CITY OF NOVI CITY COUNCIL
APRIL 12, 2021

SUBJECT: Approval to award engineering design services to Spalding DeDecker to develop an asset management plan for replacement of the Asbestos Cement main in the City's water distribution system, in the amount of $24,080.00.

SUBMITTING DEPARTMENT: Department of Public Works, Engineering Division

EXPENDITURE REQUIRED	**$ 24,080.00**
AMOUNT BUDGETED	**$ 24,080.00**
APPROPRIATION REQUIRED	**$ 0**
LINE ITEM NUMBER	**592-592.00-816.055**

BACKGROUND INFORMATION: The City's 2021 Water System Master Plan recommended replacement of the approximately 30 miles of Asbestos-Cement (AC) water main that exists throughout the network. The majority of the AC water main is located the southeastern portion of the City.

AC water main was installed up until the early 1980s and is now reaching the end of its lifecycle. Although the use of AC water main is not considered to be a health concern, it's considered good practice to eliminate AC pipe from water main networks when practical. AC pipe was commonly used starting in the 1940s due to its corrosion resistance and lightweight construction, but the material is brittle and not sized to standard outside dimensions. This makes AC pipe difficult to repair and connect to contemporary pipe materials, in both water system expansion projects and emergency repairs.

The City's engineering consultant, Spalding DeDecker, provided the attached proposal outlining the scope of services to develop an asset management plan for the replacement of the existing AC water main within the City. Based on existing conditions, probability of failure and consequence of failure, a prioritization will be established to use to develop a multi-year plan for the replacement of the AC pipe.

RECOMMENDED ACTION: Approval to award engineering design services to Spalding DeDecker to develop an asset management plan for replacement of the Asbestos Cement main in the City's water distribution system, in the amount of $24,080.00.

SPALDING DEDECKER
Engineering & Surveying Excellence since 1954

March 15, 2021

Ben Croy, PE
City Engineer
City of Novi
26300 Lee BeGole Drive
Novi, Michigan 48375

Re: AC Water Main Study Proposal
Proposal for Civil Engineering Services

Dear Mr. Croy:

Spalding DeDecker (SD) is pleased to provide the following proposal for engineering design services to provide an asset management plan for replacement of the existing AC water main in the City.

Project Understanding

SD understands the intent of the project is to put together a priority list for future AC water main replacements based on a desktop evaluation of the existing main conditions, probability of failure and consequence of failure.

Proposed Scope of Services

SD's scope will include:

Data Collection

- Obtain GIS data from Novi and sort for pertinent information.
  - Catalog and sort by Type (Transmission/Distribution), Size, and Age.
- Review existing asset management plan (AMP) and capital improvement plan (CIP).
- Obtain water main break history from Novi

Analysis

- Develop criteria for analysis
  - Probability of Failure (POF) – Break history, Age (1-5 scale)
  - Consequence of Failure (COF) – Main size/classification (transmission, arterial, local distribution), Number of customers serviced (1-5 scale)
  - Business Risk Evaluation (BRE) – POF x COF = BRE (1-25 scale)
  - Workshop with Novi to develop limits for each score (1-5)

Cost Estimation

- Develop project limits based on ratings, CIP plan and allowable expenditures per year ($2 million - $4 million roughly).
- Develop high-level cost estimates for each of the project limits.

Technical Report

- Provide a technical memo outlining methods of grading for POF, COF and BRE as well as results of the study including the following:
    - Table identifying the priority for each project limit
    - Cost for each project limit
    - 20 year cost distribution schedule

Meetings

- Kickoff meeting and 3 additional review meetings

Technical Specifications

- Provide AC Water Main replacement general conditions additions.
    - Landfill manifest requirements, handling procedures, safety equipment, etc.
- Provide a technical specification to be used for all AC water main replacement projects.

