

EGLE Brownfield Grant Work Plan

Project Name: Sewer Extension Hamlin at Adams
Project Location: South Side of Hamlin Road, East of Adams Road, Rochester Hills, Michigan
EGLE Tracking Code: 2023-2540
EGLE Location Code: 6K60
Work Plan Date: July 31, 2024
Work Plan Number: 2
Work Plan Subject: Dewatering Monitoring and Contingency Plan

Awardee Name: City Rochester Hills
Prepared by: ASTI Environmental – Emily Manetz

1.0 INTRODUCTION

This Dewatering Monitoring and Contingency Plan (DWCP) was prepared on behalf of City of Rochester Hills for the sanitary sewer that will be installed along the south side of Hamlin Road in the City of Rochester Hills, Oakland County, Michigan (the Investigation Area). Refer to Figure 1 for the site location and Figure 2 for the location of the Investigation Area.

Sanitary sewer installation will start at Innovation Hills Park (2800 West Hamlin Road), cross Hamlin Road to the south, proceed east along the south side of Hamlin Road adjacent to the former Cardinal and Veterans Landfills, cross a portion of 2463 Hamlin Road, and terminate at an existing connection located at 2450 Norfolk. The Proposed Sewer Extension Plans and four proposed manholes (MH-2 through MH-5) are illustrated in Figure 3.

The sanitary sewer will be installed using directional drilling, but soils will be removed for the construction of these four manholes. In addition, dewatering will likely be required during installation, particularly at MH-2 and MH-3, where groundwater was encountered in a previous investigation.

ASTI completed a Limited Phase II Environmental Site Assessment (ESA) for the Investigation Area on May 22 and 23, 2024, in accordance with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) approved Brownfield Grant Work Plan #1 dated April 15, 2024. The Limited Phase II ESA included the advancement of four soil borings (SB-1 through SB-4) at the proposed manhole locations, collection of soil samples, installation and sampling of two permanent groundwater monitoring wells, and screening of methane in soil gas. Boring and well locations are depicted in Figure 4.

The results of the sampling completed for the Investigation Area did not detect any of the analyzed constituents above generic residential clean-up criteria in soils. However, perfluorooctanoic acid (PFOA) was detected in groundwater at concentrations exceeding the

Michigan Maximum Contaminant Levels (MCLs) for per- and polyfluoroalkyl substances (PFAS) at one location (SB-3-MW), and concentrations of PFAS below the MCL were detected in groundwater at another location (SB-4-MW). Additionally, methane was detected in soil gas at a concentration exceeding the lower explosive limit (LEL) at one location (SG-1). Therefore, pretreatment of groundwater removed during dewatering was recommended.

2.0 SCOPE OF WORK

The following sections describe the individual tasks that are proposed as part of this Work Plan #2.

2.1 Task #2 – Remediation and Removal Actions

The City of Rochester Hills will install a dewatering system to lower the existing groundwater elevations to facilitate the construction and connection of the proposed sanitary sewer system to the existing sanitary sewer main located at 2450 Norfolk. Based on the previous study, it is anticipated that dewatering will only be required on the east half of the proposed sewer line (in the area of SB-3-MW and SB-4-MW).

Prior to beginning the dewater operations, frac tank(s) will be delivered to the Investigation Area. Any residual water that exists in the frac tanks prior to use will be sampled and analyzed for volatile organics, polynuclear aromatics, 10 Michigan metals, PFAS and polychlorinated biphenyls (PCBs) to establish a baseline.

Dewatering wells will be installed along the proposed sanitary sewer line, as necessary, to a maximum depth of 40 feet below ground surface (bgs). The wells will be fitted with submersible pumps connected to polyvinyl chloride (PVC) riser pipe that will convey the pumped water to the surface. The risers will be connected via a suction hose to a common discharge header. A sediment filtration bag will be attached to the end of the discharge lines. The pumped water will then be treated with a granular activated carbon (GAC) treatment system and directed into frac tanks (number of tanks will depend on groundwater recharge rate).

