



# CITY of NOVI CITY COUNCIL

**Agenda Item H**  
**May 6, 2019**

**SUBJECT:** Approval to award civil engineering services to OHM Advisors for design engineering services associated with the 2019 Sanitary Sewer Manhole and Pipe Rehabilitation in the amount of \$41,550.

**SUBMITTING DEPARTMENT:** Department of Public Works, Water and Sewer Division

**CITY MANAGER APPROVAL:** 

<b>EXPENDITURE REQUIRED</b>	<b>\$ 41,550</b>
<b>AMOUNT BUDGETED</b>	<b>\$ 638,925</b>
<b>APPROPRIATION REQUIRED</b>	<b>\$ 0</b>
<b>LINE ITEM NUMBER</b>	<b>592-592.00-976.077</b>

## **BACKGROUND INFORMATION:**

The Water and Sewer Division has recently completed a five-year program involving the inspection of sanitary sewer manholes and pipes. The City of Novi received \$1,104,646 in grant funding (75% of project costs) from the Michigan Department of Environmental Quality through a program intended to assist with Stormwater, Asset Management, and Wastewater (SAW) projects (refer to attached Memo for additional information related to the grant program).

With the SAW grant inspection program completed, OHM Advisors and staff will review the results of the inspections and confirm the necessary rehabilitation locations and repair techniques within the project area. Staff will then identify one or more projects to address the defects observed in the sanitary sewer manholes and pipes. The future rehabilitation of the sanitary sewer infrastructure will be based on multiple factors such as severity, criticality and location of the defects. The attached figures show the area included in the inspection program, and highlights the manholes and pipes identified to be addressed. The repairs will be completed utilizing many methods, including grouting, pipe and manhole liners, removal and replacement, and other rehabilitation methods.

The attached design engineering services proposal outlines the scope of services in more detail. The design cost of the project is \$34,850 (4.25% of the estimated construction cost of \$820,000), plus \$6,700 for preliminary engineering services to plan for the rehabilitation of the remainder repairs not addressed with this project, for a total design fee of \$41,550. The Water and Sewer Division has reviewed the scope of services proposal and recommends approval.

**RECOMMENDED ACTION:** Approval to award civil engineering services to OHM Advisors for design engineering services associated with the 2019 Sanitary Sewer Manhole and Pipe Rehabilitation in the amount of \$41,550.



April 25, 2019

Mr. Ben Croy  
Water and Sewer Senior Manager  
City of Novi  
Department of Public Services  
26300 Lee Begole Drive  
Novi, MI 48375

RE: 2019 Sanitary Sewer Manhole and Pipe Rehabilitation

Dear Mr. Croy:

In response to the City's commitment and desire to improve its public utility infrastructure system, OHM Advisors is pleased to submit this proposal to assist the City with engineering services, as well as the preparation of bidding documents related to the proposed rehabilitation of portions of the City's sanitary sewer system. We are submitting this proposal as a follow up to our completion of the Stormwater, Asset Management, and Wastewater (SAW) Grant Project Plan for the sanitary sewer system in 2018. We have prepared the project understanding and scope of services based on our discussions with the City staff. Our proposal contains our Project Understanding, Scope of Services, Schedule, and Fee related to this work.

### **PROJECT UNDERSTANDING**

The proposed project would involve the rehabilitation of sanitary sewer mains and manholes identified as needing rehabilitation per the City's SAW Project Plan. We understand that the City has an initial project budget of \$287,600 for sanitary sewer manhole rehabilitation, and \$713,190 for sanitary sewer main rehabilitation. Not all pipes and manholes identified as needing rehabilitation will be able to receive repair under this initial budget. The pipe and manhole rehabilitation projects will be selected and prioritized based on the findings and results from the 2018 SAW Grant project. We understand that the City desires that OHM Advisors continue with professional services for preparation of Phase 1 contract documents and bidding services, consistent with our on-going Agreement for Civil Engineering Services.

Additionally, we understand that the City is requesting OHM Advisors to provide a scope and budget for a future Phase 2 of this project for manhole and pipe rehabilitation, to implement the recommendations in the previous SAW Project Plan. This effort will begin in conjunction with the preparation of contract documents for Phase 1, and would conclude shortly after the Phase 1 bid letting.

