



DRINKING WATER ASSET MANAGEMENT (DWAM) GRANT APPLICATION

Sec. 1001, 2019 PA 57

Public Act 57 of 2019 was made effective on September 29, 2019. Section 1001 denotes language to provide grants for asset management plan creation and distribution system materials inventory.

Grants may be awarded for Asset Management Plan (AMP) development or updates, and/or distribution system materials inventory (DSMI) related activities. The maximum grant amount allowable per applicant is \$1 million. There are no local match requirements. Applications will be accepted continuously until funding is exhausted. Applications will be awarded on a quarterly funding cycle. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) may reevaluate program and system needs after one year. Grant applications must be received by close of business on these dates to be funded in the applicable quarterly funding cycle:

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Application Deadline	January 1, 2021	April 1, 2021	July 1, 2021	October 1, 2021
Anticipated Grant Award Date (on or before)	March 15, 2021	June 15, 2021	September 15, 2021	December 15, 2021

Type I Community Water Supplies and Type II Nontransient Noncommunity Water Supplies are eligible to apply. Applicants must not appear on the federal Debarment and Suspension List and must be in good standing with EGLE programs (i.e., no EGLE grant revoked or terminated and no demonstrated inability to manage a grant or meet obligations in a project contract with EGLE).

Application for DWAM Grant

Applicant Name:	Project Name:
Project Location (City or Village or Township, and County):	Population Served by System:
Estimated Project Start Date (month/year):	Estimated Project End Date (month/date/year):
Project Contact #1 (Authorized Signatory): Name: Title: Telephone: Address: E-mail address:	Project Contact #2 (Consulting Engineer or other): Name: Title: Telephone: Address: E-mail address: balintt@rochesterhills.org

Project Summary: Attach project workplan or summary pages; should include project need, what will be addressed and how, and map(s) illustrating project work areas.

Project Cost Information: Attach documentation of estimated project costs in project workplan/summary (may include vendor estimates/quotes, contracts, etc.). Grant eligible costs are those that are associated with AMP creation/update and/or DSMI. This may include asset inventory and condition assessment, level of service, criticality assessment, revenue structure review/development, and Capital Improvement Planning as part of AMP creation/update; equipment purchase if needed and used as a direct interface for asset management or materials assessment; and verification of materials for Final DSMI, including potholing/hydrovacating/trenching for inventory/planning purposes. Additional eligibility items as related to equipment purchases is discussed on the [DWAM Grant Overview Guidance Document](#).

Eligibility is project specific and determined on a case-by-case basis by EGLE. Costs not eligible for grant inclusion include, but are not limited to, tangible permanent construction.

Provide Estimated Project Costs:

1. AMP Costs	
2. DSMI Costs	
3. Equipment Purchase Costs	
4. Project Cost Subtotal	
5. Requested Grant Amount*	

*Total grant amount cannot exceed \$1,000,000.

Ranking/Scoring: Projects will be batched and scored in each quarterly funding cycle. Scores will be based on the criteria established in the [DWAM Grant Overview Guidance Document](#).

Fill in the appropriate response below:

- Has the water supply had a lead or copper Action Level Exceedance (ALE) in the past three years?
Yes No
- Did the water supply submit its Preliminary DSMI to EGLE? Yes No If yes:

Number of service lines that are ‘unknown-likely contains lead’ that need to be verified for Final DSMI:

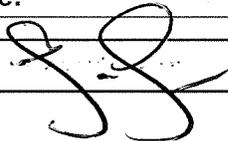
Number of service lines that are ‘unknown-likely does not contain lead’ that need to be verified for Final DSMI:

Number of service lines that are 'material unknown' that need to be verified for Final DSMI: 23,882

Total number of service lines in the water supply: 23,882

- 3. Has the water supply implemented an EGLE-approved AMP? Yes No
- 4. Has the water supply entered into an Administrative Consent Order with EGLE related to AMP deficiencies that will be addressed as part of the awarded grant? Yes No
- 5. Was the water supply's most recent Sanitary Survey completed with no deficiencies? Yes No
- 6. Did the water supply complete the Michigan Infrastructure Council's Asset Maturity Assessment? Yes No

I certify that the information provided in this application is complete, true, and accurate to the best of my knowledge.

