street rehabilitation) for a total design cost of \$174,294.00.

**RECOMMENDED ACTION:** Approval to award civil engineering services to AECOM Great Lakes, Inc., for design engineering services associated with Eleven Mile Road Rehabilitation project from Wixom Road to Clark Street in the amount of \$174,294.00.

# 11 Mile Road Rehabilitation from Wixom Road to Clark Road

Location Map



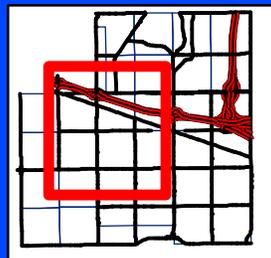
Map Author: Joseph Akers  
 Date: April 9, 2018  
 Project: 11 Mile Road from Wixom to Clark  
 Version #: 1

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 332 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

 Project Limits



**City of Novi**

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



1 inch = 2,061 feet





April 23, 2018

Mr. Joseph Akers  
City of Novi  
Field Services Complex  
26300 Lee Begole Drive  
Novi, MI 48375

**Reference: Proposal for Engineering Services  
11 Mile Road Rehabilitation from Wixom Road to Clark Street**

Dear Mr. Akers,

AECOM is pleased to submit this proposal for the above referenced project. We understand that the project includes:

- **Segment 1- Beck Road to Taft Road:** Full pavement and base removal and replacement between Beck Road and Taft Road while preserving a majority of the existing curb and gutter. The road condition in this area is rated "Poor" and requires a greater degree of reclamation.
- **Segment 2-Taft Road to Clark Street:** Milling and overlaying most of 11 Mile Road between Taft Road and Clark Road and reconstructing or heavily rehabilitating approximately 400 feet of it, while preserving the curb and gutter. The road condition of this area is mostly "Fair"; the eastern section of this area is rated as "Poor".
- **Segment 3- Wixom Road to Beck Road:** Milling and overlaying 11 Mile Road between Wixom Road and Beck Road while preserving a majority of the curb and gutter. The road condition of this area is rated "Fair" requires the least amount of rehabilitation of the three sections.

We have assumed that a small percentage of the curb & gutter will need to be reconstructed throughout the project. The project will not include new pavement at the intersections of Wixom, Beck or Taft Roads (the intersection at Taft Road will be done in 2018 when Taft Road is improved). A right turn lane will be added at Beck Road with this project. There is existing curb and gutter for the full length of the project. The curb and gutter generally is in good condition. There is either sidewalk or a non-motorized pedestrian path for the length of the project. Some pedestrian ramps within the project limits need to be upgraded to current ADA standards. The non-Motorized Master Plan states that bicycle lane(s) should be considered for this project. They are not included in this proposal. This is addressed in a separate memorandum.

The following tasks will be completed for the project:

#### **Initial Meeting and Scope Verification**

The intent of this task is to meet with the City and verify the limits and scope of work for the project. The scope, schedule, and budget for the project will be discussed. A geotechnical study has already been performed, so no soil borings or pavement cores are needed. The report's project recommendations have been taken under consideration; the final pavement sections have been determined jointly with city staff. The need for drainage improvements and work in addition to pavement reconstruction/rehabilitation will also be identified and discussed at the meeting. Upon completion of this task, we will move forward with the surveying and preliminary design.



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### **Survey and Base Plans**

The intent of this task is to provide topographic survey and base mapping as needed for the proposed design work. We anticipate that a full topographic survey will not be required for this project since the curbs largely will be left in place and little underground pipe work is anticipated. Base drawings will be created using the survey data, supplemented by aerial photos and a detailed field review of the site.

AECOM will prepare base plans (30%-40% complete) to identify the major design features. These plans will also be used to further the utility investigation and resolution of potential conflicts and *geotechnical* investigations. Base plans will include the results of the survey information, utility information from response to our solicitations, and a preliminary estimate.