Initially, dewatering will be conducted for up to 24 hours in the Investigation Area to document dewatering efficiency and the impact of dewatering on groundwater drawdown. During this 24-hour period, groundwater elevations will be continuously measured in monitoring wells SB-3-MW and SB-4-MW. All dewatering fluids removed during this test period will be treated and batched in the frac tanks as described above. After the initial 24-hour period, samples will be collected from monitoring wells SB-3-MW and SB-4-MW, as well as from the frac tanks (for a total of three samples) to confirm groundwater conditions prior to full-time dewatering operations.

The pumping/flow rate during dewatering will vary based on groundwater conditions in the Investigation Area and will likely diminish as groundwater elevations approach steady-state conditions.

In the event that subsequent post-treatment samples identify concentrations of PFAS exceeding the MCLs, discharge activities will be ceased immediately to allow for evaluation and troubleshooting of the treatment system. Dewatering and discharge will not resume until a sufficient plan is generated to address and resolve the treatment issues to the satisfaction of EGLE.

In the event that no PFAS is identified above the MCL in pretreated groundwater batched in the fac tanks for three consecutive days, discharge will be directly from the GAC treatment system.

A permit will be obtained for discharge to surface water or publicly owned treatment works (POTW), as appropriate.

Because methane was reported in soil gas at a concentration exceeding the LEL, intrinsically safe equipment will be used during all activities conducted within the Investigation Area.

2.1.1 Discharge Monitoring

Treated batched groundwater in the fac tank(s) will be analyzed for PFAS prior to being discharged to surface waters or POTW. Frequency of sampling is estimated at once per work day for purposes of this work plan, but will be based on when fac tanks have been filled.

In the event that concentrations of PFAS exceeding the MCLs are identified in dewatering fluids during any of the monitoring events, notification and associated laboratory analytical reports will be provided to EGLE within 24 hours of receipt of the analytical reports.

2.2 Task #8 - Contingency

In the event that dewatering requires an additional week, a contingency for extended use of fac tank(s) and the GAC treatment system, as well as continued monitoring, is included in this Work Plan.

3.0 SCHEDULE

Dewatering and discharge activities are expected to commence as soon as permit approval from EGLE is received, and, for purposes of this Work Plan, to require two weeks, with one additional week contingency included in this Work Plan. Laboratory analysis for each PFAS sample will require 24 hours to complete.