### **SCOPE OF SERVICES**

The scope of work for this project will be consistent with our Agreement for Civil Engineering Consulting Services between the City and OHM Advisors. The following is a summary of necessary tasks to be provided for each of the main phases of work related to the preparation of construction documents and bidding assistance.

#### Preparation of Construction Documents

Under this phase of work, OHM Advisors will prepare contract documents for this project. Specific work tasks would include the following:



- Review sanitary sewer video from the SAW project and confirm the necessary rehabilitation locations and methodology for manholes and pipe within the project study area.
- Based on the overall project budget, streamline the scope of work from the SAW Project Plan to maximize the amount of work that can be performed on this project, providing some ability for the City to add work to the Contract within the total budgeted amount.
- Provide research and recommendations related to the type and method of rehabilitation for the manholes and pipe. The typical options for manholes include spray-in liners or manhole inserts, as well as isolated chimney repair. Typical options for pipe rehabilitation include spot liners, full pipe liners, and pipe joint grouting.
- Prepare a project manual/contract book for the project to include bid sheet, general conditions, general specifications and detailed engineering specifications as necessary for the project. Appendices containing maps identifying the proposed pipe and manhole rehabilitation projects will also be included.
- Prepare a Final Opinion of Construction Cost for the project.

#### Phase 2 Scoping Effort

- Review the remaining sanitary sewer video from the SAW project not included in the Phase 1 scope of work.
- Confirm the necessary rehabilitation locations and methodology for manholes and pipe within the project study area.
- Provide research and recommendations related to the type and method of rehabilitation for the manholes and pipe. The typical options for manholes include spray-in liners or manhole inserts, as well as isolated chimney repair. Typical options for pipe rehabilitation include spot liners, full pipe liners, and pipe joint grouting.
- Prepare a Preliminary Opinion of Construction Cost for a future Phase 2 of the project.

#### Bidding Assistance

Assuming that the City authorizes the bidding of Phase 1 of the project, the bidding assistance phase of work would begin. Specific work tasks would include the following:

- Provide the finalized Project Manual and Appendices to the City.
- Provide support for bidding of the project contract documents on the City MITN site.
- Answer contractor questions as necessary.
- Prepare and distribute addenda to prospective bidders, if necessary.
- Review bids for consistency with Contract Documents, if requested by City.
- Provide feedback and evaluation on bidders to the City, if requested.



## SCHEDULE

The project schedule would follow the milestone dates for completion of each phase of work as outlined below:

### Phase 1 Contract Documents

Authorization Date – May 7, 2019  
Preliminary Engineering – June 21, 2019  
80% Contract Documents – August 9, 2019  
Bid Set/Advertisement – August 28, 2019  
Bid Opening – September 19, 2019

For the scoping effort related to a future Phase 2 of this project, we propose to complete that effort by October 18<sup>th</sup>, 2019.

## FEE

Based on the above scope of work, our project fee is established as follows:

- Based on the estimated construction budget of \$820,000 for Phase 1, the engineering fee percentage based on our Consulting Services Agreement for the design phase of underground utility rehabilitation is 4.25%.
  - Phase 1 Design Fee is calculated as  $4.25\% \times \$820,000 = \mathbf{\$34,850}$
- For Phase 2 of this project, we will perform preliminary engineering services consistent with our Phase 2 scope of work outlined above for a fee of **\$6,700**.

If you find this proposal acceptable, we will begin the work outlined above upon City authorization. Should you have any questions, please do not hesitate to contact me at 734-466-4439. We thank you for this opportunity to provide professional engineering services to the City of Novi.

