

**SUBJECT**  
RACER Buick City Industrial Avenue Sanitary Sewer Investigation Work Plan

**TO**  
Brendan Mullen – RACER

**DATE**  
February 20, 2025

**DEPARTMENT**  
Environment

**PROJECT NUMBER**  
30215500

**COPIES TO**  
Micki Maki – Arcadis  
Chris Peters – Arcadis

**NAME**  
Tony Maffeo  
517.304.1433 (m)  
[tony.maffeo@arcadis.com](mailto:tony.maffeo@arcadis.com)

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On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, Arcadis of Michigan, LLC (Arcadis) is providing this sampling workplan related to per- and poly-fluoroalkyl substances (PFAS) detections in sanitary sewers near the Buick City Site (the Site) located in Flint, Michigan (**Figure 1**).

## Background

The City of Flint (City) indicated in October of 2024 that sampling they conducted in March of 2024 identified detections of PFOS and PFOA - in the sanitary sewer main that flows from north to south along Industrial Avenue - exceeding the respective surface water criteria (See **Figure 2** for sewer location). Previous sampling completed by the City in 2018 did not detect PFAS concentrations above surface water criteria and no further investigation was completed at that time.

Historical information related to the sanitary sewer infrastructure in this area is not well documented. To develop this work plan, Arcadis reviewed the City's analytical data, historical data, and historical sewer map information to try to better understand the issue and the potential extents of PFAS impacts. Arcadis also consulted with Ashley Capital, who redeveloped a portion of the former Buick City site north of Hamilton Avenue, between Industrial Avenue and North Street, for information they acquired, and work they performed on the sanitary sewer along Industrial Avenue.

The initial evaluation of the sanitary sewers along Industrial Avenue determined that there appears to be two separate sanitary sewer lines that run north-south along Industrial Avenue. Ashley Capital reportedly bulkheaded one of the sanitary lines (15-inch) onsite as part of their site development activities. This information and the location of the bulkhead is being confirmed.

## Scope of Work

The two key elements of this Work Plan include sampling at multiple locations in both the Industrial Ave and Hamilton Ave sanitary sewers (including the locations previously sampled by the City) and developing a better understanding of the sanitary sewer configuration in Industrial Ave. Specifically, the locations of manholes that have been previously sampled by the City, as well as potential sites for infiltration, will be sampled (**Figure 2**). To better understand the source(s) of PFAS, samples will be collected from 8 sample locations from the sanitary lines located throughout Industrial Avenue and Hamilton Avenue (**Figure 2**). One of the samples will be collected from a manhole upgradient of a separate sanitary sewer running West to East along Hamilton Avenue that was previously bulkheaded to address other PFAS impacts. One duplicate sample will be collected for quality control

purposes. Samples will be analyzed for the full PFAS suite (34 compounds) using method ASTM 7979. The following table provides additional detail about the sample locations:

Sample Identification	Sample Location
MH-I1	Downgradient manhole believed to be 18-inch sanitary sewer – on Industrial Avenue south of Hamilton Avenue
MH-I2	Downgradient manhole believed to be 27-inch sanitary sewer – on Industrial Avenue south of Hamilton Avenue. Believed to be sampled by the City of Flint in March 2024
MH-I3	Manhole believed to be 18-inch sanitary sewer – at the intersection of Industrial Avenue and Hamilton Avenue
MH-I4	Manhole believed to be 27-inch sanitary sewer – at the intersection of Industrial Avenue and Hamilton Avenue.
MH-I5	Manhole believed to be 18-inch sanitary sewer – Just north of the intersection of Industrial Avenue and Hamilton Avenue
MH-I6	Upgradient manhole believed to be 24-inch sanitary sewer – just south of Oak Park / Baker Street.
MH-I7	Upgradient manhole believed to be 15-inch sanitary sewer – just south of Oak Park / Baker Street.
MH-H3	Manhole between Industrial Avenue and previously bulkheaded portion of the Hamilton Avenue sanitary sewer

The samples will be collected from the furthest downgradient locations first to prevent cross contamination. All PFAS samples will be sent to Merit Laboratories in East Lansing, Michigan for analysis. Sample locations are situated along an active roadway, which may necessitate the implementation of traffic control measures. Additionally, any sampling conducted off the property will require the appropriate access permissions.