Printed Name and Title:		Signature:	Date:
Bryan Barnett	Mayor		10-20-20

Submit completed form and applicable attachments to [EGLE-DWGrants@michigan.gov](mailto:EGL-DWGrants@michigan.gov).

Or via U.S. mail to: Michigan Department of Environment, Great Lakes, and Energy
Finance Division – Water Infrastructure Financing Section
525 West Allegan Street
P.O. Box 30457
Lansing, Michigan 48909-7957

For information or assistance on this publication, please contact the program, through EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request.

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This form and its contents are subject to the Freedom of Information Act and may be released to the public.

Number of service lines that are 'material unknown' that need to be verified for Final DSMI:

Total number of service lines in the water supply:

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October 13, 2021

Michigan Department of Environment, Great Lakes, and Energy
Finance Division - Water Infrastructure Financing Section
525 West Allegan Street
Lansing, Michigan 48909

RE: Drinking Water Asset Management Grant Work Plan
City of Rochester Hills, Michigan

HRC Job No. 20201032

The following provides additional information for the proposed activities to completed as part of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Drinking Water Asset Management (DWAM) grant.

≡ Project Need

The preliminary distribution system material inventory (PDSMI) completed by the City of Rochester Hills indicated that 17,603 of the total 23,882 water service lines were considered 'material unknown'. However, as part of EGLE's "Minimum Service Line Material Verification Requirements" guidance, this definition of "unknown" has been clarified since the PDSMI work and as such all 23,882 of the water service lines would have been considered "unknown" if this guidance was provided at the time of the DWAM Grant Application submittal deadline. The requested Grant funds will be used to verify the material of these "unknown" service lines in accordance with the "Minimum Number of Service Lines Requiring Physical Verification" guidance and support the collection, documentation and organization of information to develop the Complete DSMI.

The City's water supply system contains over 428 miles of 4-inch to 36-inch water main and approximately 5,132 hydrants and 4,774 line valves. Approximately 10% of the City's system is 16-inch diameter pipe and greater. Refer to the map included with this Work Plan. These water mains that are greater than 16-inch in diameter are critical system mains, however, they are predominantly located along major collector roads that have been heavily developed and would be difficult, disruptive and costly to replace. The City wishes to develop a maintenance and rehabilitation program for their critical large diameter mains and valves to extend their useful life and minimize disruption to their customers.

≡ Project Plan

Distribution System Materials Inventory (DSMI) Work

The current scope of service line material investigations is based on the physical verification of a random representative sample of the unknown services lines in the City's distribution system. Based on guidance from EGLE's "Minimum Service Line Material Verification Requirements" document, the City of Rochester Hills has 23,882 service lines within their distribution system that would be categorized as "unknown". Therefore, the City would be required to physically verify a minimum of 379 of these service lines in order to produce a statistically sound subset of information and assess the reliability of their existing records and predict service line materials at locations that were not physically verified for the completion of their Complete DSMI. The investigation of the unknown service lines will consist of potholing at the curb stop locations (at least 24 inches on either side of the curb stop) to physically observe the public and private side service line piping materials as well as coordinating with residents a time and date to conduct an internal verification of the service line material upstream of their meter. The estimate per line cost is inclusive of only the excavations to complete the verification at the curb stop locations and restoration of the surface

Delhi Township 2101 Aurelius Rd. Suite 2A Holt, MI 48842 517-694-7760	Detroit 535 Griswold St. Buhl Building, Ste 1650 Detroit, MI 48226 313-965-3330	Grand Rapids 1925 Breton Road SE Suite 100 Grand Rapids, MI 49506 616-454-4286	Howell 105 W. Grand River Howell, MI 48843 517-552-9199	Jackson 401 S. Mechanic St. Suite B Jackson, MI 49201 517-292-1295	Kalamazoo 834 King Highway Suite 107 Kalamazoo, MI 49001 269-665-2005	Lansing 215 S. Washington SQ Suite D Lansing, MI 48933 517-292-1488
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necessary to complete the work. Communicating the project with impacted residents, scheduling internal investigations, observing and recording the curb stop verification work and the time spent documenting, organizing and reviewing all the information collected from the physical verifications will be completed by professional engineering services.