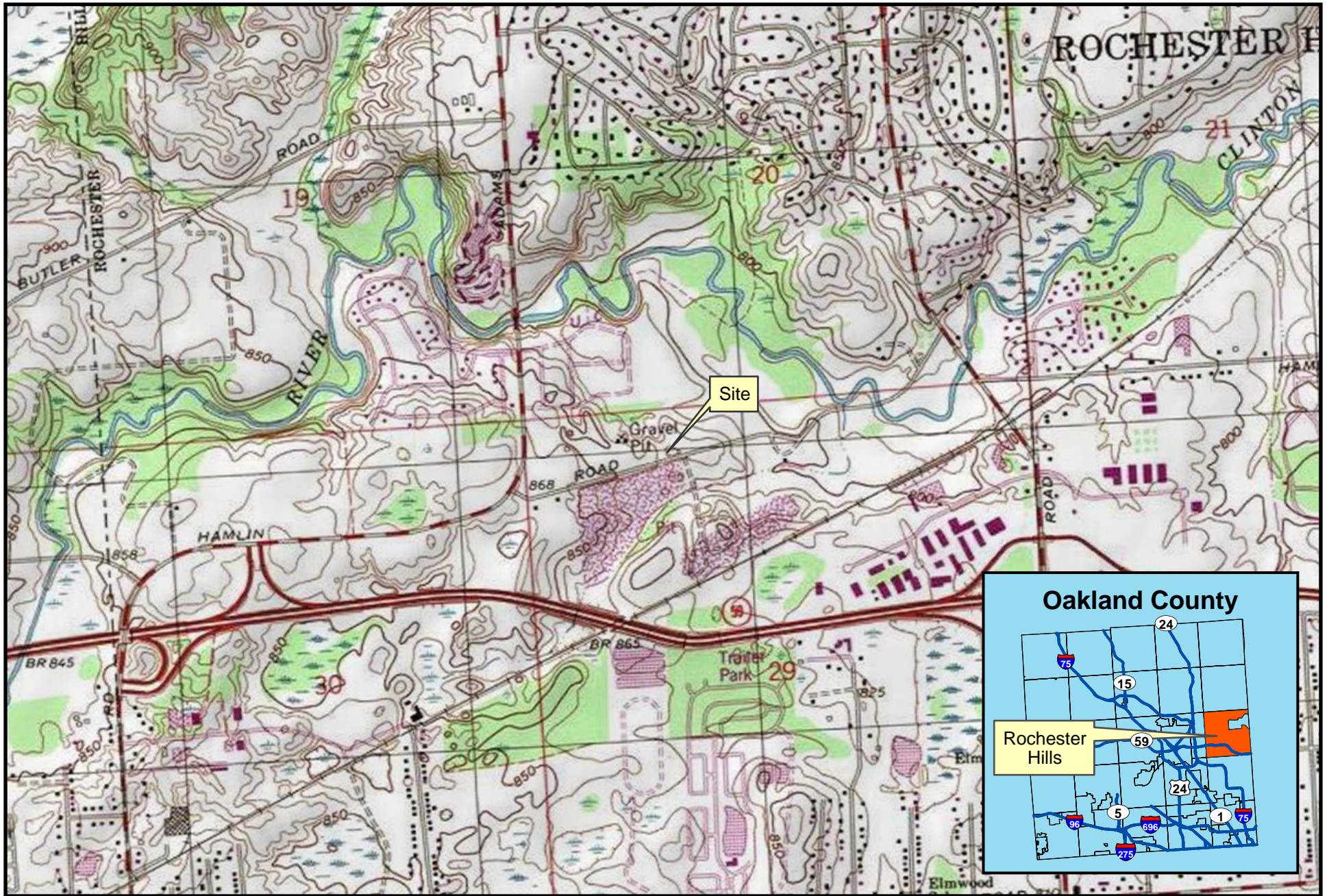
Figures

Figure 1 – Site Location Map

Figure 2 – Area of Investigation

Figure 3 – Manhole Locations

Figure 4 – Sampling Locations Work Plan #1