The second component of this Work Plan involves developing a more comprehensive understanding of the sewer route. This process may involve location mapping and utilizing video to document the infrastructure. The City has indicated they can assist in the effort to confirm the presence of two separate sanitary sewers along Industrial Avenue. The objective is to ensure accurate assessment and analysis of the sewer system as identified in **Figure 1**. In the event that this information is obtained prior to sampling, this sampling plan may be modified to better respond the actual sewer configurations.

Once sample analysis reports are received, Arcadis will review the data and evaluate next steps. The data will be provided to the City of Flint and EGLE. A summary memo will be generated that includes the finding of the investigation and potential next steps. One meeting with the City of Flint and one meeting with EGLE is anticipated for this effort.

### **Cost Estimate**

The estimated cost for this scope of work is **\$14,356**. This breaks down as follows:

- Arcadis labor - \$6,663
- Arcadis expenses - \$268
- Subconsultants
  - Traffic controls (GEBS) - \$4,000
  - Waste disposal (Republic – contingency)- \$275
  - Analytical laboratory (Merit) - \$3,150

### **Assumptions**

- Sampling will require two field technicians for traffic safety.
- All samples will be collected from ground surface. No confined space entry is anticipated for this scope of work.
- Any disposable materials will be drummed and disposed of as site waste, as appropriate.
- Work will be coordinated with the City of Flint and Ashley Capital.

### **Schedule**

It is anticipated that the samples can be collected within one week of approval of this Work Plan. Sample results should be available two weeks after submitting to the lab. Evaluation and development of the summary memo is anticipated to take 2 weeks to complete. receipt of the analysis.

### **Enclosures:**

Figure 1 – Sanitary Sewer from Industrial Drive to James P Cole Blvd

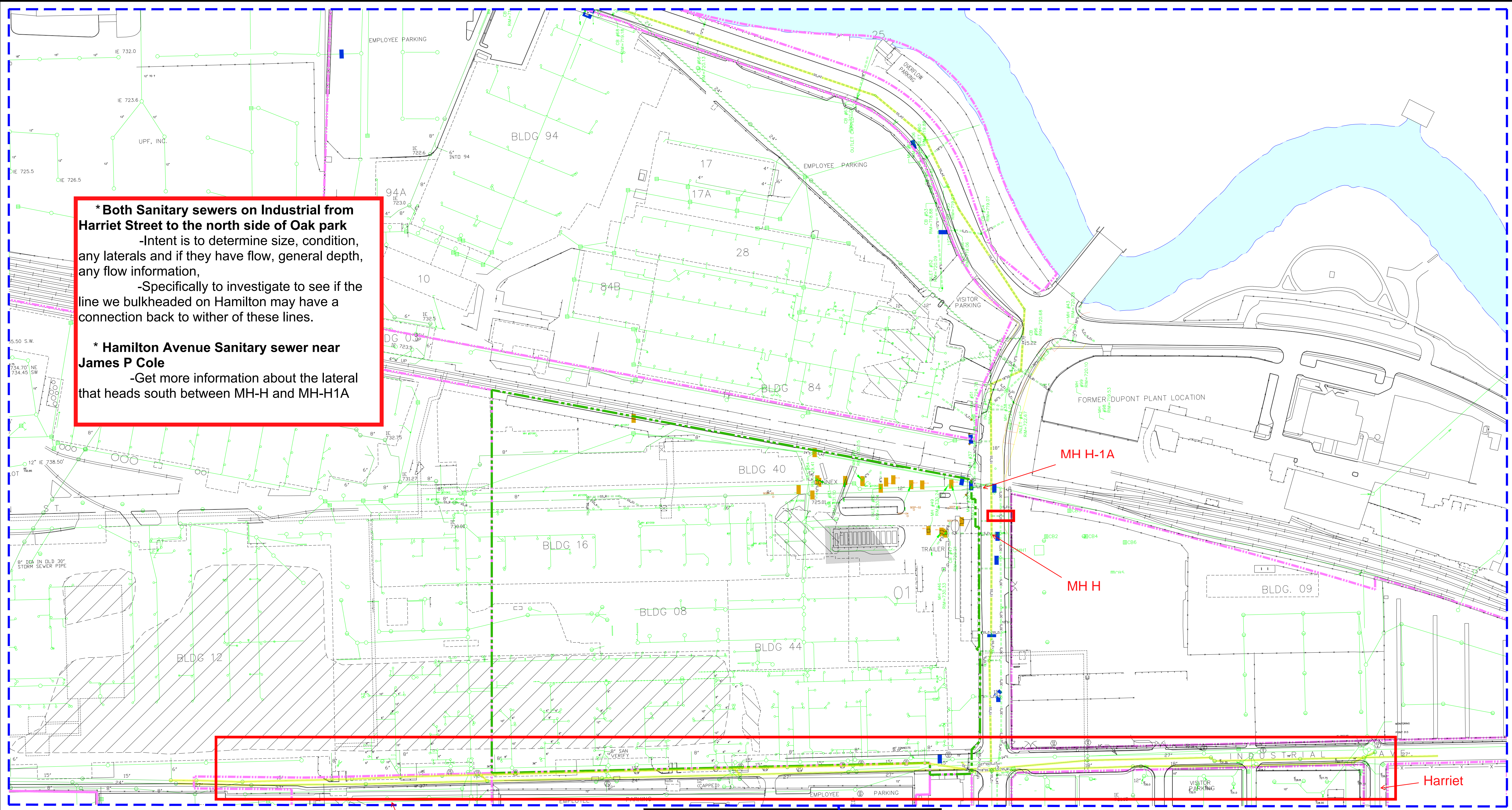
Figure 2 – Proposed Sanitary Sewer Sample Locations