Sincerely,  
OHM Advisors

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George Tsakoff, PE  
Principal

cc: Tim Juidici, OHM  
Mackenzie Johnson, OHM

Year	Cost
1	\$147,750.00
2	\$ 50,650.00
20% Contingency	\$39,680.00
40% Engineering Fee	\$79,360.00
<b>Grand Total</b>	<b>\$317,440.00</b>

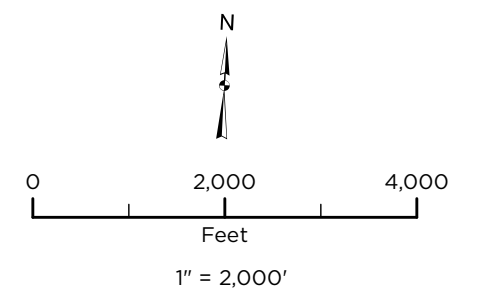


# Wastewater SAW

## Project Plan

### Manhole Rehabilitation

- CIP Year
- Year 1
  - Year 2
  - No Project
  - Sanitary Gravity Main
  - SAW Study Area



Source: Data provided by City of Novi and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 IntlFeet

Map Published: November 20, 2018



Year	Total Cost
1	\$ 430,779.88
2	\$ 289,168.25
3	\$ 422,364.88
Cleaning	\$ 10,521.00
20% Contingency	\$ 230,566.80
40% Engineering Fee	\$ 461,133.60
<b>Total</b>	<b>\$ 1,844,534.41</b>

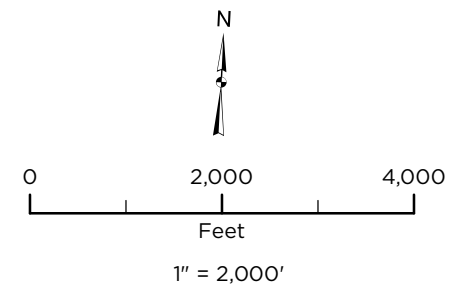


# Wastewater SAW

## Project Plan

### Pipe Rehabilitation

- Sanitary Gravity Main**
- CIP Year**
- Year 1
  - Year 2
  - Year 3
  - Cleaning
  - No Project
  - SAW Study Area



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Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 IntlFeet

Map Published: November 20, 2018



# MEMORANDUM



**TO:** JEFF HERCZEG, DPW DIRECTOR  
**FROM:** BEN CROY, WATER & SEWER SENIOR MANAGER  
**SUBJECT:** SAW GRANT  
**DATE:** MARCH 7, 2019

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In 2015, the City of Novi received grant funding from the Michigan Department of Environmental Quality (MDEQ) through a program intended to assist with Stormwater, Asset Management, and Wastewater (SAW) projects. Two grants for sanitary sewer system related tasks were successfully applied for; one submitted by the Department of Public Works' Water and Sewer Division, and one submitted by the Oakland County Water Resources Commissioner (for work related to the portion of the sanitary sewer system they maintain on behalf of Novi). The grant funding under the SAW programs allowed for a 90% grant (with 10% local match) for the first million, and a 75% grant (25% local match) for the second million. Between the two grants, **Novi received \$1,104,646 in grant funding** (with a match of \$140,180) for sanitary sewer system inspection, asset management planning, and construction projects.

Figure 1 shows the areas inspected during this five-year program (2013-2018). Even though the grant was awarded in 2015, work dating back through 2013 was considered eligible, allowing pipe inspections and manhole repairs already completed to be reimbursed. The one primary program limitation was that infrastructure involved must be 20+ years old to be eligible for the grant funding, which meant the areas investigated fell within the older areas of the city.