Asset Management Planning (AMP) Work

To develop a Transmission Main and Large Valve maintenance and rehabilitation program, the City is proposing to access existing valve vaults and assess the condition of the existing 16 inch and larger valves, perform a pipeline integrity assessment of its 16-inch and larger water mains and strategically inspect the pipes (16 inch & larger) that the City has identified as most likely to fail.

The City has identified 280 valves within its water supply system that are 16 inch and larger. The City currently has record drawing information on the location, type and installation year of these valves but have not had the resources to GPS or inspect these valves. There have been instances when these valves will leak when operated or the City cannot get a quality shutdown when needed causing costly emergency repairs or project delays to get parts. The Large Valve maintenance and rehabilitation program will develop a plan and process to physically locate, inspect, and assess the large valves in the system, document and report repairs needed for each valve and create a strategic plan for future rehabilitation and major maintenance. It is estimated that the cost to inspect the large valves will be \$900 each which will include all dewatering, confined space entry and traffic control costs. As most of these large valves are located along major roads (refer to the City's Water Main Transmission System Map included in this Work Plan), traffic control set ups will be costly and time consuming, as such, it is anticipated that two (2) valves per day would be able to be inspected. Costs to repair the valves **are not** included in the Grant request.

The City will review all approximately 42 miles of its transmission system (i.e. 16 inch pipes and larger), installation history, laying conditions, pipe material, depths, topography, installer, joint type, geotechnical information, operational characteristics, break history, etc. from a desktop perspective to reveal any trends in performance and extract any tendencies in the data. This pipeline integrity assessment will assist the City with programming future transmission main rehabilitation and replacement projects. It is estimated that the cost to perform a pipeline integrity assessment is between \$500 - \$1,000 per mile of pipeline reviewed.

Through the development of the City's Water Asset Management Program (WAMP) and results of studies performed regionally, the City has identified certain pipelines in its transmission system with a higher likelihood of failure. The prestressed concrete cylinder pipe (PCCP), 16 inch and larger, manufactured and installed in the early to mid-1970's has been identified locally and regionally as a potential pipeline with integrity and failure concerns. The City has identified over 14 miles of 16" to 24" PCCP pipe that was manufactured and installed in the early to mid-1970's (refer to the attached map). The Transmission main inspection program would develop a plan and process to physically inspect a representative sample of these mains identified as critical. The City would propose to use technologies that physically assess PCCP pipeline integrity through analyzing wire breaks, steel cylinder corrosion and joint deterioration. It is estimated that costs to inspect existing 16" diameter PCCP water main will start at \$50,000 per mile including necessary appurtenances to insert and retrieve inspection equipment.

Lastly, the City will continue to update its GIS and asset inventory through review of historical data and information, work order history from its CMMS system and collection and review of information collected through the above asset management planning tools. The City has dedicated significant time and effort creating and developing its asset management system and is the entity that should continue to update it. This will be considered force account work and will follow Grant requirements for invoice detail and tracking and maximum fringe benefits. It is estimate that City staff will require approximately \$25,000 per year to upgrade and improve the City water system asset inventory including enhanced condition assessment and level of service information to help with Capital Improvement Planning.

≡ Map(s) illustrating project work area

A map of the City is attached with the service line information as reported in the Preliminary Distribution System Materials Inventory (PDSMI) illustrated. The current project area includes all services lines with unknown materials. The priority and extent of the verifications will be reviewed and updated upon receipt of the aforementioned EGLE guidance.

A map of the City's water transmission system showing all 42 miles of 16" and larger main has been provided. The mains highlighted on this map is where the large valves will be inspected and where the pipeline integrity assessment will focus. The number and location of the large valves to be inspected will be reviewed to coordinate with the City's criticality assessment from their WAMP and parallel AMP activities.