Detailed Cost Table

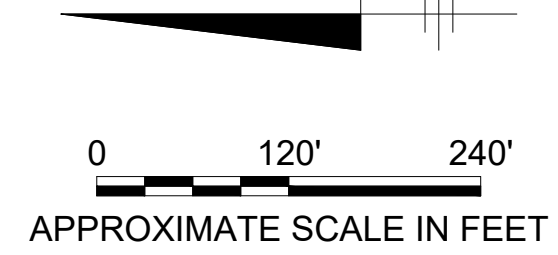
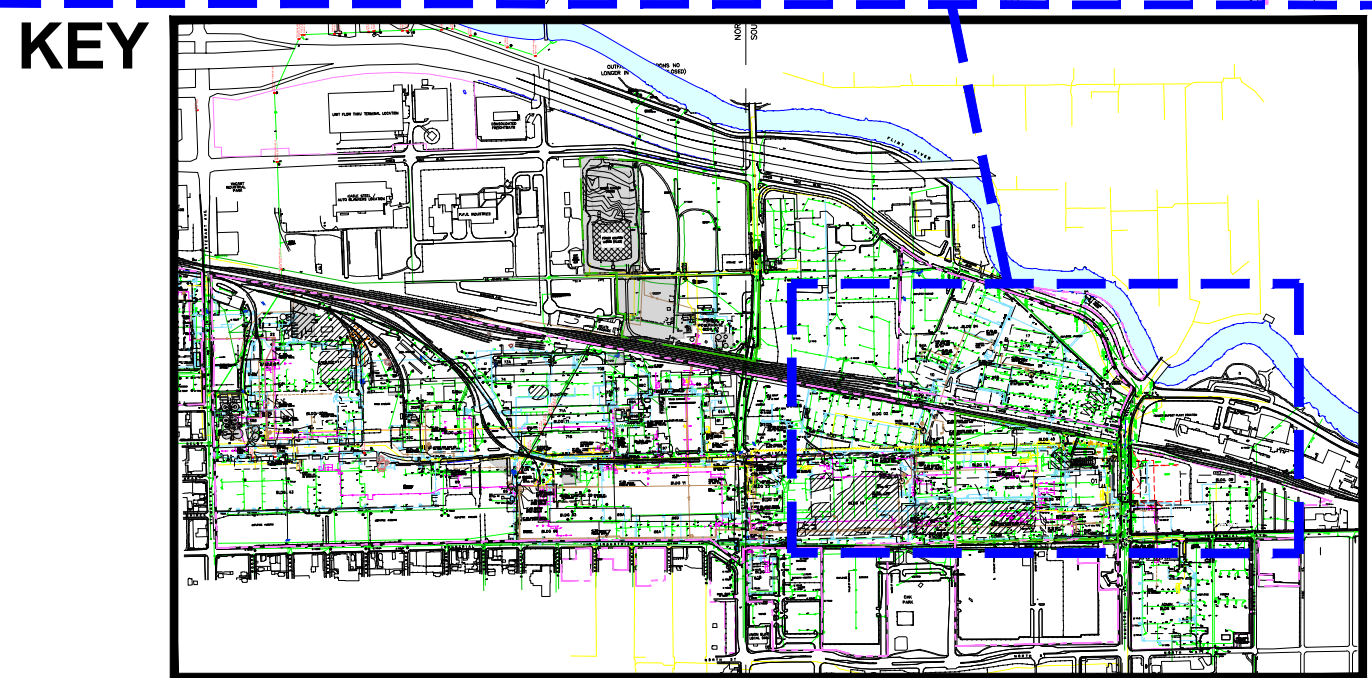
C:\Users\BSS\small\DC\ACCD\BUICK\BUICK CITY\_FLINT\_MIP\101\_ARC\_ENV\202501-10\DWGSANITARY SEWER - INDUSTRIAL TO J.P. COLE.dwg LAYOUT\_4\_SAVED: 1/21/2025 2:39 PM ACADVER: 24.25 (LMS TECH) PAGES: 10 PLOTTED: 1/21/2025 12:40 PM BY: SMALL BRIAN