Hamlin Road Sewer Extension

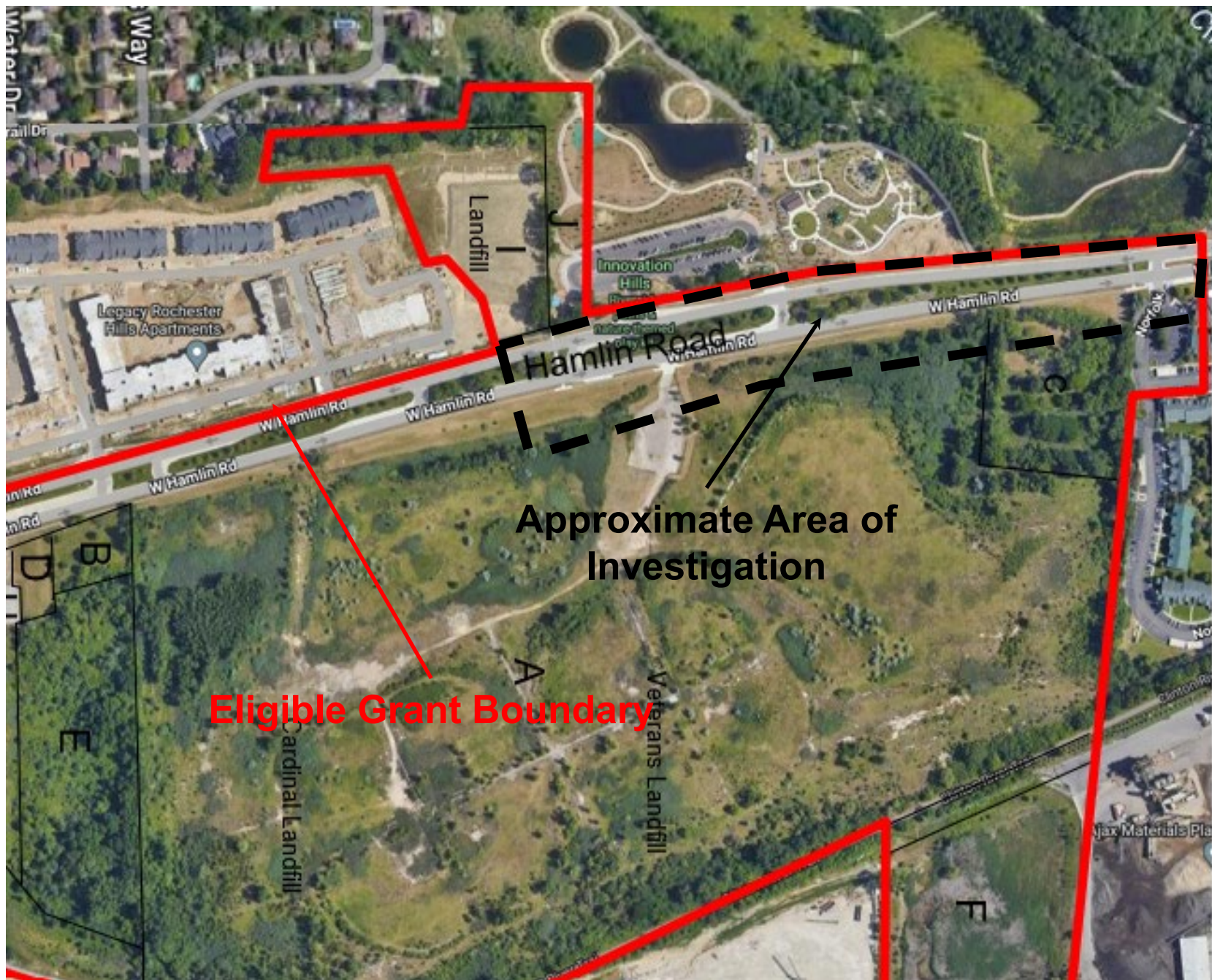
Rochester Hills, MI



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Figure 1 - Site Location Map