A map of the City's 16" to 24" PCCP water mains installed in the 1970's has been provided showing where the physical pipeline inspections will be focused. The location of the pipelines to be inspected will be reviewed to coordinate with the City's criticality assessment from their WAMP and parallel AMP activities.

≡ Estimated Costs

Asset Management Planning (AMP) estimated costs were provided on the Project Plan section and have been summarized in the attached cost summary sheet. AMP costs were based on previous experience coordinating large valve inspection programs and cost sharing information with regional water systems on pipeline integrity assessments and pressure pipeline condition assessments.

The attached table is a bid tabulation from a service line verification program publicly bid in the Spring of 2020. The table summarizes service line verification costs from seven contractors and calculates the anticipated costs for "typical" curb stop service line verifications including excavations, visual verification and documentation, backfill and turf restoration. For the Grant application, a cost of \$738 per service line verification at the curb stop (physical investigation at the curb stop, points 2 & 3 based on EGLE Guidance) and a cost of \$120 per internal service line verification (physical investigation at the curb stop, point 1 based on EGLE Guidance) was used for the cost allocation estimate. In addition, professional engineering service costs are necessary to manage the service line verification program, including but not limited to; planning and coordinating the verification locations, scheduling, tracking and observing the work, organizing the collected information, troubleshooting the asset management collection software, finalizing restoration items and administration of grant reporting and reimbursements.

Refer to the attached cost summaries for the breakdown of DSMI costs as provided in the DWAM Grant Application worksheet and the estimated professional service fees for the proposed work.

If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

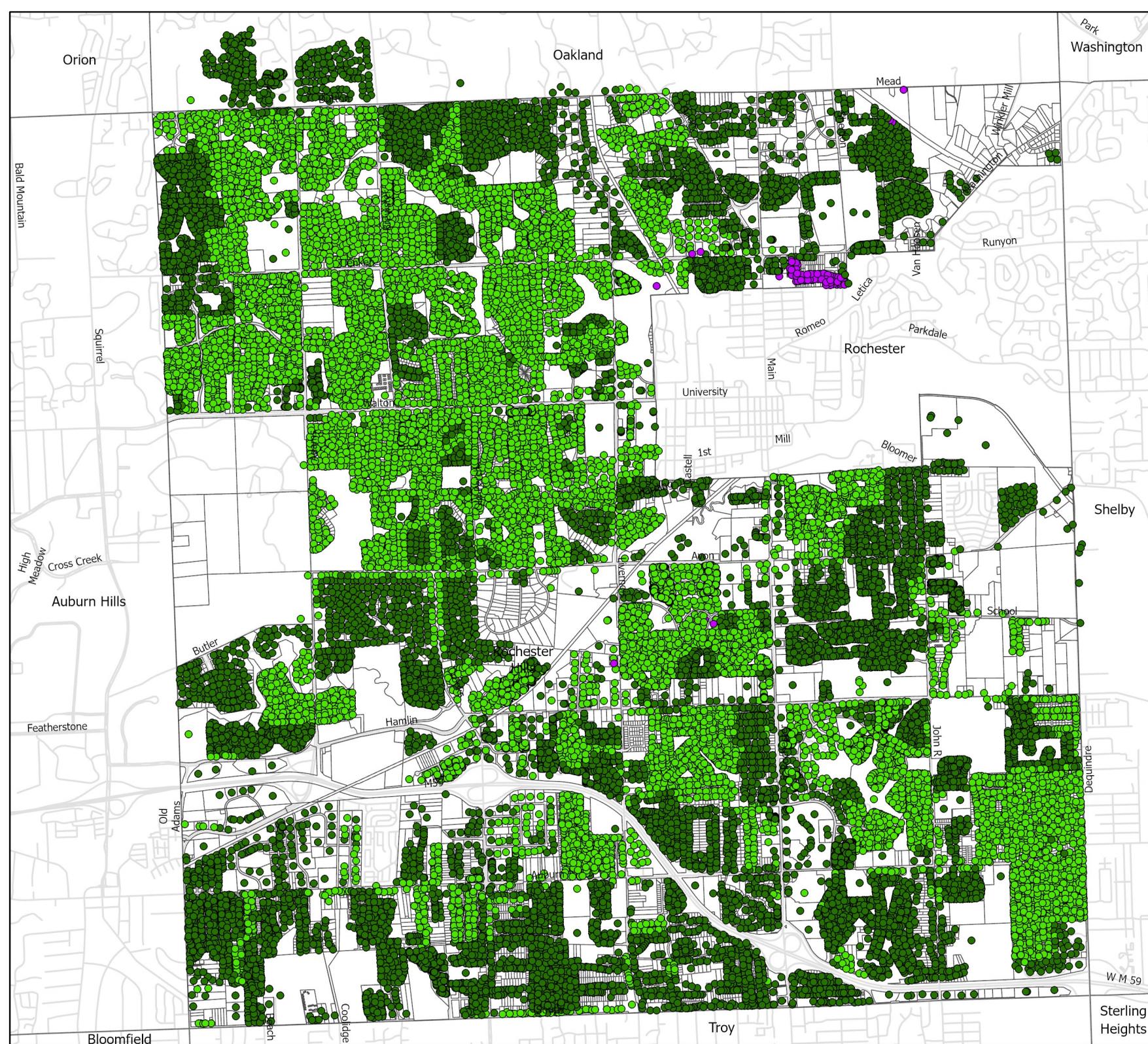
HUBBELL, ROTH & CLARK, INC.