AECOM will distribute the base plan design set to the utility companies that have indicated that they have facilities in the project area. We will incorporate the additional information that utility companies provide to AECOM into the plan set.

### **Preliminary Plans**

Incorporating the information obtained from the above tasks, we will prepare the preliminary plan set (90%) in accordance with City requirements. This submittal will include items such as the typical cross sections, materials/quantities and details. A Project Manual and preliminary updated cost estimate will also be prepared and submitted.

### **Final Plans and Proposal**

Incorporating comments from the City, AECOM will develop the final plans submittal, including the plan set, Project Manual, and cost estimate.

### **Advertising and Award**

We will respond to any final comments received from the City and submit the Advertisement for Bids to the City for publication. Contract Documents will be made available to bidders by AECOM. AECOM will respond to bidder inquiries during the advertising period and prepare addenda as required. Following the bid opening AECOM will submit the Bid Tabulation and a letter with recommendations regarding contract award.

It is understood that these projects are scheduled for construction as follows:

CIP Project ID#: 082-30 - 11 Mile from Beck to Taft – FY2020-2021

CIP Project ID#: 132-27 – 11 Mile from Taft to Clark – FY2023-2024

CIP Project ID#: 132-26 – 11 Mile from Beck to Wixom – FY2022-2023

### **Construction**

AECOM will provide full time inspection, contract administration, and staking as required for the project.



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### Schedule

We anticipate that the following schedule can be maintained:

Notice To Proceed with Design	Mid May, 2018
Preliminary Plans Submittal	October, 2018
Final Plans Submittal	December, 2018
Contract Award	
11 Mile from Beck to Taft	Fall, 2020
11 Mile from Taft to Clark	Fall, 2023
11 Mile from Beck to Wixom	Fall, 2022

### Begin Construction

11 Mile from Beck to Taft	Spring, 2021
11 Mile from Taft to Clark	Spring, 2024
11 Mile from Beck to Wixom	Spring, 2023

### End Construction

11 Mile from Beck to Taft	Summer, 2021
11 Mile from Taft to Clark	Summer, 2024
11 Mile from Beck to Wixom	Summer, 2023

### Estimated Cost of Construction and Design Fees

The attached estimate shows the construction cost for the project to be

Beck to Taft	\$1,552,867.00
Taft to Clark	\$ 922,128.00
<u>Wixom to Beck</u>	<u>\$1,053,121.00</u>

Total Project      \$3,528,116.00

Part of the project is a road rehabilitation project which has a design fee of 4.5% (for Wixom to Beck and Taft to Clark) per the Engineering Fee Schedule. Beck to Taft is a reclamation project with a design fee of 5.5%.

The proposed design fee is:

Beck to Taft	\$1,552,867.00 x 5.5% = \$85,408.00
Taft to Clark	\$ 922,128.00 x 4.5% = \$41,496.00
<u>Wixom to Beck</u>	<u>\$1,053,121.00 x 4.5% = \$47,390.00</u>
Total Project	\$174,294.00



Mr. Joseph Akers  
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We understand that fees for construction phase services will be determined after a construction contract is awarded. If projects are let separately, then fees will be based on individual project costs.

Please contact me if you have any questions or wish to discuss this submittal.

Sincerely,

AECOM Great Lakes, Inc.

A handwritten signature in blue ink that reads "Sean Kelsch". The signature is written in a cursive style and is positioned above a horizontal line.