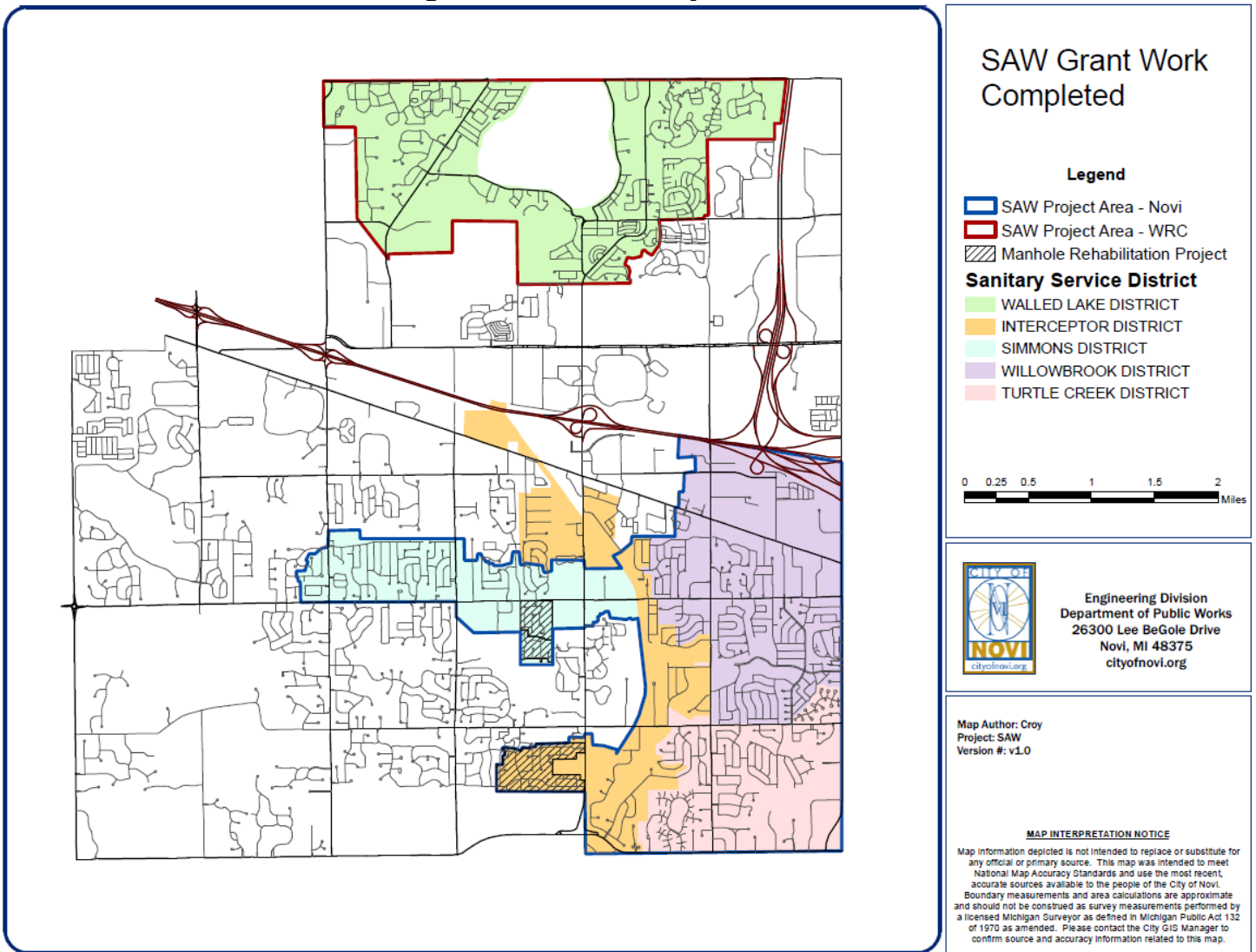
The tasks completed during the SAW grant program included the following:

- Televising, cleaning, and inspection of sanitary sewer pipe - this work was completed by Water and Sewer Division staff, the City's contractor (Metro Environmental) and Oakland County staff; 546,678 linear feet (103 miles) of pipe was inspected during the program.
- Condition assessment of sanitary sewer manhole structures - 1,673 manholes were inspected during the program.
- Manhole Rehabilitation - 133 sanitary sewer manholes were repaired or reconstructed as necessary throughout four subdivisions.
- Asset Management Plan - This plan was developed as a tool to help implement a cost-effective program for future maintenance of the sanitary sewer system.

Two reports summarizing the findings and recommendations resulting from the SAW program were developed by OHM Advisors, the consultant used by both Novi and

Oakland County for this work. The reports outline short-term and long-term plans for infrastructure repair, as well as an asset management plan.

Figure 1: SAW Grant Project Area



Based on the findings summarized in the two reports, future projects will be developed to complete the repairs identified during the inspection. Some projects have already been planned for in the City’s Capital Improvement Program in anticipation of the upcoming work. These projects will be completed following a prioritization analysis based on the severity of the defect and the consequence of failure for each segment. In general, the city’s sanitary sewer infrastructure is in good condition. This is encouraging news given that the area inspected contains some of the city’s oldest infrastructure.

cc: Scott Roselle, Water and Sewer Asset Manager