Bradley Shepler, P.E., CCCA, LEED AP
Associate

Attachment

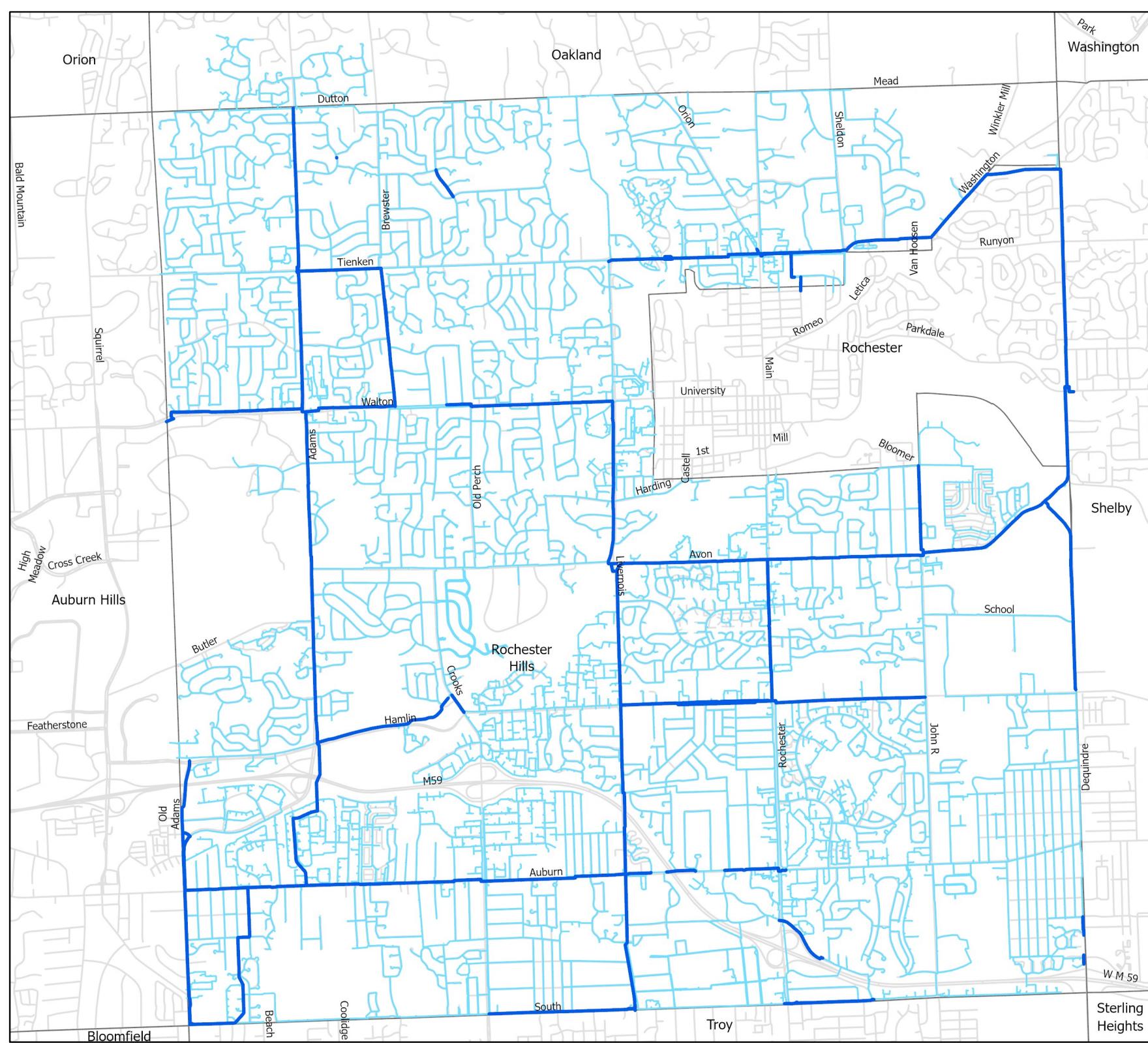
pc: City of Rochester Hills, A. Schneck, T. Balint, L. Luedeman
HRC; D. Mitchell, B. Clarke, File