Sean Kelsch, PE  
Vice-President

**CITY OF NOVI**  
**11 Mile Road from Beck to Taft Road**  
**Probable Estimate of Cost**  
**4/23/2018**  
**Road Reclamation**

Item No.	Item Description	Unit	Quantity	Unit Price (\$)	Item Cost (\$)
1	Mobilization (10%)	LS	1	\$ 140,000.00	\$ 140,000.00
2	Pre-Construction Audio-Visual	LS	1	\$ 2,500.00	\$ 2,500.00
3	HMA Surface, Rem	Syd	20,090	\$ 5.00	\$ 100,450.00
4	Geosynthetic Paving Fabric	Syd	17,200	\$ 4.00	\$ 68,800.00
5	Curb and Gutter, Rem	Ft	1,000	\$ 10.00	\$ 10,000.00
6	Aggregate Base, 21AA Limestone, 6 inch	Syd	19,000	\$ 7.00	\$ 133,000.00
7	Roadway Grading	Sta	52.1	\$ 1,000.00	\$ 52,100.00
8	Subgrade Undercutting	Cyd	350	\$ 45.00	\$ 15,750.00
9	Sidewalk, Rem	Syd	435	\$ 10.00	\$ 4,350.00
10	Sidewalk Ramp, Conc, 6 inch	Sft	3,820	\$ 10.00	\$ 38,200.00
11	Detectable Warning Surface	Ft	125	\$ 40.00	\$ 5,000.00
12	Dr Structure Cover	Ea	40	\$ 750.00	\$ 30,000.00
13	Dr Structure Cover, Adj, Case 1	Ea	40	\$ 450.00	\$ 18,000.00
14	Point Up Drainage Structure	Ea	30	\$ 300.00	\$ 9,000.00
15	Reconstruct Drainage Structure	Ft	80	\$ 200.00	\$ 16,000.00
16	Dr Structure Tap, 6 inch	Ea	60	\$ 250.00	\$ 15,000.00
17	Underdrain, Subgrade, Open-Graded, 6 inch	Ft	9,000	\$ 10.00	\$ 90,000.00
18	HMA, 5E3	Ton	2,000	\$ 85.00	\$ 170,000.00
19	HMA, 3E3	Ton	3,263	\$ 80.00	\$ 261,057.57
20	HMA Approach	Ft	900	\$ 125.00	\$ 112,500.00
21	Curb and Gutter, Conc, Det F2	Ft	2,040	\$ 20.00	\$ 40,800.00
22	Driveway Opening, Conc, Det M	Ft	610	\$ 20.00	\$ 12,200.00
23	Silt Fence	Ft	1,000	\$ 2.00	\$ 2,000.00
24	Permanent Signing	LS	1	\$ 10,000.00	\$ 10,000.00
25	Permanent Pavement Markings	LS	1	\$ 10,000.00	\$ 10,000.00
26	Maintaining Traffic	LS	1	\$ 40,000.00	\$ 40,000.00
27	Surface Restoration	LS	1	\$ 25,000.00	\$ 4,989.50
28	Misc Items	LS	1	\$ 141,169.71	\$ 141,169.71
	Construction Subtotal				\$ 1,552,866.77
	Contingency	%	10%		
	<b>Construction Total</b>				<b>\$ 1,708,153.45</b>
	Design Engineering*	% Fee	5.50%		\$85,407.67
	Geotechnical Investigation	LS	0.00	\$ -	\$0.00
	Inspection (Crew Days)	CD	60.00	\$700.00	\$42,000.00
	Contract Administration*	% Fee	4.00%		\$62,114.67
	Materials Testing	LS	1.00	\$ 26,000.00	\$26,000.00
	R.O.W. Acquisition	LS	0.00	\$ -	\$0.00
	Permitting	LS	0.00	\$ -	\$0.00
	[Other_Non-Bid_Items]	LS	0.00	\$ -	\$0.00
	<b>Total Estimated Cost</b>				<b>\$ 1,923,675.79</b>

Estimate Assumptions: No intersection work.

\* Per 'Attachment A' of the 2017-2022 Engineering Fee Table. Since all three segments total over \$2 Million, use highest category.