Proposed Fees

The proposed study does not fit within our current contract framework of cost by percentage of construction. However, SD has compiled a list of estimated hours necessary for the project and proposing to bill on an hourly not-to-exceed basis through the duration of the project. Based on the estimated hours, the proposed not-to-exceed fee for this project is:

AC Water Main Study Phase - **$24,080.00***
*See the attached fee breakdown

Project Schedule

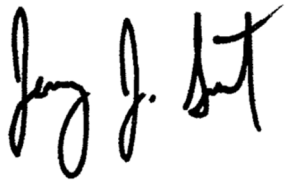
The following summarizes the anticipated schedule for the project:

Milestone	Completed By
Project Award	4/6/2021*
Kickoff Meeting	4/9/2021
Data Collection	4/12-4/23/2021
Base Analysis	4/26 -5/7/2021
POF and COF Rating Review	5/14/2021
Develop Project Limits	5/21-5/28/2021
Review Project Limits and Expenses	6/4/2021
Develop Technical Memo	6/7-6/18/2021
Final Review	6/25/2021
Final Submission	6/30/2021

*Dates shown are earliest possible assuming City Council approval necessary, we understand the City may need to alter the schedule accordingly.

Thank you for the opportunity to provide this proposal for Engineering Services. Please don't hesitate to contact me if you have any questions or comments regarding this submittal.

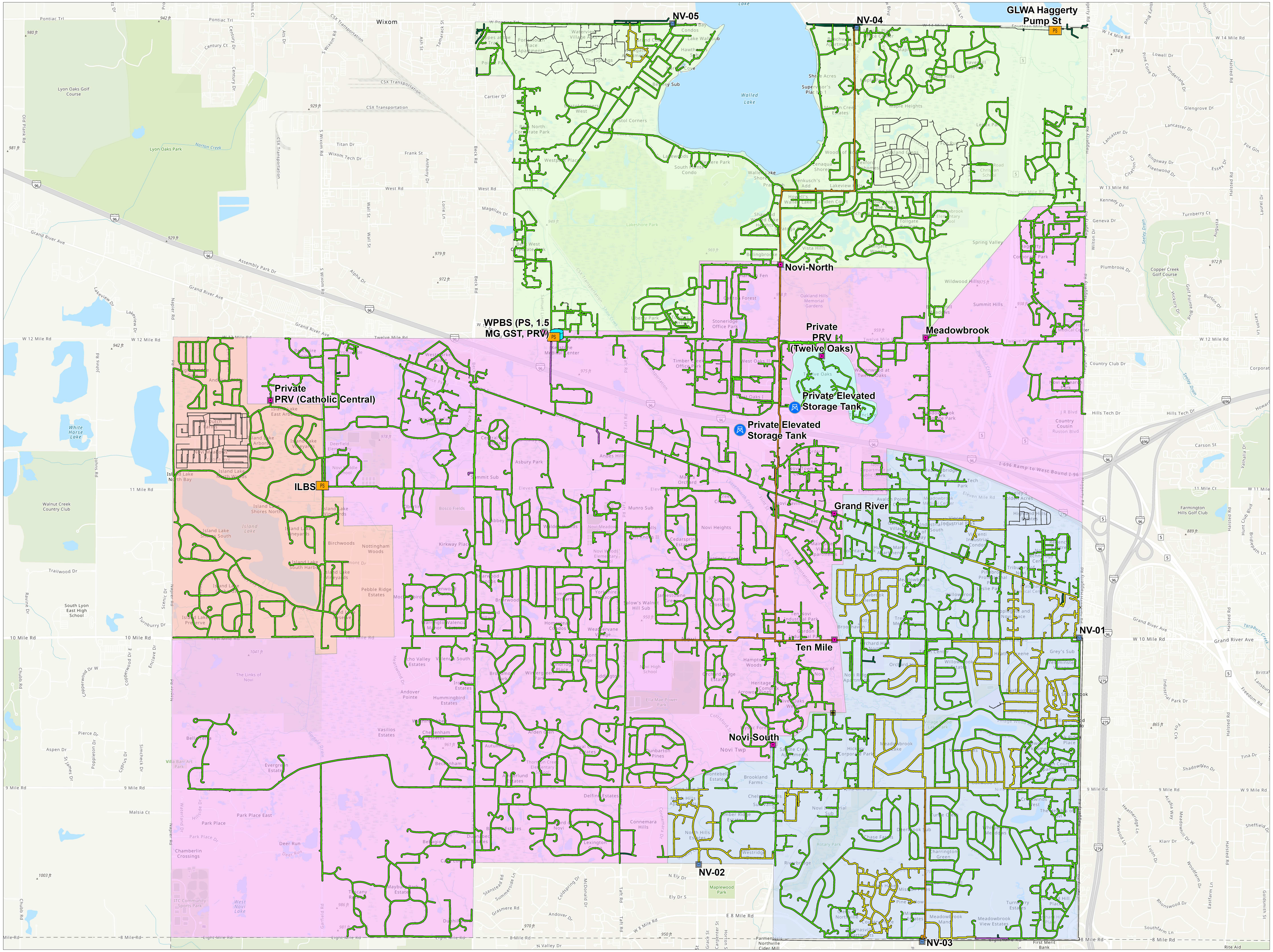
SPALDING DEDECKER ASSOCIATES, INC.