DSMI Inventory

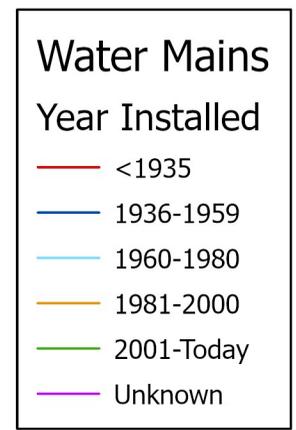
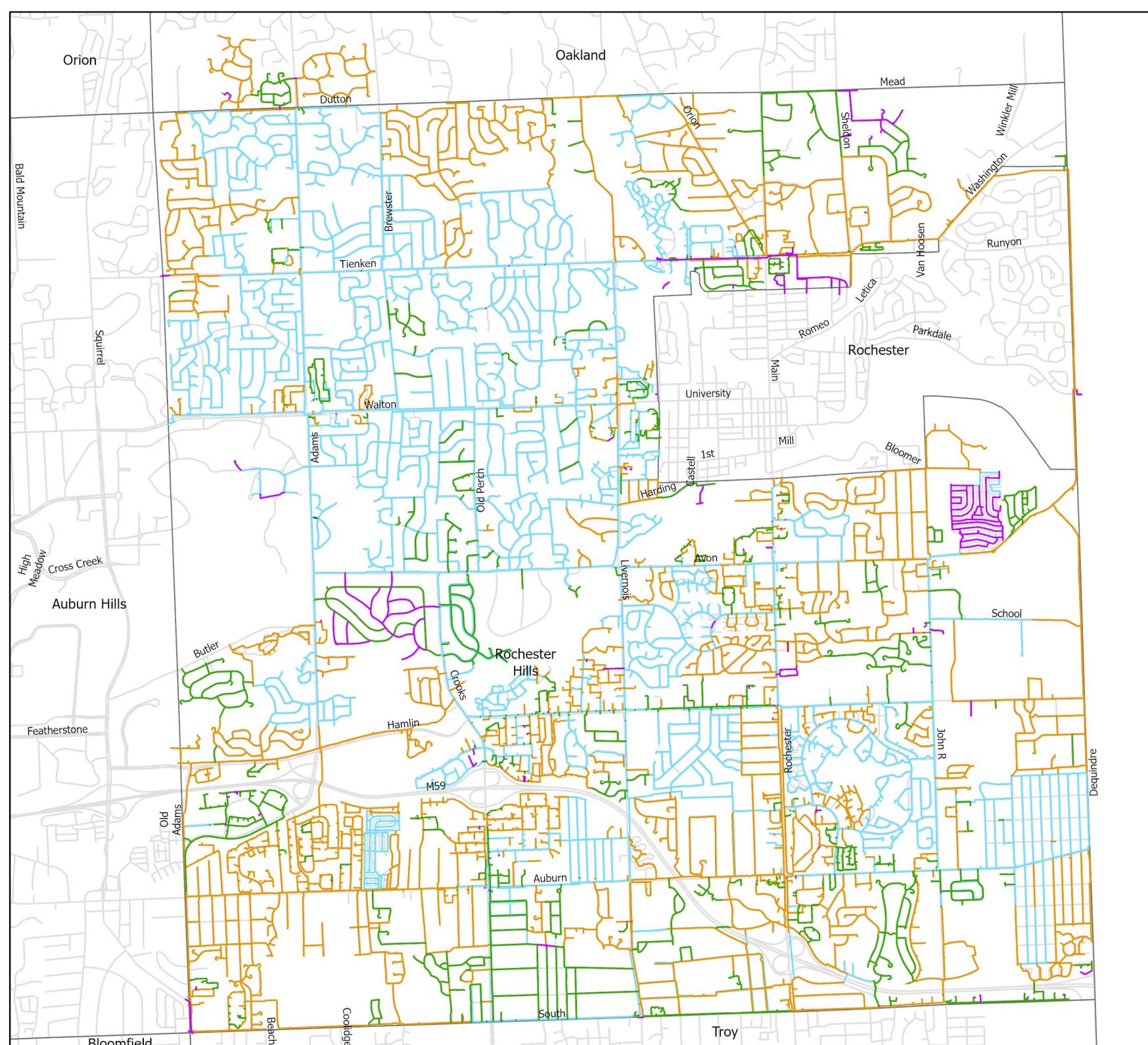
Estimated Service Connections by Service Line Material