**CITY OF NOVI**  
**11 Mile Road from Taft to Clark Road**  
**Probable Estimate of Cost**  
**4/23/2018**  
**Road Rehabilitation Partial Mill & Overlay and Full Depth Pavement**

Item No.	Item Description	Unit	Quantity	Unit Price (\$)	Item Cost (\$)
1	Mobilization (10%)	LS	1	\$ 80,138.50	\$ 80,138.50
2	Pre-Construction Audio-Visual	LS	1	\$ 1,500.00	\$ 1,500.00
3	HMA Surface, Rem	Syd	10,950	\$ 5.00	\$ 54,750.00
4	Curb and Gutter, Rem	Ft	1,525	\$ 10.00	\$ 15,250.00
5	Subgrade Undercutting	Cyd	500.0	\$ 45.00	\$ 22,500.00
6	Silt Fence	Ft	1,000	\$ 2.00	\$ 2,000.00
7	Aggregate Base, 21AA Limestone, 6 inch	Syd	1,875	\$ 13.00	\$ 24,375.00
8	Roadway Grading	Sta	29.9	\$ 4,500.00	\$ 134,550.00
9	Sidewalk Rem	Syd	50	\$ 10.00	\$ 500.00
10	Sidewalk Ramp, Conc, 6 inch	Sft	350	\$ 9.50	\$ 3,325.00
11	Detectable Warning Surface	Ft	30	\$ 40.00	\$ 1,200.00
12	Dr Structure Cover	Ea	16	\$ 750.00	\$ 12,000.00
13	Dr Structure Cover, Adj, Case 1	Ea	16	\$ 450.00	\$ 7,200.00
14	Point Up Drainage Structure	Ea	12	\$ 300.00	\$ 3,600.00
15	Reconstruct Drainage Structure	Ft	32	\$ 200.00	\$ 6,400.00
16	Underdrain, Subgrade, Open-Graded, 6 inch	Ft	6,000	\$ 12.00	\$ 72,000.00
17	Geosynthetic Paving Fabric	Syd	9,100	\$ 4.00	\$ 36,400.00
18	HMA, 5E3	Ton	1,150	\$ 85.00	\$ 97,750.00
19	HMA, 3E3	Ton	1,717	\$ 80.00	\$ 137,360.00
20	HMA Approach	Ton	325	\$ 125.00	\$ 40,625.00
21	Curb and Gutter, Conc, Det F2	Ea	1,050	\$ 20.00	\$ 21,000.00
22	Driveway Opening, Conc, Det M	Ft	475	\$ 25.00	\$ 11,875.00
23	Permanent Signing	LS	1	\$ 6,000.00	\$ 6,000.00
24	Permanent Pavement Markings	LS	1	\$ 6,000.00	\$ 6,000.00
25	Maintaining Traffic	LS	1	\$ 25,000.00	\$ 25,000.00
26	Surface Restoration	LS	1	\$ 15,000.00	\$ 15,000.00
27	Misc Items	LS	1	\$ 83,829.85	\$ 83,829.85
	Construction Subtotal				\$ 922,128.35
	Contingency	%	10%		
	<b>Construction Total</b>				<b>\$ 1,014,341.19</b>
	Design Engineering*	% Fee	4.50%		\$41,495.78
	Geotechnical Investigation	LS	0.00	\$ -	\$0.00
	Inspection (Crew Days)	CD	50.00	\$700.00	\$35,000.00
	Contract Administration*	% Fee	2.75%		\$25,358.53
	Materials Testing	LS	1.00	\$ 20,000.00	\$20,000.00
	R.O.W. Acquisition	LS	0.00	\$ -	\$0.00
	Permitting	LS	0.00	\$ -	\$0.00
	[Other Non-Bid Items]	LS	0.00	\$ -	\$0.00
	<b>Total Estimated Cost</b>				<b>\$ 1,136,195.49</b>

Estimate Assumptions: 400' of pavement replaced with new aggregate base. 15% of curb replaced. No intersection work. Adjust/Cover and 2' reconstruction of all structures. Point Up 3/4 of structures. Replace all M openings.

\* Per 'Attachment A' of the 2017-2022 Engineering Fee Table. Since total of all projects exceeds \$2 million use highest category.

