CITY OF NOVI CITY COUNCIL
JUNE 15, 2020

SUBJECT: Consideration of approval to award a professional services contract to OHM Advisors for the collection of data related to the City's water, sanitary sewer, and storm sewer systems, in the amount of $486,760.

SUBMITTING DEPARTMENT: Department of Public Works, Engineering Division

EXPENDITURE REQUIRED	**$ 230,670.00 Water/Sewer** **$ 256,090.00 Storm Sewer** **$ 486,760.00**
AMOUNT BUDGETED	**$ 143,737 Water/Sewer (FY 2019-20)** **$ 110,000 Water/Sewer (FY 2020-21)** **$ 253,737** **$ 209,199 Storm Sewer (FY 2019-20)** **$ 72,500 Storm Sewer (FY 2020-21)** **$ 281,699** **$ 535,436 TOTAL**
APPROPRIATION REQUIRED	**$ 0**
LINE ITEM NUMBER	**592-592.00-816.038 Water/Sewer** **210-211.00-816.038 Storm Sewer**

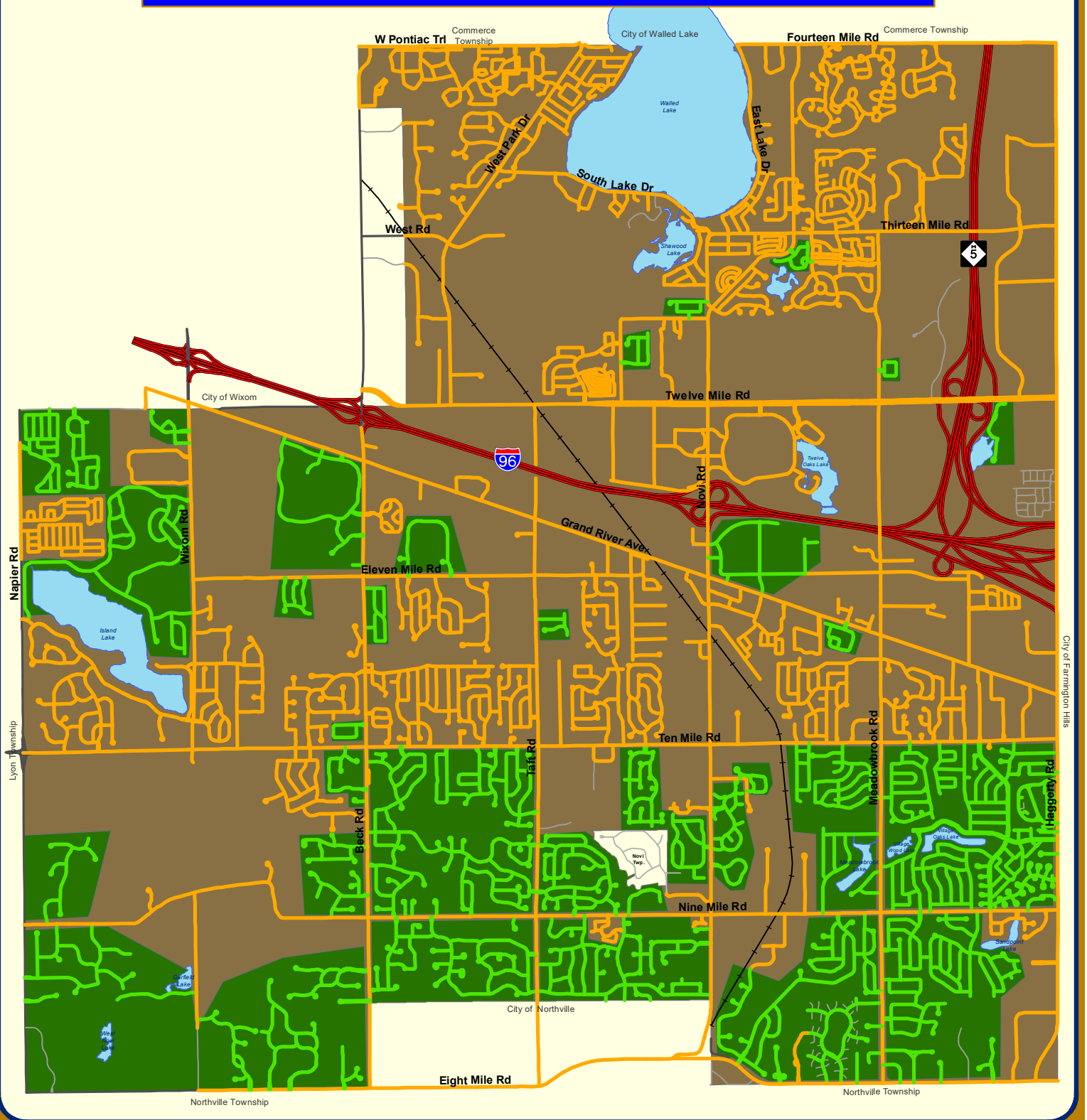
BACKGROUND INFORMATION: The City of Novi has a robust and comprehensive underground infrastructure system to service residents and stakeholders. Over the years, the system has been expanded, improved upon, and repaired. All of those activities have been cataloged and inputted into the City's geospatial information system (GIS). Some of this information collected over the past few years by staff reviewing available record drawings and/or field verifying assets by visual observation. The aforementioned activities have resulted in approximately one-third of the water and sanitary sewer assets being properly addressed (see attached figure). The remaining two-thirds of the water, and sanitary sewer assets, as well as, all of the storm sewer assets have incomplete and/or unverified asset information. The proposed data collection project would address these assets and provide multiple GIS layers with accurate information which leads to improving the effectiveness of the overall system.