- Lead
- Galvanized Previously Connected to Lead
- Unknown-Likely Contains Lead
- Unknown-Likely Does Not Contain Lead
- Unknown-Unknown
- No Lead or Galvanized Previously Connected to Lead



Water Mains
DIAMETER

- 6" - 14"
- 16" - 36"



**CITY OF ROCHESTER HILLS
 DRINKING WATER ASSET MANAGEMENT (DWAM) GRANT APPLICATION
 ESTIMATED PROJECT COST BREAKDOWN**

HRC Project No. 20201032

Asset Management Planning Costs

Task	Qty	Unit	Unit Price	Total
1) Large Valve Inspections		54 each	\$ 900.00	\$ 48,600.00
2) Pipeline Integrity Assessment		42 miles	\$ 750.00	\$ 31,500.00
3) Pipeline Condition Assessment		2 miles	\$ 50,000.00	\$ 100,000.00
4) Asset Inventory Updates		3 years	\$ 25,000.00	\$ 75,000.00
			Subtotal: \$	255,000.00
			Planning, Administration, Coordination & Reporting: \$	39,000.00
			TOTAL AMP COSTS \$	294,000.00

Distribution System Materials Inventory Costs

Task	Qty	Unit	Unit Price	Total
1) Service Line Material Investigations (physical investigation at the curb stop, points 2 & 3 based on EGLE Guidance)		379 each	\$ 738.00	\$ 280,000.00
2) Interior Service Line Verification (physical investigation at the curb stop, point 1 based on EGLE Guidance)		379 each	\$ 120.00	\$ 45,480.00
			Subtotal: \$	325,480.00
			Planning, Administration, Coordination & Reporting: \$	87,700.00
			TOTAL DSMI COSTS \$	413,180.00

**CITY OF ROCHESTER HILLS
PROFESSIONAL ENGINEERING SERVICES FOR
ASSET MANAGEMENT PLANNING COSTS
DRINKING WATER ASSET MANAGEMENT (DWAM) GRANT**