**CITY OF NOVI**  
**11 Mile Road from Wixom to Beck Road**  
**Probable Estimate of Cost**  
**4/23/2018**  
**Road Rehabilitation Mill & Overlay**

Item No.	Item Description	Unit	Quantity	Unit Price (\$)	Item Cost (\$)
1	Mobilization (10%)	LS	1	\$ 92,938.92	\$ 92,938.92
2	Pre-Construction Audio-Visual	LS	1	\$ 2,500.00	\$ 2,500.00
3	HMA Surface, Rem	Syd	4,750	\$ 5.00	\$ 23,750.00
4	Cold Milling HMA Surface	Syd	18,600	\$ 5.00	\$ 93,000.00
5	Geosynthetic Paving Fabric	Syd	18,600	\$ 4.00	\$ 74,400.00
6	Curb and Gutter, Rem	Ft	1,197	\$ 10.00	\$ 11,970.00
7	Aggregate Base, 21AA Limestone, 6 inch	Syd	3,800	\$ 13.00	\$ 49,400.00
8	Sidewalk, Rem	Syd	130	\$ 10.00	\$ 1,300.00
9	Sidewalk Ramp, Conc, 6 inch	Sft	1,080	\$ 9.50	\$ 10,260.00
10	Detectable Warning Surface	Ft	30	\$ 40.00	\$ 1,200.00
11	Dr Structure Cover	Ea	33	\$ 750.00	\$ 24,750.00
12	Dr Structure Cover, Adj, Case 1	Ea	33	\$ 450.00	\$ 14,850.00
13	Point Up Drainage Structure Case 2	Ea	25	\$ 300.00	\$ 7,500.00
14	Reconstruct Drainage Structure Case 3	Ft	66	\$ 200.00	\$ 13,200.00
15	HMA, 5E3	Ton	3,903	\$ 85.00	\$ 331,755.00
16	HMA, 3E3	Ton	704	\$ 80.00	\$ 56,320.00
17	HMA Approach	Ton	262	\$ 125.00	\$ 39,249.16
18	Curb and Gutter, Conc, Det F2	Ft	1,037	\$ 20.00	\$ 20,740.00
19	Driveway Opening, Conc, Det M	Ft	160	\$ 20.00	\$ 3,200.00
20	Remove Ped Pushbutton	Ea	1	\$ 100.00	\$ 100.00
21	Permanent Signing	LS	1	\$ 10,000.00	\$ 10,000.00
22	Permanent Pavement Markings	LS	1	\$ 10,000.00	\$ 10,000.00
23	Maintaining Traffic	LS	1	\$ 40,000.00	\$ 40,000.00
24	Surface Restoration	LS	1	\$ 25,000.00	\$ 25,000.00
25	Misc Items	LS	1	\$ 95,738.31	\$ 95,738.31
	Construction Subtotal				\$ 1,053,121.38
	Contingency	%	10%		
	<b>Construction Total</b>				<b>\$ 1,158,433.52</b>
	Design Engineering*	% Fee	4.50%		\$47,390.46
	Geotechnical Investigation	LS	0.00	\$ -	\$0.00
	Inspection (Crew Days)	CD	60.00	\$700.00	\$42,000.00
	Contract Administration*	% Fee	2.75%		\$28,960.84
	Materials Testing	LS	1.00	\$ 25,000.00	\$25,000.00
	R.O.W. Acquisition	LS	0.00	\$ -	\$0.00
	Permitting	LS	0.00	\$ -	\$0.00
	[Other Non-Bid Items]	LS	0.00	\$ -	\$0.00
	<b>Total Estimated Cost</b>				<b>\$ 1,301,784.82</b>

Estimate Assumptions: New right turn at Beck. No intersection work. Adjust/Cover and 2' reconstruction of all structures. Point Up 3/4 of structures. Existing street has no concrete base layer. Fees based on over 2 million dollar total project cost.

\* Per 'Attachment A' of the 2017-2022 Engineering Fee Table