Hamlin Road Sewer Expansion

Rochester Hills, MI

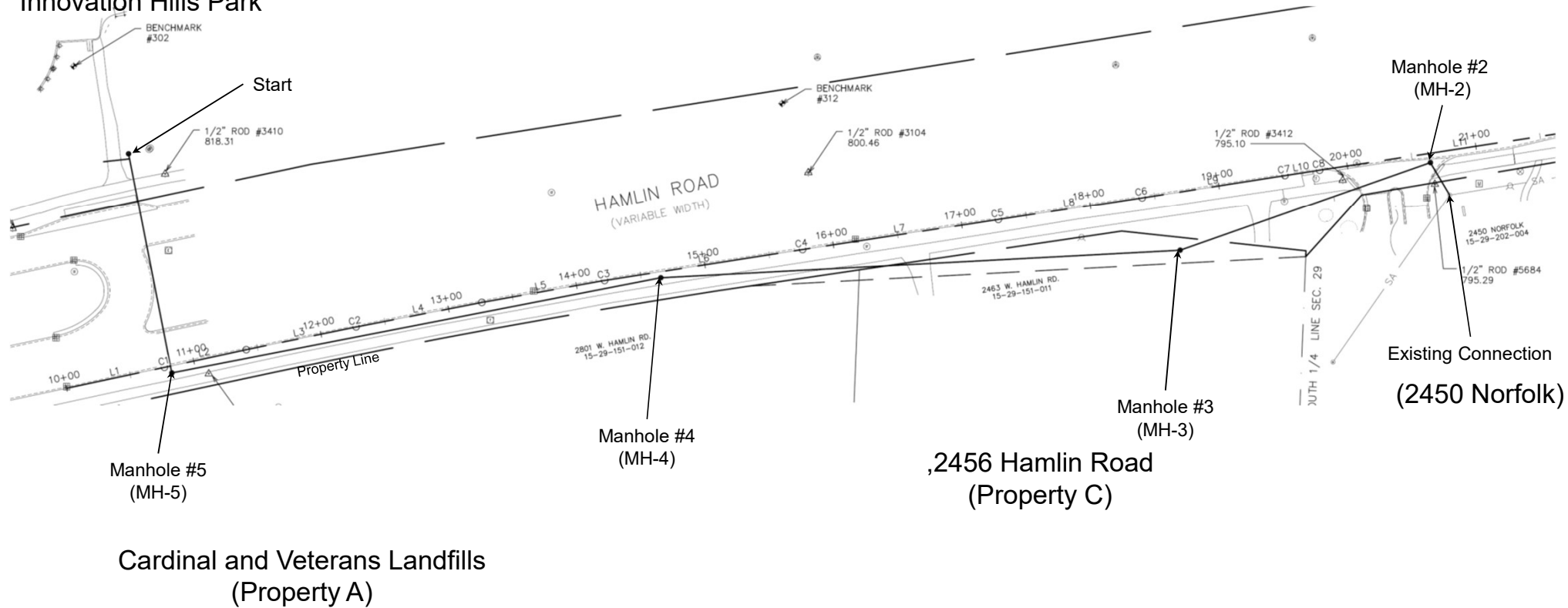


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Figure 2: Area of Investigation

Innovation Hills Park



Sewer Extension Hamlin at Adams

Rochester Hills, MI

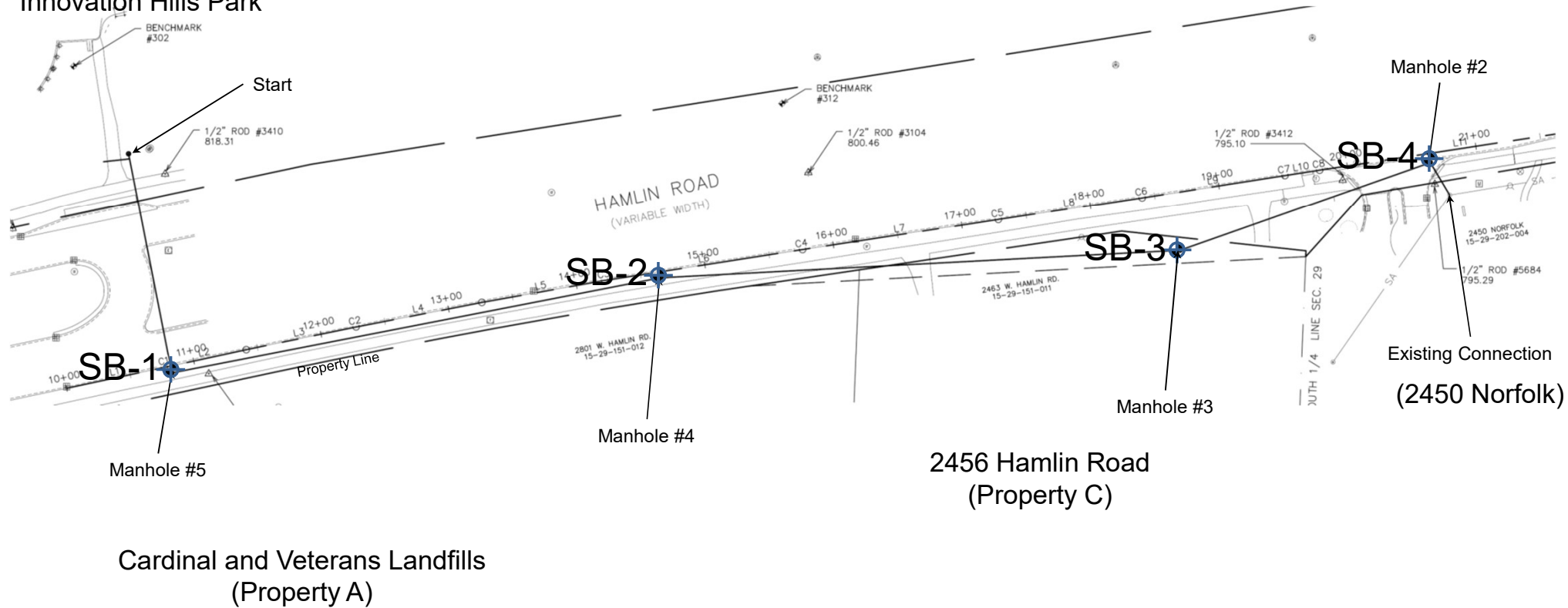


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Figure 3: Manhole Locations

Innovation Hills Park



Sewer Extension Hamlin at Adams

Rochester Hills, MI



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Figure 4: Sample Locations – Work Plan #1