As one of the City's engineering consultants, OHM Advisors was asked to provide the attached proposal for this project using the fee percentages in the Agreement for Professional Engineering Services. The proposal discusses two options for this task. Option 1 involves collecting the location and structure type. Option 2 would collect additional information such as invert elevations, pipe diameter, and direction. The additional information included in Option 2 is valuable when dealing with the City's infrastructure, and is the recommended option.

This task would begin this summer and could be completed by summer 2021, depending on the speed at which some of the data can be accessed and collected.

RECOMMENDED ACTION: Approval to award a professional services contract to OHM Advisors for the collection of data related to the City's water, sanitary sewer and storm sewer systems, in the amount of $486,760.

Utility Data Accuracy Improvement Status



Map Author: Keri Blough
Date: August 7, 2018
Version #: 1.0

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.

Map Legend

Utility Data Conversion Progress

- As-Built Converted
- Location GPS Verified

GPS Status

- GPS Complete
- Vendor to GPS

Number of Assets to GPS (approx.)

Water Valve = 3100
Hydrant = 3000
Stop Box = 7400
Sewer Manhole = 4600
Storm Manhole = 9500
Catch Basin = 5400
Culvert End Section = 350

City of Novi
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Feet
0 850 1,700 3,400 5,100

1 inch = 4,225 feet

May 19, 2020

Mr. Benjamin Croy, PE
City Engineer
City of Novi - Department of Public Works
26300 Lee BeGole Drive
Novi, MI 48375

RE: Scope of Services
DPW Asset Locating Project

Dear Mr. Croy:

Per your request, the following outlines our proposed scope of services and fee to perform GPS survey collection of various structures for the City's storm water, sanitary, and water infrastructure systems. This summary includes our project understanding, proposed scope of work, assumptions, schedule, and fee.

PROJECT UNDERSTANDING

It is our understanding that the City of Novi wishes to collect data related to their existing public storm water, sanitary, and water infrastructure. City staff has utilized available as-built plans to update the existing GIS for these infrastructure systems, but a majority of the assets have not been accurately located via GPS. Approximately 1/3 of the water and sanitary assets have been GPS-located by City staff, while none of the storm water assets have been GPS-located. The RFP indicates approximately 42,500 assets to be located. OHM has reviewed the most recent GIS database obtained from the City and estimates approximately 43,500 assets are in need of GPS-locating.