**\* Both Sanitary sewers on Industrial from Harriet Street to the north side of Oak park**  
-Intent is to determine size, condition, any laterals and if they have flow, general depth, any flow information,  
-Specifically to investigate to see if the line we bulkheaded on Hamilton may have a connection back to wither of these lines.

**\* Hamilton Avenue Sanitary sewer near James P Cole**  
-Get more information about the lateral that heads south between MH-H and MH-H1A



- LEGEND:
- RACER PROPERTY BOUNDARY
  - FORMER RACER PROPERTY BOUNDARY
  - SANITARY SEWER
  - STORM SEWER
  - BULKHEAD LOCATION



RACER TRUST  
BUICK CITY  
FLINT, MICHIGAN

**SANITARY SEWER FROM INDUSTRIAL DRIVE TO JAMES P. COLE BOULEVARD**

FIGURE  
**1**



Buick City  
Industrial Avenue  
Sanitary Sewer Investigation Work Plan

RACER Task Number and Description:			
		Activity:	
	Rate	Est. Qty.	Cost
<b>Consultant Labor <sup>2</sup>:</b>			
Principal Engineer/Scientist	\$181.00	4	\$ 724.00
Sr. Engineer/Scientist II	\$167.00	13	\$ 2,171.00
Sr. Engineer/Scientist I	\$158.00	2	\$ 316.00
Sr. Project Engineer/Scientist II	\$136.00	2	\$ 272.00
Sr. Project Engineer/Scientist I	\$124.00	4	\$ 496.00
Project Engineer/Scientist	\$114.00	7	\$ 798.00
Engineer/Scientist II	\$106.00	0	\$ -
Engineer/Scientist	\$92.00	0	\$ -
Technician IV	\$104.00	23	\$ 2,392.00
Construction Resident	\$85.00	0	\$ -
Drafter	\$109.00	2	\$ 218.00
Project Assistant II	\$96.00	0	\$ -
<b>Consultant Labor Subtotal:</b>			<b>\$6,663.00</b>
<b>Consultant Direct Costs:</b>			
Vehicle Rental - <span style="color: red;">Mileage for Racer</span>	\$0.56	60	\$ 33.60
Equipment			\$ 133.80
Disposable Supplies (gloves, plastic, etc.)			\$ 100.00
Additional Equipment (not incl. in table)			
<b>Consultant Direct Costs Subtotal:</b>			<b>\$267.40</b>
<b>Consultant Indirect Costs:</b>			
Surveying			\$ -
Subcontractor (JSS,YECI)			\$ -
Traffic Controls (GEBS)			\$ 4,000.00
Sewer video (GPRS)			\$ -
Waste Disposal <sup>3</sup> (Republic)			\$ 275.00
Utility Clearance			\$ -
Drilling Subcontractor			\$ -
Laboratory <sup>2</sup> (Merit)			\$ 3,150.00
<b>Subcontractor Subtotal:</b>			<b>\$7,425.00</b>
<b>Labor and Supplies Subtotal:</b>			
<b>Task Budget Total <sup>1</sup>:</b>			<b>\$14,355.40</b>

**Notes:**

1. These budgets are based on a time and materials approach. These Task Budgets are not to be exceed without a Michigan EGLE approved budget amendment.
2. Identified classifications are intended as examples and actual hours and classifications used could vary depending on availability.
3. Estimated cost based on previous work completed at the Site and historical subcontractor and vendor costs. Funds are for budgetary purposes and final costs will be based on subcontractor quote and subject to Cleanup Manager approval and markup.
4. This cost has been estimated for budgetary purposes and is subject to competitive bidding and subject to Cleanup Manager approval of any mark-up.