Tables

Table 1 - Grant Activity Costs and Schedule Table

Table 2 - Grant Cumulative Expenditures Table

Table 1

Work Plan #2 Activity Costs and Schedule					
Eligible Activities	Quantity	Unit	Unit Cost	Cost	Estimated Completion Quarter
Task #2 Remediation and Removal Actions					
2001 Preparation of Work Plan	1	ea.	\$ 1,800.00	\$ 1,800.00	Completed
2002 Discharge Monitoring					
Obtain Permits	6	hours	\$ 140.00	\$ 840.00	4Q 2024FY
Initial 24-hour Period					
Frac Tanks (2)	2	Days	\$ 1,260.00	\$ 2,520.00	1Q 2025FY
Monitoring (Daily)	2	Days	\$ 1,260.00	\$ 2,520.00	1Q 2025FY
Analytical Frac Tanks (PFAS)	1	ea.	\$ 2,046.00	\$ 2,046.00	1Q 2025FY
Baseline Analytical (VOC, PNA, 10 Metals, PFAS, PCBs)	2	ea.	\$ 895.00	\$ 1,790.00	1Q 2025FY
Analytical Groundwater Wells (PFAS)	2	ea.	\$ 450.00	\$ 900.00	1Q 2025FY
GAC Treatment System Rental					
During Dewatering					
Frac Tanks (2)	2	Week	\$ 6,292.00	\$ 12,584.00	1Q 2025FY
Monitoring (Daily)	10	Days	\$ 560.00	\$ 5,600.00	1Q 2025FY
Analytical Frac Tanks (PFAS)	10	ea.	\$ 2,046.00	\$ 20,460.00	1Q 2025FY
2004 Project Management/Grant Reporting					
Final Report	1	Est	\$ 3,500.00	\$ 3,500.00	2Q 2025FY
Task #8 Contingency					
8001 Contingency					
Frac Tanks (2)	1	Week	\$ 6,292.00	\$ 6,292.00	1Q 2025FY
GAC Treatment System Rental	1	Week	\$ 24,275.00	\$ 24,275.00	1Q 2025FY
Monitoring (Daily)	5	Days	\$ 560.00	\$ 2,800.00	1Q 2025FY
Analytical Frac Tanks (PFAS)	5	ea.	\$ 2,046.00	\$ 10,230.00	1Q 2025FY
EGLE Eligible Activities Total Costs				\$ 146,707.00	

Table 2

Cumulative Expenditures Table							
Task	Original Sub-Grant Budget	Current Sub-Grant Budget	Work Plan #1 Amount Approved to Date	Amount Spent to Date	Work Plan Amount Remaining	Grant Amount Remaining	Work Plan #2
Task #1 Environmental Assessment	\$ 32,800.00	\$ 32,800.00	\$ 36,739.00	\$ 13,277.02	\$ 23,461.98	\$ 19,522.98	\$ -
Task #2 Remediation and Removal Actions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,110.00
Task #3 Engineered Controls	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task #4 EGLE Sign	\$ 500.00	\$ 500.00	\$ 500.00	\$ 85.84	\$ 414.16	\$ 414.16	\$ -
Task #8 Contingency	\$ 4,875.00	\$ 4,875.00	\$ -	\$ -	\$ -	\$ 4,875.00	\$ 43,597.00
EGLE Eligible Activities Total Costs	\$ 38,175.00	\$ 38,175.00	\$ 37,239.00	\$ 13,362.86	\$ 23,876.14	\$ 24,812.14	\$ 146,707.00