Per the RFP, the City has asked for a base proposal/cost to collect horizontal GPS locations of the assets and basic attributes. An additional quote is also requested to collect additional attribute information for the assets, such as rim elevations, pipe diameter and direction, and invert elevations. We have included corresponding costs and proposed schedule for each of these options in this proposal.

The OHM Team for this project will include three (3) one-person crews with the latest Eos-GNSS Positions Systems collection equipment. This equipment will allow our technicians to collect X, Y, & Z location of the assets with centimeter accuracy (accuracy dependent on vegetation canopy cover and other multipath obstacles). ArcGIS Collector Application, tracking Dashboard with embedded Web Mapping Application will be developed by the OHM GIS Team. The City of Novi will have access to the ArcGIS Online content for verification and tracking purposes.

SCOPE OF SERVICES

The following outlines our work plan to accomplish the scope of services for this project as noted above:

Quote A

- Arrange and attend a kick-off meeting with the City to discuss project approach and schedule.
- Build collector applications and progress tracking dashboard.
- Perform field data collection/GPS locating for assets as identified by the City.
- Collect basic asset attributes and populate data fields as indicated in RFP requirements for Quote A.
- Coordinate with the City DPW for assistance with traffic control as required.

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- Complete quality control checks on field data.
- Compile data sets for delivery to the City (assume 4-5 data deliveries) on specified dates that my change.
- Arrange and attend progress meeting.
- Scope of Services separated out by Task (feature types)
    a. List all Feature Types being collected
        i. Water
            1. Gate Valve
            2. Hydrant Valve
            3. Hydrant
            4. Stop Box
        ii. Sanitary Sewer
            1. Manhole
        iii. Storm Sewer
            1. Manhole
            2. Inlet
            3. Culvert End Section
            4. Underground Detention
- Provide full data delivery at the completion of the project in WGS1984 (Horizontal Datum) and NAVD88 (vertical datum) of all collected data.

Quote B

- Arrange and attend a kick-off meeting with the City to discuss project approach and schedule.
- Build collector applications and progress tracking dashboard.
- Perform field data collection/GPS locating for assets as identified by the City.
- Coordinate with the City DPW for assistance with traffic control as required.
- Complete quality control checks on field data.
- Compile data sets for delivery to the City (assume 4-5 data deliveries) on specified dates that my change.
- Arrange and attend progress meeting.
- Collect additional attribute information for the assets, such as rim elevations, pipe diameter and direction, and invert elevations per Quote B requirements outlined in RFP.
- Scope of Services separated out by Task (feature types)
    a. List all Feature Types being collected
        i. Water
            1. Gate Valve
            2. Hydrant Valve
            3. Hydrant
            4. Stop Box
        ii. Sanitary Sewer
            1. Manhole
        iii. Storm Sewer
            1. Manhole
            2. Inlet
            3. Culvert End Section
            4. Underground Detention
- Provide full data delivery at the completion of the project in WGS1984 (Horizontal Datum) and NAVD88 (vertical datum) of all collected data.

ASSUMPTIONS

The following summarizes our assumptions associated with this proposal:

- No more than 5 minutes will be spent searching for the location of any asset. If an asset cannot be found within that time, it will be noted and the crew will move to the next asset.
- If structures are not accessible/unable to open cover, that will be noted in the comments field and we will coordinate with the DPW as needed.
- The City DPW will aid with traffic control as required for collection of assets along major roadways.
- Eos GNSS Positing System and ESRI ArcGIS Online
    - ESRI Collector Application and Eos Arrow Gold RTK GNSS Positioning Systems will be used for this data collection.
    - X and Y coordinates shall be +/- 0.2 feet in accuracy. Z coordinates (Quote 2) shall be +/- 0.2 feet in accuracy. Locations where this accuracy is not achieved will be noted in the attribute table.
    - If the desired accuracy cannot be reached due to accessibility (parked cars, gated yards, etc. or lack of signal caused by multipath errors (heavy vegetation, electrical wires, buildings, weather or other reasons), OHM will determine it the collection of the structure can be achieved at a later date and will return to the site no more than two times to collect data (original attempt and subsequent reattempt).
    - The location of each point will be taken as outlined in the RPF (pg. 2)
    - Esri Collector will be used as our field data collection platform.
    - Tracking Dashboard will be created, and the City of Novi will have access.
- OHM will use the City of Novi's existing GIS features as a guide to locate and GPS structures.
- All specified Domains and Fields will be created in the new geodatabase.
- It appears that there are approximately 1800 storm water discharge points in the existing City GIS that were not included in the RFP for GPS location. If the City chooses to add any of these to the collection efforts, these can be collected at the cost/asset identified below.

SCHEDULE

The following outlines our anticipated schedule and milestones of main tasks related to this work:

DPW Asset Location Project Proposed Schedule (Quote A)		**52 Weeks**
2020		
July	Authorization / Kickoff Meeting / Build Collector Applications and Dashboard	
July - December	Field Data Collection	
September 25th	Data Delivery 1	
December 18th	Data Delivery 2 (Progress Meeting)	
2021		
January – June	Field Data Collection* (intensity may vary depending on weather)	
March 19th	Data Delivery 3	
June 30th	Data Delivery 4 (Final geodatabase with all collected features)	

DPW Asset Location Project Proposed Schedule (Quote B)		56 Weeks
2020		
July	Authorization / Kickoff Meeting / Build Collector Applications and Dashboard	
July - December	Field Data Collection	
August 28th	Data Delivery 1	
October 23rd	Data Delivery 2	
December 18th	Data Delivery 3 (Progress Meeting)	
2021		
January - March	Field Data Collection* (intensity may vary depending on weather)	
April-July	Field Data Collection	
February 26th	Data Delivery 4	
April 23rd	Data Delivery 5	
July 31st	Data Delivery 6 (Final geodatabase with all collected features)	

FEE

The proposed fee for the above work is two hundred ninety-eight thousand four hundred twenty-five dollars ($298,425) for Quote A. The proposed fee for the optional attribute collection is four hundred eighty-six thousand seven hundred sixty dollars ($486,760) for Quote B. The costs are derived based on the anticipated number of field crew hours at the standard contract rate of $155/hour and the anticipated number of office staff hours at the standard contract rate of $115/hour. The summary of anticipated hours and costs are included in the tables below, as well as the corresponding breakdown between storm water, water, and sanitary systems.

DPW Asset Location Project Quote 1 (Base)					
Feature Category	Estimated Hours Field Crew	Estimated Hours Office Staff	Field Crew Hourly Rate	Office Hourly Rate	Estimated Cost
Storm Water	970	60	$155.00	$115.00	$157,250.00
Water	680	40	$155.00	$115.00	$103,800.00
Sanitary	245	15	$155.00	$115.00	$37,375.00
Total	**1895**	**115**			**$298,425.00**

DPW Asset Location Project Quote 2 (Optional Attributes)					
Feature Category	Estimated Hours Field Crew	Estimated Hours Office Staff	Field Crew Hourly Rate	Office Hourly Rate	Estimated Cost
Storm Water	1578	100	$155.00	$115.00	$256,090.00
Water	1042	70	$155.00	$115.00	$169,560.00
Sanitary	372	30	$155.00	$115.00	$61,110.00
Total	**2992**	**200**			**$486,760.00**

Thank you for the opportunity to be of service. If you have any questions or require additional information, please contact us. We look forward to working with you on this project.

Sincerely,
OHM Advisors

Timothy J. Juidici, P.E.
Principal-in-Charge

Authorization to Proceed

Signature Date

Printed Name Title

cc: Jeff Herczeg, Director of Public Works
Michael Cousins, OHM
File

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