Jeremy Schrot, PE
Director of Public Engineering

Project Name: Novi AC Main AMP
Client Name: City of Novi - Water System
Client Contact: Ben Croy, Scott Roselle
Proposal Number: PR20-128
Created By: Jeremy Schrot
Reviewed By: -------
Date Last Revised: 3/17/2020
Billing Rate Table: Standard 2021 Billing Rates

Billing Tasks		Tasks by Quantity and Hours						Distribute Total Labor Hours				
								Employee Initials				
								JS	AM	ZS		
Billing Task #	Billing Task Name	Line #	Sub-Task:	Quantity (Ea)	Unit Hours (Hr)	Total Hours (Hr)		Project Manager $180.00	Project Engineer $112.00	Engineer $102.00	Direct Task Labor Hours (Hr)	Direct Task Labor Fee ($)
100	Survey	1		0	0	0					0	$0.00
			Billing Task Sub Totals	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**$0.00**
200	AMP	2	Kick-off Meeting	1	8	8		4	4		8	$1,168.00
		3	GIS Analysis & Data Processing	1	60	60		4	40	16	60	$6,832.00
		4	Establish POF, COF, BRE	1	16	16		4	12		16	$2,064.00
		5	Construction Cost Estimates	20	2	40		4	20	16	40	$4,592.00
		6	Build 10, 15 and 20 year Replacement Schedules	1	24	24		4	20		24	$2,960.00
		7	Preliminary AMP Review Meeting	2	8	16		8	8		16	$2,336.00
		8	Revise & Resubmit Final AC AMP and Replacement Schedule	1	8	8		2	6		8	$1,032.00
			Billing Task Sub Totals	**27**	**126**	**172**		**30**	**76**	**32**	**172**	**$20,984.00**
210	Spec	9	Master AC Water Main Removal Specification & Details	1	16	16		2	14		16	$1,928.00
		10	Specification Review with Novi	1	8	8		4	4		8	$1,168.00
			Billing Task Sub Totals	**2**	**24**	**24**		**6**	**18**	**0**	**24**	**$3,096.00**
			Grand Totals	**29**	**150**	**196**		**36**	**94**	**32**	**196**	**$24,080.00**



CITY OF NOVI

cityofnovi.org

Water System Master Plan

Figure A-2: Material Map

Water Main (Material)

- Asbestos Cement
- Concrete/Class Unknown
- Ductile Iron
- HDPE/Class SDR 11
- Unknown
- Water Main (NOT Owned by Novi)
- Water Pump Station
- 1.5 MG Above Ground Storage Tank
- Private Storage Tank
- Water Meter
- Pressure Reducing Valve
- GLWA Meter

Pressure Districts

- HIGH
- INTERMEDIATE
- ISLAND LAKE
- LOWER
- TWELVE OAKS

N

0 1,500 3,000
Feet

1″ = 1,500′

Source: Data provided by the City of Novi, OHM Advisors, and Novi. 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 Feet Intl

Map Published: January 29, 2021

OHM