**TABLE 1
ESTIMATED HOURS AND FEES**

October 13, 2021

20201032

Task Description	Rate Classification & Estimated Hours				Total Hours
	Associate/ Managing Engineer	Staff Engineer	Graduate Construction Engineer	Rochester Hills GIS Analyst	
	\$ 150.00	\$ 110.00	\$ 90.00	\$ 35.00	
Large Valve Inspections					
1 Development of Contract Documents & Procurement	16	24	-	-	40
2 Construction Engineering	8	16	27	-	51
3 Project Tracking, Coordination, Documentation and Reporting	4	24		-	28
Pipeline Integrity Assessment					
1 Development of Professional Services Agreement	16	8	-	-	24
2 Coordinate Background Information/Project Kickoff Meeting	4	16	-	-	20
3 Project Tracking, Coordination, Reviews and Reporting	8	4		-	12
Pipeline Condition Assessment					
1 Development of Contract Documents & Procurement	24	48	-	-	72
2 Construction Engineering and Field Testing	8	16	24	-	48
3 Project Tracking, Coordination, Documentation and Reporting	12	20		-	32
PLANNING, ADMINISTRATION, COORDINATION & REPORTING TOTAL	100	176	51	-	327
Asset Inventory Updates (per year)					
1 Review of Historical Data, Information & CMMS Work Orders	-	-	-	200	200
2 Data Collection & Input	-	-	-	150	150
3 Enhance Condition Assessment and LOS Key Project Indicators	-	-	-	100	100
4 GIS Update & Review	-	-	-	250	250
PROJECT TOTAL	-	-	-	700	1,354

Notes:

- (1) Rate for City Staff accounts for Force Account limitation of hourly wage plus 40% fringes

PLANNING, ADMINISTRATION, COORDINATION & REPORTING

Personnel	HOURS	RATE	TOTAL
Associate/Managing Engineer	100	\$ 150.00	\$ 15,000.00
Staff Engineer	176	\$ 110.00	\$ 19,360.00
Graduate Construction Engineer	51	\$ 90.00	\$ 4,590.00
TOTAL ESTIMATED FEE			\$ 39,000.00

ASSET INVENTORY UPDATES (FORCE ACCOUNT WORK)

Personnel	HOURS	RATE (1)	TOTAL
Rochester Hills GIS Analyst (year one)	700	\$ 35.00	\$ 24,500.00
(year two)	700	\$ 35.00	\$ 24,500.00
(year three)	700	\$ 35.00	\$ 24,500.00
TOTAL ESTIMATED FEE			\$ 73,500.00

**CITY OF ROCHESTER HILLS
PROFESSIONAL ENGINEERING SERVICES FOR
PROGRAM MANAGEMENT SERVICES FOR SERVICE LINE MATERIALS INVESTIGATION
DRINKING WATER ASSET MANAGEMENT (DWAM) GRANT**

**TABLE 1
ESTIMATED HOURS AND FEES**

October 13, 2021

20201032

Task Description	Rate Classification & Estimated Hours				Total Hours
	Associate/ Managing Engineer	Staff Engineer	Program Manager	GIS Analyst	
1 DWAM Grant Application and EGLE Requested Application Modifications	20	-	-	-	20
2 Observation of Curb Stop Verification (1)	-	-	310	-	310
3 Program Management	32	64	32	-	128
4 Program Supervision	62	-	-	-	62
5 Mobile Application/Data Collection Setup	-	-	-	20	20
6 GIS/CMMS coordination/input/reporting	28	46	80	130	284
PROJECT TOTAL	142	110	422	150	824

Notes:

(1) Assumes a typical 10-15 verifications per day

ESTIMATED FEE SUMMARY

PERSONNEL	HOURS	RATE	TOTAL
Associate/Managing Engineer	142	\$ 150.00	\$ 21,300.00
Staff Engineer	110	\$ 110.00	\$ 12,100.00
Program Manager	422	\$ 95.00	\$ 40,090.00
GIS Analyst	150	\$ 95.00	\$ 14,250.00
TOTAL ESTIMATED FEE \$			87,700.00



